DITA 2.0 proposals
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# 1 Overview

This document contains the text of the stage two and stage three proposals for DITA 2.0 that have been approved by the OASIS DITA Technical Committee (DITA TC).

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This document is regenerated periodically, as new proposals are approved by the DITA TC.

## 2 DITA 2.0: Stage two proposals

These proposals have been approved by the DITA TC at the stage two level. For more information about stage two criteria, see DITA 2.0 proposal process.

### 2.1 Base edition

#### 2.1.1 Stage two: #08 <include> element

A new base element for inclusion of content from external files. This new element will serve as the base element for the existing transclusion elements `<coderef>`, `<svgref>`, and `<mathmlref>`.

### Date and version information

**Date that this feature proposal was completed**

February 25, 2018

**Champion of the proposal**

Chris Nitchie

**Links to any previous versions of the proposal**

None

**Links to minutes where this proposal was discussed at stage 1 and moved to stage 2**


**Links to e-mail discussion that resulted in new versions of the proposal**

N/A

**Link to the GitHub issue**

https://github.com/oasis-tcs/dita/issues/8

### Original requirement or use case

The `<coderef>` element is a transclusion element – it loads the referenced file and places its contents as CDATA at the location of the referencing element. However, `<coderef>` is a specialization of `<xref>`, which is not a transclusion element. That is, the specialization-based fallback behavior for `<coderef>` is fundamentally incompatible with the expected processing. The same is true for `<svgref>` and `<mathmlref>`. The only way for people other than the TC to create similar transclusion elements via specialization is to specialize from one of those, or customize their processors to do the right thing with their element.

### Use cases

- A company wants to enable the transclusion of some foreign XML markup other than SVG or MathML.
- A company wants to enable the reuse of README textual content from their source code into their DITA content.
- A tool vendor wants to provide feature support for the inclusion of CSV data as DITA tables.
- A tool vendor wants to provide feature support for the inclusion of relational database query results as DITA tables.
New terminology

None.

Proposed solution

A new base vocabulary element called `<include>`. This element will use standard DITA referencing mechanics, but will be used for transclusion rather than simple referencing. It will be the base element for `<coderef>`, `<mathmlref>`, and `<svgref>`. In addition to the standard referencing attributes, the element will carry a `@parse` attribute specifying the processing to apply to the contents of the referenced file. Standard values for this attribute will be `text`, which will imply the conversion of `<`, `>`, and `&` into their equivalent character entity references, and `xml`, which will not. Vendors may provide support for additional processing modes.

Benefits

Who will benefit from this feature?

Developers of DITA processing engines, who can now use a single, unified mechanism for processing transclusion elements, rather than special-casing the current three elements.

Organizations needing to support transclusion of non-DITA content other than MathML and SVG, and code examples.

What is the expected benefit?

An extensible mechanism for transclusion of non-DITA content.

How many people probably will make use of this feature?

Many.

How much of a positive impact is expected for the users who will make use of the feature?

Significant.

Technical requirements

New base element: `<include>` with a `@class` of `- topic/include`. In addition to `%univ-atts;` and `@outputclass`, this element will carry the following attributes:

- `@href`
  URI of content to include.

- `@keyref`
  Key reference to content to include.

- `@format`
  The format of the resource.

- `@scope`
  Describes the relationship between this document and the referenced resource. In this case, primarily used by systems such as CCMS tools to determine how or whether to manage the relationship between this document and the target resource.

- `@parse`
  Transclusion processing instructions for the processor. Conforming processors must support the following values.

  - `text`
    Content is treated as plain text. Reserved XML characters are replaced with the equivalent character entity references. This is the default value.

DITA TC work product
Content is parsed and inserted with XML structure preserved. If a fragment identifier is included in the address of the content, processors must select the element with the specified ID. If no fragment identifier is included, the root element of the referenced XML document is selected. Any grammar processing should be performed during resolution, such that default attribute values are explicitly populated. Prolog content must be discarded. Put another way, processing of XML inclusion should match the processing for XInclude references.

It is an error to use `parse="xml"` anywhere other than within `<foreign>` or a specialization thereof.

Processors may support additional values for `@parse` with custom processing expectations. Other standard tokens may be added in future versions of the DITA standard. When an unsupported value for `@parse` is encountered, processors should issue a warning and treat the `<include>` as an unresolvable reference.

The character encoding to use when translating the character data from the referenced content when `parse="text"`. The value should be a valid encoding name. If not specified, processors may make attempts to automatically determine the correct encoding, for example using HTTP headers or through analysis of the binary structure of the referenced data, or the `<?xml?>` processing instruction (when including XML as text). The resource should be treated as UTF-8 if no other encoding information is available.

When `parse="xml"`, standard XML parsing rules apply for the detection of character encoding.

It is considered an error to use `<include>` to reference DITA content using `parse="xml"`, and processors should issue an error message when they detect inclusion of DITA content in this way. Authors should use `@conref` or `@conkeyref` instead.

The content model for the element is `ANY`. Content will not be presented in output unless the transclusion fails, in which case the contents of the tag may be used as fallback content. The presence of `translate="yes"` on an `<include>` element does not imply that the referenced resource should be translated, only the inline fallback content.

The `<include>` element should generally be used via specialization, and not used directly, similar to guidance on the use of the `<data>` or `<foreign>` elements.

`<include>` will be allowed anywhere `<xref>` is allowed.

The `<coderef>` element will be refactored to be a specialization of `<include>`, with the following default attribute values:

- `parse="text"`
- `format="text"`

The `<svgref>` element will be refactored to be a specialization of `<include>`, with the following default attribute values:

- `parse="xml"`
- `format="svg"`

The `<mathmlref>` element will be refactored to be a specialization of `<include>`, with the following default attribute values:

- `parse="xml"`
- `format="mathml"`
Backwards compatibility

DITA 2.0 is the first DITA release that is open to changes affecting backwards compatibility. To help highlight any impact, does this proposal involve any of the following?

Was this change previously announced in an earlier version of DITA?
   No.

Removing a document type that was shipped in DITA 1.3?
   No.

Removing a domain that was shipped in DITA 1.3?
   No.

Removing a domain from a document type shell was shipped in DITA 1.3?
   No.

Removing or renaming an element that was shipped in DITA 1.3?
   No.

Removing or renaming an attribute that was shipped in DITA 1.3?
   No.

Changing the meaning of an element or attribute in a way that would disallow existing usage?
   No.

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
   No.

Changing specialization ancestry?
   Yes, as described above.

Removing or replacing a processing feature that was defined in DITA 1.3?
   No.

Are element or attribute groups being renamed or shuffled?
   No.

Migration plan

Existing DITA content with <coderef>, <svgref>, or <mathmlref> elements will not require any migration, as their markup will not change.

DITA implementations that implement support for the <include> element will not need to do any extra work to support the refactored inclusion elements from DITA 1.3; correct processing for all three will happen with generic <include> processing.

It's unlikely that there are specializations of the existing inclusion elements, but any that do exist will need to be modified to use the new specialization hierarchy.

Costs

This change will have the following impact on the specification:

- A new language reference topic for the <include> element.
- Likely a new topic in the architectural spec describing the <include> element and its usage.
- Minor updates to the <coderef>, <svgref>, and <mathmlref> element topics in the language reference.

DITA processors will need to add support for the <include> element.
CCMS systems will need to be able to index and manage relationships between objects formed using `<include>` when `scope="local"`.

**Examples**

For the most part, `<include>` will be used as a basis for specialization. The following examples use it directly for purposes of illustration.

```xml
<!-- Inclusion of XML markup other than SVG or MathML -->
<fig>
  <title>JSP Tag Library Elements and Attributes</title>
  <foreign outputclass="tld">
    <include href="../src/main/webapp/WEB-INF/jsp-tag-library.tld"
             parse="xml" format="tld"/>
  </foreign>
</fig>

<!-- Inclusion of README text into a DITA topic. -->
<shortdesc>
  <include href="../src/README.txt" parse="text" encoding="UTF-8"/>
</shortdesc>

<!-- Vendor-specific handling for CSV tables -->
<fig>
  <title>Data Table</title>
  <include href="data.csv" parse="vnd-csv-to-simpletable"/>
</fig>

<!-- Vendor-specific handling of relationa data as tables -->
<fig>
  <title>Data Table</title>
  <include href="vnd-db://connectionName/queryName?param1=v1&param2=v2"
           scope="external"
           parse="vnd-query-to-simpletable"/>
</fig>
```

**2.1.2 Stage two: #15 Relax specialization rules**

Specialization rules in DITA 2.0 should be relaxed to permit more flexibility in information modeling.

**Date and version information**

**Proposal version**
1

**Completion date**
June 8, 2017

**Proposal Champion**
Chris Nitchie

**Initial Suggestion**

**GitHub Issue**
https://github.com/oasis-tcs/dita/issues/15

**Original requirement or use case**

Specialization rules in DITA 2.0 should be relaxed such that they allow specialized elements to have attributes unique to that element and not present on the specialization base. Any custom attribute added to any specialized element must be declared in whatever DITA 2.0 will use instead of `@domains` for declaring specialized attributes.
It should also be possible to target a specialization of @base (and maybe @props) to a specific element or elements. For example, pre-DITA 1.3, it would have been nice to be able to add @orient to <entry> without having to also make it available on every other element in the DTD.

It should also be possible to introduce new specialized elements into existing content models selectively. For example, it should be possible to introduce a new <data> specialization within <fig> without adding it globally, all locations that <data> is valid. Currently, the only way to accomplish this without running afoul of specialization rules is to add the new specialization everywhere, and then constrain it from every element except the ones where you want it to appear. This is overly onerous, and should be simplified to allow affirmative inclusion of the element in specific content models, rather than requiring global inclusion combined with near-global exclusion via constraints.

**Use cases**

1. A company makes extensive use of complex tables to present product listings. They occasionally highlight individual cells, rows, or columns for various purposes. A content architect wishes to implement a semantically meaningful way to identify the @cell-purpose of <entry>, <row>, and <colspec>. They'd prefer to do this with enforceable grammar rules rather than forcing authors to hand-edit @outputclass, leading to potential errors. (This could be accomplished via an element domain specializing form <table>, but this would break their authoring tool's table editing features.) However, they want to add @cell-purpose only to table-related tags, rather than using a @base specialization that would have global applicability.

   ```xml
   <legislatonref keyref="FamilyLeaveAct" legislationsubset="1.2"
                   legislationsubsettype="section"/>
   ```

   These additional attributes will be used both for styling purposes and to generate indices of referenced legislation.

2. A content architect wishes to create a new <xref> specialization for legal citations, and want to signify the location within referenced legislation using new attributes (they aren't in DITA, and so specifying an element ID won't work). They want the configuration attributes to appear only on their new specialization. For example:

   ```xml
   <section>
     <section-shortdesc>
       These additional attributes will be used both for styling purposes and to generate indices of referenced legislation.
     </section-shortdesc>
   </section>
   ```

3. A content architect wishes to augment the content model of <section> with a new, optional <section-shortdesc> element. The <section-shortdesc> element would be specialized from <p>, but would only be allowed within <section>.

**Proposed solution**

- Specializations of @base can be added to attributes lists for specific elements without being added to %base-attribute-extensions;. Such @base specializations must still be represented in @domains and accounted for when generalizing to @base.
- Specialized elements can be selectively injected into specific content models without being declared as globally available anywhere its specialization base is used. Such specializations must still be accounted for in the @domains attribute.
- When integrated in this way, document type shells must include other @domains tokens indicating constraints, since the elements and/or attributes do not follow the default global availability pattern.

**Note** At the time of this writing, there is talk within the TC (though not yet any formal feature proposal) of radically simplifying the requirements around @domains. As such, much of the discussion in this proposal about @domains should be considered provisional pending formalization of those changes.
Benefits

- Information architects will gain significant flexibility in their designs for specializations and document type shells.
- Authors will benefit significantly from more intuitive, easier to use content models.

Technical requirements

This change is a relaxation of the rules around how DITA-compliant grammars are constructed, and as such, will have essentially no technical impact.

Provide a detailed description of how the solution will work. Be sure to include the following details:

DTD and Schema modifications

None.

Processing impact

None. All @domains- and @class-based processing of specialized elements and attributes will continue to function exactly as it has before.

Overall usability

Current DITA users, and current document type shells, will be unaffected. Usability of authoring with specializations will ultimately be improved due to grammars’ being able to more closely model business requirements.

Costs

- This may add perceived complexity to the rules around grammar construction. However, the removal of semi-arbitrary restrictions in the current rules may compensate for this.
- Maintainability of document type shells may suffer, depending on the extent to which information architects make use of these new techniques and the care put into their initial development and organization.
- Because this proposal adds flexibility to the construction of information models, it opens the door to new opportunities for poor decision-making in information design, potentially leading to document type shells that are awkward for authors and/or processors.

Examples

See Use Cases, above.

2.1.3 Stage two: #16 Improvements to <titlealts>

This feature makes the alternate-title mechanism more extensible, and allows its use in maps as well as topics.

Date and version information

Include the following information:

Date that this feature proposal was completed
1/8/2019

Champion of the proposal
Chris Nitchie

Links to any previous versions of the proposal
N/A
Links to minutes where this proposal was discussed at stage 1 and moved to stage 2

Reviewers for Stage 2 proposal
Eliot Kimber, Robert Anderson, Alan Houser

Links to e-mail discussion that resulted in new versions of the proposal
N/A

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/16

Original requirement or use case
We should allow `<titlealts>` inside `<map>` as well as `<topic>`. We should also add a zero-or-more `<titlealt>` element that can be specialized for specific purposes, and consider making `<navtitle>` and `<searchtitle>` specializations of `<titlealt>`.

In developing applications that leverage DITA, you very frequently need to ask the question, “what’s this document’s title?” It should be as simple as looking for the `<title>` element, or its specialization, at the top level of the file. However, this doesn’t work for Bookmap, because its title element - `<booktitle>` - is actually a collection of pseudo-title elements specialized from `<ph>` - `<mainbooktitle>` and `<booktitlealt>` . So you have to write special-case code to handle BookMap, which is irksome. Even then, it won’t work for other `<map>` types that use a similar trick (like D4P PubMap). Adding `<titlealts>` to `<map>` types that use a similar trick solves it for new map types.

Use cases
- A developer of a DITA map specialization wants to allow map authors to specify subtitles without specializing from `<ph>` inside of `<title>`, as Bookmap currently does.
- A content architect at a software company wants to add the ability for help topic authors to specify the window title for their topics using new `<windowtitle>` and `<breadcrumbtitle>` alternative title types.
- That same content architect wants to be able to put those titles inside `<topicmeta>` on `<topicref>` elements, as well as or instead of in the topics.

New terminology
None.

Proposed solution
- A new base element, called `<titlealt>`, will be added to the base vocabulary. This element is allowed within `<titlealts>` in topics and `<topicmeta>` in maps.
- The `<navtitle>` and `<searchtitle>` elements will be extracted to a new Alternative Titles domain, and made specializations of `<titlealt>`.

Benefits
Who will benefit from this feature?
- Content architects who want to allow custom alternative title types.
- Authors whose content needs such alternative titles.
- DITA map content architects.
Vendors that need to determine the primary titles in documents using future map specializations that allow for alternate/sub titles.

**What is the expected benefit?**
- Standard mechanism for customized alternate titles.
- Formalized alternate titles for maps and map specializations.
- Applicability of custom alternate title specializations for topics, maps, and topicrefs.

**How many people probably will make use of this feature?**
- Lots. Everyone using the new BookMap. Any group requiring their own special alternative title types.

**How much of a positive impact is expected for the users who will make use of the feature?**
- Very much. Current solutions are hacks (<pubtitlealt>, use of <data> specializations in <prolog> for alternate topic titles) or simply not possible.

**Technical requirements**

- New base element type, `<titlealt>`, for use in `<titlealts>` and `<topicmeta>`. Within `<topicmeta>`, it appears in place of the current `<navtitle>` element.
- `<titlealt>` carries the global and universal attribute groups. It also carries a required CDATA `@title-role` attribute describing the intended purpose or purposes of the alternate title. Specializations should provide a default or fixed value for this attribute. For example, the `@title-role` for `<navtitle>` would default to "navtitle". A single `<titlealt>` element can have multiple `@title-role` values, separated by white space, when it fulfills multiple roles.
- If a given `@title-role` token appears more than once within a given `<titlealts>` or `<topicmeta>` element, the first one takes precedence.
- When merging `<titlealt>` elements between topics and maps, the result is the union of all `<titlealt>` elements from both, with the elements from the map first, followed by those from the topic.

  **Note** When these two rules are taken together, the effect is that a topicref's entry for a given `@title-role` token takes precedence over any matching role in the topic.

- New "Alternate Titles" domain, containing `<navtitle>` and `<searchtitle>`, both as specializations of `<titlealt>`, to be included in all distributed topic and map types.
- Unlike previous versions of DITA, the navigation title is defined as the `<titlealt>` with `title-role="navtitle"`, rather than the `<navtitle>` element specifically. The `<navtitle>` element will specify `title-role="navtitle"` by default, but authors may choose to specify the navigation title in combination with other alternative titles via a compound `@title-role` attribute, or via a different specialization of `<titlealt>`, so long as it specifies `title-role="navtitle"`. As in current versions of DITA, a topic's `<title>` is used for its navigation title if neither the topic or the map specify a `<navtitle>` element.
- Similarly, Search Title will be redefined as the `<titlealt>` with `title-role="searchtitle"`, rather than the `<searchtitle>` element specifically. Again, `<searchtitle>` will specify `title-role="searchtitle"` by default. Processor expectations for search titles are unchanged.
- The title role of "hint" is reserved, and indicates that processors must ignore the alternate title that carries it.
- With the exception of "navtitle", "searchtitle", and "hint", no special processing or output presentation is prescribed for `<titlealt>` roles. Processors should ignore them by default.
- Remove `@locktitle` from the base map vocabulary.
Backwards compatibility

In current versions of DITA, `<navtitle>` in a map is essentially ignored unless `@locktitle` is set to "yes". Since `@locktitle` will be removed, and the new behavior will be for a map’s alternate titles, including navtitles, to take precedence over those in the topics, many - possibly most - existing uses of `<navtitle>` in maps will likely prove problematic unless they are modified.

The recommended migration solution is to add `title-role="hint"` to non-locked `<navtitle>` elements, since that is often the actual role being served by the element - as information for map authors without having to open the topic, but ignored for purposes of publication. Since this would override the default `@title-role` of the element, it's no longer a navigation title as far as DITA processors are concerned, and will be ignored.

The specialization hierarchy of `<navtitle>` and `<searchtitle>` will be changed, to "- topic/titlealt altTitles-d/navtitle " and "- topic/titlealt altTitles-d/searchtitle ", respectively. This will require any existing specializations or constraints involving those elements to be updated to be compatible with DITA 2.0.

Migration plan

For `<navtitle>` elements in maps:

- Existing maps containing `<navtitle>` with `locktitle="yes"` remain unchanged except for the removal of `@locktitle`.
- Other occurrences of `<navtitle>` in maps should be given an explicit `@title-role` attribute specifying a role appropriate to the particular case.

Any `@locktitle` attributes must be removed.

Any instances of content with explicit `@class` attributes will need to be modified with the new specialization hierarchy of `<navtitle>` and `<searchtitle>`.

Processors will need to tweak `<navtitle>` handling as well as implementing generic `<titlealt>` handling and merging.

Existing map specializations may choose to modify their content model for alternate titles to take advantage of this feature, but existing approaches will also continue to work (and be a burden on processors).

Costs

Maintainers of the grammar files

The alternative titles domain will be a new grammar module that needs to be maintained.

Editors of the DITA specification

- New topics:
  - Container topic for alternative titles domain.
  - New language reference topic for `<titlealt>`.
  - Architectural specification topic describing `<titlealt>` processing, specifically merging of alternative titles between topicrefs and topics, with examples.
- Updates to existing topics:
  - The language reference topic for `<titlealts>` will likely need to be updated.
  - The language reference topics for `<navtitle>`, and `<searchtitle>` will need to be moved to the alternative titles domain and updated.
- The topic Metadata in maps and topics will need to be updated to discuss <titlealt>.
- Likewise Reconciling topic and map metadata elements will need to be updated to discuss <titlealt>.

**Vendors of tools**

Processors will need to implement <titlealt> reconciliation between topics and maps, as well as updating <navtitle> handling.

**DITA community-at-large**

- **Will this feature add to the perception that DITA is becoming too complex?**
  
  Not by much, and possibly the reverse. It may seem more complex to those of us inured to the idiosyncrasies of the current markup, but I hope the opposite is true. The reconciliation of topicref and topic alternate titles involves simple concatenation and first-wins precedence. This proposal will vastly simplify, and make explicit, the mechanism for alternative titles in maps, making it trivial for tools to determine map titles without having to treat <booktitle> as a special-case. Finally, it will remove the counter-intuitiveness inherent in the @locktitle attribute.

  **Will it be simple for end users to understand?**

  Yes.

**Producing migration instructions or tools**

As noted above, many existing <navtitle> elements in map will likely require explicit @title-role attributes to avoid undesired navigation title behavior, and @locktitle attributes must be removed.

**Example: Navigation titles**

Consider the following series of topicrefs:

```xml
<topicref href="topics.dita#one"/>
<topicref href="topics.dita#two">
  <topicmeta>
    <navtitle>Title Two (Map navtitle)</navtitle>
  </topicmeta>
</topicref>
<topicref href="topics.dita#three">
  <topicmeta>
    <navtitle title-role="hint">Title Three (Map navtitle hint)</navtitle>
  </topicmeta>
</topicref>
<topicref href="topics.dita#four">
  <topicmeta>
    <titlealt title-role="navtitle">Title Four (Map navtitle)</titlealt>
  </topicmeta>
</topicref>
```

Here is the ditabase document containing those three topics:

```xml
<dita>
  <topic id="one">
    <title>Title One</title>
  </topic>
  <topic id="two">
    <title>Title Two</title>
    <titlealt>Title Two (Topic navtitle)</titlealt>
  </topic>
  <topic id="three">
    <title>Title Three</title>
    <titlealt>Title Three (Topic navtitle)</titlealt>
  </topic>
</dita>
```
The resulting navigation structure would look like this:

1. Topic One
2. Topic Two (Map navtitle)
3. Topic Three (Topic navtitle)
4. Topic Four (Map navtitle)

The first topic's navigation title is pulled from the title of the topic, since neither the map nor the topic specify a navigation title.

The second topic's navigation title comes from the map, as its navigation title takes precedence over that in the topic.

The navigation title for Topic Three comes from the topic because the entry in the map specifies \texttt{title-role="hint"}, overriding the default value of "navtitle", thus nullifying its use as a navigation title.

Finally, the fourth topic's navigation title comes from the \texttt{<titlealt title-role="navtitle"/>} in the map. Even though the element is not a \texttt{<navtitle/>}, it is the \texttt{@title-role} that matters when determining the role of the alternate title, not the tag name or \texttt{@class} attribute.

\textbf{Example: Custom Alternative Title Types}

The content architect described under 'Use Cases' could create a Topic specialization with custom title elements.

They could also allow their map authors to overrule these alternative titles.

\textbf{Example: Map Alternative Titles}

A certain unnamed standards committee produces their specification document as a DITA map with a large number of alternative titles. Currently, in DITA 1.3, they use the Bookmap \texttt{<pubtitlealt>} element with \texttt{@outputclass}. For example:
This is problematic for all sorts of reasons, but with this change they could rewrite this as follows:

Example: Reconciling Map and Topic Alternate Titles

A <topicref> says:

The referenced topic says:

During processing, the two sets of elements will be concatenated together, with the map's elements coming first:

Note that breadcrumbTitle is specified in both the map and the topic, and the map's value takes precedence. However, that same alternate title in the topic specifies an additional role of flipbookTitle, which is not overridden by the map, and so should be preserved.

The equivalent merged alternative titles, with duplicates removed, would look like this:
2.1.4 Stage two: #17 Make @outputclass universal

Make @outputclass a universal attribute.

Date and version information

Include the following information:

- Presented as stage 1 proposal at TC meeting on January 24, 2017: https://www.oasis-open.org/committees/document.php?document_id=59918&wg_abbrev=dita
- First draft of stage 2 proposal: June 12, 2017
- Champion: Robert Anderson
- Links to any previous versions of the proposal: N/A
- Links to e-mail discussion that resulted in new versions of the proposal: N/A

Original requirement or use case

The @outputclass attribute is currently a near-universal attribute on content elements. The original definition was:

Provides a value that will be added to the HTML class attribute for the associated output element, for use by CSS style sheets. May also be used by other output processes.

Effectively the intent for the attribute was to create a simple way to sub-class information. For example, "This is a section, with the subclass of X". Because of the original expectation that it would be used to style content in HTML, it was added universally to content elements, but only sporadically to metadata or other elements. Even with DITA 1.0, architects immediately took advantage of this ability to sub-class elements and used @outputclass as a way to mock-up specializations. This doesn't work for metadata elements without the attribute, so each subsequent release of DITA has added it to more elements, but still not to every element. To reduce confusion and enable sub-classing of any element, this proposal adds @outputclass to every element (except <dita>, which does not even have @class and is purely a container).

Use cases

- The lightweight DITA SC initially wanted to use @outputclass as part of a template based specialization process. This did not work simply because the attribute is unavailable on a couple of elements. Others have had this same idea and run into the same limitation. Making @outputclass universal on elements that can be specialized removes this block and enables template-based processes that have been envisioned since DITA 1.1.
- It is now generally recognized that the specification itself does not control which elements result in content. Any element (even metadata) may need to be rendered. The lack of @outputclass means that sub-classing can be used to style most elements, but cannot be used on a few others. Making this available everywhere enables quick styling on all elements.
- In terms of overall complexity, having @outputclass available on all content elements + many (but not all) metadata elements just causes confusion when somebody finds it missing. In this case, having the attribute available globally simplifies both the architecture and the cognitive load on those using it.

New terminology

N/A
Proposed solution

In both maps and topics, add @outputclass as an attribute on all elements that do not have it, apart from the <dita> container element.

Benefits

Address the following questions:

- Authors who already expect @outputclass to be available everywhere will no longer be confused that it is missing on a few elements.
- Tools long envisioned using this attribute (such as template based specialization) can now be realized.
- The DITA specification can be simplified for both readers and maintainers by grouping @outputclass among other universal attributes.
- Maintainers of DITA architecture will no longer have to figure out whether the attribute is available on individual elements.
- If tools are developed that depend on a global @outputclass attribute, it's possible that many will see benefit from this change. Outside of that, it is likely to be a positive improvement for many DITA users, with a greater impact on information architects / those designing grammar files (who are the ones most likely to be concerned with or confused by this today).

Technical requirements

Provide a detailed description of how the solution will work. Be sure to include the following details:

Adding new elements or attributes

Adding an attribute

- @outputclass will be added to all elements that do not currently allow it, except for the <dita> container element. (That element cannot be subclassed / specialized today, and does not have any of the otherwise universal attributes apart from localization attributes.)
- No additional processing is required for this attribute.
- This attribute does not contain translatable text.

Processing impact

- Applications may add processing support for @outputclass on the new elements, but no specific processing is required, and any intended processing should match processing already available elsewhere.

Overall usability

The attribute is already widely used without problem, so there should not be any usability concerns.

Backwards compatibility

This feature is fully backwards compatible with DITA 1.x.

Migration plan

There is no need for migration.

Costs

Outline the impact (time and effort) of the feature on the following groups:
• Maintainers of the grammar files: minor change to make this available where it is not. Most likely this means placing the attribute into a reused group of attribute definitions, and removing individual definitions of the attribute.

• Editors of the DITA specification:
  – How many new topics will be required: zero.
  – How many existing topics will need to be edited: Many language reference topics will remove an extra link to the @outputclass definition, and the definition itself will need to be placed with other universal attributes.
  – The feature will not require substantial changes to the information architecture of the DITA specification, and involves no new terminology.

• Vendors of tools: no cost

• DITA community-at-large:
  – Will this feature add to the perception that DITA is becoming too complex? No: it simplifies DITA by avoiding the arbitrary decisions about what elements need @outputclass
  – Will it be simple for end users to understand? Yes

• Producing migration instructions or tools: N/A

Examples

The attribute is not currently available on <prolog>; adding it would make the following example a legal way to mock up a specialization of <topic>. Note that this would also become a valid mock-up using LwDITA, though does not contain all of the data envisioned for the latest template based specialization process. Both full and LwDITA would currently prohibit this use because @outputclass is not valid on <prolog>.

```xml
<topic id="mockup" outputclass="bookreport">
  <title outputclass="booktitle">Sample title</title>
  <prolog outputclass="bookreportdata">
    <data outputclass="pages" value="lots"/>
    <data outputclass="stars" value="many"/>
    <data outputclass="did-i-finish" value="of course"/>
  </prolog>
  <body outputclass="bookreportbody">
    <section outputclass="bookabout">Here is what the book was about</section>
    <section outputclass="bookthoughts">Here is what I thought about it</section>
  </body>
</topic>
```

2.1.5 Stage two: #18 Make audience, platform, product, otherprops into specializations

DITA 2.0 should refactor the existing profiling attributes—@audience, @platform, @product, and @othermeta—so that they're defined in domains and specialized from @props, as we did for @deliveryTarget in 1.3.

Date and version information

Date that this feature proposal was completed
February 27 2018

Champion of the proposal
Robert D. Anderson

Links to any previous versions of the proposal
Links to minutes where this proposal was discussed at stage 1 and moved to stage 2

Links to e-mail discussion that resulted in new versions of the proposal
N/A

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/18

Original requirement or use case
As discussed at the TC May 2, 2017, the goal is to clean up our architecture by making the original four filter attributes into specializations of @props. They already function exactly the same way as @props (including the fact that they allow the grouping syntax that is exactly equivalent to the generalized attribute syntax). However, they were defined as part of the core before we had specialized attributes, so for backwards compatibility they have remained in the core even though logically they must be treated exactly the same as any specialization of @props.

Use cases
1. To clean up the language and simplify processors.
   With DITA 1.0, the four attributes (@audience, @platform, @product, and @otherprops) were intended to be the only attributes available for filter / flag metadata processing. When attribute specialization was developed, a new base attribute called @props was added, also for filtering / flagging. To fully support the specification around filtering and flagging, processors must now support:
   - The @props attribute
   - Any unrecognized attributes that are properly specialized from @props
   - Generalized syntax within any of those attributes
   - A general processor must do all of that, but then add in exceptions for the 4 original attributes that function exactly the same but are not actually declared as specialized attributes.

   With these four turned into specializations, any processor that supports @props + specializations of @props is complete.

2. To allow proper specializations of @audience, @platform, @product, and @otherprops.
   Authors have at times requested the ability to specialize these attributes - that need is explicitly what led to the grouping syntax added in DITA 1.3. However, because of the original DITA 1.0 design, these attributes could not be handled / specialized in the same way. Converting them to specializations of @props will allow architects to create new attributes off of these four, such as defining @appserver and @database as specialized variants of @product.

New terminology
N/A; any terminology needed for these already exists for specialized attributes.

Proposed solution
1. Create four new domain modules, one for each of @audience, @platform, @product, and @otherprops. Having these as four individual domains (rather than as one group) allows any architect to more easily remove any that do not apply – for example, keeping @audience while removing the other three.
2. Remove the existing definitions of these attributes. In OASIS grammars, these are defined as base attributes in the \%filter-atts; group along with @props and a placeholder for extensions of @props. This is the only place the attributes are named in OASIS grammars (DTD: commonElements.mod; RNG: commonElementsMod.rng).

3. Add the domain attributes into the shells of all OASIS-provided grammar files, and add them to the props-extension group. This will restore the attributes to any element that previously defined them.

Note Based on a suggestion from Tom when discussing this stage 2 proposal at TC meeting on 20 March 2018, an updated definition for @otherprops should be part of the stage 3 proposal. The updated definition should explain when the attribute should be used (versus creating a new specialized attribute).

Benefits

Who will benefit from this feature?

- Processors can be simplified with one set of rules for all filtering / flagging
- Information architects gain the ability to remove any or all of these 4 without needing a constraint
- Information architects gain the ability to specialize directly from the existing attributes
- Maintainers of DITA specification can simplify language around these attributes and (more importantly) attribute grouping, which becomes an exact match for generalization syntax

How many people probably will make use of this feature?
Realistically, few authors will see a change, as many architects will likely restore all four attributes into existing shells, but this is just a guess.

How much of a positive impact is expected for the users who will make use of the feature?
Minor impact but goes along with the overall goal of simplifying the language.

Technical requirements

Adding new elements or attributes

Adding a domain
All existing shells will get these four new attribute extension domains, with zero overall change to content / attribute models. The domains will exactly match the pattern of the current @deliveryTarget attribute, both in how the module is defined and in how it is integrated into shells.

Adding an attribute
The four domains will add a total of four attributes, but with no overall change to the language as a whole.

Removing elements or attributes

Removing an attribute
The attribute definitions will be moved, which will technically remove the attributes from any shells that do not restore them. All DITA document types will be affected, and will need to update their shells as part of any migration to DITA 2.0.

Processing impact
N/A

Overall usability
No change to authors. Architects that maintain shells will need to go through the one-time process of adding these domains.
Backwards compatibility

Was this change previously announced in an earlier version of DITA?
It has been discussed in an unofficial capacity many times, but I'm not sure if it was officially announced.

Removing or renaming an attribute that was shipped in DITA 1.3?
The four attributes in question, from all elements.

Are element or attribute groups being renamed or shuffled?
This is closest in concept to the suggested change; the attributes are not going away, but moving them from the %filter-atts; group into their own domains will require updates to shells, but will have no impact on DITA documents.

Migration plan

• No documents will need to be migrated.
• Processors may optionally remove exceptions in any filter/flagging code that explicitly look for these attributes, but as long as the processors correctly support @props and specializations, they will continue to work as designed.
• Document types that wish to retain all four attributes will need to add the four new domains into shells.
• Constraints that remove any of these attributes today will need to be updated; it may be possible to discard the constraint module and simply not include the relevant domain(s).
• Constraints that explicitly declare or restrict values on these attributes will need to be updated.

Costs

Outline the impact (time and effort) of the feature on the following groups:

• Maintainers of the grammar files: very small cost of removing the attribute definitions, small cost of creating and integrating the domain modules based on the existing @deliveryTarget pattern.
• Editors of the DITA specification:
  – No new topics required.
  – Definitions of these attributes will likely remain where they are, together in one topic with @deliveryTarget, but need additional language to clarify that they are domain specializations.
  – The topics about filtering and grouping syntax will need editing, and can be simplified to treat all of these attributes in the same way as @props.
• Implementations: likely a low cost to remove extra support for these attributes, and allow them to use general support based on @props.
• DITA community-at-large: those only concerned with authoring should see no change. There will be a small cost associated with updating shells, but we can provide straightforward patterns that allow cut-and-paste updates. Costs for updating constraints are harder to determine, because we do not know how many exist or what they are doing, but should not be large.
• Producing migration instructions or tools:
  – Small cost for instructions on updating shells - basically, documenting the updates we make to our own shells.
  – Small additional cost with (speculative) updates about impacts on constraint modules, with examples of how to update those we consider most likely to exist.
– No special white paper or publication is needed solely for this feature.
– Because grammar files can follow different patterns, cut-and-paste updates from the migration document are likely to be more reliable than a tool that updates DTD/XSD/RNG files.

Examples

N/A; content is exactly the same.

2.1.6 Stage two: #21 Resolve inconsistent class values for `<shortdesc>`, `<linktext>`, and `<searchtitle>`

Resolve inconsistent class values for `<shortdesc>`, `<linktext>`, and `<searchtitle>`.

Date and version information

Date that this feature proposal was completed

12 March 2018

Champion of the proposal

Robert Anderson

Links to any previous versions of the proposal

N/A

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2


Links to e-mail discussion that resulted in new versions of the proposal

N/A

Link to the GitHub issue

https://github.com/oasis-tcs/dita/issues/21

Original requirement or use case

These elements are the same semantic and thus should have a single consistent `@class` value across all DITA document types.

Use cases

Remove the need to have separate handling for the different map and topic versions of these elements.

New terminology

No new terminology.

Proposed solution

Move the declarations for `<shortdesc>`, `<linktext>`, and `<searchtitle>` to `commonElements`, making them available to both maps and topics.
Benefits

Who will benefit from this feature?
Implementors of DITA processors. Creators of specializations `<shortdesc>`, `<linktext>`, or `<searchtitle>`.

What is the expected benefit?
Simplifies DITA processor implementation by removing the need for special cases for these very common elements. Removes the need for specializers to be careful to select the correct base for their specializations or to be forced to create two different specializations for the same semantic.

How many people probably will make use of this feature?
Affects all DITA processor implementors.

How much of a positive impact is expected for the users who will make use of the feature?
Minor reduction in implementation complexity.

Technical requirements

Renaming or refactoring an element
- Remove all declarations for `<shortdesc>`, `<linktext>` and `<linktitle>` from `mapMod`.
- Move declarations for `<shortdesc>`, `<linktext>` and `<linktitle>` from `topicMod` to `commonElementsMod`.

Processing impact
No change

Overall usability
No change

Backwards compatibility
DITA 2.0 is the first DITA release that is open to changes affecting backwards compatibility. To help highlight any impact, does this proposal involve any of the following?

Was this change previously announced in an earlier version of DITA?
Change is new to DITA 2.x

Removing a document type that was shipped in DITA 1.3?
No.

Removing a domain that was shipped in DITA 1.3?
No

Removing a domain from a document type shell was shipped in DITA 1.3?
No.

Removing or renaming an element that was shipped in DITA 1.3?
No.

Removing or renaming an attribute that was shipped in DITA 1.3?
No.

Changing the meaning of an element or attribute in a way that would disallow existing usage?
No.

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
No.
Changing specialization ancestry?
Yes: Removing map/* versions of the <shortdesc>, <linktext>, and <searchtitle> elements.

Removing or replacing a processing feature that was defined in DITA 1.3?
No.

Are element or attribute groups being renamed or shuffled?
No.

Migration plan
If the answer to any question in the previous section is "yes":

Might any existing documents need to be migrated?
Documents that have literal @class values for these elements will need to either remove the @class attributes from the source or update them to reflect the new @class values. Otherwise existing documents will not be affected.

Might any existing processors or implementations need to change their expectations?
Processors that have processing that looks for the map/* versions of the @class values can remove those checks.

Might any existing specialization or constraint modules need to be migrated?
There are no OASIS-defined specializations of <shortdesc>, <linktext>, or <searchtitle>. Local specializations can be updated with a simple search and replace to change "map" to "topic" for these three element types.

Costs
Outline the impact (time and effort) of the feature on the following groups.

Maintainers of the grammar files
Update grammar files to reflect removal of map/* versions of the files. Work done as part of this Stage 2 proposal.

Editors of the DITA specification
No impact.

Vendors of tools
May need to update tools to remove matches on map/shortdesc, map/linktext, and map/searchtitle.

DITA community-at-large

- Will this feature add to the perception that DITA is becoming too complex?
  This proposal reduces complexity.
- Will it be simple for end users to understand?
  Most DITA authors should be completely unaware of the change.
- If the feature breaks backwards compatibility, how many documents are likely to be affected, and what is the cost of migration?
  Documents that use default @class values will not be affected. Map documents that have literal @class values will need to be updated to either remove the @class attributes or update the values if the @class values must be maintained in the source.
Producing migration instructions or tools

- How extensive will migration instructions be, if it is integrated into an overall 1.3 → 2.0 migration publication or white paper?
  One or two paragraphs at most.
- Will this require an independent white paper or other publication to provide migration details?
  No.
- Do migration tools need to be created before this change can be made? If so, how complex will those tools be to create and to use?
  Might be useful to include as part of a general migration tool but definitely not critical.

Examples
N/A.

2.1.7 Stage two: #27 Multimedia domain
A DITA domain for presentation of multimedia (audio/video) content.

Date and version information

Revision History

August 17, 2017
- Created `<param>` specializations for `<media-autoplay>`, `<media-loop>`, and `<media-muted>`.
- Added proposal to add `<fallback>` to `<object>`.
- Cleaned up and disambiguated language throughout.

June 27, 2017
- Fixed ‘terminology’ section.

2 - June 27, 2017
- Fixing typos. Several references to “metadata” should have been “multimedia” or “media”.

1 - June 26, 2017
- Initial revision.

Completion date
June 26, 2017

Proposal Champion
Chris Nitchie

Initial Suggestion

GitHub Issue
https://github.com/oasis-tcs/dita/issues/27

Original requirement or use case
DITA should have an HTML5-compatible multimedia domain to simplify authoring references to audio and video information. Also, since Lightweight DITA will contain multimedia elements, it’s important that they be accounted for in full DITA.
Use cases
An author wishes to reference audio and/or video content from a DITA topic.

New terminology
None

Proposed solution
Introduce <audio> and <video> elements specialized from <object> and, as much as possible, directly analogous to their HTML5 equivalents.
Also, introduce a new <fallback> element as part of the <object> content model as well as that of <audio> and <video>.

Benefits
Authors of content referencing audio and video content will benefit significantly from not having to use the generic <object> markup. Stylesheet and processing developers will find it much easier to map these elements to HTML5 than detecting the appropriate HTML5 markup based on available clues in <object>.

Technical requirements
This solution will create a new multimedia domain, media-d, which will be included in the base DITA 2.0 package and referenced from the Topic document type shell. This domain will consist of the following new elements.

<fallback>
An element containing markup to be presented when the multimedia object represented by the containing <object> element (or <object> specialization) cannot be presented.

Content Model
(#PCDATA | %basic.block.notbfgobj; | %basic.ph; | %data.elements.incl; | %draft-comment; | %foreign.unknown.incl; | %required-clean-up;)

Attributes
• %univ-atts;
• outputclass

<video>
Represents video content. Specialized from <object>.

Content Model

Attributes
• @data
• @datakeyref
• @width
• @height
• %univ-atts;

Note There are a number of important HTML5 attributes that are not represented in this element:
  • @buffered
  • @crossorigin
  • @preload

These attributes specify technical details of the delivery of the media and should be set by the delivery system or HTML transform as necessary. As such, they are not represented in the DITA model. If necessary, they could be configured using <param> elements.

<audio>
Represents audio content. Specialized from <object>.

Content Model
(foreign | unknown)*)

Attributes
  • @data
  • @datakeyref
  • %univ-atts;

Note As with @video, a number of important HTML5 attributes go unaccounted for here, including:
  • @autobuffer
  • @buffered
  • @preload

These could be encoded as <param> tags.

Other Supporting Elements
The content models of <video> and <audio> are very similar, and make use of a number of specializations of <param> that map closely, though not exactly, to HTML5 equivalents. These are described using loose DTD syntax below.

```xml
<!ELEMENT media-controls EMPTY>
<!ATTLIST media-controls
  name CDATA #FIXED 'controls'
  <!-- Processors should default to 'true' -->
  value (true|false)-dita-use-conref-target) #IMPLIED
  class CDATA '+ topic/param media-d/media-controls ' %univ-atts;>

<!ELEMENT media-autoplay EMPTY>
<!ATTLIST media-autoplay
  name CDATA #FIXED 'autoplay'
  <!-- Processors should default to 'true' -->
  value (true|false)-dita-use-conref-target) #IMPLIED
  class CDATA '+ topic/param media-d/media-autoplay ' %univ-atts;>

<!ELEMENT media-loop EMPTY>
<!ATTLIST media-loop
  name CDATA #FIXED 'loop'
  <!-- Processors should default to 'false' -->
```
Important The @xml:lang attribute on the <media-track> element identifies the language of the referenced track. This is analogous to the @srclang attribute in HTML5.

Note For the boolean on/off configuration elements - <media-controls>, <media-autoplay>, <media-loop>, and <media-muted> - if no @value or @keyref attributes are specified, the processing default @value should be considered "true".

Processing impact While this domain's markup is not exactly the same as the HTML5 <audio> and <video> markup, most of the elements and attributes have one-to-one mappings to the equivalent HTML5 markup, making HTML conversions relatively simple. Conversions into other output formats, like PDF, may require extra effort, depending on the capabilities of the target format(s), and should use <fallback> when audio or video content is not supported.

Overall usability This will add to the available tagging in many tag contexts, but will greatly simplify audio and video embedding in DITA-authored content.
Backwards compatibility

No backwards compatibility concerns.

Migration plan

N/A

Costs

Grammar file maintainers will have a new, self-contained domain to deal with and maintain.

The DITA spec should be updated with the following content:

- A new topic describing the embedding of multimedia content using this domain and/or the `<object>` tag.
- Language reference topics for all new elements.

Tool vendors will need to update authoring and publishing stylesheets to simplify authoring of this markup, and proper handling for different output types.

Examples

```xml
<!-- An audio element with a single source -->
<audio data="mysong.mp3"/>

<!-- An audio element with the same audio content in three different formats -->
<audio data="mysong.mp3">
  <fallback>Audio playback is unavailable</fallback>
  <media-source value="mysong.wav" type="audio/wav"/>
  <media-source value="mysong.ogg" type="audio/ogg"/>
</audio>

<!-- An audio element with controls turned on, and looping turned off -->
<audio data="mysong.mp3">
  <controls value="true"/>
  <autoplay value="false"/>
  <loop value="false"/>
</audio>

<!-- A video element with a single source referenced by key -->
<video datakeyref="exampleVideo"/>

<!-- A fuller example. -->
<video width="500px" height="300px">
  <fallback>Video playback not available.</fallback>
  <controls value="false"/>
  <poster value="poster.png"/>
  <source value="myvideo.mp4" type="video/mpeg-4"/>
  <source value="myvideo.ogg" type="video/ogg"/>
  <track value="myvideo-subtitles-en.vtt" type="subtitles" xml:lang="en"/>
  <track value="myvideo-subtitles-fr.vtt" type="subtitles" xml:lang="fr"/>
  <param name="autoplay" value="true"/>
</video>
```

2.1.8 Stage two: #34 Remove `<topicset>` and `<topicsetref>`

Remove topicset and topicsetref.

Date and version information

Date that this feature proposal was completed

11 March 2018
Champion of the proposal
   Eliot Kimber

Links to any previous versions of the proposal
   N/A

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2

Links to e-mail discussion that resulted in new versions of the proposal
   N/A

Link to the GitHub issue
   https://github.com/oasis-tcs/dita/issues/34

Original requirement or use case
   The `<topicset>` and `<topicsetref>` elements seem to provide very little value over ordinary `<topicref>` elements. In addition, they regularly suggest to authors that they should result in some sort of standard special processing (which they do not). The semantic of `<topicset>` was never clearly distinguished from any other use of topic reference elements to group topicrefs (e.g., `<topicgroup>`).

   The semantics of the `<topicsetref>` element were never clearly defined in a way that was not tied directly to specific delivery tools (i.e., Eclipse help). Map references and the DITA 1.3 cross-deliverable linking facility appear to satisfy all the requirements implied for `<topicsetref>`.

   As far as can be determined, there are no DITA processors in general use that provide any special processing for `<topicset>` or `<topicsetref>`.

Use cases
   This removes elements. No usage use case.

New terminology
   No new terminology.

Proposed solution
   Remove the `<topicset>` and `<topicsetref>` elements from the grammars and all specification topics that reference them.

Benefits
   Who will benefit from this feature?
      All DITA users currently confused by the presence of these elements.
      DITA tool implementors who have no idea how to implement these elements correctly or worry about having ignored a DITA feature by not implementing them.

   What is the expected benefit?
      Reduced complexity.

   How many people probably will make use of this feature?
      N/A
How much of a positive impact is expected for the users who will make use of the feature?

Hard to quantify impact of removing an element that few if any DITA users are using. Will reduce the set of `<topicref>` specializations one has to consider when learning about or authoring DITA maps.

**Technical requirements**

**Grammar and specification changes**
Remove `<topicset>` and `<topicsetref>` from the Map Group domain:

- Remove from `mapGroupDomain.rng`
- Remove from `mapGroup.ent`
- Remove from `mapGroup.mod`
- Remove from `mapGroupMode.xsd`

Update the following topics to remove references to `<topicset>` and `<topicsetref>`:

- `ditamap-elements.dita`
- `commonNavLibraryTable.dita`
- `base-elements-a-to-z.dita`
- `all-elements-a-to-z.dita`
- `map-group-elements.ditamap`
- Regenerate content model files to reflect removal from grammar files.

Remove the following topics entirely:

- `langRef/base/topicsetref.dita`
- `langRef/base/topicset.dita`

**Processing impact**

Any processor that actually provides special processing for `<topicset>` or `<topicsetref>` can remove it.

If a processor provides unique processing for `<topicset>` or `<topicsetref>` for which support needs to be retained, the processor will need to either provide its own specializations to which the processing can then be applied or provide some other way to signal the desired behavior, for example, processor-specific values for `@outputclass`.

**Overall usability**

No impact.

**Backwards compatibility**

Was this change previously announced in an earlier version of DITA?

No.

Removing or renaming an element that was shipped in DITA 1.3?

The `<topicset>` and `<topicsetref>` elements will be removed, so any documents currently using them cannot be valid against the DITA 2.0 grammars as provided by OASIS.

**Migration plan**

Might any existing documents need to be migrated?

Anyone currently using these elements will need to either replace them with normal topicrefs or define their own specializations to replace `<topicset>` or `<topicsetref>`. 
Might any existing processors or implementations need to change their expectations?

If a processor provides unique processing for `<topicset>` or `<topicsetref>` for which support needs to be retained, the processor will need to either provide its own specializations to which the processing can then be applied or provide some other way to signal the desired behavior, for example, processor-specific values for `@outputclass`.

As far as the TC can determine, there are no implementations of `<topicset>` or `<topicsetref>` in general use.

Might any existing specialization or constraint modules need to be migrated?

In the unlikely event that there are specializations of `<topicset>` or `<topicsetref>`, those specializations will need to be redefined to either specialize directly from `<topicref>` or another suitable `<topicref>` specialization, such as `<mapref>`, or define a new domain module that provides the equivalent of `<topicset>` and `<topicsetref>` to then serve as the specialization base of the specializations of `<topicset>` and `<topicsetref>`.

Costs

Maintainers of the grammar files

Remove all declarations and comments that mention or use `<topicset>` or `<topicsetref>` (already done as part of this Stage 2 proposal).

Regenerate content model topics and any generated navigation lists to reflect the removal (inherent in work that will have to be done for DITA 2.0 in any case).

Editors of the DITA specification

- How many new topics will be required?
  
  None
- How many existing topics will need to be edited?
  
  Five authored topics (see above) plus removal of topicrefs from one map. (Work already done as part of this Stage 2 proposal)
- Will the feature require substantial changes to the information architecture of the DITA specification? If so, what?
  
  No architectural change required.
- If there is new terminology, is it likely to conflict with any usage of those terms in the existing specification?
  
  No new terminology.

Vendors of tools

Tool vendors will need ensure that there are not any hard-coded references to the `<topicset>` and `<topicsetref>` elements. Any processing specific to those elements will need to either be removed or rebound to different elements or ways of signaling the need for the special processing, whatever it might be.

DITA community-at-large

- Will this feature add to the perception that DITA is becoming too complex?
  
  It should not as we are removing a confusing and largely unused element.
- Will it be simple for end users to understand?
  
  Yes.
- If the feature breaks backwards compatibility, how many documents are likely to be affected, and what is the cost of migration?
There should be few documents using `<topicset>` or `<topicsetref>`. Those that are can very likely simply replace their use with normal `<topicref>` elements.

**Producing migration instructions or tools**

- How extensive will migration instructions be, if it is integrated into an overall 1.3 → 2.0 migration publication or white paper?
  
  Migration instructions should not require more than a paragraph or two at most.

- Will this require an independent white paper or other publication to provide migration details?
  
  No.

- Do migration tools need to be created before this change can be made? If so, how complex will those tools be to create and to use?
  
  It might be useful to include a general `<topicset>` and `<topicsetref>` to `<topicref>` transform as part of a general migration tool.

**Examples**

N/A

**2.1.9 Stage two: #36 Remove fastpath Value from note/@type**

Remove the `fastpath` value from `@type` for the `<note>` element.

**Date and version information**

- **Date that this feature proposal was completed**
  
  10 March 2020

- **Champion of the proposal**
  
  Keith Schengili-Roberts

- **Links to any previous versions of the proposal**
  
  N/A

- **Links to minutes where this proposal was discussed at stage 1 and moved to stage 2**
  
  Discussion: [https://lists.oasis-open.org/archives/dita/201706/msg00013.html](https://lists.oasis-open.org/archives/dita/201706/msg00013.html); moved to stage 2: [https://github.com/oasis-tcs/dita/issues/35#issuecomment-594052646](https://github.com/oasis-tcs/dita/issues/35#issuecomment-594052646)

- **Reviewers for Stage 2 proposal**
  
  TBD.

- **Links to e-mail discussion that resulted in new versions of the proposal**
  
  N/A

- **Link to the GitHub issue**
  
  [https://github.com/oasis-tcs/dita/issues/35](https://github.com/oasis-tcs/dita/issues/35)

**Original requirement or use case**

This value is very rarely used and often seen as an odd part of DITA, in that it does not fit with other values for `<note>/@type`. An informal survey was done with the members of the DITA Technical Committee, and the results confirmed that it was rarely used, and would not be missed.
Use cases
This removes a single value or `<note>/@type`. Arguably it is the lack of a use case for `fastpath` that is the reason for this proposal.

New terminology
No new terminology.

Proposed solution
Remove the `fastpath` value from `@type` for the `<note>` element.
Remove the `fastpath` value from any grammar and specification topics that reference them.

Benefits
Who will benefit from this feature?
All DITA users currently confused by the intended use of this value.
DITA tool implementers who will have one less value for `<note>/@type` to implement.

What is the expected benefit?
Reduced complexity.

How many people probably will make use of this feature?
N/A

How much of a positive impact is expected for the users who will make use of the feature?
The `fastpath` value is little-used. While there will be some impact for those people who have implemented the value, the removal of this value will be a minor or non-existent issue for many current DITA practitioners.

Technical requirements
Removing elements or attributes
Remove `fastpath` as a value from the base domain:
- Remove from `commonElementsMod.rng`
- Remove from `commonElements.ent`

Update the following topics to remove references to `fastpath`:
- `reuse-note.dita`
- `thetypeattribute.dita`

Processing impact
Any processor that provides special processing for `<note>` can remove it.

Overall usability
No impact.

Backwards compatibility
Was this change previously announced in an earlier version of DITA?
No.

Removing or renaming an attribute that was shipped in DITA 1.3?
Removing a rarely-used value (`fastpath`) from `<note>/@type`. 
Changing the meaning of an element or attribute in a way that would disallow existing usage?
Will only impact DITA practitioners who already use the fastpath value for <note>@type. It is anticipated that the number of practitioners this will affect is small.

Migration plan

Might any existing documents need to be migrated?
Anyone currently using fastpath will either need to use another value for @type, or define their own specializations to replace it.

Might any existing processors or implementations need to change their expectations?
If a processor provides unique processing for the fastpath value of <note>@type whose support needs to be retained, the processor will need to either provide its own specializations to which the processing can then be applied or provide some other way to signal the desired behavior, for example, processor-specific values for @outputclass.

Might any existing specialization or constraint modules need to be migrated?
No.

If no migration need is anticipated, why not?
The value is rarely used, and it is thought that many DITA practitioners do not use it at all.

Costs

Maintainers of the grammar files
Remove all declarations relating to the fastpath.

Editors of the DITA specification

• How many new topics will be required?
  None
• How many existing topics will need to be edited?
  Two topics: (see above).
• Will the feature require substantial changes to the information architecture of the DITA specification? If so, what?
  No architectural change required.
• If there is new terminology, is it likely to conflict with any usage of those terms in the existing specification?
  No new terminology.

Vendors of tools
Tool vendors will need ensure that there are not any hard-coded references to the fastpath value. Any processing that is specific to that value will need to either be removed or rebound to a different value.

DITA community-at-large

• Will this feature add to the perception that DITA is becoming too complex?
  It should not as we are removing a rarely-used value.
• Will it be simple for end users to understand?
  Yes.
• If the feature breaks backwards compatibility, how many documents are likely to be affected, and what is the cost of migration?
This will only impact the few DITA practitioners who utilize the **fastpath** value for `<note>@type`. This is likely to be a small number of documents.

**Producing migration instructions or tools**

- How extensive will migration instructions be, if it is integrated into an overall 1.3 → 2.0 migration publication or white paper?
  
  Migration instructions will likely require no more than a sentence, perhaps a short paragraph at most.

- Will this require an independent white paper or other publication to provide migration details?
  
  No.

- Do migration tools need to be created before this change can be made? If so, how complex will those tools be to create and to use?
  
  No.

**Examples**

N/A

**2.1.10 Stage two: #36 Remove deprecated elements and attributes**

Remove elements and attributes that have been designated as deprecated, "reserved for future use," or defined by mistake and retained only to maintain backwards compatibility

**Date and version information**

**Proposal version**

03

**Completion date**

Stage two proposal sent to DITA TC on 1 February 2019. First revision on 19 February 2018. Second revision on 26 February 2018.

**Proposal champion**

Kristen James Eberlein, Eberlein Consulting LLC

**Links to any previous versions of the proposal**


**Initial suggestion**

The stage one proposal was sent to the TC list on 6 June 2017: [https://lists.oasis-open.org/archives/dita/201706/msg00016.html](https://lists.oasis-open.org/archives/dita/201706/msg00016.html). It was discussed and moved to stage two on 6 June 2017.

**GitHub issue**

[https://github.com/oasis-tcs/dita/issues/36](https://github.com/oasis-tcs/dita/issues/36)

**Original requirement or use case**

Remove deprecated/reserved for future use items (elements and attributes) from the DITA base

**Use cases**

Not applicable
New terminology
None

Proposed solution
Modify the grammar files and documentation to remove elements and attributes that have been designated as deprecated, "reserved for future use," or defined by mistake and retained only to maintain backwards compatibility

Benefits
Reduced technical debt

Technical requirements
Figure 1: Element types to be removed

<table>
<thead>
<tr>
<th>Element type</th>
<th>Module in which the element is defined</th>
<th>Status</th>
<th>Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;boolean&gt;</td>
<td>commonElements.mod</td>
<td>Deprecated since DITA 1.0</td>
<td>&lt;state&gt;</td>
</tr>
<tr>
<td>&lt;indextermref&gt;</td>
<td>commonElements.mod</td>
<td>Reserved for future use</td>
<td>None</td>
</tr>
</tbody>
</table>

Figure 2: Attributes to be removed

<table>
<thead>
<tr>
<th>Attribute and attribute values</th>
<th>Module in which the attribute is defined</th>
<th>Status</th>
<th>Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>@alt</td>
<td>commonElements.mod</td>
<td>Deprecated since DITA 1.0</td>
<td>&lt;alt&gt;</td>
</tr>
<tr>
<td>@chunk=&quot;to-navigation&quot;</td>
<td>None</td>
<td>Deprecated since DITA 1.3</td>
<td>None</td>
</tr>
<tr>
<td>@collection-type=&quot;tree&quot; on &lt;linkpool&gt; and &lt;linklist&gt;</td>
<td>topic.mod</td>
<td>Deprecated. Only present in DTDs, not XSD or RNG.</td>
<td>None</td>
</tr>
<tr>
<td>@collection-type on &lt;reltable&gt; and &lt;relcolspec&gt;</td>
<td>map.mod</td>
<td>Undefined and reserved for future use</td>
<td>None</td>
</tr>
<tr>
<td>@keyref on &lt;navref&gt;</td>
<td>map.mod</td>
<td>&quot;... unintentionally defined for &lt;navref&gt; in the original DITA grammar files. It is retained for backwards compatibility. The attribute will be removed in a future release, and processors are not expected to support it.&quot;</td>
<td>None</td>
</tr>
<tr>
<td>Attribute and attribute values</td>
<td>Module in which the attribute is defined</td>
<td>Status</td>
<td>Replacement</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------</td>
<td>--------</td>
<td>-------------</td>
</tr>
<tr>
<td>@locktitle on &lt;topichead&gt; and &lt;topicgroup&gt;</td>
<td>&lt;topichead&gt; and &lt;topicgroup&gt; are defined in mapGroup.mod. In each case, the %topicref-atts;; entity is referenced.</td>
<td>Housekeeping to correct an unintentional mistake; the attribute was present only because attribute definitions were reused between several elements</td>
<td>None</td>
</tr>
<tr>
<td>@longdescref on &lt;image&gt;</td>
<td>commonElements.mod</td>
<td>Deprecated since DITA 1.2</td>
<td>&lt;longdescref&gt;</td>
</tr>
<tr>
<td>@navtitle</td>
<td>map.mod</td>
<td>Deprecated since DITA 1.2</td>
<td>&lt;navtitle&gt;</td>
</tr>
<tr>
<td>@print</td>
<td>map.mod</td>
<td>Deprecated since DITA 1.3</td>
<td>@deliveryTarget</td>
</tr>
<tr>
<td>@query</td>
<td>• &lt;topicref&gt;: map.mod&lt;br&gt; • &lt;anchorref&gt;, &lt;mapref&gt;, &lt;topicset&gt;, &lt;topicset ref&gt;, and &lt;keydef&gt;: mapGroup.mod&lt;br&gt; • &lt;link&gt;: topic.mod</td>
<td>Declared but never defined</td>
<td>None</td>
</tr>
<tr>
<td>@refcols</td>
<td>The attribute is declared in the %simpletable.attributest group in commonElements.mod.</td>
<td>Undefined and reserved for future use</td>
<td>None</td>
</tr>
<tr>
<td>@role=&quot;sample&quot; and @role=&quot;external&quot;</td>
<td>%relational-atts; and %rel-atts; in topic.mod</td>
<td>Deprecated since DITA 1.0</td>
<td>None</td>
</tr>
<tr>
<td>@title on &lt;map&gt;</td>
<td>mapGroup.mod</td>
<td>Deprecated since DITA 1.1</td>
<td>&lt;title&gt;</td>
</tr>
<tr>
<td>@type=&quot;internal&quot; and @type=&quot;external&quot; on &lt;lq&gt;</td>
<td>commonElements.mod</td>
<td>Deprecated since DITA 1.2&lt;br&gt;Note: While @type=&quot;internal&quot; is listed as deprecated in the DITA 1.3 spec, it is not a defined attribute value in commonElements.mod</td>
<td>@scope and @format on &lt;lq&gt;</td>
</tr>
</tbody>
</table>

**Backwards compatibility**

**Figure 3: Elements and attributes deprecated in DITA 1.0**

- @alt
- <boolean>
• @role="sample" and @role="external"

Figure 4: Elements and attributes deprecated in DITA 1.1
• @title on <map>

Figure 5: Elements and attributes deprecated in DITA 1.2
• @navtitle
• @longdescref on <image>
• @type="internal" and @type="external" on <lq>

Figure 6: Elements and attributes deprecated in DITA 1.3
• @chunk="to-navigation"
• @print

Figure 7: Impact to specialization modules
If implementations have specialized from <boolean> or <indextermref>, they will need to redefine the specialization base.

Figure 8: Impact to constraint modules
The following constraint modules will need to be refactored:
• Constraint modules that include <boolean> or <indextermref> in a content model.
• Constraint modules that list any of the deprecated attributes. This will most likely to be encountered in regard to @alt, @navtitle, and @print.

Migration plan
For most cases, migration could be handled by any of the following methods:
• Search and replace across the body of DITA topics and maps
• Prebuilt XLST scripts

Implementation that use the @print attribute will need to do more comprehensive rework of their information architecture. This might include the following:
• Determining values for use with the @deliveryTarget attribute
• (Optional) Developing a subjectScheme map to control values for the @deliveryTarget attribute
• Developing or modifying DITaval files to include or exclude content tagged with specific values for the @deliveryTarget attribute

Costs
This feature will have an impact on the following:

Maintainers of the grammar files
The following files must be modified:

DTDs
• commonElements.mod
• map.mod
Editors of the DITA specification

The following topics will need to be removed:

- `<boolean>`
- `<indextermref>`

This proposal will affect all of the following topics (and probably others that I missed). The `@navtitle` attribute appears in **MANY** examples.

- Edits to the following element-reference topics:
  - 3.1 Base DITA elements, A to Z
  - 3.2.1.5 `<navtitle>`
  - 3.2.2.1 `<alt>`
  - 3.2.2.17 `<image>`
  - 3.2.2.23 `<lg>`
  - 3.2.2.25 `<object>`
  - 3.2.4.1 `<link>`
  - 3.2.4.2 `<linklist>`
  - 3.2.4.3 `<linkpool>`
  - 3.3.1.5 `<navref>`
  - 3.3.1.1 `<map>`
  - 3.3.1.6 `<reltable>`
  - 3.3.1.10 `<relcolspec>`
  - 3.3.2.4 `<topicgroup>`
  - 3.3.2.5 `<topichead>`
  - 3.4.1.22 `<resourceid>`
  - 3.5.1.3 `<hazardsymbol>`
  - 3.6.1.2 `<schemeref>`
  - 3.6.1.15 `<relatedSubjects>`
  - 3.6.2.2 `<topicapply>`
  - 3.10.1.2 Metadata attribute group
  - 3.10.3 Attributes common to many map elements:
    - 3.10.10 Simpletable attribute group
    - 3.10.12 Topicref element attributes group
    - 3.10.13.5.1 Using the `-dita-use-conref-target` value
    - 3.10.13.12 The `@role` and `@otherrole` attributes
- Edits to the examples in the following element-reference topics
  - 3.3.1.4 `<anchor>`
• Edits to the following appendix topics:
  - "Element-by-element recommendations for translators: Base edition"
• Edits to the following architectural specification topics:
  - 2.2.2.4 DITA map attributes
  - 2.2.2.5.4 Example: How the @cascade attribute functions
  - 2.2.3.6 Scaling a list of controlled values to define a taxonomy
  - 2.2.3.8.1 Example: How hierarchies defined in a subject scheme map affect filtering
  - 2.2.3.8.2 Example: Extending a subject scheme
  - 2.2.3.8.3 Example: Extending a subject scheme upwards
  - 2.2.4.2.1 Conditional processing attributes
  - 2.2.4.4 Cascading of metadata attributes in a DITA map
  - 2.2.4.5 Reconciling topic and map metadata elements
  - 2.2.4.6.1 Cascading of attributes from map to map
  - 2.3.4.9 Processing key references to generate text or link text [@alt]
  - 2.4.1.1 Table of contents
  - 2.4.3.4 Conditional processing to generate multiple deliverable types
  - 2.4.5.2 Chunking examples
  - 2.6.3.3 DTD: Coding requirements for element type declarations
  - 2.6.4.3 RELAX NG: Coding requirements for element type declarations
• No changes to the basic information architecture of the specification
• No new terminology

**Vendors of tools: XML editors, component content management systems, processors, etc.**

If tool vendors have built features around any of the deprecated items, those features will need to be migrated to use alternate markup.

**DITA community-at-large**

Removing the @navtitle and @print attributes is likely to have the greatest impact. While DITA maps that contain @navtitle attributes could be automatically rewritten to use <navitle> elements, reworking maps that use the @print attribute will require more fundamental architectural rework.
DITA migration procedures or tools

The DITA TC will deliver a separate document that contains migration information.

It is possible that the TC should provide some basic scripts to make migration easier.

Examples

The following table contains examples of code that contains deprecated elements and attributes; it also provides example of how the code could be constructed in DITA 2.0.

<table>
<thead>
<tr>
<th>Deprecated item</th>
<th>DITA 1.3 markup</th>
<th>DITA 2.0 markup</th>
</tr>
</thead>
<tbody>
<tr>
<td>@alt</td>
<td><code>&lt;image href=&quot;bike.gif&quot; alt=&quot;Two-wheeled bicycle&quot;/&gt;</code></td>
<td><code>&lt;image href=&quot;bike.gif&quot; </code>&lt;alt&gt;Two-wheeled bicycle<code>&lt;/alt&gt; &lt;/image&gt;</code></td>
</tr>
<tr>
<td>&lt;boolean&gt;</td>
<td>She said &quot;&lt;boolean state=&quot;yes&quot;/&gt;&quot; when I asked her to marry me!</td>
<td><code>&lt;step&gt;&lt;cmd&gt;Verify the presence of an &quot;on&quot; or high condition at the input gate (ie, </code>&lt;state name=&quot;inflag&quot; value=&quot;high&quot;/&gt;<code>)&lt;/cmd&gt;&lt;/step&gt;</code></td>
</tr>
<tr>
<td>@print</td>
<td><code>&lt;topicref href=&quot;foo.dita&quot; print=&quot;no&quot;/&gt;</code></td>
<td><code>&lt;topicref href=&quot;foo.dita&quot; deliveryTarget=&quot;Web-only&quot;/&gt;</code></td>
</tr>
<tr>
<td>@navtitle</td>
<td><code>&lt;subjectScheme&gt;</code></td>
<td><code>&lt;subjectScheme&gt;</code></td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;os&quot; navtitle=&quot;Operating system&quot;&gt;</td>
<td>&lt;subjectdef keys=&quot;os&quot;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;linux&quot; navtitle=&quot;Linux&quot;&gt;</td>
<td>&lt;topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;redhat&quot; navtitle=&quot;RedHat Linux&quot;&gt;</td>
<td>&lt;navtitle&gt;Operating systems&lt;/navtitle&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;suse&quot; navtitle=&quot;SuSE Linux&quot;/&gt;</td>
<td>&lt;/topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;subjectdef keys=&quot;redhat&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;windows&quot; navtitle=&quot;Windows&quot;/&gt;</td>
<td>&lt;topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;zos&quot; navtitle=&quot;z/OS&quot;/&gt;</td>
<td>&lt;navtitle&gt;RedHat Linux&lt;/navtitle&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;/topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/enumerationdef&gt;</td>
<td>&lt;subjectdef keys=&quot;suse&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/attributedef&gt;</td>
<td>&lt;topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;navtitle&gt;SUSE Linux&lt;/navtitle&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/enumerationdef&gt;</td>
<td>&lt;/topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/topicmeta&gt;</td>
</tr>
</tbody>
</table>

DITA TC work product
### 2.1.11 Stage two: #46: Remove @xtrf and @xtrc

The `@xtrf` and `@xtrc` attributes were added in DITA 1.0 purely for processing purposes, to add a standard way for processors to store mid-conversion debug information while (in theory) retaining validity against an original DTD. This is a legacy concern outside the scope of the standard / outside of the usual interoperability concern; they should be removed as part of the effort to clean up DITA 2.0 and remove obsolete or unnecessary markup.

### Date and version information

**Date that this feature proposal was completed**

January 30, 2018
Champion of the proposal
Robert D Anderson

Links to any previous versions of the proposal
- Stage 1 details stored in tracking issue https://github.com/oasis-tcs/dita/issues/46

Links to e-mail discussion that resulted in new versions of the proposal
N/A

Link to Github issue
https://github.com/oasis-tcs/dita/issues/46

Original requirement or use case
The @xtrc and @xtrf attributes were added to all elements in DITA 1.0. They are entirely intended for processing purposes, with a DITA-OT style processing model in mind. Specifically, the expectations were that:

1. Assumption (often but not always true): Processors would read/write DITA files as they evaluated features like @conref (as DITA-OT has done since early days in the temporary directory).
2. Assumption (often but not always true): Processors needed to a place to track the source each element to enable later debugging (this was done by some processors with @xtrc and @xtrf even in DITA beta days).
3. Assumption (not a valid assumption!): Each DITA document had to remain valid during every read/write operation in the temp directory, including with this debug information. DITA-OT has never followed this and will not in the future; I only know of one tool in beta DITA days that had this requirement.
4. Result: Because processed DITA with debug info had to be valid, every DITA element needed to declare @xtrc and @xtrf as part of the standard. (At the time, there was no way to specialize attributes, so they had to be in the standard to be valid.)

The DITA specification (in the last couple of releases) has moved away from adding functionality or markup based on what is done with processed DITA, in particular what might be done by one single processor but not others. Instead it uses DTD / RNG to place rules on the source, but once processors start working with it, something like storing debug information is completely up to the processor.

The standard cannot and should not try to design this aspect of any DITA implementation, particularly a feature like this that presents no interoperability concern. Based on item #3 above, even the implementations that resulted in these attributes consider them obsolete as part of the standard.

Use cases
The use cases for removing these are:

- Cleaner language; when attributes are unnecessary, there is no reason for them to clutter up the language, the specification, and the attribute list within an authoring tool.
- Cleaner implementation; there is not (and cannot be) a requirement for implementations to use these attributes as designed, but their presence forces implementors to consider them and may guide implementations down an unnecessary path.
- The attribute names themselves are a point of confusion when first encountered, adding to DITA’s “perception of complexity” problem.
- There is not a requirement for specialized elements to declare these attributes, so the idea that any implementation can assume they are "global attributes" is already false. At the same time,
those designing specializations are often afraid to remove them because it’s not clear what they’re doing (again adding to the complexity problem).

**New terminology**

N/A

**Proposed solution**

Remove the @xtrf and @xtrc declarations from grammar files and from the specification.

**Benefits**

**Who will benefit from this feature?**
Authors, information architects working on specializations, DITA implementations, maintainers of the DITA specification.

**What is the expected benefit?**
Simplified language leads to reduced complexity & less noise in the language.

**How many people probably will make use of this feature?**
N/A; nearly all audiences will have the very slight benefit of not running into or having to think about the attributes at some point.

**How much of a positive impact is expected for the users who will make use of the feature?**
Minor impact to wide audience.

**Technical requirements**

**Removing elements or attributes**

**Removing an attribute**

- The @xtrf and @xtrc attributes are currently declared for every element that is formally part of the standard, as part of the %global-atts; entity. This entity would be removed from all MOD files that list it (this includes nearly every MOD file that declares elements).

**Processing impact**
Should not have any processing impact. Tools like DITA-OT that declare this attribute in intermediate files can continue to do so, but this is not required.

**Overall usability**
N/A

**Backwards compatibility**

**Was this change previously announced in an earlier version of DITA?**
No, though it has been discussed infrequently in various forums. (Some have complained at the absurdity of such a processing feature being part of the core specification.)

**Removing or renaming an attribute that was shipped in DITA 1.3?**
Yes, removing two attributes from every element.

**Removing or replacing a processing feature that was defined in DITA 1.3?**
Technically yes, removing these attributes is removing a specification-defined method to store debugging information. However, that usage is still allowed by the specification (and could not be prevented in any case).
Migration plan

For documents that may use the attributes:

- A tool could be provided to explicitly scan for and delete any instances of these attributes in source files.
- If any script exists to help migrate documents to DITA 2.0 (as is generally anticipated), this is an easy addition to that tool.

Might any existing processors or implementations need to change their expectations?

Yes, if cases exist where these attributes were not used as intended. Specifically, it's possible that somebody has noticed that these attributes 1) exist on every element, 2) have no meaningful definition with regards to interoperability of source material, and 3) used them as a handy place to drop some other form of annotation or metadata. In such cases, there are a few alternatives:

1. Create an attribute domain that declares @xtrf and @xtrc as specializations of @base, add that to local shells, and continue as-is.
2. Preferably, do the same, but give the attributes names related to their purpose.
3. If "no specialization or extension" is a requirement, use @base directly as the generic "extensible for any purpose" attribute. Alternatively, a recent proposal from Eliot for a global metadata attribute (also specializable) may serve the purpose.

Might any existing specialization or constraint modules need to be migrated?

Yes - most existing element specialization modules will need an update. It's possible that constraints will need an update, but much less likely.

The two attributes are added to all OASIS based modules using a consistent pattern for each grammar (always using the global-atts name). While this is not required, that pattern is followed in all of the specialization modules I've encountered, and I suspect it is true of most modules:

- In DTDs, the attributes are added with the %global-atts; parameter entity:

```xml
<!ATTLIST  steps  %global-atts;  class CDATA "- topic/ol task/steps ">
```

- In RNG, the attributes are also added with the class attribute:

```xml
<define name="steps.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="- topic/ol task/steps "/>
  </optional>
</define>
```

- In XSD, the attributes are added with an attribute group:

```xml
<xs:attributeGroup name="steps.attributes">
  <xs:attributeGroup ref="univ-atts"/>
  <xs:attribute name="outputclass" type="xs:string"/>
  <xs:attributeGroup ref="global-atts"/>
</xs:attributeGroup>
```

If a utility is created to help scan and update specialized grammar files for DITA 2.0, removing these items is a trivial addition.

If that utility does not exist, removing these references can be done with a search/replace operation that matches the exact sequences above and replaces them with an empty value. I would expect this to work for nearly all specialization modules. If modules exist that independently declare @xtrf or @xtrc, then the same search-and-replace process can be used with a search for those attribute declarations.
Costs

Maintainers of the grammar files
Minor cost, primarily search and replace, to remove the attribute group and its usage.

Editors of the DITA specification:

How many new topics will be required?
None

How many existing topics will need to be edited?

• The global attribute topic will need to be removed: http://docs.oasis-open.org/dita/dita/v1.3/errata01/os/complete/part1-base/langRef/attributes/debugAttributes.html
• Element definitions that explicitly list and link to these attributes will need to remove the reference (based on DITA 1.3, assumes these elements remain in DITA 2.0):
  <attributedef>, <dita>, <elementdef>, <enumerationdef>, <no-topic-nesting>, <ux-window>

Will the feature require substantial changes to the information architecture of the DITA specification?
No

If there is new terminology, is it likely to conflict with any usage of those terms in the existing specification?
No

Vendors of tools:
Only cost is to tools that make use of these attributes in ways not intended; see the "migration plan" section above.

DITA community-at-large:

Will this feature add to the perception that DITA is becoming too complex?
No, it should reduce that perception.

Will it be simple for end users to understand?
N/A

If the feature breaks backwards compatibility, how many documents are likely to be affected, and what is the cost of migration?

• Few DITA maps or topics, as this attribute is not intended for use in source documents
• Specialization modules will need to be updated to remove these attributes; this is a straightforward process with easy migration instructions
• Tools that used these attributes in a way not intended may have a higher cost; that cost will depend on how the attributes were used

Producing migration instructions or tools:

How extensive will migration instructions be:
Minimal - full instructions covered above

Will this require an independent white paper or other publication to provide migration details?
No

Do migration tools need to be created before this change can be made? If so, how complex will those tools be to create and to use?
No, though it would be helpful. Migration tools for source should not be very complex. Migration tools for grammars could be more difficult because there are many ways these could be defined. A good search/replace tool is likely the fastest way to migrate specializations.
Examples

N/A.

If the attribute is used as intended, it will not exist in source files before or after migration.

If the attribute is used in some other way (not as defined in the spec), before/after migration examples will depend on that usage.

2.1.12 Stage two: #73 Remove delayed conref domain

Given the complexity of this feature, lack of implementation support, and lack of evidence that it is actually used by DITA adopters, the TC should remove this feature from DITA 2.0.

Date and version information

- Champion: Alan Houser
- Stage 2 proposal revised 12 February 2018 by Alan Houser (current version)
- Stage 1: Proposed by Robert Anderson on 5 September 2017: https://github.com/oasis-tcs/dita/issues/73
- E-mail discussion: https://lists.oasis-open.org/archives/dita/201708/msg00056.html

Original requirement or use case

As this is a proposal to remove a feature from DITA 2.0 there is no original use case. Proposal is based on the complexity of the feature, lack of implementation support, and lack of evidence that the feature is used.

DITA 1.3 specification: http://docs.oasis-open.org/dita/dita/v1.3/errata01/os/complete/part3-all-inclusive/langRef/containers/delayconref-d.html#delayconref

Use cases

Reduce complexity of DITA 2.0 specification; reduce complexity for implementors.

New terminology

Not applicable

Proposed solution

Removing this feature would require:

- Remove delayedResolution domain content from DITA 2.0 specification.
- Remove delayedResolution domain, and references to the domain, from DITA 2.0 grammar files.

Benefits

The expected benefits of this proposal are:

- Some simplification of the DITA 2.0 specification.
- Simplification for implementers of DITA processing tools and applications.
While there has not been a formal audit of usage of this feature, TC-member perception is that few adopters use this feature.

Current DITA adopters who do use this feature, if any, would presumably need to replace it with some other mechanism before migrating to DITA 2.0.

**Technical requirements**

*Important*

This section must be complete in order for the proposal to be approved.

Provide a detailed description of how the solution will work. Be sure to include the following details:

**Removing elements or attributes**

*Removing a domain entirely, or from select document types*

"delayResolutionDomain.ent" and "delayResolutionDomain.mod" are to be removed. The domain is included in the basemap DTD shell, and is available in all map types.

*Removing an element*

All elements are defined in "delayResolutionDomain.mod":
- anchorid
- anchorkey
- exportanchors

**Processing impact**

Removing this feature should yield zero processing side-effects for processors that do not use this feature. Maintainers of processors that have implemented this feature may choose to remove support, support the feature as a DITA domain specialization, or migrate support to some other markup.

**Overall usability**

Near-zero impact to current DITA users who are not using this feature. Small reduction in the content of the specification.

**Backwards compatibility**

This feature was introduced with DITA 1.2. The feature is bound to the delayed conref resolution domain. Removing this feature will break backwards compatibility for users of the domain.

Any current users of this domain could add this domain to their DITA 2.0 shells; if their tools continue to support the markup then the feature will continue to work.

**Migration plan**

Current users of this feature could add the domain to their DITA 2.0 shells or implement the feature in some other way.

**Costs**

- Costs to editors of the DITA grammar files: Removing this feature would require removing references to the delayedConrefResolution domain from the three DITA schema expressions (RNG, DTD, and W3C Schema) and supporting catalog files. Estimated total effort: one hour.
- Costs to editors of the DITA specification: Removing this feature would require removing references to the delayedConrefResolution domain and component elements (exportanchors, anchorid, anchorkey) from specification map files, and removal of references to the three delayed
conref resolution elements where mentioned in the specification content (example: Element-by-element recommendations for translators). Estimated total effort: one hour.

- Costs to tools vendors: Zero. DITA-OT/Eclipse is the only known publishing toolchain that supports this feature. No known commercial tools support this feature.
- Costs to DITA community-at-large: Zero cost. Very minor possible positive benefit (admittedly negligible) with respect to simplifying the DITA Specification.
- Migration costs: Current users of this feature (if any) will need to update their DITA 2.0 shells to include the domain or identify/implement an alternate solution.

Examples
Not applicable.

2.1.13 Stage two: #105 Redesign chunking
Simplify how the @chunk attribute is defined to 1) make it easier to use, and 2) make implementation easier and more reliable.

Date and version information
Include the following information:
Date that this feature proposal was completed
14 March 2018
Champion of the proposal
Robert D Anderson
Links to any previous versions of the proposal
Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
https://www.oasis-open.org/committees/download.php/62726/minutes20180313.txt, with Eliot and Stan as reviewers
Reviewers for Stage 2 proposal
Stan Doherty, Eliot Kimber
Links to e-mail discussion that resulted in new versions of the proposal
Discussed at TC 3 April 2018, resulting in updated Stage 2 proposal
Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/105

Original requirement or use case
Redesign the chunk attribute for the following reasons / benefits:
- Make it easier to use (rename useful tokens to intuitive values)
- Make it easier to implement (discard operations that are not useful or are edge cases)

Use cases
- Make it easier to use: the current tokens are not obvious. To someone who is not already very familiar with the values, the most common values (chunk="to-content" to combine content
and chunk="by-topic" to split content) are not intuitive and require frequent use of DITA reference documentation. It's also not clear from the value-names whether those values would apply to the referenced document, child documents in a map hierarchy, or both. Replacing these two tokens

- Make it easier to use and implement: the current attribute tries to do too many things at one time, resulting in complex and difficult-to-implement attribute values. The attribute values in DITA 1.3 attempt to do three things at once (select how much of a single document should be published, decide how to combine multiple documents, and decide how to render those combinations). To use these effectively an author must use multiple tokens in the single attribute. All 7 original tokens for these functions are non-obvious, making it very difficult to know which and what combination of these tokens are necessary. Most of the additional behaviors are rarely (if ever used), resulting in little or no benefit from the additional values.

- Make the spec (and implementations) easier to maintain: the original 7 values were defined in a topic on chunking in DITA 1.1. The values were not rigorously explained, and there was no explanation of how they interacted. Later versions of the specification attempted to clarify some of the missing information, but this topic has been very difficult to work with given the need to support all interpretations of what came in with the first version. In addition, implementations have often been unclear about how to handle combinations; using DITA-OT as an example, the need to handle many (often non-sensical) possible combinations has resulted in very complex, error-prone, and hard to maintain code.

New terminology

N/A

Proposed solution

The overall goal with this solution is to preserve (mostly intact) the two most useful existing cases for chunking.

1. The chunking function, as with features like @conref, is a DITA-defined operation related to processing DITA documents. As such, the specification can only declare the before and after state of all DITA documents that implement the feature, in the context of processing the documents for some other purpose. For example, a DITA document many.dita might be chunked into many topic documents during rendering, but (again like @conref) the before/after state still deals with the DITA content. Any examples that make use of published HTML file names are purely for illustration / ease of understanding.

2. Because the chunking operation is defined in terms of processing, the values below are not meant as tool operations on the source, such as "refactor my source to reflect these new chunks". The result of evaluating @chunk is no longer a source file, and does not need to exist as an actual file (it may be an object in memory somewhere).

3. This entire function is intended for situations where splitting or combining content is relevant, & where authors need control over how that happens. In nearly all cases, chunking will be irrelevant for monolithic publishing formats like PDF or EPUB. Likewise, published HTML is often multi-file and so typically makes use of chunking. However, neither of these is always the case – local style may dictate that PDFs are split at some level, or that HTML is always generated as a single file. As such, we need to be careful that the specification allows @chunk to be ignored when needed. This also means that the specification itself cannot know in advance when this is the
case or for what formats this is the case – the best we can do is give examples of common cases.

These are the two operations people already think of or look for when they ask about chunking: the ability to publish many documents as if they were one, and the ability to publish one document as if it was many. To that end, the proposed solution is:

1. Remove all of the current @chunk token values (one value, to-navigation, is already deprecated).

2. Define one new value combine to handle the most common scenario, combining multiple DITA documents from a map into one while preserving the overall hierarchy of the map.

   • When specified on a map, it means that all documents referenced by the map should be combined into one DITA document.
   
   • When specified on a branch of a map, it means that all documents referenced within that branch should be combined into one. This is true regardless of whether the element that specifies @chunk refers to a topic or specifies a heading. In cases such as <topicgroup> where a grouping element specifies chunk="combine", the result is likely to be a single DITA document with a <dita> root element containing peer topics.
   
   • When chunk="combine" is specified on a reference to a map, it indicates that all documents within the scope of the referenced map should be combined into one DITA document.
   
   • Once chunk="combine" is specified on a map, branch, or map reference, all documents in scope are combined into a single resource. Any additional @chunk attributes on elements within the hierarchy are ignored. (This is based on a response to my original stage 1 proposal.)

3. Define one new value split to handle the second most common scenario of splitting one DITA document into many.

   • When specified on a <topicref>, it indicates that all topics within the referenced document should be split into multiple documents. For example, in a context where each individual DITA document is published as a single HTML file, specifying chunk="split" on a reference to a document that contains five topics will result in 5 documents + 5 output files.
   
   • When specified on an element such as <topicgroup> that does not refer to a topic or have content that is treated as a topic, the value has no meaning.
   
   • In each of the above cases (chunk="split" specified on a <topicref> rather than on a map), there is no cascading for the @chunk value; if contained topic references do not specify any @chunk attributes, they will use whatever default chunking style is in operation for the rest of the map.
   
   • When specified on the root map, it indicates that chunk="split" is the default operation for all documents in the map, outside the context of relationship tables. The split value is used until / unless a "combine" value is encountered, in which case "combine" takes over.
   
   • When specified on a submap, it indicates that chunk="split" is the default operation for all documents within the scope of that map, outside the context of relationship tables, until / unless a "combine" value is encountered, in which "combine" takes over.
   
   • I don't think it makes sense for documents to be split inside of a relationship table; doing so would result in far more links than expected. I think that if you do want links between specific topics, those can and should be specified in the source relationship table. Basically, what I'm going for here is "do what people would expect", while also trying not to overcomplicate things.
In all cases, when a DITA document is split into multiple documents, the hierarchy of the topics in that document must be preserved in the resulting `<topicref>` hierarchy that references each generated document. Any nested `<topicref>` elements within the original `<topicref>` should be treated as follows:

a. If the referenced topic document to be split has a root DITA topic, any nested `<topicref>` elements within the original `<topicref>` SHOULD be treated as if they are nested directly within the root topic, after any other nested topics. For example, if the document to be split uses the following hierarchy, any nested topic references from the map should appear nested inside of topic "c":

```xml
<topic id="root"><title>Root topic</title>...
<topic id="a"><title>First child topic</title>...content, maybe nested topics</topic>
<topic id="b"><title>Second child topic</title>...content, maybe nested topics</topic>
<topic id="c"><title>Last child topic</title>...content...
...maybe nested topic...
<!-- nested map hierarchy goes here, after (but not within) other topics -->
</topic>
</topic>
```

b. If the referenced topic document to be split has a root `<dita>` element, any nested `<topicref>` elements within the original `<topicref>` SHOULD be treated as if they are nested directly within the final child topic of the `<dita>` element, after any other nested topics. For example, if the document to be split uses the following hierarchy, any nested topic references from the map should appear nested inside of concept "c":

c. `<dita>`

```xml
<topic id="a"><title>First topic</title>...content, maybe nested topics</topic>
<task id="b"><title>Second topic, a task</title>...content, maybe nested topics</task>
<concept id="c"><title>Last child topic, a concept</title>...content...
...maybe nested topics...
<!-- nested map hierarchy goes here, after (but not within) other topics -->
</concept>
</dita>
```

In all cases, when a DITA document is split into multiple DITA documents, file names are up to the implementation. (We could suggest that file names be taken from topic IDs, but implementations must be free to choose naming schemes that make sense in their context, and would regardless have to handle conflicting IDs.)

4. When links exist to a topic that is chunked, applications will need to handle the link so that it resolves to the new combined or split context. If a chunking operation results in multiple instances of a result topic (either chunked separately, or some chunked and some not), applications may determine which result topic to target with the link.

Note As discussed in the TC meeting on 3 April 2018, there is no specification-defined way to associate context-sensitive keys with each nested topic in a document that will be split. This is not a change from previous version of DITA, but was not previously called out in the specification. This means that if a document appears more than one time in a map, and is split into multiple documents, there is no standard mechanism to associate keys or URIs with one instance of the nested topic versus another instance of the nested topic. As a result, there is no standard mechanism that allows links or relationship tables to those topics.
This is only an issue when the document appears more than once in a navigation context, because if the topic only appears once then key or URI based links can be updated as needed. Applications can come up with methods to associate context-sensitive keys or URIs with these topics, although those methods should still follow the normal rules of the DITA language (in other words, they should not create a new mechanism where @keyref resolves in a non-standard fashion).

5. This attribute should still be defined as CDATA, which would allow applications to define additional tokens, although I expect those will be rare. One potential advantage to this approach is that DITA 1.x tokens would still remain valid according to the parser (but ignored by 2.0 processors). I propose that we avoid some of the DITA 1.x confusion by stating that the attribute can only contain a single token (note this would mean some potential DITA 1.x values are no longer valid).

6. All remaining behaviors associated with DITA 1.x chunking are no longer supported by this attribute. The original tokens declared several unrelated behaviors using a single attribute. I suggest that if any of those other behaviors are still required, alternate attributes be defined to handle them. I do not intend to define those attributes as part of this proposal. That work should only be done if somebody has a strong need for the attributes.

Benefits

Who will benefit from this feature?

1. Authors wishing to combine or split documents
2. Those trying to implement chunking in a processor
3. Maintainers of the DITA specification and of DITA tools who can now provide a clear explanation of the function

What is the expected benefit?

1. Chunking is easier to use
2. Chunking is easier to implement
3. Improved documentation (in the spec and elsewhere)
4. DITA is simplified by making the feature more intuitive and by removing features that are not used + make the simple case difficult

How many people probably will make use of this feature?

Many, based on my own experience and based on the number of open defect reports against DITA-OT chunking

How much of a positive impact is expected for the users who will make use of the feature?

Significant improvement over the current feature

Technical requirements

Renaming or refactoring elements and attributes

Renaming or refactoring an attribute

The current attribute values are not defined in the grammar file, so the grammar definition does not change.

In the specification, the current definition for all 6 valid values and 1 deprecated value will be removed. The will be replaced with the two values "combine" and "split".

This applies to all uses of the @chunk attribute; no elements will get the attribute that did not have it before, and no elements that had the attribute will have it removed.
Processing impact

• The chunk="combine" attribute value will be equivalent to the current chunk="to-content" value when no other chunk tokens are present, so implementations will need to adjust for the new value.
• The chunk="split" attribute value will be equivalent to the current chunk="by-topic" value when no other chunk tokens are present, so implementations will need to adjust for the new value.
• Removing other tokens, removing the ability to combine unrelated tokens, and defining these new values in a way that is clear & simple will all allow applications to remove the many conditions required to support old values.
• The feature may have an impact on how result documents are named, but that should generally be left up to processors.

Overall usability
The chunking feature today is hard to use and hard to implement. This should address both concerns, resulting in a much more usable experience in all aspects of DITA chunking.

Backwards compatibility
Was this change previously announced in an earlier version of DITA?
No, although I have personally described this in public venues as one feature sure to be redesigned in DITA 2.0.

Changing the meaning of an element or attribute in a way that would disallow existing usage?
Yes; for the most common uses (possibly for the only real-world uses), the migration path is clear.

Migration plan
Documents
The easiest path is likely to use search/replace across DITA maps, and update chunking tokens to use the new value.

Processors
Processors will need to be updated to handle the new tokens. As a first approach they could simply treat the new values the same way as older equivalent values, but I would expect that over time many tools will want to replace older chunking processes with new ones.

Might any existing specialization or constraint modules need to be migrated?
Unlikely, although possible in theory. The only case where this could happen is if a module was designed to explicitly enumerate values for @chunk. In that case, the same modules would need to allow for the new tokens.

Costs
Maintainers of the grammar files
N/A

Editors of the DITA specification
• How many new topics will be required? 0
• How many existing topics will need to be edited? Two topics will need significant editing (Using the @chunk attribute) and chunking examples. We may wish to revise the current definition of @chunk in the attribute details topic, although the current definition actually works better for the new design than for the old.
Will the feature require substantial changes to the information architecture of the DITA specification? No.
If there is new terminology, is it likely to conflict with any usage of those terms in the existing specification? N/A

Vendors of tools
Tools that implement chunking can take a quick approach (interpret the new values exactly the same as old ones), which should have minimal cost. Alternatively, they may wish to rewrite the chunking process, which will have a larger cost (hard to specify exactly due to widely different tool scenarios).

DITA community-at-large
- This should not add to the perception that DITA is too complex (it should do the opposite).
- It should be simple for end users to understand - that is the primary goal. This should be much simpler than the current design.
- Backwards compatibility: any documents that use chunking today will require migration, but with low cost (search-and-replace which can be done before or after the switch to a fully DITA 2.0 environment).

Producing migration instructions or tools
- Migration instructions (as part of a larger migration document) will be minimal, likely only a few paragraphs with small code examples.
- No independent publication for this feature migration will be needed.
- If other tools exist to migrate DITA documents, this would be an easy addition to those tools, but absent that tool this would be more easily done with search-and-replace routines.

Examples

**Figure 9: Creating a single monolithic result document from a root map**

```dita
<map chunk="combine">
  <title>Previously this would have been chunk="to-content"</title>
  <topicref href="hello.dita">...</topicref>
  <topicref href="world.dita">...</topicref>
  ...
</map>
```

**Figure 10: Creating multiple result documents from a single document**

In the case where hello.dita contains 5 topics (either nested or peers within a `dita` element), the following markup would result in hello.dita being split into 5 individual documents. How the documents are handled at that point is up to the processor (in HTML5 output where one input file generally = one output file, this would turn hello.dita into five output files, presumably named after topic IDs within the original document). Note that the `chunk="split"` value has no impact on content within the nested reference notchunked.dita. In the resulting hierarchy, the reference to notchunked.dita should end up as the final nested topic within the final child of `dita` (when that file has a root topic), or as the final nested topic within the final child of `dita` (when that file has a root `dita` element).

```dita
<map>
  <title>Previously this would have used chunk="by-topic"</title>
  <topicref href="hello.dita" chunk="split">
    <topicref href="notchunked.dita"/>
  </topicref>
  <topicref href="world.dita">...</topicref>
  ...
</map>
```
Figure 11: Creating multiple result documents from every source DITA document

In the case where hello.dita and world.dita each contain 5 topics each (either nested or peers within a <dita> element), the following markup would result in the two original documents being split into 10 individual documents, with the same handling caveats as above.

```xml
<map chunk="split">
  <title>Previously this would have used chunk="by-topic"</title>
  <topicref href="hello.dita"></topicref>
  <topicref href="world.dita"></topicref>
</map>
```

Figure 12: Explicit example of split topic with resulting hierarchy

Assume the very simple map below with a single topic simple.dita, and the contents of simple.dita are also shown.

```xml
<map>
  <title>Very simple "split" example</title>
  <topicref href="simple.dita"/>
</map>
```

simple.dita:
```xml
<topic id="a">
  <title>Root topic</title>
  <body>...</body>
  <topic id="b">
    <title>Sub-topic</title>
    <body>...</body>
    <topic id="c">
      <title>sub-sub-topic</title>
      <body>...</body>
    </topic>
  </topic>
  <topic id="jumpup">
    <title>another sub-topic</title>
    <body>...</body>
  </topic>
</topic>
```

The document simple.dita contains four topics; the chunking operation split effectively results in the following map, with each document containing only one topic. For this sample the file names are taken from the topic IDs for clarity but this is not required.

```xml
<map>
  <title>Very simple "split" example</title>
  <topicref href="a.dita">
    <topicref href="b.dita">
      <topicref href="c.dita"/>
    </topicref>
    <topicref href="jumpup.dita"/>
  </topicref>
</map>
```

Figure 13: "split" when used on a grouping element

Assume the following map, where chunk="split" is used on grouping elements:

```xml
<map>
  <title>Groups are split</title>
</map>
```
In the case of the `<topicgroup>` element, the `@chunk` value is ignored; it does not cascade, and there is no referenced topic, so it has no effect.

In the case of the `<topichead>` element, in many applications, the title is equivalent to a single title-only topic. In this case the `@chunk` value also has no effect; if the `<topichead>` is treated as a title-only topic, it cannot be split further, and if it is ignored for the current processing context, it is treated no differently than `<topicgroup>`.

**Figure 14: "combine" when used on a grouping element**

Assume the following map, where `chunk="combine"` is used on grouping elements:

```xml
<map>
  <title>Groups are combined</title>
  <topicref href="ingroup1.dita">...</topicref>
  <topicref href="ingroup2.dita">...</topicref>
  <topicgroup chunk="combine">
    <topicref href="ingroup1.dita">...</topicref>
    <topicref href="ingroup2.dita">...</topicref>
  </topicgroup>
  <topichead chunk="combine">
    <topicmeta><navtitle>Heading for a branch</navtitle></topicmeta>
    <topicref href="inhead1.dita">...</topicref>
    <topicref href="inhead2.dita">...</topicref>
  </topichead>
</map>
```

- In the case of the `<topicgroup>` element, the `@chunk` value results in a single DITA document that includes the contents of both `ingroup1.dita` and `ingroup2.dita`. A literal, DITA-valid file representation of the resulting content would presumably include each of those as peers within a `<dita>` container.
- In the case of the `<topichead>` element, the `@chunk` value also results in a single DITA document. Again, in many applications, the title is equivalent to a single title-only topic. In that case, a file representation of the resulting content would include the contents of `inhead1.dita` and `inhead2.dita` as children of the topic with "Heading for a branch" as the title. If `<topichead>` is ignored for the current processing context, the result would be the same as with `<topicgroup>`, where the contents of `inhead1.dita` and `inhead2.dita` become peers within a `<dita>` element.

**Figure 15: Edge case: "split" becomes "combine"**

Assume the following map, where `chunk="split"` on the root element means that all topics within this map structure are split by default, but a branch within the map sets `chunk="combine"`:

```xml
<map chunk="split">
  <title>Split most, but not one branch</title>
  <topicref href="splitme.dita">...</topicref>
  <topicref href="exception.dita" chunk="combine">...</topicref>
  <topicref href="splitmetoo.dita">...</topicref>
</map>
```

Assume as well that no other `@chunk` attributes are specified in this map. The following is true:
1. The document `splitme.dita` and all documents within that branch will be split apart if they contain more than one topic.

2. Because of the `chunk="combine"` setting, the second branch with `exception.dita` at the root will result in a single result document.

3. The document `splitmetoo.dita` and all documents within that branch will be split apart if they contain more than one topic.

**Figure 16: Edge case: ignoring "split" values within a combined branch**

Assume the following map, where a branch is combined, but a nested `<topicref>` specifies "split":

```xml
<map>
  <title>Ignoring split value</title>
  <topicref href="bigBranch.dita" chunk="combine">
    <topicref href="iamhappy.dita"/>
    <topicref href="iamconfused.dita" chunk="split"/>
    <topicref href="happyagain.dita"/>
  </topicref>
  ...
</map>
```

In this case:

1. The branch beginning with `bigBranch.dita` results in a single, combined document.
2. In the combined document, the contents of `iamhappy.dita`, `iamconfused.dita`, and `happyagain.dita` are all peers within the final topic of `bigBranch.dita`.
3. The `chunk="split"` value within the branch is ignored.

**2.1.14 Stage two #107: Add `<em>` and `<strong>`**

Proposal for the inclusion of the `<strong>` and `<em>` elements under a new domain, while redefining the `<b>` and `<i>` elements in a more semantic manner.

**Date and version information**

**Date that this feature proposal was completed**
8 October 2018

**Champion of the proposal**
Keith Schengili-Roberts

**Links to any previous versions of the proposal**

**Links to minutes where this proposal was discussed at stage 1 and moved to stage 2**

**Links to e-mail discussion that resulted in new versions of the proposal**

**Link to the GitHub issue**
[https://github.com/oasis-tcs/dita/issues/107](https://github.com/oasis-tcs/dita/issues/107)

**Original requirement or use case**

Many new people coming to DITA have expressed confusion as to the supposed semantic nature of DITA when they notice the existence of the `<b>` (bold) and `<i>` (italics) elements.

HTML has long supported (since the "HTML+" specification from 1993) the additional `<strong>` and `<em>` elements as more descriptive, semantic equivalents for `<b>` and `<i>`. In late 2014 the HTML5...
standard took this one step further by fully defining `<b>` and `<i>` as semantic elements, distinct from `<strong>` and `<em>`.

In keeping with HTML5, a standard that many coming to DITA have more than a passing familiarity with, this proposal suggests that `<strong>` and `<em>` be added as elements under a new domain called "emphasis". At the same time, the existing `<b>` and `<i>` elements within the highlighting domain will be re-defined within the DITA 2.0 specification in a more semantic manner. This will bring them more in-line with their equivalent elements in HTML5; they are otherwise unchanged.

**Use cases**
For users seeking a semantic equivalent for the `<b>` and `<i>` elements, `<strong>` and `<em>` could now be used instead.

The retention and redefining of the `<b>` and `<i>` elements would also make it clear as to the situations for which `<strong>` and `<em>` should be used, and the scenarios where `<b>` and `<i>` are more appropriate.

**New terminology**
The `<strong>` element would inherit from topic/ph emphasis, and could be defined as follows:

“The `<strong>` element can be used to indicate content that is considered to be important, serious, or has some form of urgency (without being a specific warning). Typically, its content will be rendered in boldface at output. Use this element only when a more semantically appropriate element is not available. For example, for a specific warning, consider using an appropriate element from the hazard statement domain, such as `<hazardstatement>`.”

The `<em>` element would also inherit from topic/ph emphasis, and could be defined as follows:

“The `<em>` element can be used to indicate emphasis. A stress emphasis is designed to change the meaning of a phrase or sentence, or stressing the importance of a particular noun, verb or adjective. Typically, its content will be rendered in italics at output. Use this element only when a more semantically appropriate element is not available. For example, when indicating a different mood or voice, the `<i>` element may be more relevant.”

The `<b>` element description would also change, making it more semantically descriptive, and aligning with its equivalent in HTML5. This could look like the following:

“The `<b>` element should be used to draw attention to a word or phrase for utilitarian purposes without implying that there is any extra importance. There is also no implication of an alternate voice or mood, or that its content should be actionable. For example, it can be used to indicate product names within a review, highlighting roles within a process, or for use in spans of text where the typical presentation is expected to be in a boldface.”

Similarly, the `<i>` element would also be redefined to make it more semantically descriptive, and aligning with its equivalent in HTML5. It could look like the following:

“The `<i>` element should be used for a word or phrase indicating either an alternate voice or mood, or to otherwise offset it from the content around it to indicate a different quality of text, such as a taxonomic designation, an idiomatic phrase from another language, technical term, or a ship name.”

**Proposed solution**
1. Create a new emphasis domain.
2. Create two new phrase-level elements within this domain: `<strong>` and `<em>`.
3. Add new descriptions plus example code illustrating the intended usage for these elements.
4. Change the descriptions for the `<b>` and `<i>` elements within the highlighting domain and include example code illustrating their intended usage.

**Benefits**

**Who will benefit from this feature?**
Authors seeking a more semantic element for encapsulating content that should either be `<strong>` or emphasized. The redefinition of the `<b>` and `<i>` elements will also make it plain when and where these highlighting elements should be used. It will also benefit DITA trainers who will now be able to point to more semantic equivalents to the existing `<b>` and `<i>` elements.

**What is the expected benefit?**
Authors working within DITA will have a more clear-cut choice on when to use `<strong>` and `<em>`, and when to use `<b>` and `<i>`, in keeping with how these elements are currently defined within HTML5.

**How many people probably will make use of this feature?**
There are cases where technical writing teams have constrained out the highlighting domain because of its lack of semantic elements. Similarly, there are DITA authoring groups that have either specialized `<ph>` to create their own equivalent of `<strong>` and `<em>`, or, more awkwardly, use `@outputclass` with `<ph>` to achieve the same ends. The redefinitions proposed for `<b>` and `<i>` may convince the former to retain the highlighting domain, while providing the new, semantically-described `<strong>` and `<em>` elements ought to take care of the latter group. While this proposal is not sufficient to draw people to use DITA 2.0, it will likely be welcomed by the user community.

**How much of a positive impact is expected for the users who will make use of the feature?**
Likely minimal; in many ways this is less a feature than a long-overdue tweak to the specification. However, those who will use this feature are likely to be pleased with its addition.

**Technical requirements**

**Adding new elements or attributes**
Two new elements, `<strong>` and `<em>`, will be added under a new domain.

**Adding a domain**
The new emphasis domain would fall under the set of general-purpose Domain elements. It is possible that other elements may fit into this domain in the future; for example, active-low signals in electrical engineering/semiconductor documentation are typically rendered with an overline, indicating logical negation. This is currently handled using the `<overline>` element from the highlight domain. Similarly, instead of using subscript letters to indicate voltage nodes, these could be more specifically and semantically described within the emphasis domain, which can then be formatted according to the style for that industry sector.

**Adding an element**
Two new elements will be added under the emphasis domain: `<strong>` and `<em>`.

**Inheritance:**
+ topic/ph emphasis/strong
+ topic/ph emphasis/em

**DTDs:**
(Please note that the following is based on DITA 1.3 and does not include any proposed changes for phrase-level elements that may have already been proposed for DITA 2.0).

```xml
<!ENTITY % emphasis-d-ph "
`
Renaming or refactoring elements and attributes

Only the description of the `<b>` and `<i>` elements need to be updated in the DITA 2.0 specification. See the "New Terminology" section for the proposed changes in wording.

Renaming or refactoring an attribute

N/A

Removing elements or attributes

N/A

Processing impact

Expected to be minimal.
Overall usability
Users will have a choice between using <strong> and <em> vs. the <b> and <i> elements. There may be some confusion as to when to best use <strong> vs. <b> and <em> vs. <i>, but this can be mitigated by providing numerous, relevant code examples in the specification for each element.

Backwards compatibility
Changing the meaning of an element or attribute in a way that would disallow existing usage?
As the <b> and <i> elements are not being removed, going forward DITA 2.0 users can continue to use these elements if they choose, opt to use <strong> and <em> as their replacements, or to use both sets of elements in parallel.

Migration plan
Might any existing documents need to be migrated?
Use of <strong> and <em> is optional as <b> and <i> are still present, so there is no need to update all instances of <b> to <strong>, and <i> to <em>, though there will undoubtedly be some technical documentation teams that choose to do so.

Might any existing processors or implementations need to change their expectations?
Not in terms of expectations, though output processors (such as the DITA-OT) will need to accommodate the formatting of the two new elements, though for compatibility it is suggested that <strong> copies the default output behavior of <b>, and that <em> copies that of <i>.

Might any existing specialization or constraint modules need to be migrated?
Groups that have previously constrained out the highlighting domain, or who have specialized <ph> for creating equivalents for <strong> and <em>, are likely to drop their modifications with this proposal. There may still be groups that choose to constrain out the highlighting domain despite the revised semantic descriptions for <b> and <i>, but if so that would be their choice.

Costs
DITA community-at-large
Outline the impact (time and effort) of the feature on the following groups:

Maintainers of the grammar files
Minor cost in adding the new domain and its associated elements.

Editors of the DITA specification: How many new topics will be required?
Three. One to describe the intent of the new emphasis domain, and one for each new element (<strong> and <em>). There also ought to be changes to the default document shells to include references to the new domain.

Editors of the DITA specification: How many existing topics will need to be edited?
Two. The topics for <b> and <i> ought to be updated to be more semantically descriptive, which will align them with their equivalent elements in HTML5.

Will the feature require substantial changes to the information architecture of the DITA specification? If so, what?
Only the addition of the new domain. Other than that, no significant architectural change is required. A possible advantage of having a new emphasis domain is that it opens the possibility to include other, more semantically-descriptive elements that lend themselves to specific formatting styles. For example, active-low signals in electrical engineering/semiconductor documentation are typically rendered with an overline, indicating logical negation. This is currently handled using the
<overline> element from the highlight domain. Similarly, instead of using subscript letters to indicate voltage nodes, these could be more specifically and semantically described within the emphasis domain, which can then be formatted according to the style for that industry sector.

Vendors of tools
Low cost is expected. Again, this is less a significant new feature than an overdue "tweak".

Will this feature add to the perception that DITA is becoming too complex?
Any additional element adds to the total number of elements available in DITA. However, the intent is to bring DITA more in line with current HTML5 practice, something that will likely be welcomed by the community.

Will it be simple for end users to understand?
Yes. As mentioned earlier, this is less of a wholly new feature than a long-overdue tweak. It seems likely that the community is likely to embrace these new tags, along with the alignment with their equivalents in HTML5.

Producing migration instructions or tools
If there are teams that decide to migrate all instances of <b> and <i> to <strong> and <em>, there are already tools capable of doing this one-for-one switch. It is unlikely that there will be new tools needed to do this.
A white paper to describe the correct usage of the new and revised elements would be overkill, especially if sufficient code examples explaining the context for usage are provided within the specification.

If there is new terminology, is it likely to conflict with any usage of those terms in the existing specification?
The new definitions for <strong> and <em>, plus <b> and <i>, will make it clear as to their scenarios for use, along with a good set of code examples to demonstrate best practices for when they should be used.

Examples
(The following is a draft description of the <strong> element intended for use in the DITA 2.0 specification. It includes several examples).
The <strong> element can be used to indicate content that is considered to be important, serious, or has some form of urgency (without being a specific warning). Typically, its content will be rendered in bold at output.

Examples
The following examples show how it can be used.

Emphasizing an important detail:

<p>Your doctor prescribed this medicine to treat an infection. It is important that you <strong>take all of the medicine</strong> as described.</p>

Another example:

<p>When starting a car with a keyless ignition, you must <strong>step on the brake pedal</strong> before pressing the start button.</p>
Underscoring a serious point:

Use the word `<em>` very` <strong>` sparingly`</strong>`. Where emphasis is necessary, use words strong in themselves.

Pointing out a critical/urgent detail:

```
<p>SERVICE HEADLIGHT—<strong>Black</strong> wire with <strong>red tracer</strong> from handlebar toggle switch to large terminal screw; <strong>red</strong> wire with <strong>yellow tracer</strong> from handlebar toggle switch to small terminal screw.</p>
```

This element is part of the emphasis domain. The addition of this element brings DITA more into alignment with its equivalent in the current HTML specification.

*(The following is a draft description of the `<em>` element intended for use in the DITA 2.0 specification. It includes several examples.)*

The `<em>` element can be used to indicate emphasis. A stress emphasis is designed to change the meaning of a phrase or sentence, or stressing the importance of a particular noun, verb or adjective. Typically, its content will be rendered in italics at output. Use this element only when a more semantically appropriate element is not available. For example, when indicating a different mood or voice, the `<i>` element may be more relevant.

**Examples**

The following examples show how it can be used.

**Emphasizing meaning within a sentence:**

```
<p>What was previously called `<em>`block-level`</em>` content up to HTML 4.1 is now called `<em>`flow`</em>` content in HTML5.</p>
```

**Stressing the importance of a noun within a sentence:**

```
<p>A `<em>`condenser`</em>` is an apparatus for condensing a large quantity of electricity on a comparatively small surface.</p>
```

**Stressing the importance of a verb or actions within a sentence:**

```
To remove a message from a pigeon, first `<em>`catch`</em>` the bird, then `<em>`hold`</em>` it in one hand, `<em>`extend`</em>` its leg, and `<em>`remove`</em>` the message holder with the other hand.
```

**Stressing the importance of an adjective or adjectival phrase within a sentence:**

```
<p>A good plan once adopted and put into execution `<em>`should not be abandoned`</em>` unless it becomes clear that it can not succeed.</p>
```

This element is part of the emphasis domain. The addition of this element brings DITA more into alignment with its equivalent in the current HTML specification.

*(The following is a draft description of the `<b>` element intended for use in the DITA 2.0 specification. It includes several examples.)*

The `<b>` element is used to draw attention to a word or phrase for utilitarian purposes without implying that there is any extra importance. There is also no implication of an alternate voice or mood, or that its content should be actionable. For example, it can be used to indicate product names within a review,
highlighting roles within a process, or for use in spans of text where the typical presentation is expected to be in a boldface.

Examples

The `<b>` element can be used to indicate a product name within a review:

```html
<p>One of the best features of <b>Mr. Flip-it</b> is its ability to manipulate objects within a three-dimensional space so that you can see the other side.</p>
```

The `<b>` element can be used to highlight related concepts within a topic:

```html
<p>The <b>Solid Waste Operations Manager</b> plans and manages the countywide transfer station and landfill operations, coordinates solid waste processing operations with the planning and engineering staff, and performs related duties as required.</p>
```

The `<b>` element can also be used in situations where boldfaced text is expected for stylistic purposes, such as when the house style for an article lede is to be rendered in boldface:

```html
<p><strong>Know where to get help.</strong> Before proceeding to wrangle your first ostrich, ensure you know the location of the closest first aid station.</p>
```

The redefining of this element brings DITA more into alignment with the equivalent element in the current HTML specification.

(The following is a draft description of the `<i>` element intended for use in the DITA 2.0 specification. It includes several examples).

The `<i>` element is used to indicate either an alternate voice or mood, or to otherwise offset it from the content around it to indicate a different quality of text, such as a taxonomic designation, an idiomatic phrase from another language, technical term, or a ship name.

Examples

The `<i>` element can be used for indicating text in a different voice, such as when foreign words or phrases are used:

```html
<note type="caution">Even highly experienced operators of heavy machinery should remain alert for dangerous situations. Having a <i>laissez-faire</i> attitude is a recipe for disaster.</note>
```

The `<i>` element can also be used to indicate different character voices:

```html
<p><i>Edgar</i>: I know thee well—a serviceable villain, as duteous to the vices of thy mistress as badness would desire.</p>
```

```html
<p><i>Gloucester</i>: What, is he dead?</p>
```

It can also be used to indicate a taxonomic designation:

```html
<p>When wrangling ostriches (<i>Struthio camelus</i>) people are advised that while they are a type of bird</p>
```
(Class: <i>Aves</i>), they are thought to be descendants of their extinct dinosaur (Suborder: <i>Theropoda</i>) relatives and share the same type of temperament.

The <i>element can also be used to designate the name of a ship:

<p>The MV <i>Rena</i> was a container ship that ran aground near Tauranga, New Zealand, resulting in an oil spill.</p>

It can also be used to indicate a new or technical term the first time it is introduced:

<p>Immediately prior to undergoing an MRI, a doctor may inject a contrast agent called the <i>gadolinium contrast medium</i> into the patient. This 'dye' highlights the part of the body being scanned and can provide more information to the radiologist who is assessing the patient's problem.</p>

The redefining of this element brings DITA more into alignment with the equivalent element in the current HTML specification.

### 2.1.15 Stage two: #164 Redesign <hazardstatement>

Redesign the hazard statement domain to better support current standards, authoring requirements, and rendering requirements.

#### Date and version information

This proposal contains the following information:

**Date that this feature proposal was completed**

21 September 2019

**Champion of the proposal**

Kristen James Eberlein, Eberlein Consulting LLC

**Links to any previous versions of the proposal**

16 September 2019

This version of the stage two proposal, dated 18 September 2019, contains the following changes from the version submitted to the DITA TC on 16 September 2019:

- Acknowledgment of feedback from Amber Swope, Individual member
- Acknowledgment of review from Dawn Stevens, Comtech Services, Inc.
- Correction of a typographic error and a markup error
- Added the following sentence to the "Use cases" section: “Enabling hazard images to be associated with <messagepanel> and its child elements makes it possible to produce grouped safety messages that comply with ANSI Z535.6.”

**Links to minutes where this proposal was discussed at stage 1 and moved to stage 2**

20 August 2019

In addition, this proposal was discussed (requests for early feedback) at the following TC meetings:

- 03 September 2019
- 10 September 2019

**Reviewers for Stage 2 proposal**

This proposal was reviewed by the following voting TC members

Robert Anderson, IBM
Eliot Kimber, Individual member
Scott Hudson, The Boeing Company
Dawn Stevens, Comtech Services, Inc.

In addition, the following individuals were asked for feedback on this proposal:
   Jang Graat, Former individual member (sent personal e-mail approving the proposal)
   Amber Swope, Individual member (sent personal e-mail approving the proposal)

Links to e-mail discussion that resulted in new versions of the proposal
   Not applicable

Link to the GitHub issue
   Issue #64

Original requirement or use case
In May 2018, the following TC members suggested changes to the hazard statement domain for DITA 2.0:
   • Jang Graat, Individual member (no longer an OASIS member)
   • Dawn Stevens, Comtech Services, Inc.
   • Amber Swope, Individual member

All three TC members were motivated to improve the hazard statement domain by increasing its alignment with various safety standards; in addition, they wanted to make it easier for content developers to use and better able to support rendering requirements.

In September 2019, after a careful study of existing safety standards and the changes suggested by DITA TC members and the larger DITA community, I presented various options to the TC and developed consensus on the solution that is outlined in this proposal.

Use cases
This proposal will enable hazard statements authored in DITA to meet the following objectives:

Better comply with the ANSI Z535.6 standard
   While the ANSI Z535.6 standard provides great flexibility for companies to implement its recommendations, it does provide strict requirements for safety alert symbols and signal words.
   ANSI Z535.6 defines a *signal word* as a “word that calls attention to a safety message or messages or a property damage message or messages, and designates a degree or level of hazard seriousness.” The standard only permits four signal words: “DANGER”, ”WARNING”, ”CAUTION”, and ”NOTICE”.
   The `@type` attribute on the `<hazardstatement>` element specifies the signal word. For DITA 1.2 and 1.3, the values of the `@type` attribute are identical to those permitted on `<note>`. That allows a lot of values that are not germane for hazard statements and so can introduce authoring dissonance.

Improve the semantic nature of the specialization base
   Currently, `<hazardstatement>` is specialized from `<ul>`, and its child elements are specialized from `<li>`. This specialization hierarchy does not make sense.

Enable hazard images to be associated with `<messagepanel>` and its child elements
   Currently, the hazard images are part of the content model for the `<hazardstatement>` element. This presents a problem when the `<hazardstatement>` element contains multiple
<messagepanel> elements; there is no way to determine which hazard images are associated with specific message panels – nor can it be determined what the hazard image represents: <typeofhazard>, <consequence>, or <howtoavoid>.

Enabling hazard images to be associated with <messagepanel> and its child elements makes it possible to produce grouped safety messages that comply with ANSI Z535.6.

Simplify the authoring experience

Currently, the fixed order of the child elements within <messagepanel> forces some authors to author content in a different order than it will be rendered and read by consumers. This can be counter intuitive.

Also, often authors must use a value for the @outputclass attribute in order to indicate how a list in the <howtoavoid> element should be rendered. This makes the authoring process harder than it needs to be.

Simplify the work of CSS and stylesheet developers

Many implementations must use transformations, CSS, and stylesheets to swap the order of the <consequence> and <howtoavoid> elements. This can be burdensome to small implementations, and it can easily be avoided by relaxing the content model of <messagepanel>.

Currently, many implementations rely on CSS and style sheets to render the simple list allowed within <howtoavoid> as either an ordered or unordered list. Allowing <ol> and <ul> within <howtoavoid> will eliminate this extra work.

New terminology

Not applicable

Proposed solution

- Restrict the values of the @type attribute on <hazardstatement> to "danger", "caution", "warning", "notice", and "-dita-use-conref-target"
- Require the @type attribute on <hazardstatement>
- Improve the element-reference topic for <hazardstatement> to include definitions of the values for the @type attribute that match those in the ANSI Z535.6 standard. The following definition descriptions are taken verbatim from ANSI Z535.6:

  **DANGER**
  Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

  **WARNING**
  Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

  **CAUTION**
  Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

  **NOTICE**
  Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

  **Note** that the DITA spec will not use these definitions verbatim. They will be edited to match our style guidelines.
• Expand the content model of `<messagepanel>` to enable greater flexibility in the order of the child elements. While `<typeofhazard>` will remain required and the first child of `<messagepanel>`, it now can be followed by either of the following:
  – `<consequence>` (zero or more), `<howtoavoid>` (one or more)
  – `<howtoavoid>` (one or more), `<consequence>` (zero or more)
• Expand the content model of `<howtoavoid>` to permit `<ol>` and `<ul>`, in addition to `<sl>`
• Change the specialization base of `<messagepanel>`, `<typeofhazard>`, `<consequence>`, and `<howtoavoid>` to `<div>`
• Add `<hazardsymbol>` to the content models of `<messagepanel>`, `<typeofhazard>`, `<consequence>`, and `<howtoavoid>`
• Remove `<hazardsymbol>` from the content model of `<hazardstatement>`

Benefits

This proposal addresses the following questions:

Who will benefit from this feature?

The following will benefit from this redesign:
  • All DITA implementations that use the hazard statement domain
  • DITA implementations that do not use the hazard statement domain due to concerns that the hazard statement domain is inadequate, difficult to use, or difficult to render
  • Companies whose documentation requires hazard statements but who have not migrated to DITA due to concerns that the hazard statement domain is inadequate, difficult to use, or difficult to render

What is the expected benefit?

A hazard statement domain that is easier to use and easier to render

How many people probably will make use of this feature?

Unknown

How much of a positive impact is expected for the users who will make use of the feature?

Significant

Technical requirements

This proposal involves the following changes:

Refactoring elements

  • `<hazardstatement>`
    – Remove several values for the @type attribute
    – Make the @type attribute required
    – Remove `<hazardsymbol>` from the content model
  • `<messagepanel>`
    – Modify content model to enable better flexibility regarding the order of elements
    – Add `<hazardsymbol>` (zero or more) to the content model
    – Change specialization base to `<div>`
  • `<typeofhazard>`
    – Add `<hazardsymbol>` (zero or more) to the content model
– Change specialization base to `<div>`
  * `<consequence>`
    – Add `<hazardsymbol>` (zero or more) to the content model
    – Change specialization base to `<div>`
  * `<howtoavoid>`
    – Add `<ol>` and `<ul>` to the content model
    – Add `<hazardsymbol>` (zero or more) to the content model
    – Change specialization base to `<div>`

Processing impact
Not applicable

Overall usability
Improved usability for current and future users.

Backwards compatibility
This proposal addresses the following questions:

Was this change previously announced in an earlier version of DITA?
No

Removing a document type that was shipped in DITA 1.3?
No

Removing a domain that was shipped in DITA 1.3?
No

Removing a domain from a document type shell was shipped in DITA 1.3?
No

Removing or renaming an element that was shipped in DITA 1.3?
No

Removing or renaming an attribute that was shipped in DITA 1.3?
No

Changing the meaning of an element or attribute in a way that would disallow existing usage?
Yes – Removing values for the `@type` attribute on `<hazardstatement>` that were allowed in DITA 1.2 and 1.3

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
Yes – Removing `<hazardsymbol>` from the content model of `<hazardstatement>`
Yes – Making the `@type` attribute required on `<hazardstatement>`

Changing specialization ancestry?
Yes – As follows:

<table>
<thead>
<tr>
<th>Element</th>
<th>DITA 1.3</th>
<th>DITA 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;consequence&gt;</code></td>
<td><code>&quot;+ topic/li hazard-d/consequence &quot;</code></td>
<td><code>&quot;+ topic/div hazard-d/consequence &quot;</code></td>
</tr>
<tr>
<td><code>&lt;howtoavoid&gt;</code></td>
<td><code>&quot;+ topic/li hazard-d/howtoavoid &quot;</code></td>
<td><code>&quot;+ topic/div hazard-d/howtoavoid &quot;</code></td>
</tr>
</tbody>
</table>
Removing or replacing a processing feature that was defined in DITA 1.3?

No

Are element or attribute groups being renamed or shuffled?

No

Migration plan

This proposal addresses the following questions:

Might any existing documents need to be migrated?

Yes, implementations will need to rework `<hazardstatement>` elements to relocate `<hazardsymbol>` elements.

Yes, if existing DITA topics use values of `@type` on `<hazardstatement>` that are removed.

Yes, if existing DITA topics contain `<hazardstatement>` elements that do not set the `@type` attribute.

Might any existing processors or implementations need to change their expectations?

Authoring tools might need to change the CSS or XSLT that is used to render hazard statements.

Implementations might need to adjust their stylesheets for rendering output.

Might any existing specialization or constraint modules need to be migrated?

(Unlikely) If an implementation has specialized elements from the hazard statement domain, it might need to modify their specialization modules.

If no migration need is anticipated, why not?

Not applicable

Costs

This proposal has a (time and effort) impact on the following groups:

Maintainers of the grammar files

- (DTD) Edits to `hazardstatementDomain.mod` and `hazardstatementDomain.ent`
- (RNG) Edits to `hazardstatementDomain.rng`

Editors of the DITA specification

The changes to the DITA specification will be minor to medium:

- Editorial changes to the `<hazardstatement>` topic to specify values for `@type`
- Updates to the "Specialization hierarchy" sections for the `<messagepanel>`, `<typeofhazard>`, `<consequence>`, and `<howtoavoid>` topics
- Changes to the "Example" sections in the `<hazardstatement>`, `<messagepanel>`, `<typeofhazard>`, `<consequence>`, and `<howtoavoid>` topics
- Updates to the "Usage information" section in the `<messagepanel>` topic, to explain meaning of `<hazardsymbol>` as direct child of `<messagepanel>`
The entire topic collection for the hazard statement domain is overdue for an edit, but that should be handled separately from this proposal. We should consider providing more information about formatting expectations for elements in the hazard statement domain.

No changes to the information architecture or specification terminology will be required.

**Vendors of tools**

Authoring tools that render the `<hazardstatement>` element will need to modify the CSS or XSLT that renders the element.

Applications that style the `<hazardstatement>` element in output formats will need to modify their stylesheets.

**DITA community-at-large**

The changes to the hazard statement domain should not add to a perception of DITA complexity. The changes should be simple and intuitive for end users to understand.

**Producing migration instructions or tools**

Migration instructions will be straight forward.

**Examples**

This section provides examples of the new markup.

**Figure 17: Loosening content model of <messagepanel> and <howtoavoid>**

The following code sample illustrates the following:

- Increased flexibility for the content model of `<messagepanel>`
- Use of an unordered list within the `<howtoavoid>` element

```xml
<hazardstatement type="danger">
  <messagepanel>
    <typeofhazard>Hazard of electric shock, explosion, or arc flash</typeofhazard>
    <ul>
      <li>Reinstall the inner cover in the bottom of the battery breaker box before proceeding.</li>
      <li>Ensure correct polarity.</li>
    </ul>
    <consequence>Failure to follow these instructions will result in death or serious injury.</consequence>
  </messagepanel>
</hazardstatement>
```

This markup might be rendered as the following:
This is an actual screen capture from the Schneider Electric installation instructions for Gallery XV Battery Breaker Box, taken in August 2019.

**Note** that the company currently must override the HTML transformation to get the desired rendering; the changes that we are implementing for DITA 2.0 will make that override unnecessary.

**Figure 18: Adding `<hazardsymbol>` to `<typeofhazard>`, `<consequence>`, and `<howtoavoid>`**

The following code sample illustrates how a company could use a `<hazardstatement>` element to generate what ANSI Z535.6 calls a “grouped safety message”:

```xml
<hazardstatement type="warning">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="electric-shock-hazard"/>
      ELECTRIC SHOCK HAZARD</typeofhazard>
      <consequence>The equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock</consequence>
      <howtoavoid>
        <hazardsymbol keyref="ground-power-source"/>
        <ul>
          <li>Turn off and disconnect power at main switch before disconnecting any cables or before servicing or installing any equipment.</li>
          <li>Connect only to grounded power sources.</li>
          <li>All electric wiring must be done by a qualified electrician and comply with all local codes and regulations.</li>
        </ul>
      </howtoavoid>
    </messagepanel>
    ...
  </hazardstatement>
```

This markup might be rendered as the following:
Figure 19: Adding <hazardsymbol> to <messagepanel>

The following code sample illustrates how <messagepanel> will be able to contain <hazardsymbol>. This will be useful for companies as they migrate from the old to new content models.

```xml
<hazardstatement type="warning">
  <messagepanel>
    <typeofhazard>GENERAL HAZARDS</typeofhazard>
    <consequence>Overriding or defeating the interlocks will expose personnel to hazardous conditions.</consequence>
    <howtoavoid>DO NOT override or defeat the interlocks unless specifically directed to do so in the procedures. When directed to override an interlock, follow all safety procedures and apply HEI (Lockout/Tagout) procedures as necessary.</howtoavoid>
    <hazardsymbol keyref="general-warning"/>
  </messagepanel>
</hazardstatement>
```

2.1.16 Stage two: #217 Remove @domains attribute

Remove the domains attribute, and the tokens used for the domains attribute; for specialized attributes, replace the existing parenthetical syntax with a simpler token syntax.

Date and version information

Include the following information:
Date that this feature proposal was completed
June 2019

Champion of the proposal
Robert D. Anderson

Links to any previous versions of the proposal
N/A

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
May 14 2019

Reviewers for Stage 2 proposal
Chris Nitchie, Bill Burns, Eliot Kimber

Links to e-mail discussion that resulted in new versions of the proposal
xxx

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/217

Original requirement or use case
Discussed May 14 2019 based on email to the DITA TC and extended follow-up discussion. Given the limited utility of the current domains attribute design, the high level of complexity needed to use it properly, and the mostly-theoretical benefits that have never been realized in 15 years of use, we should drop @domains attribute requirements that place a high level of burden on DITA architects and Implementors.

Use cases
This proposal removes extraneous features in order to simplify DITA design and implementation.

- For information architects: removing @domains will remove steps from creating specializations or constraints, simplifying the process for each.
- For specification readers and editors: this will remove some of the most technically complex portions of the specification (about how to set up grammar file tokens for @domains), particularly for specialization modules that combine structural and domain tokens.
- For DITA implementations: today there are complex rules about how to use @domains tokens when evaluating @conref; those rules are technically complex, and can confuse tool users when implemented properly. Removing those rules will simplify DITA implementations and avoid those confusing results.

In addition, this proposal replaces @domains with a new attribute for the one domain token that is necessary for processing and generalization. This gives a clearer purpose for the attribute (simplifying the spec for readers and simplifying DITA in general). Along with moving the value to a new attribute, this proposal simplifies the syntax for attribute domain tokens, making it easier to create that value and easier for implementations to process that value.

New terminology
N/A

Proposed solution
1. Remove definitions of @domains
2. Remove specification sections and topics about how to properly define tokens for `@domains`
3. Remove the grammar file definition of `@domains`
4. Define a new attribute for declaring specializations of `@props` and `@base`
5. Define a simpler syntax for declaring specializations of `@props` and `@base`

**Benefits**

Address the following questions:

**Who will benefit from this feature?**

- Information architects creating specializations or constraints
- Readers of the specification
- Maintainers of the specification
- Implementors of DITA processing tools

**What is the expected benefit?**

Removes one of the most technically complex portions of the specification, and also simplifies the process for evaluating domain tokens with specialized attributes.

**How many people probably will make use of this feature?**

- All those creating or maintaining specialization and constraint modules will have fewer steps to go through.
- Editors, reviewers, and readers of the specification will no longer have to edit / review / read the extremely complex topics about domain tokens.
- Tools that strictly comply with the specification will no longer have to work with the complex rules around `@domains` tokens.
- No impact on most DITA authors who do not create or maintain grammar file modules.

**How much of a positive impact is expected for the users who will make use of the feature?**

Medium level impact to those listed above. The rules today are relatively straightforward but require following a complicated list of rules for little or no perceived benefit, so avoiding those rules will reduce that burden for all who encounter them today.

**Technical requirements**

Provide a detailed description of how the solution will work. Be sure to include the following details:

**Adding an attribute**

- **Name of the attribute**: `@specializations`

Syntax for the new attribute: today's syntax will be simplified. Today's tokens use the syntax `a(props newthing) to indicate that @newthing is a specialization of @props; similarly, a(props newthing newerThing) indicates that @newerThing is specialized from @newthing which is specialized from @props. Instead, that syntax will be simplified to use a single token without spaces. Each attribute name is separated from its ancestor by a slash: a(props newthing) is simplified to @props/newthing, and a(props newthing newerThing) is simplified to @props/newthing/newerThing.

The same syntax is used for specializations of `@base`. While that attribute does not normally provide any inheritance based processing, the token must still be defined; without it, generalization processors would not have any way to recognize and generalize the specialized attribute back into `@base`. So, where a specialization of base named `@myInfo`
would define a token today using the syntax `a(base myInfo)`, with this proposal the syntax would match the one above for `@props: base/myInfo`.

The method for integrating these tokens into the `@specializations` attribute matches the current method for adding tokens to `@domains` using the configured grammar file shell.

**Note** Originally I considered using an attribute name that explicitly limited this to attribute specializations, such as `@attribute-extensions` or `@special-atts`. Based on review feedback, I’ve gone with a more generic name `@specializations`, which will help future proof us if DITA 2.x eventually needs to provide additional specialization tokens unrelated to attributes.

- Elements that will get the new attribute: all elements that currently take `@domains` (that is, `<map>`, `<topic>`, and their specializations)
- Processing expectations that are associated with the new attribute: same as those associated with attribute specialization tokens in `@domains` with DITA 1.3
- The attribute does not contain translatable text

**Removing an attribute**

- Removing `@domains` from `<topic>`, `<map>`, and all specializations of those.

**Processing impact**

Processors can remove support for most aspects of `@domains` processing, while processing for attribute specialization tokens must be updated to account for a new attribute name and simpler syntax.

**Overall usability**

No impact to authors, and much simpler for those working with domain modules.

**Backwards compatibility**

DITA 2.0 is the first DITA release that is open to changes affecting backwards compatibility. To help highlight any impact, does this proposal involve any of the following?

**Was this change previously announced in an earlier version of DITA?**

No.

**Removing a document type that was shipped in DITA 1.3?**

No.

**Removing a domain that was shipped in DITA 1.3?**

No.

**Removing a domain from a document type shell was shipped in DITA 1.3?**

No.

**Removing or renaming an element that was shipped in DITA 1.3?**

No.

**Removing or renaming an attribute that was shipped in DITA 1.3?**

Yes. This will impact all specialization modules and configuration shells.

**Removing or replacing a processing feature that was defined in DITA 1.3?**

Removing `@domains` and most associated processing (the only critical aspect of processing, for attribute domains, is moved to a new attribute).

**Are element or attribute groups being renamed or shuffled?**

No.
Migration plan

If the answer to any question in the previous section is "yes":

Might any existing documents need to be migrated?

The @domains attribute is intended to be used as a default attribute value retrieved from grammar files; wherever topics or maps that have added the attribute into a DITA document, the attribute will need to be removed.

Might any existing processors or implementations need to change their expectations?

- Processors can remove support for processing that is no longer defined in the specification, such as generalization-during-conref and differing support for loose versus strict constraints.
- Processors will need to be updated to use the new syntax in the new attribute for specialized attribute tokens.

Might any existing specialization or constraint modules need to be migrated?

Yes:

- Specializations of <topic> or <map> will need to remove declarations of @domains, and add a declaration for the new attribute
- Declarations of @domains tokens can be removed from non-attribute modules
- Declarations of @domains tokens for @props and @base attribute specializations will need to be modified to use a new syntax, and configuration shells might need to use a new syntax to add those tokens to the new attribute

Costs

Outline the impact (time and effort) of the feature on the following groups.

Maintainers of the grammar files

Minor impact to remove the old attribute declaration and create the new attribute + update to use the new syntax

Editors of the DITA specification

- How many new topics will be required? None
- How many existing topics will need to be edited? Several, mostly by removing content
- Will the feature require substantial changes to the information architecture of the DITA specification? No

Vendors of tools

Minor impact (removing extraneous processing and simplifying parsing rules for attribute domain tokens)

DITA community-at-large

- Will this feature add to the perception that DITA is becoming too complex? No, should have the opposite effect
- Will it be simple for end users to understand? Yes
- If the feature breaks backwards compatibility, how many documents are likely to be affected, and what is the cost of migration? Few documents should be affected, most specialization modules and configuration shells will need an update.

Producing migration instructions or tools

- How extensive will migration instructions be, if it is integrated into an overall 1.3 → 2.0 migration publication or white paper? Minor addition to existing migration instructions
• Will this require an independent white paper or other publication to provide migration details? No
• Do migration tools need to be created before this change can be made? If so, how complex will those tools be to create and to use? Migration tools for this cannot cover all cases, because specializations / shells do not have to use the same format. Tools may catch some cases but some minor updates will likely be required.

Examples

With DITA 1.3, a specialization of @props must declare a token beginning with the letter a followed by a (props followed by a space followed by the name few the new attribute (followed by attribute names for further specializations, if present) followed by ). For example, if @props is specialized to @newthing which is specialized to @newerThing which is specialized to @finalThing, the DITA 1.3 domain token is a(props newthing newerThing finalThing)

With DITA 2.0 that syntax is simplified, removing the a and parenthetical grouping, as well as all spaces. The new declaration will be a single token without spaces, including the full ancestry of the specialized element – starting with @props and ending with the attribute name. For example, if @props is specialized to @newthing which is specialized to @newerThing which is specialized to @finalThing, the updated domain token will be @props/newthing/newerThing/finalThing

When a grammar file is parsed, a configured shell that defines three attribute extensions – @deliveryTarget, a @props specialization named @newThing, and a @base specialization named @myInfo – would include the following three tokens (not necessarily in this order):

specializations="@props/deliveryTarget @props/newThing @base/myInfo"

2.1.17 Stage two: #252 Add @outputclass to DITAVAL

For flagging purposes, DITAVAL today allows you to associate a variety of styles with a specific property or revision. Today, the @outputclass attribute is frequently used to associate a much broader range of processing or even CSS styling with an element or group of elements; allowing DITAVAL to associate that same token as a flag will give DITAVAL based flagging the same full range of possibilities.

Date and version information

Include the following information:

Date that this feature proposal was completed
September 4, 2019

Champion of the proposal
Robert D Anderson

Links to any previous versions of the proposal
N/A

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
June 11 2019

Reviewers for Stage 2 proposal
Kris Eberlein

Links to e-mail discussion that resulted in new versions of the proposal
N/A

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/252
Original requirement or use case

Presented June 11 2019:

Today, DITAVAL allows you to flag content based on property attributes or revision attributes in the file. A limited set of flag styles are available (including images, color, a specific set of text styles, change bars for revisions). For example, you can set up your DITAVAL file to flag everything with platform="mac", and define the flag so that any of those styles are applied: every element with platform="mac" can be flagged with an image, or presented in bold red text, or given a yellow background, or all of the above. The intent with flagging is to provide a way to style annotated elements so that they stand out in a publication.

At the same time, @outputclass (now a universal attribute for DITA 2.0) is a general attribute that gives you a full range of processing possibilities. For any output, a processor can use the attribute to provide any type of custom styling. For many known HTML processors, the value is passed directly into HTML’s @class attribute, making it directly available for styling by CSS.

The original suggestion leading to this requirement was: with my DITAVAL conditions, I should have access to the same full range of CSS based processing that I already have with @outputclass. At the same time, we shouldn’t need to create a whole new processing feature. @outputclass already provides this full capability on its own, and is already widely used for CSS or other custom processing. We should be able to flag content by setting up an @outputclass attribute on flagged content, which gives us the full range of formatting already available with that mechanism.

Use cases

1. Today, I have a lot of my content marked up with rev="v7" for the upcoming v7 release.
2. I also have marketing material that shows off new features. It uses outputclass="exciting" for exciting new features. That value goes through to HTML @class attributes, where it is picked up by my CSS and JS so that 1) it renders with a distinct font, 2) the text expands and contracts, and 3) a "ta-da" sound plays when you hover over the feature description.
3. When I publish my documentation for V7, I’d like all of those custom rendering features -- which I already have working thanks to @outputclass -- to show up with each V7 change in the documentation.
4. Allowing me to associate an @outputclass token with any revision or property in the DITAVAL gives me access to all of my existing custom formatting, without needing to implement anything new.

New terminology

N/A

Proposed solution

Add @outputclass to the <prop> and <revprop> elements in the DITAVAL format. The attribute is CDATA, allowing one or more tokens (exactly the same syntax as @outputclass in DITA).

When a property evaluates to "flag" based on existing DITAVAL rules, and revprop/@outputclass or prop/@outputclass is specified, processors should treat the flagged element as if the full value @outputclass value in the DITAVAL was specified on the full element.

If @outputclass is already specified on the flagged element, the DITAVAL based @outputclass comes first -- in CSS cascading order, this means that the explicit value on the element has higher precedence for any conflicting styles.
If two properties each evaluate to “flag”, and each associate an \texttt{@outputclass} value with the flag, the order in which they are applied is determined by the processor.

### Benefits

Address the following questions:

**Who will benefit from this feature?**

Anyone who wants more advanced flagging capabilities associated with existing content metadata attributes.

**What is the expected benefit?**

Allows content to make use of \texttt{@outputclass} based styling capabilities for flagging.

**How many people probably will make use of this feature?**

Anyone who already uses DITAVAL based flagging; those who do not use DITAVAL flagging because the flag capabilities are too limited; those who already use \texttt{@outputclass} based styling and would like to apply similar styling based on existing metadata.

**How much of a positive impact is expected for the users who will make use of the feature?**

For those making use of the feature, allows a broad range of new capabilities with little learning curve.

### Technical requirements

Provide a detailed description of how the solution will work. Be sure to include the following details:

**Adding new elements or attributes**

Adding an attribute

- Adds \texttt{@outputclass} to \texttt{<revprop> and <prop>} in the DITAVAL format.
- When one of those elements evaluates to “flag” using existing DITAVAL based rules, in addition to any flagging applied by existing attributes, processors will treat the flagged element as if the \texttt{@outputclass} value is also specified on the element.
- The attribute does not contain translatable text.

**Processing impact**

- There is a processing impact for any processor that handles DITAVAL based flagging.
- When a property on an element in DITA content evaluates to “flag”, and the matching DITAVAL rule for flagging specifies \texttt{@outputclass}, processors will treat the DITA element as if that \texttt{@outputclass} attribute is specified in the content.
- If processors do not provide any capability for custom styling or processing based on \texttt{@outputclass} in DITA, the net effect is zero - if there is no way to handle custom processing for the attribute in DITA, then adding the equivalent via flagging has no meaning.
- For other processors, any ability to customize processing or styling based on existing \texttt{@outputclass} values becomes available on the flagged element.
- What edge cases need to be considered?
  
  1. What happens when the \texttt{@outputclass} attribute in DITAVAL has more than one value? Both are used (the full value is made available to the flagged DITA element)
  2. What happens when the flagged element already specifies \texttt{@outputclass}? It is combined with the value from the DITAVAL, with the flag value coming first (so that CSS based selectors give priority to the local value over the flag value)
  3. What happens when more than one flag value provides \texttt{@outputclass}? Both are added. The order is determined by the processor: there is no requirement for the
order in which property tokens are evaluated, and requiring an order in order to handle this edge case seems to add far more complexity than is warranted.

**Overall usability**

Should be fairly straightforward to use; it does not provide any new terminology, and the `@outputclass` attribute is already familiar from earlier versions of DITA.

**Backwards compatibility**

N/A

**Migration plan**

N/A

**Costs**

Outline the impact (time and effort) of the feature on the following groups.

**Maintainers of the grammar files**

Minor

**Editors of the DITA specification**

- How many new topics will be required? 0
- How many existing topics will need to be edited? 2 (element reference topics for `<prop>` and `<revprop>`)  
- Will the feature require substantial changes to the information architecture of the DITA specification? No substantial changes  
- If there is new terminology, is it likely to conflict with any usage of those terms in the existing specification? N/A

**Vendors of tools**

XML editors, component content management systems, processors, etc: Small impact; this makes use of existing DITA features in a new way, so would not expect a large cost.

**DITA community-at-large**

- Will this feature add to the perception that DITA is becoming too complex? No  
- Will it be simple for end users to understand? Yes  
- If the feature breaks backwards compatibility, how many documents are likely to be affected, and what is the cost of migration? N/A

**Producing migration instructions or tools**

N/A

**Examples**

Assuming the following DITAVAL properties are provided to the processor:

```xml
<prop action="flag" att="otherprops" val="simple" outputclass="SimpleCSS"/>
<prop action="flag" att="otherprops" val="twovals" outputclass="addColor addFont"/>
<prop action="flag" att="platform" val="mac" outputclass="appleFont"/>
<revprop action="flag" val="v7" outputclass="exciting"/>
```

- The result of evaluating flags on my paragraph `<p otherprops="simple"> is equivalent to `<p otherprops="simple" outputclass="SimpleCSS">
2.1.18 Stage two: #253 Indexing changes

Refactor indexing to remove redundant elements and reduce complexity

Date and version information

This proposal includes the following information:

Date that this feature proposal was completed
14 June 2019

Champion of the proposal
Kristen James Eberlein

Links to any previous versions of the proposal
Not applicable

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
11 June 2019

Reviewers for Stage 2 proposal
Robert Anderson
Deb Bissantz

Links to e-mail discussion that resulted in new versions of the proposal
Not applicable

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/253

Original requirement or use case

Clean up indexing elements:

- Remove the indexing domain, and add `<index-see>` and `<index-see-also>` to the base
- Remove `<index-base>`
- Remove `<index-sort-as>`


Note The `<indextermref>` element was removed as as result of proposal #36: Remove deprecated elements and attributes.
Use cases

• Simplify the indexing experience for authors
• Simplify the experience for DITA practitioners who create document-type shells
• Simplify the experience for maintainers of the DITA grammar files by removing unnecessary elements and domains

New terminology

Not applicable

Proposed solution

Simple changes to grammar files and specification

Benefits

This proposal addresses the following questions:

Who will benefit from this feature?
Everyone using DITA 2.0 who indexes content

What is the expected benefit?
Decrease in complexity; removal of a domain

How many people probably will make use of this feature?
Everyone using DITA 2.0 who indexes content

How much of a positive impact is expected for the users who will make use of the feature?
Minor

Technical requirements

This proposal involves the following changes:

Renaming or refactoring elements and attributes
Adding <index-see> and <index-see-also> to commonElementsMod.rng; redefining the value of the @class attribute for those elements

Removing a domain

• Removing indexingDomain.rng
• Removing the indexing domain from basemap.rng and basetopic.rng

Removing an element

• Removing <index-base> from commonElementsMod.rng
• <index-sort-as> will be removed as a result of removing the indexing domain

Overall usability

Simplifies the current authoring experience by removing <index-base>; reduces the number of domains that need to be considered for document-type shells; removes a redundant element

Backwards compatibility

This proposal addresses the following questions:

Was this change previously announced in an earlier version of DITA?
No
Removing a document type that was shipped in DITA 1.3?
No

Removing a domain that was shipped in DITA 1.3?
Yes – Removing the indexing domain

Removing a domain from a document type shell that was shipped in DITA 1.3?
Yes – Removing the indexing domain from base map and topic

Removing or renaming an element that was shipped in DITA 1.3?
Yes – Removing <index-base> and <index-sort-as>

Removing or renaming an attribute that was shipped in DITA 1.3?
No

Changing the meaning of an element or attribute in a way that would disallow existing usage?
No

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
Yes – Removing <index-base> from the content model of <indexterm>

Changing specialization ancestry?
Yes – As follows:

<table>
<thead>
<tr>
<th>Element</th>
<th>DITA 1.3</th>
<th>DITA 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;index-see&gt;</td>
<td>&quot;+ topic/index-base indexing-d/index-see &quot;</td>
<td></td>
</tr>
<tr>
<td>&lt;index-see-also&gt;</td>
<td>&quot;+ topic/index-base indexing-d/index-see-also &quot;</td>
<td>&quot;- topic/index-see &quot;</td>
</tr>
</tbody>
</table>

Removing or replacing a processing feature that was defined in DITA 1.3?
Yes – If processors did not implement support for <sort-as> within <indexterm>

Are element or attribute groups being renamed or shuffled?
Yes – Adding <index-see> and <index-see-also> to base

Migration plan

This proposal addresses the following questions:

Might any existing documents need to be migrated?

- Implementations will need to remove any instances of <index-base> from their DITA source.
- Implementations will need to change any instances of <index-sort-as> to <sort-as>. This can be accomplished by search-and-replace or a simple script.
- If the DITA source has instances <index-see> or <index-see-also> with values of the @class attribute explicit, that will need to be modified.

Might any existing processors or implementations need to change their expectations?

- Processor should no longer expect to encounter <index-sort-as>; if they have not implemented support for <sort-as>, they will need to do so.
- Processors will need to use new values for @class attribute for <index-see> and <index-see-also>. 

DITA TC work product
Might any existing specialization or constraint modules need to be migrated?

- (Removal of elements) If anyone has specialized `<index-base>`, they will need to redo their specialization modules.
- (Specialization ancestry changes) If anyone has specialized `<index-see>` or `<index-see-also>`, they will need to change the values of the `@class` attributes in the specialization modules.

Costs

This proposal has a (time and effort) impact on the following groups:

Maintainers of the grammar files

- Delete `indexingDomain.rng`
- Edits to `basemap.rng` and `basetopic.rng`
- Edits to `commonElementsMod.rng`
- Edits to catalog files

Editors of the DITA specification

The changes to the DITA specification will be minor:

- No new topics.
- Removal of `<index-base>` from "Specialization elements" cluster.
- Removal of `<index-base>` and `<index-sort-as>` topics from the "DITA elements, A to Z" topic.
- Removal of the "Indexing elements group" topic cluster from the element-reference topics.
- Addition of `<indexterm>`, `<index-see>`, and `<index-see-also>` topics to an "Indexing elements" cluster. I suggest that it be a child of "Metadata elements".
- Moving content from `<index-sort-as>` topic into other topics about sorting.

Vendors of tools

Tools will need to:

- Remove any legacy processing for `<index-sort-as>`
- Handle the changed `@class` attributes for `<index-see>` and `<index-see-also>`

DITA community-at-large

Overall, this proposal will reduce complexity and might make indexing easier for authors.

Since this proposal removes elements, there is a migration cost. It affects the following:

- DITA source that contains `<index-base>`, which should NOT be in DITA source
- DITA source that contains `<index-sort-as>`: Not common for DITA source authored in English, but common for (indexed) DITA source authored in Japanese
- Implementations that have specialized `<index-base>` and `<index-sort-as>`
- Stylesheets that format `<index-see>` and `<index-see-also>`?

Producing migration instructions or tools

Migration instructions can be integrated into the *Migrating to DITA 2.0* committee note. They will be straight-forward.
Examples
This section contains examples of DITA 1.3 markup and how that markup needs to be modified in DITA 2.0.

<table>
<thead>
<tr>
<th>DITA 1.3</th>
<th>DITA 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;indexterm&gt;</code> &lt;data&amp;gt;&lt;/index-sort-as&gt;</td>
<td><code>&lt;indexterm&gt;</code> &lt;data&amp;gt;&lt;/sort-as&gt;</td>
</tr>
</tbody>
</table>

2.1.19 Stage two: #277 Change specialization base for `<imagemap>`
Change the specialization base for `<imagemap>` to enable image maps to be treated as images.

Date and version information

Date that this feature proposal was completed
17 July 2019; updated on 12 August 2019

Champion of the proposal
Kristen James Eberlein, Eberlein Consulting LLC

Links to any previous versions of the proposal
E-mail to list on 17 July 2019

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
16 July 2019

Reviewers for Stage 2 proposal
Robert Anderson, IBM
Eliot Kimber, Individual member

Links to e-mail discussion that resulted in new versions of the proposal
Not applicable

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/277

Original requirement or use case
“Originally, `<imagemap>` was a specialization of `<fig>`. This means you cannot use an `<imagemap>` directly inside of a `<fig>`, which makes it complicated to add a title to your image. ... If we change the specialization base of `<imagemap>` from `<fig>` to something slightly more generic such as `<div>`, that may simplify the adding of a title (or other content) around an `<imagemap>` in a `<fig>`.” Zoe Lawson, 09 July 2019.

Use cases
Changing the specialization base for `<imagemap>` will enable authors to treat imagemaps in the same way as images:

- Insert `<imagemap>` in a figure with an associated title
- Associate a description with the `<imagemap>`
- Include `<imagemap>` in rendered lists of figures
New terminology
None

Proposed solution
Change the specialization base for `<imagemap>` and `<area>` to `<div>`

Benefits
This proposal addresses the following questions:

**Who will benefit from this feature?**
Authors will benefit from consistency in markup for images and imagemaps.

**What is the expected benefit?**
Increased consistency in authoring markup.

**How many people probably will make use of this feature?**
Few.

**How much of a positive impact is expected for the users who will make use of the feature?**
Minor.

Technical requirements
This section contains a detailed description of how the solution will work.

**Renaming or refactoring elements and attributes**
This proposal suggests changing the specialization base for `<imagemap>` and its child element `<area>`.

**Processing impact**
None

**Overall usability**
Positive effect on usability; authors will be able to treat imagemaps in the same way as images.

Backwards compatibility
DITA 2.0 is the first DITA release that is open to changes affecting backwards compatibility. To help highlight any impact, does this proposal involve any of the following?

**Was this change previously announced in an earlier version of DITA?**
No

**Removing a document type that was shipped in DITA 1.3?**
No

**Removing a domain that was shipped in DITA 1.3?**
No

**Removing a domain from a document type shell was shipped in DITA 1.3?**
No

**Removing or renaming an element that was shipped in DITA 1.3?**
No

**Removing or renaming an attribute that was shipped in DITA 1.3?**
No
Changing the meaning of an element or attribute in a way that would disallow existing usage?
No

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
No

Changing specialization ancestry?
Yes – As follows:

<table>
<thead>
<tr>
<th>Element</th>
<th>DITA 1.3</th>
<th>DITA 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;area&gt;</td>
<td>&quot;+ topic/figgroup ut-d/area &quot;</td>
<td>&quot;+ topic/div ut-d/area &quot;</td>
</tr>
<tr>
<td>&lt;imagemap&gt;</td>
<td>&quot;+ topic/fig ut-d/imagemap &quot;</td>
<td>&quot;+ topic/div ut-d/imagemap &quot;</td>
</tr>
</tbody>
</table>

Removing or replacing a processing feature that was defined in DITA 1.3?
No

Are element or attribute groups being renamed or shuffled?
No

Migration plan

This proposal addresses the following questions:

Might any existing documents need to be migrated?
Only if CCMS or other applications make the @class attribute explicit in the source.

Might any existing processors or implementations need to change their expectations?
(Very unlikely) If any stylesheets are matching on the full value of the @class attribute, they will need to be modified.
(Very unlikely) If any stylesheets are expecting fallback processing for <fig>, they might get unexpected results.

Might any existing specialization or constraint modules need to be migrated?
The "Domains extensions" section of all document-type shells that integrate the utilities domain will need to be modified.

It is very unlikely that anyone has specialized <imagemap> or <area>. But if implementations have done so, they will need to update their specialization modules.

(An extreme edge case) If an implementation has applied a constraint module to remove <div> – or limit where it can be used, the constraint modules might need to be updated to ensure image maps can still be placed in the pre-DITA 2.0 locations.

If no migration need is anticipated, why not?
Not applicable.

Costs

This proposal has a (time and effort) impact on the following groups:

Maintainers of the grammar files
The following grammar files will need to be modified:

  • basemap.dtd
Editors of the DITA specification

The following specification topics will need to be modified:

- area.dita
- imagemap.dita

Vendors of tools

Not applicable

DITA community-at-large

Not applicable

Producing migration instructions or tools

Migration instructions will be simple and can be handled in the planned committee note, *Migrating to DITA 2.0*. 

Examples

Changing the specialization base of `<imagemap>` (and its child element `<area>`) will allow authors to insert `<imagemap>` within a figure.

```xml
<fig>
<title>Map of the world</title>
<imagemap>
  <image href="imagemapworld.jpg">
    <alt>Map of the world showing 5 areas</alt>
  </image>
  <area shape=rect coords=2,0,53,59>
    <xref href="d1-s1.dita">Section 1 alternative text</xref>
  </area>
  <area shape=rect coords=54,1,117,60>
    <xref href="d1-s2.dita">! -- Pull title from d1-s2.dita --</xref>
  </area>
  <area shape=rect coords=54,62,114,116>
    <xref href="#inline" type="topic">Alternative text for this rectangle</xref>
  </area>
  <area shape=circle coords=120,154,29>
    <xref format="html" href="test.html">Link to a test html file</xref>
  </area>
  <area shape=poly coords=246,39,200,35,173,52,177,86,215,90,245,84,254,65>
    <xref format="pdf" href="test.pdf">Link to a test PDF file</xref>
  </area>
</imagemap>
</fig>

2.1.20 Stage two: #279 Remove @lockmeta attribute

The @lockmeta attribute will be removed from the `<topicmeta>` and `<bookmeta>` elements.

Date and version information

Date that this feature proposal was completed

TBD
Champion of the proposal
Bill Burns

Links to any previous versions of the proposal
N/A

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
https://wiki.oasis-open.org/dita/Agenda-16-July-2019

Reviewers for Stage 2 proposal
TBD

Links to e-mail discussion that resulted in new versions of the proposal
N/A

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/278

Original requirement or use case
The @lockmeta attribute is ambiguous and poorly defined. While it was present in the DITA 1.0 DTDs, it was not defined in the spec. An ambiguous definition was added in the DITA 1.1 timeframe. Rather than work to define an attribute that we do not see the need for, the DITA TC recommends that it be removed.

Modified grammar files
The following files must be modified:

DTDs
map.mod
bookmap.mod

RNGs
mapMod.rng
bookmapMod.rng (appears to be missing already)

Use cases
N/A

New terminology
N/A

Benefits

Who will benefit from this feature?
Users who are unsure about what metadata will be applied for a particular topic. The ambiguity of the specification leaves the question open about how @lockmeta impacts metadata assignment.

What is the expected benefit?
Removing the attribute eliminates ambiguity. The assumption is that metadata in the map overrides when only one metadata element or value is allowed but supplements what is in the referenced topic when more than one element or value is permitted.

How much of a positive impact is expected for the users who will make use of the feature?
Minor
**Technical requirements**

Removing elements or attributes

Removing an attribute

- @lockmeta would be removed from `<topicmeta>` and `<bookmeta>` elements.

**Backwards compatibility**

DITA 2.0 is the first DITA release that is open to changes affecting backwards compatibility. To help highlight any impact, does this proposal involve any of the following?

**Was this change previously announced in an earlier version of DITA?**

No

**Removing or renaming an attribute that was shipped in DITA 1.3?**

Yes.

**Migration plan**

If the answer to any question in the previous section is "yes":

**Might any existing documents need to be migrated?**

Yes. This attribute would need to be removed from any maps on which it is set. Authors or organizations would also need to rethink their metadata strategy to ensure that they don't override topic metadata values where doing so is not desired.

**Might any existing processors or implementations need to change their expectations?**

Possibly but doubtful because the processing expectations were never clear from the start. Since the attribute is simply going away, the only changes needed would be for processors that did not comply with the default processing anyway.

**Might any existing specialization or constraint modules need to be migrated?**

Possibly, if a specialization includes this attribute.

**Costs**

Maintainers of the grammar files

Minimal

Editors of the DITA specification

Minimal:

- No new topics would be required.
- Three topics would need to be edited: 2.2.4.3, 3.3.1.3, and 3.10.6.2.1.
- No changes would be required for the information architecture of the DITA specification.
- No new terminology is necessary.

Vendors of tools

Any impact should be minimal.

DITA community-at-large

We expect any impact to be small as community use of this attribute is expected to be low.

**2.1.21 Stage two #292: Add @colspan, @rowspan, and `<title>` to `<simpletable>`**

The `<simpletable>` element currently does not allow custom definition of the number of columns or rows that a cell should span. Likewise, the current `<simpletable>` content model does not include a
caption or title for a table. Allowing column/row spanning and title will make the `<simpletable>` element more similar to the HTML table, which should make it more usable for authors working in web contexts and also more compatible with content structures in HDITA (the Lightweight DITA authoring format that is based on HTML5).

**Date and version information**

Include the following information:

**Date that this feature proposal was completed**

??

**Champion of the proposal**

Carlos Evia

**Links to any previous versions of the proposal**

N/A

**Links to minutes where this proposal was discussed at stage 1 and moved to stage 2**


**Reviewers for Stage 2 proposal**

Robert Anderson

**Links to e-mail discussion that resulted in new versions of the proposal**


**Link to the GitHub issue**

https://github.com/oasis-tcs/dita/issues/292

**Original requirement or use case**

Presented July 30 2019:

We've had two table models in DITA for a long time - CALS and simple table. The CALS model is meant to handle even the most complex table markup, but can be cumbersome to use or specialize. Simple table was meant to handle tables that do not need the complexity, and is intentionally easy to specialize. Outside of DITA, HTML5 has one of the most commonly used table models. The HTML table maps very easily to DITA's simple table, except that the simple table is missing two very common features of the HTML5 table -- row/column spanning and table captions. This poses a problem for tool compatibility, especially for Lightweight DITA, where HTML is the common table model in both HDITA and MDITA.

Rather than add a third table model to support HTML table markup, we propose extending the markup for `<simpletable>` to allow it to support common HTML table features. This could be done in a backwards-compatible fashion - existing `<simpletable>` markup would remain valid, we would only be adding options to support those features. We would still have a complex (CALS) model and simple model, this just means that our simple table would map more easily to the widely supported HTML5 table.

The value of `<simpletable>` for specialization purposes would be preserved, and we would gain greater compatibility with the dominant table markup standard in today's web and CMS tooling.

**New terminology**

N/A

**Proposed solution**

Add the existing DITA `<title>` element as optional first child of `<simpletable>` to mimic the behavior of `<caption>` in the HTML5 `<table>` element. In the base topic, `<title>` is already contained by
<data>, <example>, <fig>, <figgroup>, <linklist>, <section>, <table>, and <topic>. The element can remain unchanged when contained by <simpletable>.

Add the new @colspan and @rowspan optional attributes to <stentry>. @colspan indicates the number of columns that the cell is to span inside a <simpletable>, and @rowspan indicates the number of rows that the cell is to span inside a <simpletable>.

Benefits

Who will benefit from this feature?
DITA and LwDITA authors

What is the expected benefit?
The <simpletable> element will be easier to map to <table> in HTML5, which makes it relevant for authors creating content for Web publication. The CALS <table> will still be available for more complex tabular environments.

How many people probably will make use of this feature?
Many, mainly those authoring content for Web publication.

How much of a positive impact is expected for the users who will make use of the feature?
Significant.

1. The addition of <title> to <simpletable> will make it a more accessible element and a more complete alternative to <table>
2. Allowing @rowspan and @colspan in <simpletable> will make it more compatible with the authoring formats of LwDITA, which should attract new users.

Technical requirements

Provide a detailed description of how the solution will work. Be sure to include the following details:

Adding new elements or attributes

Adding an element
- Adds <title> as optional first child of <simpletable>
- The block element will contain translatable text and expected to behave like <title> does in <data>, <example>, <fig>, <figgroup>, <linklist>, <section>, <table>, and <topic>.

Adding an attribute
- Adds @colspan and @rowspan as optional attributes to <stentry>
- These attributes will not contain translatable text
- The value for @colspan must be a valid non-negative integer greater than zero
- The value for @rowspan must be a valid non-negative integer. As its namesake attribute from the HTML5 spec indicates, a value of 0 (zero) in an instance of @rowspan means that the cell is to span all the remaining rows in the table environment.

Processing impact
Minimal. Processors would just need to acknowledge <title>, which already exists in many DITA environments, in <simpletable>. The new attributes for spanning rows and columns will not require major processing changes.
Overall usability
The proposed changes will actually increase the usability of `<simpletable>`, as it will more closely resemble the widely used `<table>` element in HTML. It will also increase its accessibility and compatibility with LwDITA authoring formats.

Backwards compatibility
The proposed changes will not affect backwards compatibility because the `<title>` element and `@rowspan` and `@colspan` attributes will be optional in `<simpletable>`. Existing `<simpletable>` versions will not need the proposed changes.

Was this change previously announced in an earlier version of DITA?
No.

Removing a document type that was shipped in DITA 1.3?
No.

Removing a domain that was shipped in DITA 1.3?
No.

Removing a domain from a document type shell was shipped in DITA 1.3?
No.

Removing or renaming an element that was shipped in DITA 1.3?
No.

Removing or renaming an attribute that was shipped in DITA 1.3?
No.

Changing the meaning of an element or attribute in a way that would disallow existing usage?
No.

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
No.

Changing specialization ancestry?
No.

Removing or replacing a processing feature that was defined in DITA 1.3?
No.

Are element or attribute groups being renamed or shuffled?
No.

Costs
Outline the impact (time and effort) of the feature on the following groups.

Maintainers of the grammar files
...

Editors of the DITA specification

- The `<simpletable>` topic will need to be edited to include the optional caption/title and attributes for spanning rows and columns
- Topics for attributes will need to be edited to included the new `@rowspan` and `@colspan`
Vendors of tools

- Editors and table processors will have to be updated to support titles and row/column spanning in simple tables.

DITA community-at-large

- Will this feature add to the perception that DITA is becoming too complex?
  - Probably the opposite. `<simpletable>` can become a more popular element with these additions.
- Will it be simple for end users to understand?
  - Yes, the syntax proposed is very similar to widely used HTML attributes.

Examples

Figure 20: Example of `<title>` element

```xml
<simpletable>
  <title>Food log for today</title>
  <sthead>
    <stentry>Meal</stentry>
    <stentry>Food</stentry>
  </sthead>
  <strow>
    <stentry>Breakfast</stentry>
    <stentry>Eggs</stentry>
  </strow>
  <strow>
    <stentry>Lunch</stentry>
    <stentry>Salad</stentry>
  </strow>
  <strow>
    <stentry>Dinner</stentry>
    <stentry>Chicken</stentry>
  </strow>
</simpletable>
```

Figure 21: Example of `@colspan` attribute

```xml
<simpletable>
  <title>Food log for today</title>
  <sthead>
    <stentry>Meal</stentry>
    <stentry>Food</stentry>
  </sthead>
  <strow colspan="2">Fasting period</strow>
  <strow>
    <stentry>Lunch</stentry>
    <stentry>Salad</stentry>
  </strow>
  <strow>
    <stentry>Dinner</stentry>
    <stentry>Chicken</stentry>
  </strow>
</simpletable>
```

Figure 22: Example of `@rowspan` attribute

```xml
<simpletable>
  <title>Food log for today</title>
  <sthead>
    <stentry>Meal</stentry>
</simpletable>
```
2.1.22 Stage two: #297 Allow example element in more places

The `<example>` element is not allowed in several elements, which means that content cannot be tagged as examples in certain contexts. Adding `<example>` to more contexts solves the issue.

Date and version information

Date that this feature proposal was completed
08 OCT 2019

Champion of the proposal
Scott Hudson

Links to any previous versions of the proposal

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2

Reviewers for Stage 2 proposal
- Carlos Evia, Ph.D.
- Joyce Lam
- Kris Eberlein
- Robert Anderson

Links to email discussion that resulted in new versions of the proposal

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/297

Original requirement or use case

The content model of `<example>` is much too restrictive, limiting how and where content can be semantically marked as examples. As a result, writers often hardcode paragraphs with "For example:" or other non-semantic constructions.

By allowing `<example>` in more places, content can be properly tagged with the `<example>` semantic.
Use cases
When implemented, authors can include example content as part of most block elements. For example, between descriptive paragraphs, within sections, and following other block elements.

New terminology
None.

Proposed solution
Allow `<example>` everywhere that `<fig>` can go in DITA 1.3, except do not allow `<example>` directly within `<example>`. Also allow `<example>` as a child of `<fig>`.

Benefits
This proposal addressed the following questions:

Who benefits from this feature?
All writers and information consumers.

What is the expected benefit?
Allowing `<example>` in more contexts enables better semantic accuracy in labeling example content. This feature improves styling and search with better semantic accuracy. The feature discourages "tag abuse," which forces inconsistent styling of example content.

How many people probably can use this feature?
Everyone.

How much of a positive effect is expected for the users who can make use of the feature?
Significant.

1. This feature allows `<example>` to exist where it does in DITA 1.3. Use of the element is fully backward compatible.
2. This feature allows `<example>` in most block elements.
3. This feature would not create a new context for titled areas, since the additional contexts already allow for titled elements. This suggests processors should be able to cope with the new context without much difficulty.
4. This feature avoids the "why would they do this" condition since it prevents nesting of `<example>` as a child of `<example>`.

Technical requirements
Renaming or refactoring elements and attributes

Refactoring of `<example>`
Add example to the following contexts:

- `<abstract>`
- `<cause>`
- `<chdesc>`
- `<chdeschd>`
- `<choice>`
- `<choption>`
- `<choptionhd>`
• <condition>
• <context>
• <dd>
• <div>
• <draft-comment>
• <entry>
• <fig>
• <fn>
• <glossScopeNote>
• <glossUsage>
• <glossdef>
• <info>
• <itemgroup>
• <li>
• <lq>
• <note>
• <p>
• <pd>
• <postreq>
• <prereq>
• <propdeschd>
• <proptyehd>
• <propvaluehd>
• <refsyn>
• <responsibleParty>
• <result>
• <section>
• <sectiondiv>
• <stentry>
• <stepresult>
• <steps-informal>
• <stepsection>
• <steptroubleshooting>
• <tasktroubleshooting>
• <tutorialinfo>

Processing impact
Minimal. All @domains- and @class-based processing of specialized elements and attributes will continue to function exactly as it has before. Processors may need to be adjusted to account for the additional contexts of <example>, but these contexts already allow for titled blocks.

Overall usability
Current DITA users, and current document type shells, will be unaffected. Usability of authoring with specializations is ultimately improved due to content models that more closely model business requirements.
**Backwards compatibility**

Backward compatibility is not affected, since the `<example>` element is an addition to existing content models.

**Was this change previously announced in an earlier version of DITA?**

No.

**Removing a document type that was shipped in DITA 1.3?**

No.

**Removing a domain that was shipped in DITA 1.3?**

No.

**Removing a domain from a document type shell was shipped in DITA 1.3?**

No.

**Removing or renaming an element that was shipped in DITA 1.3?**

No.

**Removing or renaming an attribute that was shipped in DITA 1.3?**

No.

**Changing the meaning of an element or attribute in a way that would disallow existing usage?**

No.

**Changing a content model by removing something that was previously allowed, or by requiring something that was not?**

No.

**Changing specialization ancestry?**

No.

**Removing or replacing a processing feature that was defined in DITA 1.3?**

No.

**Are element or attribute groups being renamed or shuffled?**

This solution can be achieved by adding `<example>` to the following common element sets in `dita/doctypes/rng/base/commonElementsMod.rng`:

- basic.block
- basic.block.notbl
- basic.block.nonote
- basic.block.nopara
- basic.block.nolq

**Migration plan**

No existing content requires migration, since the `<example>` element is an addition to existing content models.

**Costs**

**Maintainers of the grammar files**

Grammar files need to be updated as outlined in this proposal. Downstream schema generation should be unaffected.

**Editors of the DITA specification**

None.
Vendors of tools

Tool vendors may need to update functionality if they have unique support for display or processing of the `<example>` elements. Otherwise, no changes should be necessary.

DITA community-at-large

The solution should improve authoring and user experience with the addition of more places that `<example>` is allowed.

Producing migration instructions or tools

None.

Examples

Intermixing examples with paragraphs

```xml
<sect id="sect_Content">
<title>My code description</title>
<section div product="productname">
<p><synp>variable</synp></p>
<example><codeph>var=123</codeph></example>
</sectiondiv>
<example>
<title>Scenario: when to use this code</title>
<p>Lorem ipsum.</p>
<codeblock>var=123</codeblock></example>
</sect>
```

New `<example>` context within a table entry

```xml
<p>File maintenance commands create, modify, and delete records in the database. An explanation and example of each maintenance command is shown in the following table.</p>
<table colsep="1" frame="all" rowsep="1" id="tb_FileMaintenace">
<thead>
<row>
<entry>Command</entry>
<entry>Description</entry>
</row>
</thead>
<tbody>
<row>
<entry><cmdname>ADD</cmdname></entry>
<entry>The following example illustrates the creation of a new record. All parameter settings are strictly optional.</entry>
</row>
<example><codeblock>01 OPTIONS ABC,ADD,DEF,HIJK,IMNO,ACW=25000,HF=2</codeblock></example>
</tbody></table>
```

2.2 Technical Content edition

2.2.1 Stage two (revised): #29 `<bookmap>` update

Revise book map design to remediate problems but avoid breaking backwards compatibility.

Date and version information

This proposal includes the following information:

Date that this feature proposal was completed

14 October 2019
Champion of the proposal
Kristen James Eberlein, Eberlein Consulting LLC

Links to any previous versions of the proposal
There were several earlier versions of this stage two proposal:

- 26 February 2018
- 04 February 2019
- 19 February 2019 (approved by TC)

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
Minutes, 23 May 2017

Reviewers for stage two proposal
This revised proposal was reviewed by the following voting members:

Robert Anderson, IBM
Nancy Harrison, Individual member
Eliot Kimber, Individual member
Dawn Stevens, Comtech Services, Inc

In addition, the following TC member provided review feedback:

Leigh White, IXIASOFT

Links to e-mail discussion that resulted in new versions of the proposal
The following e-mails resulted in this stage two proposal, approved 19 February 2019, being revised and resubmitted to the DITA TC:

<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Title</th>
<th>Date discussed at TC meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 September 2019</td>
<td>Kristen James Eberlein</td>
<td>Question about issue 29 &quot;Bookmap update&quot;</td>
<td>01 October 2019</td>
</tr>
<tr>
<td>19 September 2019</td>
<td>Kristen James Eberlein</td>
<td>Concerns about issue #29 &quot;Bookmap updates&quot;</td>
<td>01 October 2019</td>
</tr>
<tr>
<td>01 October 2019</td>
<td>Kristen James Eberlein</td>
<td>Bookmap updates and the glossary reference domains</td>
<td>08 October 2019</td>
</tr>
<tr>
<td>01 October 2019</td>
<td>Kristen James Eberlein</td>
<td>Info from minutes about adding glossary reference domain to bookmap</td>
<td>08 October 2019</td>
</tr>
<tr>
<td>02 October 2019</td>
<td>Kristen James Eberlein</td>
<td>How best to handle &lt;mapresources&gt;</td>
<td>08 October 2019</td>
</tr>
<tr>
<td>07 October 2019</td>
<td>Kristen James Eberlein</td>
<td>Integrate glossary reference domain into bookmap?</td>
<td>08 October 2019</td>
</tr>
<tr>
<td>07 October 2019</td>
<td>Kristen James Eberlein</td>
<td>Content model and attributes for &lt;mapresources&gt;</td>
<td>08 October 2019</td>
</tr>
</tbody>
</table>

On 08 October 2019, the DITA TC decided that the issue of integrating the glossary reference domain into bookmap should be considered as part of a separate proposal that focuses on glossary design.

Link to the GitHub issue
#29 Modify bookmap design
Original requirement or use case

The requirements and use cases for this proposal were part of a larger discussion about bookmap, its deficits, and the development of a new publication map that began in early 2017. For excerpts from all TC meetings minutes that pertained to this discussion, see this PDF.

E-mails that specifically pertained to remediating the bookmap design include the following:

<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Requirement or use case</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 February 2017</td>
<td>Eric Sirois, IXIASOFT</td>
<td>Limitations for keyref and ditavalref in bookmap</td>
</tr>
<tr>
<td>21 February 2017</td>
<td>Eric Sirois, IXIASOFT</td>
<td>Allow keyref in more natural position in bookmap</td>
</tr>
<tr>
<td>22 May 2017</td>
<td>Chris Nitchie, Oberon Technologies</td>
<td>Allow &lt;ditavalref&gt; before &lt;frontmatter&gt;</td>
</tr>
<tr>
<td>05 April 2018</td>
<td>Stefan Eike on dita-comment list</td>
<td>Allow &lt;amendments&gt; in &lt;booklists&gt;</td>
</tr>
<tr>
<td>25 April 2018</td>
<td>Eliot Kimber, Individual member</td>
<td>Bookmap does not include glossary reference domain</td>
</tr>
</tbody>
</table>

Use cases

This proposal will enable map authors to:

Apply a DITAVAL to the entire bookmap

The DITA design for bookmap and the DITAVALref domain makes it impossible for map authors to specify a DITAVAL that applies to the entire bookmap. In order for a <ditavalref> element to apply to the bookmap as a whole, the <ditavalref> element needs to be present at the root of the bookmap; this is not permitted in the current design of bookmap.

Specify resource-only objects in an intuitive location

The design for bookmap, developed for DITA 1.1, does not include an intuitive location for map authors to specify resource-only objects such as:

- Key definitions
- Subject scheme maps
- Topics that contain information used for the rendering of PDF cover pages

Adding a wrapper element with @processing-role set to "resource-only" will add a clear location for bookmap authors to add resource-only objects. To enable map authors to specify that the resources apply to the entire bookmap, the new element will be included in the content model for <bookmap>.

Because such an element will be useful in <map>, it will be defined in the map group domain. This also will make the new element available in bookmap specializations of <topicref> such as <chapter>, <part>, and <appendix>.

Specify that a list of updates should be auto-generated

DITA 1.3 introduced the release management domain, which enables authors to add change information to topics and maps. Some implementations developed plug-ins to harvest this information and generate a list of updates, but were stymied by the lack of a clear way to indicate in a bookmap that a list of updates should be generated.

Adding <amendments> to <booklists>, which is available in both front and back matter will address this issue. (In addition, this change addresses the fact that <amendments> is currently allowed only in back matter and many people want it in front matter also.)
New terminology
None

Proposed solution

- Modify the content model of `<bookmap>` to allow zero or more `<ditavalref>` elements after `<bookmeta>`
- Add a `<mapresources>` element to the map group domain. The `<mapresources>` element will:
  - Be specialized from `<topicref>`
  - Have a content model of:
    - Zero or one `<topicmeta>` elements
    - Zero or more `%data.elements.incl;` elements
    - Zero or more `<topicref>` elements
  - Have the following attributes: `@href`, `@keys`, `@keyref`, `@keyscope`, `@processing-role`, `@type`, `@cascade`, `@scope`, `@format`, `@linking`, `@toc`, `@search`, and `%univ_atts`; attributes
  - The attributes should have the same values as `<keydef>`, with the following exception: the `@keys` attribute is not required.
- Modify the content model of `<bookmap>` to allow zero or more `<mapresources>` elements after `<ditavalref>`
- Modify the content model of `<booklists>` to allow zero or more `<amendments>`

Note: This solution adds hard dependencies on two domains to the bookmap module: DITAVAlRef and map group. This is something that the TC has not previously done in document-type shells and will need to be clearly documented and explained to DITA practitioners.

Benefits

This proposal addresses the following questions:

Who will benefit from this feature?
Information architects and map authors.

What is the expected benefit?

- An easier-to-use bookmap that enables information architects and map authors to:
  - Apply a DITAVAl to the entire bookmap
  - Locate key definitions, subject scheme, and other resource-only objects (such as cover page information) in an intuitive location
  - Indicate to processors where an auto-generated change list should be generated
- A more robust map group domain, that includes a convenience element for containing resource-only object

How many people probably will make use of this feature?
Many or most bookmap authors; many map users

How much of a positive impact is expected for the users who will make use of the feature?
Significant

Technical requirements

This proposal involves the following changes:
Adding an element

This proposal will add a `<mapresources>` element to the map group domain. This element will:

- Serve as a wrapper element to hold key definitions, subject schemes, and other resource-only objects
- Have the `@processing-role` attribute set to "resource-only"
- Be specialized from `<topicref>` and be available where ever `<topicref>` is permitted

The `<mapresources>` element cannot include text, and it does not define new elements or attributes that can contain translatable text.

Refactoring an element

The content models of two elements defined in the bookmap module will be modified:

```xml
<bookmap>
  • Zero or more `<ditavalref>` elements allowed after `<bookmeta>`
  • Zero or more `<mapresources>` elements allowed after `<ditavalref>`
</bookmap>

<booklists>
  Zero or more `<amendments>` elements allowed.
</booklists>
```

Processing impact
None

Overall usability
Improved usability for current and future users

Backwards compatibility

This proposal addresses the following questions:

Was this change previously announced in an earlier version of DITA?
No

Removing a document type that was shipped in DITA 1.3?
No

Removing a domain that was shipped in DITA 1.3?
No

Removing a domain from a document type shell that was shipped in DITA 1.3?
No

Removing or renaming an element that was shipped in DITA 1.3?
No

Removing or renaming an attribute that was shipped in DITA 1.3?
No

Changing the meaning of an element or attribute in a way that would disallow existing usage?
No

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
No

Changing specialization ancestry?
No
Removing or replacing a processing feature that was defined in DITA 1.3?
No

Are element or attribute groups being renamed or shuffled?
No

Migration plan
Implementations will need to pay attention to their document-type shell for book map. The DITA 2.0 specialization for bookmap requires that the DITAVALref and map group domains be integrated.

Costs
This proposal has a (time and effort) impact on the following groups:

Maintainers of the grammar files
The following files will need to be modified:

- **DTDS:**
  - bookmap.dtd
  - bookmap.mod
  - mapGroup.mod
  - mapGroup.ent

- **RNG:**
  - bookmap.rng
  - bookmapMod.rng
  - mapGroupDomain.rng

Note
The following comment must be added to the bookmap document-type shells.

```xml
<!-- Do not remove references to the map group or DITAVALref domains. The bookmap specialization requires these domains. -->
```

Editors of the DITA specification

Note All numeric references here are to the DITA 2.0 specification, *working draft 11*.

The changes to the DITA specification will involve a medium amount of effort:

- A new `<mapresources>` topic.
- A new topic for the "Examples of constraints" section. This topic will illustrate how a DITA practitioner would modify a bookmap document-type shell to remove the DITAVALref domain.
- Adding `<mapresources>` to the "DITA elements, A to Z" topic.
- Updates to the "Example" section in the `<bookmap>` topic to show:
  - Usage of `<ditavalref>`
  - Usage of `<mapresources>`
  - Usage of `<amendments>` within `<booklists>`
- Updates to the `<amendments>` topic to explain processing expectations for an `<amendments>` element that does not reference a resource.
- Updates to the short description in the `<booklists>` topic.
• 3.4.3 "DITA map elements" (Not clear if this topic will remain in the DITA 2.0 specification).

In addition, the following topics will be examined to determine whether they should be reworked to include the new `<mapresources>` element:

• 6.4.10 "Examples of keys" and its child topics
• 6.4.11 "Examples of key scopes" and its child topics
• `<map>` topic

This proposal does not require changes to either the specification information architecture or terminology.

**Vendors of tools**

Tools that render DITA maps will need to modify their CSS or XSLT to specify how the `<mapresources>` element is rendered.

Processors will need to implement support for generating/rendering update lists based on the presence of the `<amendments>` element within `<booklists>`.

**DITA community-at-large**

The changes to bookmap and the map group domain should not add to a perception of DITA complexity. The changes should be simple and intuitive for end users to understand.

**Producing migration instructions or tools**

Not applicable

**Examples**

This section provides examples of the new markup enabled by this proposal.

**Figure 23: Applying a DITAVAL to an entire bookmap**

The following code sample shows how a bookmap can specify a `<ditavalref>` element that applies to the entire bookmap:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE bookmap PUBLIC "-//OASIS//DTD DITA 2.0 BookMap//EN" "bookmap.dtd">
<bookmap>
  <booktitle>
    <mainbooktitle>Test publications</mainbooktitle>
  </booktitle>
  <ditavalref href="test.ditaval"/>
  ...
</bookmap>
```

**Figure 24: Specifying resource-only objects in an intuitive location in a book map**

The following code sample illustrate how the new `<mapresources>` element can group references to key definitions, subject schemes, and other resources in a bookmap:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE bookmap PUBLIC "-//OASIS//DTD DITA 2.0 BookMap//EN" "bookmap.dtd">
<bookmap>
  <booktitle>
    <mainbooktitle>Test bookmap</mainbooktitle>
  </booktitle>
  <mapresources>
    <mapref href="key-definitions.ditamap"/>
    <mapref href="subject-scheme.ditamap" type="subjectscheme"/>
    <topicref href="cover-page.dita" outputclass="cover-page"/>
  </mapresources>
</bookmap>
```
Note that this example illustrates that `<mapresources>` can be used to make topics available for resource-only processing. In this scenario, the company uses a processor that uses content contained in the `cover-page.dita` file to generate a PDF cover page.

**Figure 25: Specifying resource-only objects in a map**

The following code sample shows a map that contains information for a specific model of a controller. This map is referenced in an omnibus publication that contains information for an entire family of controllers.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE map PUBLIC "-//OASIS//DTD DITA 2.0 Base Map//EN" "basemap.dtd">
<map keyscope="model-XNP09">
  <title>Model XNP09</title>
  <mapresources>
    <keydef keys="model-illustration" href="model-XNP09.png" format="png"/>
    <keydef keys="remove-cover" href="remove-cover-XNP09.png" format="png"/>
  </mapresources>
  <topicref href="model-overview.dita/>
  <topicref href="installing.dita/>
  <topicref href="uninstalling.dita/>
  ...
</map>
```

**Figure 26: Indicating that a processor should generate a list of changes**

The following code sample specifies that a processor should auto-generate a list of changes and render it at the location of the `<amendments>` element:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE bookmap PUBLIC "-//OASIS//DTD DITA 2.0 BookMap//EN" "bookmap.dtd">
<bookmap>
  <booktitle>Test bookmap</booktitle>
  <frontmatter>
    <booklists>
      <amendments/>
      <booklists>
    </frontmatter>
  ...
</bookmap>
```

If the `<amendments>` element specifies a DITA resource, then processors will use that as source for the change list.

### 2.2.2 Stage two: #85 Add `<sub>` and `<sup>` to glossary elements

The `<sub>` and `<sup>` elements are not allowed in several elements from glossentry, which means that terms cannot be used properly in certain contexts. Since `<sub>` and `<sup>` are specialized from `<ph>`, adding the `<ph>` element solves the issue.

### Date and version information

**Date that this feature proposal was completed**

January 29, 2018

**Champion of the proposal**

Scott Hudson
Links to any previous versions of the proposal

Initial proposal

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
http://markmail.org/message/h7x7dmicatu6klj?q=Add+%3Csup%3E+and+%3Csub%3E+to+glossary+elements+list:org%2Eoasis-open%2Elists%2Edita

Links to e-mail discussion that resulted in new versions of the proposal
- http://markmail.org/message/duqczthaqgh2a5oq?q=Add+ph+to+glossentry+models+list:org%2Eoasis-open%2Elists%2Edita
- https://www.oasis-open.org/committees/download.php/62511/minutes20180213.txt

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/85

Original requirement or use case
Authors need to be able to use superscript and subscript in several elements:

- <glossSurfaceForm>
- <glossAcronym>
- <glossSynonym>
- <glossShortForm>
- <glossAbbreviation>

Use cases
When implemented, authors will be able to include subscript and superscript content as part of most glossary elements. For example:

```xml
<glossentry id="gl_DesignManeuveringSpeed">
  <glossterm>design maneuvering speed</glossterm>
  <glossBody>
    <glossPartOfSpeech value="noun"/>
    <glossSurfaceForm>design maneuvering speed (V<sub>A</sub>)</glossSurfaceForm>
    <glossUsage>Spell out on first use. Use V<sub>A</sub> in subsequent references. </glossUsage>
    <dlentry>
      <dl>
        <dt>Examples</dt>
        <dd>The pilot's operating handbook is the best source for determining your aircraft's design maneuvering speed (V<sub>A</sub>). The cockpit placard might also include V<sub>A</sub> information.</dd>
      </dlentry>
      <dd>See also <xref href=""/> <xref href=""/> <xref href=""/> <xref href=""/> <glossAcronym>V<sub>A</sub></glossAcronym> </glossAlt>
    </glossBody>
</glossentry>
```

Proposed solution
Modify the content models to allow the <ph> element within the following elements:

- <glossSurfaceForm>
• <glossAcronym>
• <glossSynonym>
• <glossShortForm>
• <glossAbbreviation>

Benefits

Who will benefit from this feature?
Glossary term authors

What is the expected benefit?
Glossary authors will benefit significantly with the ability to include subscript and superscript content as part of a glossary term.

How many people probably will make use of this feature?
many

How much of a positive impact is expected for the users who will make use of the feature?
Any industries dealing with chemical or physics-related content can benefit from this change, including Aerospace and Aviation.

Technical requirements

Renaming or refactoring elements and attributes

<table>
<thead>
<tr>
<th>Content model name / location</th>
<th>Original model</th>
<th>Proposed model</th>
</tr>
</thead>
<tbody>
<tr>
<td>glossSurfaceForm.content</td>
<td>&lt;!ENTITY % glossSurfaceForm.content &quot;(#PCDATA</td>
<td>%keyword;</td>
</tr>
<tr>
<td>glossSurfaceForm.content</td>
<td>&lt;define name=&quot;glossSurfaceForm.content&quot;&gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt;</td>
<td>&lt;define name=&quot;glossSurfaceForm.content&quot;&gt; &lt;zeroOrMore&gt; &lt;choice&gt;</td>
</tr>
<tr>
<td>Content model name / location</td>
<td>Original model</td>
<td>Proposed model</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td><strong>glossAcronym.content</strong> (glossentry.mod)</td>
<td>`&lt;!ENTITY % glossAcronym.content &quot;(#PCDATA</td>
<td>%keyword;</td>
</tr>
<tr>
<td><strong>glossAcronym.content</strong> (glossentryMod.rng)</td>
<td><code>&lt;define name=&quot;glossAcronym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</code></td>
<td><code>&lt;define name=&quot;glossAcronym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;ref name=&quot;ph&quot; dita:since=&quot;2.0&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</code></td>
</tr>
<tr>
<td><strong>glossSynonym.content</strong> (glossentry.mod)</td>
<td>`&lt;!ENTITY % glossSynonym.content &quot;(#PCDATA</td>
<td>%keyword;</td>
</tr>
<tr>
<td><strong>glossSynonym.content</strong> (glossentryMod.rng)</td>
<td><code>&lt;define name=&quot;glossSynonym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</code></td>
<td><code>&lt;define name=&quot;glossSynonym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;ref name=&quot;ph&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</code></td>
</tr>
<tr>
<td>Content model name / location</td>
<td>Original model</td>
<td>Proposed model</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>glossShortForm.content (glossentry.mod)</td>
<td>&lt;!ENTITY % glossShortForm.content &quot;(#PCDATA</td>
<td>%keyword;</td>
</tr>
</tbody>
</table>
| glossShortForm.content (glossentryMod.rng) | <define name="glossShortForm.content">
zeroOrMore
choice
text/>
<ref
name="keyword"/>
<ref
name="term"/>
<ref
name="text" dita:since="1.3"/>
<ref name="tm"/>
</choice>
</zeroOrMore>
</define> | <define name="glossShortForm.content">
zeroOrMore
choice
text/>
<ref
name="keyword"/>
<ref
name="term"/>
<ref
name="text" dita:since="1.3"/>
<ref name="tm"/>
<ref name="ph" dita:since="2.0" />
</choice>
</zeroOrMore>
</define> |
| glossAbbreviation.content (glossentry.mod) | <!ENTITY % glossAbbreviation.content "(#PCDATA | %keyword; | %term; | %text; | %tm;}**" > | <!ENTITY % glossAbbreviation.content "(#PCDATA | %keyword; | %term; | %text; | %tm; | %ph;}" > |
| glossAbbreviation.content (glossentryMod.rng) | <define name="glossAbbreviation.content">
zeroOrMore
choice
text/>
<ref
name="keyword"/>
<ref
name="term"/>
<ref
name="text" dita:since="1.3"/>
<ref name="tm"/>
</choice>
</zeroOrMore>
</define> | <define name="glossAbbreviation.content">
zeroOrMore
choice
text/>
<ref
name="keyword"/>
<ref
name="term"/>
<ref
name="text" dita:since="1.3"/>
<ref name="tm"/>
<ref name="ph" dita:since="2.0" />
</choice>
</zeroOrMore>
</define> |
Processing impact
Minimal. All @domains- and @class-based processing of specialized elements and attributes will continue to function exactly as it has before. Processors may need to be adjusted to account for the additional allowed children and specializations of <ph>, such as <xref>.

Overall usability
Current DITA users, and current document type shells, will be unaffected. Usability of authoring with specializations will ultimately be improved due to content models that more closely model business requirements.

Note Adding <ph> will also allow the following elements to be available (particularly from the equation, highlight, programming, software, user interface, and XML mention domains):

- <abbreviated-form>
- <apiname>
- <b>
- <cmdname>
- <codeph>
- <equation-inline>
- <filepath>
- <i>
- <line-through>
- <markupname>
- <menucascade>
- <msgnum>
- <msgph>
- <numcharref>
- <option>
- <overline>
- <parameterentity>
- <parmname>
- <ph>
- <sub>
- <sup>
- <synph>
- <systemoutput>
- <textentity>
- <tt>
- <u>
- <uicontrol>
- <userinput>
- <varname>
- <wintitle>
- <xmlatt>
- <xmlelement>
- <xmlnsname>
- <xmlpi>
Backward compatibility

There is no impact to backward compatibility, since the `<ph>` element is an addition to existing content models.

Migration plan

No existing content needs to be migrated, since the `<ph>` element is an addition to existing content models.

Existing constraints or specializations might need to be adjusted or updated to remove unwanted elements from the glossary content models. One benefit, is that any elements or domains constrained in the shell DTDs (particularly from the equation, highlight, programming, software, user interface, and XML mention domains) will not be allowed in the glossary models.

Costs

Grammar files need to be updated as outlined in this proposal. Downstream schema generation should be unaffected.

Since the content model appendix will be auto-generated, no additional changes to the DITA specification is needed.

Tool vendors may need to update functionality if they have unique support for display or processing of inline domain elements (particularly from the equation, highlight, programming, software, user interface, and XML mention domains) within the glossary elements. Otherwise, no changes should be necessary.

Examples

See Use cases (112), above.

2.2.3 Stage two: #106: Nest `<steps>`

Allow the `<steps>` element to nest, in order to address one of our more common authoring pain points, simplify reuse, and reduce overall element count.

Date and version information

Date that this feature proposal was completed

14 March 2018

Champion of the proposal

Robert D. Anderson

Links to any previous versions of the proposal

- Discussed 1 August 2017: https://lists.oasis-open.org/archives/dita/201708/msg00004.html

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2

https://lists.oasis-open.org/archives/dita/201803/msg00052.html

Links to e-mail discussion that resulted in new versions of the proposal

N/A

Link to the GitHub issue

https://github.com/oasis-tcs/dita/issues/106
Original requirement or use case

Discussed August 1 2017: The current task structure allows `<substeps>` to be nested within `<steps>`, but you cannot nest `<steps>` within itself or `<substeps>` within itself, making it impossible to nest any sort of step beyond the second level. We have heard the following requests related to that structure, all suggesting that `<steps>` should be able to nest within itself:

- I need the ability to nest three levels of steps/sub-steps. The current limitation is arbitrary, with the TC deciding for me that I am supposed to create additional nested tasks. The current limitation is also meaningless because I just insert `<ol>` inside of the `<info>` portion of the step.
- I am frustrated at having to insert different elements for the same type of content. There is no semantic difference between `<steps>` and `<substeps>` – the ability to nest one task within another means that steps in one context are sub-steps in another.
- I need to reuse a step in one context as a sub-step in another. I cannot, because the difference in elements makes it impossible to establish content reference relationships with `@conref` or `@conkeyref` between a step and a sub-step (even though as established above, a step in one context is often a sub-step in another context).
- My sub-steps don't have a specified order, but the current markup only allows me to use ordered `<substeps>` even though I can have unordered steps at the task level.

Use cases

As indicated by the use cases / requirements above:

- Those who already create 3 levels of lists in a task would like to use proper markup ( `<steps>` within `<steps>` within `<steps>`, rather than `<ol>` within `<info>` within `<substeps>` within `<steps>`).
- Those who need to reuse a `<substep>` from one task as a `<step>` in another (or vice versa) would like to do so as a single content reference (rather than having to use cut/paste or having to reference each individual sub-element).
- Those who want to use sub-steps without specifying an order would like to do so without resorting to `<ul>` inside of `<info>`.

New terminology

N/A

Proposed solution

1. Allow `<steps>` and `<steps-unordered>` to nest within `<step>` (after the command, as part of the 0-to-many group of elements including `<choices>`, `<info>`, and other components).
2. Remove the `<substeps>` and `<substep>` elements, which are no longer necessary.

Benefits

**Who will benefit from this feature?**

All authors using the task model.

**What is the expected benefit?**

- Reduced frustration
- Easier reuse
- Ability to use appropriate markup for all steps in a task
How many people probably will make use of this feature?
Many users of the task document type.

How much of a positive impact is expected for the users who will make use of the feature?
Probably a medium impact; this is a long-standing issue that regularly causes small annoyances, so fixing it will remove a small but constant source of irritation.

Technical requirements
Adding new elements or attributes

Adding an element
This is not exactly adding a new element, but adding an existing element to a new context. The definitions of the `<steps>` element and `<steps-unordered>` elements do not change.

Removing elements or attributes

Removing an element
The `<substeps>` and `<substep>` elements will be removed from the task specialization.

Processing impact
There should be little processing impact; tools with special processing for steps/sub-steps will need to handle the possibility of 3 or more levels of nesting, while tools that already rely on fallback processing to ordered / unordered lists will see no impact.

Overall usability
No additional setup is necessary; based on feedback, authors will consider the revised model more usable than the existing one, so this will be a slight improvement.

Backwards compatibility

Was this change previously announced in an earlier version of DITA?
No

Removing or renaming an element that was shipped in DITA 1.3?
Yes, removing `<substeps>` and `<substep>` from the task specialization.

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
Yes; the change removes `<substeps>` from the content model of `<step>`

Migration plan

Might any existing documents need to be migrated?
Yes, any task that uses `<substeps>`. If there is a script to migrate files, this will make an easy addition to that script. Otherwise, this should be easily accomplished with a search/replace operation across files:

1. Replace `<substep>` with `<step`
2. Replace `</substep>` with `</step`

Though unlikely, any existing specializations of `<substeps>` outside of OASIS may require additional migration, but this might also be handled with relevant updates in the specialization module (leaving documents untouched). For example, if there is a specialization of `<substeps>` called `<littleSteps>`, the documents will not need migration. Instead, the declaration of the element's `@class` attribute will need to change so that the ancestry task/substeps becomes task/steps. The same change would be necessary for specializations of `<substep>`. 
Might any existing processors or implementations need to change their expectations?
If a processor does something special with `<substeps>` that behavior will need to be updated to work with `<steps>` inside of `<steps>`, and will also need to ensure it can handle additional levels of nesting.

Might any existing specialization or constraint modules need to be migrated?
Potentially:

- If a specialization module specializes `<substeps>`, the element ancestry for that new element will need to be updated so that it includes `task/steps` rather than `task/substeps` (and an equivalent update for specializations of `<substep>`).
- If a specialization or constraint module explicitly allows or references either `<substeps>` or `<substep>`, that module will need to remove that reference.

Costs
Outline the impact (time and effort) of the feature on the following groups:

**Maintainers of the grammar files**
Small cost of removing 2 element definitions and updating the content model of `<step>`

**Editors of the DITA specification**
- No new topics
- Need to remove 2 element reference topics

**Vendors of tools**
Low cost (if any) as described above.

**DITA community-at-large**
This will simplify the language (good impact!) but will result in an additional migration item for many task topics. Under the assumption that all topics will require some minimal migration regardless, this will present very little additional cost.

**Producing migration instructions or tools**
Migration instructions are simple, replacing 2 elements with 2 already known and similarly named elements. If tools already exist to migrate documents this should be added (at very low cost), but I do not anticipate tools explicitly for this.

**Examples**

**Figure 27: Before/after of basic structure**

Current markup for 3-level steps:

```xml
<steps>
  <step><cmd>Major command</cmd>
    <substeps>
      <substep><cmd>Sub-command</cmd>
        <info>
          <ol>
            <li>Long way to go, and is this still a command</li>
          </ol>
        </info>
      </substep>
    </substeps>
  </step>
</steps>
```
New markup for 3-level steps:

```xml
<steps>
  <step><cmd>Major command</cmd>
    <steps>
      <step><cmd>Sub-command</cmd>
        <steps>
          <step><cmd>Long way to go, and is this still a command</cmd></step>
        </steps>
    </step>
  </steps>
</step>
</steps>
```

**Figure 28: Example with unordered sub-steps**

Currently any unordered sub-steps must establish an order (using the ordered `<substeps>`), or must be created with alternate markup:

```xml
<steps>
  <step><cmd>This command has some components</cmd>
    <info>
      <ul>
        <li>As you can see,</li>
        <li>the order is not important</li>
        <li>But I'd like to mark them up as steps / commands</li>
      </ul>
    </info>
  </step>
</steps>
```

With unordered steps allowed within a `<step>`, the correct markup can be used:

```xml
<steps>
  <step><cmd>This command has some components</cmd>
    <steps-unordered>
      <step><cmd>As you can see</cmd></step>
      <step><cmd>the order is not important</cmd></step>
      <step><cmd>But I'd like to mark them up as steps / commands</cmd></step>
    </steps-unordered>
  </step>
</steps>
```

**Figure 29: Reuse model**

Currently the only ways to reuse a step from one task as a sub-step in another context are to either cut and paste, or to use content references on every component:

```xml
in topicA.dita:
  <step id="stepZ">
    <cmd id="stepZcmd">command...</cmd>
    <stepxmp id="stepZxmp">example...</stepxmp>
    <info id="stepZinfo">more info...</info>
    <stepresult id="stepZresult">what you end up with...</stepresult>
  </step>

in topicB.dita:
  <substep>
    <cmd conkeyref="topicA/stepZcmd"/>
    <stepxmp conkeyref="topicA/stepZxmp"/>
    <info conkeyref="topicA/stepZinfo"/>
    <stepresult conkeyref="topicA/stepZresult"/>
  </substep>
```

This is ugly, difficult to maintain, and content will be broken if the original stepZ adds or removes markup (especially if it adds something like `<choices>` that is not even available in a sub-step). Allowing steps to
nest results in the following change: the reuse element still requires the empty `<cmd>` as with any content reference on an element with required children:

```xml
in topicA.dita:
  <step id="stepZ">
    <cmd id="stepZcmd">command...</cmd>
    <stepxmp id="stepZxmp">example...</stepxmp>
    <info id="stepZinfo">more info...</info>
    <stepresult id="stepZresult">what you end up with...</stepresult>
  </step>

in topicB.dita:
  <step conkeyref="topicA/stepZ"><cmd/></step>
```

### 2.2.4 Stage 2: #257 Add hardware domain

Provide a new domain to support documenting content associated with documenting hardware. (Formerly “Provide a new element to semantically tag things you press on keyboards or other input devices.”)

**Date and version information**

This proposal contains the following information:

**Date that this feature proposal was completed**

June 28, 2020

**Champion of the proposal**

Zoë Lawson

**Links to any previous versions of the proposal**

- Original email: https://lists.oasis-open.org/archives/dita/201906/msg00033.html

**Links to minutes where this proposal was discussed at stage 1 and moved to stage 2**


**Reviewers for Stage 2 proposal**

- Bill Burns
- Kris Eberlein
- Keith Schengilli-Roberts

**Links to e-mail discussion that resulted in new versions of the proposal**

- Draft 4:

- Draft 3:
  - https://dita-users.groups.io/g/main/topic/any_interest_in_a_hardware/72542815

**Links to meeting minutes that resulted in new versions of the proposal**

Writers often want to add special formatting for things a user presses or types, such as `CTRL+Z` or `ALT+0235` or "Press the Start button". The element `<userinput>` exists, but that generally seems to be intended for strings a user enters into fields, not button or key names. Many style guides recommend different formatting for things a user presses on a keyboard vs text a user needs to enter.

Currently, you can work around this limitation using specializations or `@outputclass` such as `<userinput outputclass="keyboard">CTRL+S</userinput>` in processing. It would be convenient to trim this down to something like `<kbd>CTRL+S</kbd>`.

We considered adding an element to the software domain.

After further discussion with the Technical Committee, it was decided to instead create a new domain for elements associated with documenting hardware.

**Use cases**

There is a need for a semantic tag to indicate "things you press" on a keyboard or other physical devices. The original intention is for keys on a keyboard such as "ENTER", "PRINT SCREEN", or "CTRL+Z". These are different than the intention of a shortcut. There may not be a software UI equivalent, such as using CTRL+C to stop a process in a command window.

This could also be used in the hardware world for any physical button, switch, knob, or other control. For example, "Amt Tend" on a register, "Start" on a copier, or any "On/Off" switch.

The types of physical buttons, switches, knobs, sliders, and other physical controls are many and varied. Instead of trying to make numerous elements for all the various options, this domain will include elements that intended for specialization.

**New terminology**

None.

**Proposed solution**

Create a new hardware domain (hw-d) to include elements germane to documenting hardware information.

Add the following new elements:

- `<hwcontrol>`
- `<partno>`
The `<hwcontrol>` element would inherit from `topic/ph` and be defined as follows:
The `<hwcontrol>` element represents the name of a key, button, switch, or other physical control on a device. This element is part of the DITA hardware domain, a special set of DITA elements designed to document hardware information.

The `<partno>` element would inherit from `topic/keyword` and be defined as follows:
The `<partno>` element represents a part number. This element is part of the DITA hardware domain, a special set of DITA elements designed to document hardware information.

**Benefits**

Address the following questions:

**Who will benefit from this feature?**
Writers can semantically mark the difference between text users should enter and buttons users need to press without configuring `outputclass` or otherwise extending DITA. These writers will generally be either software or hardware writers.

**What is the expected benefit?**
The ability to distinguish between special formatting for buttons to press without the overhead of working with `outputclass` or extending DITA.

**How many people probably will make use of this feature?**
Many - Software writers often need to refer to keys in ways that are not shortcuts. Many people want to have special formatting for keyboard key names that is different from text a user needs to type into a text field, for example. Hardware authors often have special button names they need to use.

**How much of a positive impact is expected for the users who will make use of the feature?**
Minor - It's relatively easy to work around this using `outputclass`, but it would be very nice to have.

Additional positive impacts could include:
- generating lists of buttons
- assisting terminology management for translation
- special processing or formatting

**Technical requirements**

This proposal involves the following changes:

**Adding new elements or attributes**

**Adding a topic or map specialization**
N/A

**Adding a domain**
Adding a new domain, hw-d to the technical content specialization.

**Adding an element**

`<hwcontrol>`

- Attributes: Universal attribute group, `outputclass`, `@keyref` (Same as `<ph>`, no changes)
- The `<hwcontrol>` element represents the name of a key, button, switch, or other physical control on a device. This element is part of the DITA hardware domain, a special set of DITA elements designed to document hardware information.
The `<hwcontrol>` element will be constrained to reduce the number of domain elements specialized from `<ph>` that are available within `<hwcontrol>`. Ideally, the constraint would exclude the following domains and elements:

- Equation domain
- Highlight domain
- Markup domain
- MathML domain
- Programming domain
- Software domain
- XML mention domain
- `<abbreviated-form>`, `<term>`, and `<hw-control>`

Such a constraint would be difficult to implement and will only apply to the document-type shells that OASIS ships for out-of-the-box use. The stage 3 proposal will include details about what constraint can be implemented, what document-type shells will incorporate the constraint, and whether additional constraint examples will be added to the DITA 2.0 specification.
As well as any elements included due to inheritance.

- Yes, this is translatable. The part number itself may be different per country.
- Inheritance would be + topic/keyword hw-d/partno

**DTDs:**

All document-type shells that currently include the software domain should be modified to add the hardware domain.

- hardwareDomain.ent
- hardwareDomain.mod

**RNG:**

- hardwareDomain.rng

**Adding an attribute**

N/A

**Renaming or refactoring elements and attributes**

N/A

**Removing elements or attributes**

N/A

**Processing impact**

Expected to be minimal.

**Overall usability**

The new `<hwcontrol>` element provides a richer semantic option for writers and makes it easier for people setting up transforms to identify a different formatting for a different concept. DITA users may choose to replace existing semantic tags with this new element.

**Backwards compatibility**

DITA 2.0 is the first DITA release that is open to changes affecting backwards compatibility. To help highlight any impact, does this proposal involve any of the following?

**Was this change previously announced in an earlier version of DITA?**

- No

**Removing a document type that was shipped in DITA 1.3?**

- No
Removing a domain that was shipped in DITA 1.3?
No

Removing a domain from a document type shell was shipped in DITA 1.3?
No

Removing or renaming an element that was shipped in DITA 1.3?
No

Removing or renaming an attribute that was shipped in DITA 1.3?
No

Changing the meaning of an element or attribute in a way that would disallow existing usage?
No. However, some users may choose to replace existing semantic tagging with this new element. It would not "disallow", but could make current semantic tagging not as valid as it was.

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
No

Changing specialization ancestry?
No

Removing or replacing a processing feature that was defined in DITA 1.3?
No

Are element or attribute groups being renamed or shuffled?
No

Migration plan

If the answer to any question in the previous section is "yes":

Might any existing documents need to be migrated?
If you are already using some sort of outputclass, you may want to replace your existing extension to use this new element. Users will need to search and replace as we would have no idea how different people implemented the extension.

Might any existing processors or implementations need to change their expectations?
People may want to provide some default formatting for <hwcontrol>. It could be based on <userinput> or <cmdname>.

Might any existing specialization or constraint modules need to be migrated?
If there are constraints on the contexts in which <userinput> is permitted, there may be modifications needed for the new element.

If no migration need is anticipated, why not?
N/A

Costs

Outline the impact (time and effort) of the feature on the following groups.

Maintainers of the grammar files
Cost of adding a new domain and updating document-type shells.

Editors of the DITA specification
- How many new topics will be required? 3 - one describing the hardware domain, and one topic for the new elements <hwcontrol> and <partno>. 
• How many existing topics will need to be edited? All topics that list or describe domains, any
topics describing the content models, the @type topic.
• Will the feature require substantial changes to the information architecture of the DITA
specification? If so, what? - No
• If there is new terminology, is it likely to conflict with any usage of those terms in the existing
specification? - N/A

**Vendors of tools**
This addition should require minimal effort to support.

**DITA community-at-large**

• Will this feature add to the perception that DITA is becoming too complex? - no
• Will it be simple for end users to understand? - yes.
• If the feature breaks backwards compatibility, how many documents are likely to be affected,
and what is the cost of migration? - Migration will be optional, and it should be a relatively
simple search and replace for old extension to new extension.

**Producing migration instructions or tools**

• How extensive will migration instructions be, if it is integrated into an overall 1.3 → 2.0
migration publication or white paper? At most a topic.
• Will this require an independent white paper or other publication to provide migration details?
- No
• Do migration tools need to be created before this change can be made? If so, how complex
will those tools be to create and to use? - No

**Examples**

```xml
<step><cmd>If the command is already running,
select the command window and press <hwcontrol>CTRL+C</hwcontrol>
to end processing.</cmd></step>

<step><cmd>After entering the amount you received, press <hwcontrol>Amt Tend</hwcontrol>.</cmd>
<stepresult>This opens the cash drawer. The display shows the amount of change to give the
customer.</stepresult></step>

<step><cmd>To set your machine for this type of hem, set the <hwcontrol outputclass="knob">Stitch Length</hwcontrol> to
<input>3</input> and the <hwcontrol outputclass="lever">Stitch Selector</hwcontrol> to
<input>D</input>.</cmd>

<step><cmd>To sew backwards, set the <hwcontrol outputclass="discrete-control">Stitch Length</hwcontrol"></cmd>
to
<input>Reverse</input> and press the <hwcontrol outputclass="continuous-control">pedal</hwcontrol> with your foot.

<p>The basic model, <partno>DB-123-456</partno>, is an entry model. Most users can take
advantage of all features with
little to no set up. The <partno>DB-123-456</partno> is available with all systems.</p>

<step><cmd>Place the replacement <hwcontrol>Component <partno>DB-123-789</partno></hwcontrol>
in the slot and secure with the 4 screws.</cmd></step>
```
2.2.5 Stage 2: #316 Add <diagnostics> to troubleshooting topic

Add a new optional <diagnostics> element to the <troubleshooting> topic to provide a distinct, semantic location to provide guidelines for determining what is the cause of the given condition in order to then apply the appropriate remedy for that cause.

Date and version information

Date that this feature proposal was completed
29 June 2020

Champion of the proposal
Dawn Stevens, Comtech Services, Inc

Links to any previous versions of the proposal
N/A

Links to minutes where this proposal was discussed at stage 1 and moved to stage 2
TBD

Reviewers for Stage 2 proposal
Scott Hudson, Nancy Harrison, Kris Eberlein

Links to e-mail discussion that resulted in new versions of the proposal
N/A

Link to the GitHub issue
https://github.com/oasis-tcs/dita/issues/316

Original requirement or use case

In troubleshooting topics, there are several possible relationships between a problem's cause and its solution(s):

- One cause, one solution
- One cause, many solutions
- Many causes, one solution
- Many causes, each with their own solution

In the cases where more than one solution exists, particularly the last situation, users of the troubleshooting topic must first be able to determine which cause applies to their symptoms before they can begin to implement the solution. There is no semantic element in which to place this type of diagnostic information. Current options are to place the information in one of two places:

- In the Condition section. This section is meant to simply describe the problem, not diagnose why it is happening.
- In a Cause section. Because <cause> is linked to <remedy> in a <troubleSolution> pairing, this solution is problematic. Authors must have a single <troubleSolution> with only the <cause> to do the diagnostics, and then have a sequence of <troubleSolution> pairings to give the solutions for each issue. Also diagnostics might be procedural in nature, which forces authors to either use an <ol> in <cause> or use the even more non-semantic workaround of using <remedy> for the diagnostic information.

Modified grammar files

The following files must be modified:
Use cases
This proposal will enable troubleshooting authors to:

Add diagnostics tables
In a diagnostic table, authors map observable symptoms related to the condition to a specific cause. In this case, the symptoms are observable without the user having to take a specific action – they can simply observe that the symptom exists. For example, a particular light is on or off.

Add step-by-step instructions for diagnosing the problem and determining the cause
Some causes may not be simply observable, but require the user to perform a series of steps to determine the cause of the problem; for example, set breakpoints, send commands, push buttons, and so on.

New terminology
Not applicable

Proposed solution
Modify the content model of <troublebody> to allow zero or more new <diagnostics> elements after <condition>. The <diagnostics> element will in turn contain two new diagnostic elements, <diagnostics-general> and <diagnostics-steps> to address the two use cases described earlier.

Benefits
Who will benefit from this feature?
Authors writing complex troubleshooting information.

What is the expected benefit?
Authors have a separate and semantic location to place diagnostic information.

How many people probably will make use of this feature?
Most troubleshooting authors.

How much of a positive impact is expected for the users who will make use of the feature?
Significant.

Technical requirements
This proposal involves the following changes:

Adding an element
This proposal will add three elements:

- Add <diagnostics> element which will:
  - Be specialized from <bodydiv>
  - Have a content model of:
• Zero or one `<diagnostics-general>`
• Zero or one `<diagnostics-steps>`
• Add a `<diagnostics-general>` element which will:
  – Be specialized from `<section>`
  – Have an identical content model as `<cause>`
  – Provide a location to add a diagnostics table
• Add `<diagnostics-steps>` which will:
  – Be specialized from `<section>`
  – Remove `<responsible-party>` from the `<remedy>` content model, but otherwise be identical
  – Provide a location to add step-by-step diagnostic instructions

**Refactoring an element**

The content model of `<troublebody>` will be modified to allow zero or one `<diagnostics>` elements following `<condition>` and preceding `<troubleSolution>`

**Processing impact**

None

**Overall usability**

Improved semantics for current and future users

**Backwards compatibility**

This proposal addresses the following questions:

Was this change previously announced in an earlier version of DITA?
  No

Removing a document type that was shipped in DITA 1.3?
  No

Removing a domain that was shipped in DITA 1.3?
  No

Removing a domain from a document type shell was shipped in DITA 1.3?
  No

Removing or renaming an element that was shipped in DITA 1.3?
  No

Removing or renaming an attribute that was shipped in DITA 1.3?
  No

Changing the meaning of an element or attribute in a way that would disallow existing usage?
  No

Changing a content model by removing something that was previously allowed, or by requiring something that was not?
  No

Changing specialization ancestry?
  No

Removing or replacing a processing feature that was defined in DITA 1.3?
  No
Are element or attribute groups being renamed or shuffled?
No

Migration plan

Might any existing documents need to be migrated?
Optionally people who used a workaround and documented their diagnostic instructions using <condition>, <cause>, and/or <remedy> might want to migrate their content to the more semantic section; however their existing solutions would still work.

Might any existing processors or implementations need to change their expectations?
No

Might any existing specialization or constraint modules need to be migrated?
If a specialization was created for the same purpose, a company might want to adopt the new standard instead.

Costs

This proposal has a (time and effort) impact on the following groups:

Maintainers of the grammar files
   The following files will need to be modified:
   - DTDS:
     - troubleshooting.mod
   - RNG:
     - troubleshootingMod.rng

Editors of the DITA specification
   The changes to the DITA specification will be minor to medium:
   - Update Section 2.7.1.6 to discuss new structure
   - Update to section 3.10.4:
     - New sections on the three new elements
     - New example in 3.10.4.1 with new elements added

Vendors of tools
   As all elements are specializations of existing elements that behave the same way, no special processing needs to be added.

DITA community-at-large
   The changes should not add to a perception of DITA complexity. The changes should be simple and intuitive for end users to understand.

Producing migration instructions or tools
   Not applicable
Examples

This section provides examples of the new markup enabled by this proposal.

Figure 30: Adding a diagnostics table to a troubleshooting topic

The following code sample shows how a troubleshooting topic would provide a diagnostic table to help a user determine which cause and therefore which solution applies to them.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE troubleshooting PUBLIC "-//OASIS//DTD DITA 2.0 Troubleshooting//EN" "troubleshooting.dtd">
<troubleshooting>
  <title>Car is making funny noises.</title>
  <shortdesc/>
  <prolog/>
  <troublebody>
    <condition>
      <p>You probably know how your vehicle sounds when it’s running properly. Listening to your car can help you troubleshoot problems. If you hear a strange sound, pay attention and react accordingly.</p>
    </condition>
    <diagnostics>
      <diagnostics-general>
        <table frame="all" id="table_r2k_4sw_nlb">
          <tgroup cols="2">
            <colspec colname="c1" colnum="1" colwidth="1*"/>
            <colspec colname="c2" colnum="2" colwidth="1*"/>
            <thead>
              <row>
                <entry>Symptom</entry>
                <entry>Probable Cause</entry>
              </row>
            </thead>
            <tbody>
              <row>
                <entry>Clunking noise on bumps only</entry>
                <entry><xref href="#./checkstruts"></xref></entry>
              </row>
              <row>
                <entry>Continuous clunking noise</entry>
                <entry><xref href="#./checkballjoints"></xref></entry>
              </row>
              <row>
                <entry>Ticks when in neutral</entry>
                <entry><xref href="#./checkexhaust"></xref></entry>
              </row>
              <row>
                <entry>Ticks only in reverse</entry>
                <entry><xref href="#./checkbrakes"></xref></entry>
              </row>
              <row>
                <entry>Ticks in turns and curves</entry>
                <entry><xref href="#./checkcvjoint"></xref></entry>
              </row>
              <row>
                <entry>Only ticks when cold</entry>
                <entry><xref href="#./checkcatalyticconverter"></xref></entry>
              </row>
              <row>
                <entry>Ticks only at slow speed</entry>
                <entry><xref href="#./checkwheels"></xref></entry>
              </row>
            </tbody>
          </tgroup>
        </table>
      </diagnostics-general>
      </diagnostics>
    </troubleSolution>
  </troublebody>
</troubleshooting>
```
<remedy id="checkstruts">
<title>Checking your struts</title>
<steps>
<step>
...
</step>
...
</steps>
</remedy>
</troubleSolution>
<troubleSolution>
<remedy id="checkballjoints">
<title>Checking your ball joints</title>
<steps>
<step>
...
</step>
...
</steps>
</remedy>
</troubleSolution>
<troubleSolution>
<remedy id="checkexhaust">
<title>Checking your exhaust</title>
<steps>
<step>
...
</step>
...
</steps>
</remedy>
</troubleSolution>
<troubleSolution>
<remedy id="checkbrakes">
<title>Checking your brakes</title>
<steps>
<step>
...
</step>
...
</steps>
</remedy>
</troubleSolution>
<troubleSolution>
<remedy id="checkcvjoint">
<title>Checking your CV joints</title>
<steps>
<step>
...
</step>
...
</steps>
</remedy>
</troubleSolution>
<troubleSolution>
<remedy id="checkcatalyticconverter">
<title>Checking your catalytic converter</title>
<steps>
<step>
...
</step>
...
</steps>
</remedy>
</troubleSolution>
<troubleSolution>
<remedy id="checkwheels">
<title>Checking your wheels</title>
<steps>
<step>
...
</step>
...
</steps>
</remedy>
</troubleSolution>
The following code sample shows how a troubleshooting topic would provide step-by-step instructions to help a user determine which cause and therefore which solution applies to them.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE troubleshooting PUBLIC "/OASIS//DTD DITA 2.0 Troubleshooting//EN" "/troubleshooting.dtd">
<troubleshooting>
  <title>
    <shortdesc>
      <prolog/>
      <troublebody>
        <condition>
          <diagnostics>
            <diagnostics-steps>
              <steps>
                <step>
                  <cmd>Open the command prompt and type <userinput>ipconfig</userinput>.</cmd>
                  <info>
                    The Default Gateway (listed last) is your router’s IP. Your computer’s IP address is the number next to “IP Address.” If your computer’s IP address starts with 169, the computer is not receiving a valid IP address. See <xref href="#./ipaddress"/>
                  </info>
                </step>
                <step>
                  <cmd>If your address does not start with 169, type <userinput>tracert 8.8.8.8</userinput> to view each step between your router and the Google DNS servers.</cmd>
                  <info>If the error comes up early along the pathway, see <xref href="#./resetnetwork"/></info>
                </step>
                <step>
                  <cmd>If everything is working with Google, use the command <cmdname>nslookup</cmdname> to determine if there's a problem with the server you are trying to connect to.</cmd>
                  <info>If you received results such as <msgph>Timed Out</msgph>, <msgph>Server Failure</msgph>, <msgph>Refused</msgph>, <msgph>No Response from Server</msgph>, or <msgph>Network is Unreachable</msgph>, the problem originates in the DNS server for your destination.</info>
                </step>
                <step>
                  <cmd>If the previous steps turn up no problems, contact your ISP to see if they're having issues.</cmd>
                </step>
              </steps>
            </diagnostics-steps>
          </diagnostics>
        </troublebody>
      </shortdesc>
    </title>
  <remedy id="ipaddress">
    <title>Resetting Your IP Address</title>
    <steps>
      ...
      </steps>
  </remedy>
</troubleSolution>
</troubleshooting>
```

Figure 31: Adding step-by-step diagnostics to a troubleshooting topic

The following code sample shows how a troubleshooting topic would provide step-by-step instructions to help a user determine which cause and therefore which solution applies to them.
3 DITA 2.0: Stage three proposals

These proposals have been approved by the DITA TC at the stage three level. For more information about stage three criteria, see DITA 2.0 proposal process.

Unless otherwise noted, the proposals have been implemented in the "DITA-2.0" branch of the following official GitHub repositories for the OASIS DITA TC:

- DITA Technical Committee
- DITA for Technical Communication subcommittee

3.1 Base edition

3.1.1 Stage three: #08 Add <include> element

A new base <include> element for configuring the inclusion of text or markup, to be used as the new base element for <coderef>, <svgref> and <mathmlref>.

Champion

Chris Nitchie

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>July 19, 2016</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>February 25, 2018</td>
<td>HTML; DITA in SVN</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>February 27, 2018 and March 6, 2018</td>
<td>February 27, March 6</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>March 13, 2018</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>June 5, 2018</td>
<td>Eliot Kimber, Robert Anderson</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>December 18, 2018</td>
<td></td>
</tr>
</tbody>
</table>

Approved technical requirements

The <coderef> element is a transclusion element – it loads the referenced file and places its contents as CDATA at the location of the referencing element. However, <coderef> is a specialization of <xref>,
which is not a transclusion element. That is, the specialization-based fallback behavior for `<coderef>` is fundamentally incompatible with the expected processing. The same is true for `<svgref>` and `<mathmlref>`. The only way for people other than the TC to create similar transclusion elements via specialization is to specialize from one of those, or customize their processors to do the right thing with their element.

**Dependencies or interrelated proposals**

This proposal reuses the `<fallback>` element from the proposal for Issue 27, the media domain.

**Modified grammar files**

**Figure 32: commonElementsMod.rng**

This proposal requires the addition of a new `<include>` element in the base vocabulary, defined as follows.

```xml
<div>
  <a:documentation>LONG NAME: Inclusion</a:documentation>
  <define name="include.content">
    <zeroOrMore>
      <ref name="data.elements.incl"/>
    </zeroOrMore>
    <optional>
      <ref name="fallback"/>
    </optional>
    <zeroOrMore>
      <ref name="foreign.unknown.incl"/>
    </zeroOrMore>
  </define>
  <define name="include.attributes">
    <optional>
      <attribute name="href"/>
    </optional>
    <optional>
      <attribute name="keyref"/>
    </optional>
    <optional>
      <attribute name="format"/>
    </optional>
    <optional>
      <attribute name="scope">
        <choice>
          <value>external</value>
          <value>local</value>
          <value>peer</value>
          <value>-dita-use-conref-target</value>
        </choice>
      </attribute>
    </optional>
    <optional>
      <attribute name="parse"/>
    </optional>
    <optional>
      <attribute name="encoding"/>
    </optional>
    <ref name="univ-atts"/>
  </define>
  <define name="include.element">
    <element name="include" dita:longName="Inclusion">
      <a:documentation>Use the inclusion (&lt;include&gt;) element to transclude content stored in another resource into a DITA topic. The @href and @keyref attributes specify the resource to be transcluded. The @parse attribute declares the mode by which to include the content. Category: Body elements</a:documentation>
      <ref name="include.attlist"/>
      <ref name="include.content"/>
    </element>
  </define>
</div>
```
This will also require a new entry in the "ELEMENT TYPE NAME PATTERNS" section:

```xml
<define name="include">
  <ref name="include.element"/>
</define>
```

This element will be added to the following named content model groups:

- basic.ph
- basic.ph.notm
- fig.cnt

The class attribute definition for `<include>` will also need to be added to the section at the bottom:

```xml
<define name="include.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="- topic/include "/>
  </optional>
</define>
```

The specialization hierarchy for `<coderef>`, `<svgref>`, and `<mathmlref>` all need to be updated and their `@parse` attributes defaulted.

**Figure 33: programmingDomain.rng**

```xml
<define name="coderef.attributes">
  <optional>
    <attribute name="href"/>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="type"/>
  </optional>
  <optional>
    <attribute name="format"/>
  </optional>
  <optional>
    <attribute name="parse" a:defaultValue="text"/>
  </optional>
</define>
```
Later, in class declarations:

```xml
<define name="coderef.attlist" combine="interleave">
    <ref name="global-atts"/>
    <optional>
        <attribute name="class" a:defaultValue="+ topic/include pr-d/coderef "/>
    </optional>
</define>
```

**Figure 34: mathmlDomain.rng**

```xml
<define name="mathmlref.attributes">
    <optional>
        <attribute name="href"/>
    </optional>
    <optional>
        <attribute name="keyref"/>
    </optional>
    <optional>
        <attribute name="type"/>
    </optional>
    <optional>
        <attribute name="format" a:defaultValue="mml"/>
    </optional>
    <optional>
        <attribute name="parse" a:defaultValue="xml"/>
    </optional>
    <optional>
        <attribute name="scope">
            <choice>
                <value>external</value>
                <value>local</value>
                <value>peer</value>
                <value>-dita-use-conref-target</value>
            </choice>
        </attribute>
    </optional>
    <ref name="univ-atts"/>
    <optional>
        <attribute name="outputclass"/>
    </optional>
</define>
```

Later, in class declarations:

```xml
<define name="mathmlref.attlist" combine="interleave">
    <ref name="global-atts"/>
    <optional>
        <attribute name="class" a:defaultValue="+ topic/include mathml-d/mathmlref "/>
    </optional>
</define>
```

**Figure 35: svgDomain.rng**

```xml
<define name="svgref.attributes">
    <optional>
        <attribute name="href"/>
    </optional>
    <optional>
        <attribute name="keyref"/>
    </optional>
    <optional>
        <attribute name="format" a:defaultValue="svg"/>
    </optional>
    <optional>
        <attribute name="parse" a:defaultValue="xml"/>
    </optional>
</define>
```
Later, in class declarations:

```xml
<define name="svgref.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="+ topic/include svg-d/svgref "/>
  </optional>
</define>
```

**Modified terminology**

None.

**Modified specification documentation**

There will be a new language reference topic describing the `<include>` element and, in particular, the extensibility of `@parse`. See below.

The `<coderef>`, `<svgref>`, and `<mathmlref>` reference topics will all need to be updated with the new specialization hierarchy. Since that is the only modification required for those topics, they are not included in full in this proposal.

The element-by-element recommendations for translators will also be updated with a new row for `<include>`:

<table>
<thead>
<tr>
<th>Element name</th>
<th>Specialized from</th>
<th>Block/Inline (presentation)</th>
<th>Block/Inline (translation)</th>
<th>Translatable content?</th>
<th>Translatable attributes?</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;include&gt;</code></td>
<td>N/A</td>
<td>inline</td>
<td>inline</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

**Migration plans for backwards incompatibilities**

Any existing specializations of `<coderef>`, `<svgref>`, or `<mathmlref>` will need to be updated. Additionally, any content containing those elements with explicit `@class` attributes will likewise need to be updated to reflect the new specialization hierarchy.

**Element reference topic: `<include>`**

The inclusion element is an indicator that non-DITA content from a resource outside the current document should be placed at that location. The resource can be indicated using either a URI or a key reference. Processing expectations for the referenced data can also be specified.

**Usage information**

The `<include>` element can be used in many contexts, but is primarily intended for the following use cases.

- The transclusion of non-DITA XML within `<foreign>` or specializations of `<foreign>` using `parse="xml"`.
- The transclusion of preformatted textual content within `<pre>` or specializations of `<pre>` using `parse="text"`.
• The transclusion of plain-text prose within DITA elements using `parse="text"`.

It is an error when `<include>` is used to reference other DITA content. Authors should use `@conref` or `@conkeyref` for reuse of DITA XML content.

### Formatting expectations

The `<include>` element should not normally be visible in processed output, though indications of its boundaries may be presented in authoring or debugging usage contexts. It should be replaced either by the content it references or by the contents of its `<fallback>` element.

### Processing expectations

The `<include>` element instructs processors to insert the contents of the referenced resource at the location of the `<include>` element. If the content is unavailable to the processor or cannot be processed using the specified `@parse` value, the contents of the `<fallback>` element, if any, are presented instead. If the processor cannot process the referenced content using the rules implied by the `@parse` attribute, either because the referenced scheme is not supported or because there was a processing error, processors should issue a warning or error.

The `@parse` attribute specifies the processing expectations for the referenced resource. Processors must support the following values:

- **text**
  
  The contents should be treated as plain text. Reserved XML characters should be displayed, and not interpreted as XML markup.

- **xml**
  
  The contents of the referenced resource should be treated as an XML document, and the referenced element should be inserted at the location of the `<include>` element. If a fragment identifier is included in the address of the content, processors must select the element with the specified ID. If no fragment identifier is included, the root element of the referenced XML document is selected. Any grammar processing should be performed during resolution, such that default attribute values are explicitly populated. Prolog content must be discarded.

  It is an error to use `parse="xml"` anywhere other than within `<foreign>` or a specialization thereof.

Processors may support other values for the `@parse` attribute with proprietary processing semantics. Processors should issue warnings and use `<fallback>` when they encounter unsupported `@parse` values. Non-standard `@parse` instructions should be expressed as URIs.

**Note** Proprietary `@parse` values will likely limit the portability and interoperability of DITA content, so should be used with care.

The `@encoding` attribute specifies the character encoding to use when translating the character data from the referenced content. If not specified, processors may make attempts to automatically determine the correct encoding, for example using HTTP headers, through analysis of the binary structure of the referenced data, or the `<?xml?>` processing instruction when including XML as text. The resource should be treated as UTF-8 if no other encoding information can be determined.

When `parse="xml"`, standard XML parsing rules apply for the detection of character encoding. The necessity and uses of `@encoding` for non-standard values of `@parse` are implementation-dependent.
**Specialization hierarchy**
- topic/include

**Attributes**
The following attributes are available on this element in addition to the Universal attribute group, Link relationship attribute group, and @keyref.

@parse
Indicates processing expectations for the referenced content.

@encoding
The encoding to use when interpreting textual data. The value should be a valid encoding name.

**Examples**
For the most part, `<include>` should be used as a basis for specialization. The following examples use it directly for purposes of illustration.

```xml
<!-- Inclusion of XML markup other than SVG or MathML -->
<fig>
  <title>JSP Tag Library Elements and Attributes</title>
  <foreign outputclass="tld">
    <include href="../src/main/webapp/WEB-INF/jsp-tag-library.tld"
      parse="xml" format="tld"/>
  </foreign>
</fig>

<!-- Inclusion of README text into a DITA topic, with fallback. -->
<shortdesc>
  <include href="../src/README.txt" parse="text" encoding="UTF-8">
    <fallback>This topic describes XYZ.</fallback>
  </include>
</shortdesc>

<!-- Inclusion of preformatted text -->
<pre>
  <include href="../src/config.json" format="json" parse="text" encoding="UTF-8"/>
</pre>

<!-- Inclusion of README as Markdown converted to DITA using a proprietary @parse value, with fallback. -->
<section>
  <include href="about.md" encoding="UTF-8"
     parse="http://www.example.com/dita/includeParsers/markdown-to-dita">
    <fallback>This section not available.</fallback>
  </include>
</section>

<!-- Proprietary vendor handling for CSV tables -->
<fig>
  <title>Data Table</title>
  <include href="data.csv" encoding="UTF-8"
     parse="http://www.example.com/dita/includeParsers/csv-to-simpletable"/>
</fig>
```

### 3.1.2 Stage three: #17 Make @outputclass universal

Make @outputclass a universal attribute on all elements defined as part of the DITA specification.

**Champion**
Robert D Anderson
Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>Jan 24 2017</td>
<td><a href="https://lists.oasis-open.org/archives/dita/201701/msg00097.html">https://lists.oasis-open.org/archives/dita/201701/msg00097.html</a></td>
</tr>
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<td>Stage 2 proposal discussed</td>
<td>July 11 2018</td>
<td><a href="https://www.oasis-open.org/committees/download.php/61199/minutes20170711.txt">https://www.oasis-open.org/committees/download.php/61199/minutes20170711.txt</a></td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>February 28 2018</td>
<td>Sent to Dawn Stevens, Scott Hudson</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted</td>
<td>February 28 2018</td>
<td><a href="https://tools.oasis-open.org/version-control/browse/wsvn/dita/trunk/DITA-2.0/stage-3/Issue17-stage3-universalOutputclass.dita">https://tools.oasis-open.org/version-control/browse/wsvn/dita/trunk/DITA-2.0/stage-3/Issue17-stage3-universalOutputclass.dita</a></td>
</tr>
</tbody>
</table>

Approved technical requirements

Apart from the `<dita>` container element, add `@outputclass` to every element in the specification that does not already allow that attribute.

Dependencies or interrelated proposals

Any proposal for a new element in DITA 2.0 needs to ensure that `@outputclass` is allowed.

The original LwDITA proposal anticipated that `@outputclass` would be available everywhere but had to be adjusted when that was determined to be incorrect. A new version of LwDITA may want to make use of this attribute on those elements if it has not already done so.

Modified Grammar files

The `@outputclass` attribute should be declared for any element that does not already have it, as follows:

```xml
<optional><attribute name="outputclass"></optional>
```
The most reliable way to do this is to add it to the universal attribute group – assuming the other groups are not modified, this will make:

```xml
<define name="univ-atts">
  <ref name="id-atts"/>
  <ref name="select-atts"/>
  <ref name="localization-atts"/>
  <optional>
    <attribute name="outputclass">
    </optional>
  </optional>
</define>
```

All modules that independently declare `@outputclass` will need to be updated, EXCEPT for those that also need to override `univ-atts` (for example, `<topic>` and its specializations must override `univ-atts` in order to make `@id` required). The attribute is currently declared in a large number of files, and can likely be removed with a good search/replace expression. The `@outputclass` attribute is currently declared in 46 independent RNG files from DITA 1.3, so this proposal effectively updates every module that declares elements to remove one or more instances of the line above. Those in the base package that will need updates include:

- `commonElementsMod.rng`
- `delayResolutionDomain.rng` (likely to be dropped from DITA 2.0)
- `ditavalrefDomain.rng`
- `hazardstatementDomain.rng`
- `highlightDomain.rng`
- `mapGroupDomain.rng`
- `tblDeclMod.rng`
- `topicMod.rng`
- `utilitiesDomain.rng`
- `classifyDomain.rng`
- `subjectSchemeMod.rng`

DTD updates are comparable. The following attribute declaration will be needed in the `univ-atts` declaration:

```xml
outputclass     CDATA      #IMPLIED
```

The same declaration will need to be removed from every element that currently uses it; as with RNG, this will effectively mean removing that same declaration from every module that declares elements.

**Modified terminology**

No new or updated terminology.

**Modified specification documentation**

- The `@outputclass` definition will move from the "Other common attributes" topic to the "Universal attribute group" topic.
- Every element reference topic that independently links to the `@outputclass` definition will need to remove that link. As in the technical requirements section, there is an exception for any element that overrides the universal attribute group, which will keep the link to `@outputclass` in its new location. 73 topics in `specification/langRef/base/` link to `@outputclass` and need to be updated. The attribute reuse topic also contains a few reusable definitions that link to `@outputclass`. 
For most DITA 2.0 proposals I'd expect this section to have a list of all modified topics. For this reason I don't think it is necessary, because:

1. The change involves removing a single trivial item in many places, rather than adding any new language that must be reviewed.
2. The change exactly the same in all 73 topics, so describing or explaining it 73 times will not aid in evaluating the proposal.
3. Listing all 73 would also not be helpful for the spec editors; any editor implementing this change is going to do so with a quick search across the topics. That is, I would not expect any editor to make updates based on a list of 73 topics here (which I came up with using a search), because that process would be more time consuming and less reliable than doing that same search on the source.

Migration plans for backwards incompatibilities

Most structural or domain specialization modules that declare elements will need to be updated to remove declarations of @outputclass.

There is not currently a plan for an automated way to accomplish this for DTDs, due to the wide variety of coding practices for DTD modules. XSD and RNG could likely be automated with a search/replace algorithm that handles complex regular expressions, but this may result in removing the attribute from elements that do not use the universal attribute group. Current suggestion for migration instructions is as follows (to be clarified with addition details based on our own experience updating the OASIS shells):

1. Use search/replace to remove all declarations of @outputclass from any working DITA 1.3 specialization modules. This can be done by hand with a search / manual removal or (depending on grammar format and coding practice) with a search/replace query that automatically removes the declaration.
2. Once the updated modules are added to DITA 2.0 level shells, use trang or a similar tool to convert the grammar files (DTD, XSD, or RNG) into a single RNG file.
3. Run a (to-be-written) script over that RNG to check for any elements that do not declare @outputclass. For any elements that do not declare the attribute, restore the declaration in your specialization module (in the DTD, RNG, or XSD – not in the single generated RNG).
4. The single generated RNG can be discarded once this process is completed.

Note As Dawn pointed out during her review of my first stage 3 draft, the definition of XML itself technically allows you to declare an attribute twice, but it's considered a warning. This could reduce the urgency of migration by some small amount because this change alone will not break anything. That said, the warnings you're likely to receive from your editors and build systems will likely push you to migrate quite quickly, and long term a migration is definitely worth the relatively small effort of removing declarations.
3.1.3 Stage three: #18 Make @audience, @platform, @product, @otherprops into specializations

DITA 2.0 should refactor the existing profiling attributes – @audience, @platform, @product, and @otherprops – so that they’re defined in domains and specialized from @props, as we did for @deliveryTarget in 1.3.

Champion

Championed by Robert D. Anderson, originally proposed by Chris Nitchie

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>2 May 2017</td>
<td><a href="https://lists.oasis-open.org/archives/dita/201705/msg00015.html">https://lists.oasis-open.org/archives/dita/201705/msg00015.html</a></td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>28 Feb 2018</td>
<td>HTML, DITA</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>25 Sept 2018</td>
<td>Deb Bissantz, Dawn Stevens</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>1 Oct 2018</td>
<td>DITA source in SVN</td>
</tr>
</tbody>
</table>

Approved technical requirements

1. Create four new base domain modules, one for each of @audience, @platform, @product, and @otherprops.

2. Remove the existing definitions of these attributes. In OASIS grammars, these are defined as base attributes in the %filter-atts; group along with @props and a placeholder for extensions of @props. This is the only place the attributes are named in OASIS grammars (DTD: commonElements.mod; RNG: commonElementsMod.rng).

3. Add the domain attributes into the shells of all OASIS-provided grammar files, and add them to the props-extension group in each configured shell. This will restore the attributes to any element that previously defined them.

Dependencies or interrelated proposals

N/A
## Modified grammar files

<table>
<thead>
<tr>
<th>commonElements.mod (before)</th>
<th>commonElements.mod (after)</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;!ENTITY % filter-atts &quot;props</code></td>
<td><code>&lt;!ENTITY % filter-atts &quot;props</code></td>
</tr>
<tr>
<td><code>CDATA #IMPLIED</code></td>
<td><code>CDATA #IMPLIED</code></td>
</tr>
<tr>
<td><code>platform CDATA #IMPLIED</code></td>
<td><code>platform CDATA #IMPLIED</code></td>
</tr>
<tr>
<td><code>product CDATA #IMPLIED</code></td>
<td><code>product CDATA #IMPLIED</code></td>
</tr>
<tr>
<td><code>audience CDATA #IMPLIED</code></td>
<td><code>audience CDATA #IMPLIED</code></td>
</tr>
<tr>
<td><code>otherprops CDATA #IMPLIED</code></td>
<td><code>otherprops CDATA #IMPLIED</code></td>
</tr>
<tr>
<td><code>%props-attribute-extensions;&quot;</code></td>
<td><code>%props-attribute-extensions;&quot;</code></td>
</tr>
</tbody>
</table>

## All provided DTD shells (before)

```
<!ENTITY % deliveryTargetAtt-d-dec
PUBLIC "-//OASIS//ENTITIES DITA 2.0 Delivery Target Attribute Domain//EN"
"deliveryTargetAttDomain.ent"
>%deliveryTargetAtt-d-dec;  
```

## All provided DTD shells (after)

```
<!ENTITY % audienceAtt-d-dec
PUBLIC "-//OASIS//ENTITIES DITA 2.0 Audience Attribute Domain//EN"
"audienceAttDomain.ent"
>%audienceAtt-d-dec;  
```

```
<!ENTITY % deliveryTargetAtt-d-dec
PUBLIC "-//OASIS//ENTITIES DITA 2.0 Delivery Target Attribute Domain//EN"
"deliveryTargetAttDomain.ent"
>%deliveryTargetAtt-d-dec;  
```

```
<!ENTITY % platformAtt-d-dec
PUBLIC "-//OASIS//ENTITIES DITA 2.0 Platform Attribute Domain//EN"
"platformAttDomain.ent"
>%platformAtt-d-dec;  
```

```
<!ENTITY % productAtt-d-dec
PUBLIC "-//OASIS//ENTITIES DITA 2.0 Product Attribute Domain//EN"
"productAttDomain.ent"
>%productAtt-d-dec;  
```

```
<!ENTITY % otherpropsAtt-d-dec
PUBLIC "-//OASIS//ENTITIES DITA 2.0 Otherprops Attribute Domain//EN"
"otherpropsAttDomain.ent"
>%otherpropsAtt-d-dec;  
```

## commonElements.rng (before)

```
<define name="filter-atts">
  <optional>
    <attribute name="props"/>
  </optional>
</define>
```

## commonElements.rng (after)

```
<define name="filter-atts">
  <optional>
    <attribute name="props"/>
  </optional>
</define>
```
In the default domain declaration section:

```xml
<define name="domains-att"/>
  <attribute name="domains" a:defaultValue=""...content domains...
    a(props deliveryTarget)="/"
</define>
```

In the module inclusion section:

```xml
<include href="deliveryTargetAttDomain.rng" dita:since="1.3"/>
```

Rather than make this proposal appear much longer than it should due to long headers + a few lines of meaning, I've uploaded the 4 new DTD domains and 4 new RNG domains to github; they can be reviewed at:


```xml
<define name="domains-att"/>
  <attribute name="domains" a:defaultValue=""...content domains...
    a(props deliveryTarget)="/"
</define>
```

In the module inclusion section:

```xml
<include href="audienceAttDomain.rng" dita:since="2.0"/>
<include href="deliveryTargetAttDomain.rng" dita:since="1.3"/>
<include href="platformAttDomain.rng" dita:since="2.0"/>
<include href="productAttDomain.rng" dita:since="2.0"/>
<include href="otherpropsAttDomain.rng" dita:since="2.0"/>
```
### Modified terminology

N/A

### Modified specification documentation

The following topic needs to be updated: [http://docs.oasis-open.org/dita/dita/v1.3/errata02/os/complete/part1-base/langRef/attributes/metadataAttributes.html#select-atts](http://docs.oasis-open.org/dita/dita/v1.3/errata02/os/complete/part1-base/langRef/attributes/metadataAttributes.html#select-atts)

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>@platform</td>
<td>Specializations of @props</td>
</tr>
<tr>
<td>Indicates operating system and hardware. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.</td>
<td>The attributes @audience, @deliveryTarget, @platform, @product, and @otherprops are specialized from the @props attribute. They are defined in independent attribute extension domains, and integrated by default into all OASIS-provided document-type shells. If any of these domains is not integrated into a given document-type shell, the relevant attribute(s) will not be available.</td>
</tr>
<tr>
<td>@product</td>
<td>@audience</td>
</tr>
<tr>
<td>Contains the name of the product to which the element applies. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.</td>
<td>Indicates the intended audience for the element. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.</td>
</tr>
<tr>
<td>@audience</td>
<td>@deliveryTarget</td>
</tr>
<tr>
<td>Indicates the intended audience for the element. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.</td>
<td>Indicates the intended delivery target for the element; for example, &quot;html&quot;, &quot;pdf&quot;, or &quot;epub&quot;. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.</td>
</tr>
<tr>
<td>@otherprops</td>
<td>@platform</td>
</tr>
<tr>
<td>This attribute can be used for any other properties that might be needed to describe an audience, or to provide selection criteria for the element. Alternatively, the @props attribute can be specialized to provide a new metadata attribute instead of using the general @otherprops attribute. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.</td>
<td>Indicates operating system and hardware. If no value is specified, but the attribute is specified on an ancestor within a map or within the related-links section, the value will cascade from the closest ancestor.</td>
</tr>
</tbody>
</table>

The @audience, @platform, @product, and @otherprops attributes are property attributes which...
DITA defines attributes that can be used to enable filtering and flagging individual elements. The @audience, @deliveryTarget, @otherprops, @platform, and @props attributes (along with specializations of @props) allow conditions to be assigned to elements so that the elements can be included, excluded, or flagged during processing.
The following metadata and reuse attributes are used by both DITA maps and DITA topics:

- @product, @platform, @audience, @otherprops, @rev, @status, @importance
- ...other atts...
- @props and any attribute specialized from @props (such as @deliveryTarget)

The following metadata and reuse attributes are used by both DITA maps and DITA topics:

- @rev, @status, @importance
- ...other atts...
- @props and any attribute specialized from @props (including those integrated by default in OASIS shells: @audience, @deliveryTarget, @platform, @product, @otherprops)

Remove a note in attribute generalization: http://docs.oasis-open.org/dita/dita/v1.3/errata02/os/complete/part1-base/archSpec/base/generalization-attributes.html#attributegeneralize

Groups organize classification metadata into subcategories. This is intended to support situations where a predefined metadata attribute applies to multiple specialized subcategories. For example, the @product attribute can be used to classify an element based on both related databases and related application servers. Using groups for these subcategories allows each category to be processed independently; when filter conditions exclude all applicable databases within a group, the element can be safely excluded, regardless of any other @product conditions.

Groups can be used within @audience, @product, @platform, or @otherprops. The following rules apply:

Groups can be used to organize classification metadata into subcategories. This is intended to support situations where a predefined metadata attribute applies to multiple specialized subcategories. The grouping syntax exactly matches the syntax used for generalized attributes, making it valid inside @props and any attribute specialized from @props (including those integrated by default in OASIS shells: @audience, @deliveryTarget, @platform, @product, @otherprops).

For example, the @product attribute can be used to classify an element based on both related databases and related application servers. Using groups for these subcategories allows each category to be processed independently; when filter conditions exclude all applicable databases within a group, the element can be safely excluded, regardless of any other @product conditions.

Groups can be used within @props and any attribute specialized from @props (including those integrated by default in OASIS shells: @audience, @deliveryTarget, @platform, @product, @otherprops).
Note: While the grouped values reuse the generalized attribute syntax found in Attribute generalization, the @audience, @product, @platform, and @otherprops attributes cannot be specialized or generalized.

In the definition of the DITAVAL <prop> element http://docs.oasis-open.org/dita/dita/v1.3/errata02/os/complete/part1-base/langRef/ditaval/ditaval-prop.html#ditaval-prop:

### Migration plans for backwards incompatibilities

- No documents will need to be migrated.
- Processors may optionally remove exceptions in any filter/flagging code that explicitly look for these attributes. As long as the processors correctly support @props and specializations, they will continue to work as designed even without migration.
- Document types that wish to retain all four attributes will need to add the four new domains into shells. When moving shells into a DITA 2.0 environment, documents may be updated manually using the tables above; the same changes made for OASIS provided DTD / RNG shells will work for local shells that are already using DITA 1.3 and use the @deliveryTarget module. (For a large number of document-type shells, a search/replace operation or script may be faster.) Shells that do not include @deliveryTarget will likely need to be updated manually (search and replace could also work well for those, but no other strings can be assumed to exist at the right spot in all shells).
- Constraints that remove any of these attributes today will need to be updated; it may be possible to discard the constraint module and simply not include the relevant domain(s). This will need to
be handled manually, because of the many ways it could potentially be done today, but searching over any modules for the four attributes should make them easy to find.

- Constraints that explicitly declare or restrict values on these attributes will need to be updated. This will need to be handled manually, because of the many ways it could potentially be done today, but searching over any modules for the four attributes should make them easy to find.

3.1.4 Stage three: #21 Resolve inconsistent class values for `<shortdesc>`, `<linktext>`, and `<searchtitle>`

Resolve inconsistent class values for `<shortdesc>`, `<linktext>`, and `<searchtitle>`

**Champion**

Eliot Kimber, Individual Member

**Tracking information**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 2 proposal submitted</td>
<td>4 May 2019</td>
<td>PDF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DITA</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>10 Oct 2019</td>
<td>Deb Bissantz, Vasont Systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Zoe Lawson, Casenet, LLC</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>21 Oct 2019; 29 Oct 2019 (contains corrected affiliation for Zoe Lawson)</td>
<td></td>
</tr>
</tbody>
</table>

**Approved technical requirements**

The `<shortdesc>`, `<linktext>`, and `<searchtitle>` elements have the same semantics in maps and topics but in DITA 1.x are separately declared (and thus have different base class values) for maps and topics. These elements should have the same base type in both maps and topics.

**Dependencies or interrelated proposals**

No related or dependent proposals identified.

**Modified grammar files**

- `mapMod.rng` *(remove declarations for `<shortdesc>`, `<linktext>`, and `<linktitle>`):*

```
<define name="anchor">
    <ref name="anchor.element"/>
</define>
<define name="linktext">
    <ref name="linktext.element"/>
</define>
```
The short description (<shortdesc>) element occurs between the topic title and the topic body, as the initial paragraph-like content of a topic, or it can be embedded in an abstract element. The short description, which represents the purpose or theme of the topic, is also intended to be used as a link preview and for searching. When used within a DITA map, the short description of the <topicref> can be used to override the short description in the topic. Category: Topic elements

The <linktext> element provides the literal label or line of text for a link. In most cases, the text of a link can be resolved during processing by cross-reference with
the target resource. Use the `<linktext>` element only when the target cannot be reached, such as when it is a peer or external link, or the target is local but not in DITA format. When used inside a topic, it will be used as the text for the specified link; when used within a map, it will be used as the text for generated links that point to the specified topic. Category:

- Related Links elements

```xml
<element name="linktext" dita:longName="Link Text">
  <ref name="linktext.attlist"/>
  <ref name="linktext.content"/>
</element>
</define>
```

```xml
<define name="linktext.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="- map/linktext "/>
  </optional>
</define>
```

- Move declarations for `<shortdesc>`, `<linktext>`, and `<linktitle>` from topicMod.rng to commonElementsMod.rng. Add @outputclass used in map version of `<linktext>` to `<linktext> attributes (was missing from topic version in DITA 1.3).
DITA TC work product
The short description element occurs between the topic title and the topic body, as the initial paragraph-like content of a topic, or it can be embedded.

In an abstract element, the short description, which represents the purpose or theme of the topic, is also intended to be used as a link preview and for searching. When used within a DITA map, the short description of the <topicref> can be used to override the short description in the topic. Category: Topic elements

The <linktext> element provides the literal label or line of text for a link. In most cases, the text of a link can be resolved during processing by cross-reference with the target resource. Use the <linktext> element only when the target cannot be reached, such as when it is a peer or external link, or the target is local but not in DITA format.

When used inside a topic, it will be used as the text for the specified link; when used within a map, it will be used as the text for generated links that point to the specified topic. Category: Related Links elements
commonElementsMod.rng (insertions highlighted in **bold**):

```xml
...<define name="lines">
   <ref name="lines.element"/>
</define>
<define name="linktext">
   <ref name="linktext.element"/>
</define>
<define name="longdescref">
   <ref name="longdescref.element"/>
</define>
...<define name="required-cleanup">
   <ref name="required-cleanup.element"/>
</define>
<define name="searchtitle">
   <ref name="searchtitle.element"/>
</define>
<define name="sl">
   <ref name="sl.element"/>
</define>
<define name="sli">
   <ref name="sli.element"/>
</define>
<define name="simpletable">
   <ref name="simpletable.element"/>
</define>
<define name="shortdesc">
   <ref name="shortdesc.element"/>
</define>
<define name="state">
   <ref name="state.element"/>
</define>
...<div>
   <a:documentation>LONG NAME: Link Text</a:documentation>

   <define name="linktext.content">
      <zeroOrMore>
         <choice>
            <ref name="words.cnt"/>
            <ref name="ph"/>
         </choice>
      </zeroOrMore>
   </define>
   <define name="linktext.attributes">

```
<optional>
    <attribute name="outputclass"/>
</optional>
</define>
<define name="linktext.element">
  <element name="linktext" dita:longName="linktext">
    <a:documentation>The &lt;linktext> element provides the literal label or line of text for a link. In most cases, the text of a link can be resolved during processing by cross reference with the target resource. Use the &lt;linktext> element only when the target cannot be reached, such as when it is a peer or external link, or the target is local but not in DITA format. When used inside a topic, it will be used as the text for the specified link; when used within a map, it will be used as the text for generated links that point to the specified topic.
    Category: Related Links elements</a:documentation>
  </element>
</define>
<define name="searchtitle.content">
  <zeroOrMore>
    <choice>
      <ref name="words.cnt"/>
      <ref name="ph"/>
    </choice>
  </zeroOrMore>
</define>
<define name="searchtitle.attributes">
  <optional dita:since="DITA 1.3">
    <attribute name="outputclass"/>
  </optional>
  <ref name="univ-atts"/>
</define>
<define name="searchtitle.element">
  <element name="searchtitle" dita:longName="Search Title">
    <a:documentation>When your DITA topic is transformed to XHTML, the &lt;searchtitle> element is used to create a title element at the top of the resulting HTML file. This title is normally used in search result summaries by some search engines, such as that in Eclipse (http://eclipse.org); if not set, the XHTML’s title element defaults to the source topic's title content (which may not be as well optimized for search summaries) Category: Topic elements</a:documentation>
  </element>
</define>
<define name="shortdesc.content">
  <zeroOrMore>
    <choice>
      <ref name="title.cnt"/>
      <ref name="xref" dita:since="1.3"/>
    </choice>
  </zeroOrMore>
</define>
<define name="shortdesc.attributes"/>
<element name="shortdesc" dita:longName="Short Description">
  <a:documentation>The short description (&lt;shortdesc&gt;) element occurs between the topic title and the topic body, as the initial paragraph-like content of a topic, or it can be embedded in an abstract element. The short description, which represents the purpose or theme of the topic, is also intended to be used as a link preview and for searching. When used within a DITA map, the short description of the &lt;topicref&gt; can be used to override the short description in the topic. Category: Topic elements</a:documentation>
</element>
Modified terminology
No change to terminology.

Modified specification documentation
No change to specification documentation other than generated references to the map versions of the `<shortdesc>`, `<linktext>`, and `<linktitle>` elements.

Migration plans for backwards incompatibilities
Documents that do not include literal `@class` values for the map versions of `<shortdesc>`, `<linktext>`, and `<linktitle>` will not be affected.
Documents that include literal `@class` values for the map version of `<shortdesc>`, `<linktext>`, and `<linktitle>` will need to change "map/" to "topic/" in `@class` values for those elements.
Processors that expect the map versions of the `@class` values for `<shortdesc>`, `<linktext>`, and `<linktitle>` and do not already also expect the topic versions must be updated to expect the topic versions.
Specializations of the map versions of `<shortdesc>`, `<linktext>`, and `<linktitle>` must be updated to change "map/" to "topic/" in the `@class` values for those specializations.

3.1.5 Stage three: #27 Multimedia domain
A new domain for referencing multimedia content, specifically video and audio, modeled loosely on the HTML5 markup for the same purpose.

Champion
Chris Nitchie

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>May 16, 2017</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>August 17, 2017</td>
<td>HTML, DITA</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>August 22, 2017</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>August 29, 2017</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>April 7, 2018</td>
<td>Eliot Kimber, Bill Burns</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>May 21, 2018</td>
<td></td>
</tr>
</tbody>
</table>

Approved technical requirements
DITA should have an HTML5-compatible multimedia domain to simplify authoring references to audio and video information. Also, since Lightweight DITA will contain multimedia elements, it's important that they be accounted for in full DITA.
Dependencies or interrelated proposals

None.

Modified grammar files

This proposal requires the addition of a new `<fallback>` element in the base vocabulary, used within `<object>` to specify content to be rendered if the referenced object cannot be rendered or resolved. The definition for that element is as follows:

```xml
<define name="fallback.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="basic.block.notbfgobj"/>
      <ref name="basic.ph"/>
      <ref name="data.elements.incl"/>
      <ref name="draft-comment"/>
      <ref name="foreign.unknown.incl"/>
      <ref name="required-cleanup"/>
    </choice>
  </zeroOrMore>
</define>
<define name="fallback.attributes">
  <ref name="univ-atts"/>
</define>
<define name="fallback.element">
  <element name="fallback" dita:longName="Fallback">
    <a:documentation>The `<fallback>` element contains content to be rendered when a multimedia object reference cannot be rendered.</a:documentation>
    <ref name="fallback.attlist"/>
    <ref name="fallback.content"/>
  </element>
</define>
<define name="fallback.attlist" combine="interleave">
  <ref name="fallback.attributes"/>
</define>
```

This will require modifying the `object.content` definition as follows:

```xml
<define name="object.content">
  <optional>
    <ref name="desc"/>
  </optional>
  <optional>
    <ref name="longdescref"/>
  </optional>
  <optional>
    <ref name="fallback"/>
  </optional>
  <zeroOrMore>
    <ref name="param"/>
  </zeroOrMore>
  <zeroOrMore>
    <ref name="foreign.unknown.incl"/>
  </zeroOrMore>
</define>
```
The lion's share of the changes for this proposal will be contained in a new domain file, `mediaDomain.rng`, defined as follows.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<grammar xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0"
  xmlns="http://relaxng.org/ns/structure/1.0">
  <moduleDesc xmlns="http://dita.oasis-open.org/architecture/2005/">
    <moduleTitle>DITA Media Domain</moduleTitle>
    <headerComment xml:space="preserve">![CDATA[
      HEADER
      MODULE:  DITA Media Domain
      VERSION: 2.0
      DATE: April 2018
    ]]></headerComment>

    <moduleMetadata>
      <moduleType>elementdomain</moduleType>
      <moduleShortName>media-d</moduleShortName>
      <modulePublicIds>
        <dtdMod>-//OASIS//ELEMENTS DITA<var presep=" " name="ditaver"/> Media Domain//EN</dtdMod>
        <dtdEnt>-//OASIS//ENTITIES DITA<var presep=" " name="ditaver"/> Media Domain//EN</dtdEnt>
        <xsdMod>urn:oasis:names:tc:dita:xsd:mediaDomain.xsd<var presep=":" name="ditaver"/></xsdMod>
        <rncMod>urn:oasis:names:tc:dita:rnc:mediaDomain.rnc<var presep=":" name="ditaver"/></rncMod>
        <rngMod>urn:oasis:names:tc:dita:rng:mediaDomain.rng<var presep=":" name="ditaver"/></rngMod>
      </modulePublicIds>
      <domainsContribution>(topic media-d)</domainsContribution>
    </moduleMetadata>

    <div>
      <a:documentation>DOMAIN EXTENSION PATTERNS</a:documentation>
      <define name="media-d-object">
        <choice>
          <ref name="video.element"/>
          <ref name="audio.element"/>
        </choice>
      </define>

      <define name="object" combine="choice">
        <ref name="media-d-object"/>
      </define>
    </div>

    <div>
      <a:documentation xml:space="preserve"> LONG NAME: Video object reference </a:documentation>
      <define name="video.content">
        <optional>
          <ref name="desc"/>
        </optional>
        <optional>
          <ref name="longdescref"/>
        </optional>
        <optional>
          <ref name="fallback"/>
        </optional>
        <optional>
          <ref name="video-poster"/>
        </optional>
        <optional>
          <ref name="video-controls"/>
        </optional>
      </define>
    </div>
```
<optional>
  <ref name="media-autoplay"/>
</optional>
<optional>
  <ref name="media-loop"/>
</optional>
<optional>
  <ref name="media-muted"/>
</optional>
<zeroOrMore>
  <ref name="media-source"/>
</zeroOrMore>
<zeroOrMore>
  <ref name="media-track"/>
</zeroOrMore>
<zeroOrMore>
  <ref name="param"/>
</zeroOrMore>
<zeroOrMore>
  <ref name="foreign.unknown.incl"/>
</zeroOrMore>
</define>
<define name="video.attributes">
  <optional>
    <attribute name="data"/>
  </optional>
  <optional>
    <attribute name="datakeyref"/>
  </optional>
  <optional>
    <attribute name="type"/>
  </optional>
  <optional>
    <attribute name="height">
      <data type="NMTOKEN"/>
    </attribute>
  </optional>
  <optional>
    <attribute name="width">
      <data type="NMTOKEN"/>
    </attribute>
  </optional>
  <optional>
    <attribute name="tabindex">
      <data type="NMTOKEN"/>
    </attribute>
  </optional>
  <ref name="univ-atts"/>
  <optional>
    <attribute name="outputclass"/>
  </optional>
</define>
<define name="video.element">
  <element name="video" dita:longName="Video object reference">
    <a:documentation>DITA's &lt;video&gt; element corresponds to the HTML &lt;video&gt; element.
      Category: Body elements</a:documentation>
    <ref name="video.attlist"></ref>
  </element>
</define>
<define name="video.attlist" combine="interleave">
  <ref name="video.attributes"></ref>
</define>
</div>

<a:documentation xml:space="preserve"> LONG NAME: Audio object reference </a:documentation>
<define name="audio.content">
  <optional>
    <ref name="desc"/>
  </optional>
  <optional>
    <ref name="longdescref"/>
  </optional>
</define>
</div>
<element name="media-loop" dita:longName="Audio object reference">
    <a:documentation>DITA's &lt;media-loop> element corresponds to the HTML @loop attribute on &lt;video> and &lt;audio> elements.</a:documentation>
    <ref name="media-loop.content"/>
    <ref name="media-loop.attributes"/>
</element>

<define name="media-muted.element">
    <element name="media-muted" dita:longName="Audio object reference">
        <a:documentation>DITA's &lt;media-muted> element corresponds to the HTML @muted attribute on &lt;video> and &lt;audio> elements.</a:documentation>
        <ref name="media-muted.content"/>
        <ref name="media-muted.attributes"/>
    </element>
</define>

<define name="media-source.content">
    <empty/>
</define>

<define name="media-source.attributes">
    <optional>
        <attribute name="name" a:defaultValue="source">
            <value>source</value>
        </attribute>
    </optional>
    <optional>
        <attribute name="valuetype" a:defaultValue="ref">
            <value>ref</value>
        </attribute>
    </optional>
</define>
<element name="media-source" dita:longName="Audio object reference">
  <a:documentation>DITA's &lt;media-source&gt; element corresponds to the HTML &lt;source&gt; element within &lt;video&gt; and &lt;audio&gt; elements.</a:documentation>
</element>

<element name="media-track" dita:longName="Audio object reference">
  <a:documentation>DITA's &lt;media-track&gt; element corresponds to the HTML &lt;track&gt; element within &lt;video&gt; and &lt;audio&gt; elements.</a:documentation>
</element>

<element name="media-poster" dita:longName="Video poster">
  <a:documentation>LONG NAME: Media track</a:documentation>
</element>

<element name="media-poster" dita:longName="Video poster">
  <a:documentation>LONG NAME: Video poster</a:documentation>
</element>
<define name="video-poster.content">
  <empty/>
</define>

<define name="video-poster.attributes">
  <optional>
    <attribute name="name" a:defaultValue="poster">
      <value>poster</value>
    </attribute>
  </optional>
  <optional>
    <attribute name="value"/>
  </optional>
  <optional>
    <attribute name="valuetype" a:defaultValue="ref">
      <value>ref</value>
    </attribute>
  </optional>
  <optional>
    <attribute name="type"/>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <ref name="univ-atts"/>
</define>

<define name="video-poster.element">
  <element name="video-poster" dita:longName="Audio object reference">
    <a:documentation>DITA's &lt;video-poster&gt; element corresponds to the HTML &lt;track&gt; element within &lt;video&gt; and &lt;audio&gt; elements.</a:documentation>
    <ref name="video-poster.attlist"/>
    <ref name="video-poster.content"/>
  </element>
</define>

<define name="video-poster.attlist" combine="interleave">
  <ref name="video-poster.attributes"/>
</define>

<define name="audio.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="+ topic/object media-d/audio ">
    </attribute>
  </optional>
</define>

<define name="media-controls.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="+ topic/param media-d/media-controls ">
    </attribute>
  </optional>
</define>

<define name="media-autoplay.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="+ topic/param media-d/media-autoplay ">
    </attribute>
  </optional>
</define>

<define name="media-loop.attlist" combine="interleave">
  <ref name="global-atts"/>
  <optional>
    <attribute name="class" a:defaultValue="+ topic/param media-d/media-loop ">
    </attribute>
  </optional>
</define>
Finally, references to this new module will need to be added to all of the base document type shells.

- base/rng/basemap.rng
- base/rng/basetopic.rng

For instance:

```
<include href="mediaDomain.rng"/>
```

**Modified terminology**

None.

**Modified specification documentation**

Changes to the architectural specification will be limited to the element-by-element recommendations to translators topic, non-normative/elementsMerged.dita. A subset of this topic is reproduced below with the new content.

The changes to the language reference are as follows:

- **Additions to** langRef/quick-reference/base-elements-a-to-z.dita for each new element; not presented here.
- **Updates to** the generated content model topics, not presented here.
- **The** `<object>` topic (langRef/base/object.dita) **will be modified** such that examples will include the use of `<fallback>`. See the table below.
- **A new topic** will appear in the **Body elements** section (3.2.2) describing the `<fallback>` element; see below.
- **A new topic** describing the media domain will be added under the **Domain Elements** section (3.5); see below.
Beneath the new domain topic will be a new topic for each element in the domain; see below.

**Table 1: Updates to Existing Topics**

<table>
<thead>
<tr>
<th>File</th>
<th>DITA 1.3 Language</th>
<th>DITA 2.0 Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>langRef/base/object.dita</td>
<td>&lt;p&gt;Cutting the keys from the system unit:&lt;/p&gt; &lt;object classid=&quot;clsid:D27CDB6E-AE6D-11cf-96B8-444553540000&quot; codebase=&quot;http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=6,0,0,0&quot; data=&quot;cutkey370.swf&quot; type=&quot;application/x-shockwave-flash&quot; height=&quot;280&quot; width=&quot;370&quot; id=&quot;cutkey370&quot;&gt; &lt;desc&gt;A description of the task&lt;/desc&gt; &lt;param name=&quot;movie&quot; value=&quot;cutkey370.swf&quot;/&gt; &lt;param name=&quot;quality&quot; value=&quot;high&quot;/&gt; &lt;param name=&quot;bgcolor&quot; value=&quot;#FFFFFF&quot;/&gt; &lt;/object&gt;</td>
<td>&lt;p&gt;Cutting the keys from the system unit:&lt;/p&gt; &lt;object classid=&quot;clsid:D27CDB6E-AE6D-11cf-96B8-444553540000&quot; codebase=&quot;http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=6,0,0,0&quot; data=&quot;cutkey370.swf&quot; type=&quot;application/x-shockwave-flash&quot; height=&quot;280&quot; width=&quot;370&quot; id=&quot;cutkey370&quot;&gt; &lt;desc&gt;A description of the task&lt;/desc&gt; &lt;fallback&gt;Media not available.&lt;/fallback&gt; &lt;param name=&quot;movie&quot; value=&quot;cutkey370.swf&quot;/&gt; &lt;param name=&quot;quality&quot; value=&quot;high&quot;/&gt; &lt;param name=&quot;bgcolor&quot; value=&quot;#FFFFFF&quot;/&gt; &lt;param name=&quot;pluginspace&quot; value=&quot;http://www.macromedia.com/go/getflashplayer&quot;/&gt; &lt;/object&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;p&gt;What's EIM?&lt;/p&gt; &lt;object classid=&quot;clsid:D27CDB6E-AE6D-11cf-96B8-444553540000&quot; codebase=&quot;http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=6,0,0,0&quot; data=&quot;eim.swf&quot; height=&quot;400&quot; width=&quot;500&quot; id=&quot;eim&quot;&gt; &lt;desc&gt;Some great, glorious info&lt;/desc&gt; &lt;param name=&quot;movie&quot; value=&quot;eim.swf&quot;/&gt; &lt;param name=&quot;quality&quot; value=&quot;high&quot;/&gt; &lt;param name=&quot;bgcolor&quot; value=&quot;#FFFFFF&quot;/&gt; &lt;param name=&quot;pluginspace&quot; value=&quot;http://www.macromedia.com/go/getflashplayer&quot;/&gt; &lt;/object&gt;</td>
<td>&lt;p&gt;What's EIM?&lt;/p&gt; &lt;object classid=&quot;clsid:D27CDB6E-AE6D-11cf-96B8-444553540000&quot; codebase=&quot;http://download.macromedia.com/pub/shockwave/cabs/flash/swflash.cab#version=6,0,0,0&quot; data=&quot;eim.swf&quot; height=&quot;400&quot; width=&quot;500&quot; id=&quot;eim&quot;&gt; &lt;desc&gt;Some great, glorious info&lt;/desc&gt; &lt;fallback&gt;&lt;image href=&quot;media-not-available.png&quot;/&gt;&lt;/fallback&gt; &lt;param name=&quot;movie&quot; value=&quot;eim.swf&quot;/&gt; &lt;param name=&quot;quality&quot; value=&quot;high&quot;/&gt; &lt;param name=&quot;bgcolor&quot; value=&quot;#FFFFFF&quot;/&gt; &lt;param name=&quot;pluginspace&quot; value=&quot;http://www.macromedia.com/go/getflashplayer&quot;/&gt; &lt;/object&gt;</td>
</tr>
</tbody>
</table>
Migration plans for backwards incompatibilities

N/A

Element-by-element recommendations for translators: Base edition

topic elements

  Note  The vast majority of this topic is omitted; only the new row in the topic elements table and the new section for media-d elements are presented.

<table>
<thead>
<tr>
<th>Element name</th>
<th>Specialized from</th>
<th>Block/Inline (presentation)</th>
<th>Block/Inline (translation)</th>
<th>Translatable content?</th>
<th>Translatable attributes?</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;fallback&gt;</td>
<td>N/A</td>
<td>block</td>
<td>block</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>
media-d elements (media domain) *(new in DITA 2.0)*

<table>
<thead>
<tr>
<th>Element name</th>
<th>Specialized from</th>
<th>Inherits everything from ancestor?</th>
<th>Block/Inline (presentation)</th>
<th>Block/Inline (translation)</th>
<th>Translatable content?</th>
<th>Translatable attributes?</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;video&gt;</td>
<td>&lt;object&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>&lt;audio&gt;</td>
<td>&lt;object&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>&lt;media-controls&gt;</td>
<td>&lt;param&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>&lt;media-autoplay&gt;</td>
<td>&lt;param&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>&lt;media-loop&gt;</td>
<td>&lt;param&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>&lt;media-muted&gt;</td>
<td>&lt;param&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>&lt;video-poster&gt;</td>
<td>&lt;param&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>&lt;media-source&gt;</td>
<td>&lt;param&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>&lt;media-track&gt;</td>
<td>&lt;param&gt;</td>
<td>no</td>
<td>block</td>
<td>block</td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

### Media elements

The media elements are used to reference audio or video content. The elements in this domain are modeled loosely on the HTML5 `<audio>` and `<video>` elements, allowing for extensive configuration of media in multiple formats with supplemental external resources.

**Figure 36: Relationship between HTML5 and DITA markup**

The elements in the media domain can be mapped to HTML5 multimedia elements as follows.

<table>
<thead>
<tr>
<th>DITA Markup</th>
<th>Analogous HTML5 Markup</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;video&gt;</code></td>
<td><code>&lt;video&gt;</code></td>
</tr>
<tr>
<td><code>&lt;audio&gt;</code></td>
<td><code>&lt;audio&gt;</code></td>
</tr>
<tr>
<td><code>&lt;desc&gt;</code></td>
<td>@title</td>
</tr>
<tr>
<td>@data or @datakeyref</td>
<td>@src</td>
</tr>
<tr>
<td><code>&lt;media-autoplay&gt;</code></td>
<td>@autoplay</td>
</tr>
<tr>
<td><code>&lt;media-controls&gt;</code></td>
<td>@controls</td>
</tr>
<tr>
<td><code>&lt;media-loop&gt;</code></td>
<td>@loop</td>
</tr>
<tr>
<td><code>&lt;media-muted&gt;</code></td>
<td>@muted</td>
</tr>
<tr>
<td><code>&lt;video-poster&gt;</code></td>
<td>@poster</td>
</tr>
<tr>
<td><code>&lt;media-source&gt;</code></td>
<td>&lt;source&gt;</td>
</tr>
<tr>
<td><code>&lt;media-track&gt;</code></td>
<td>&lt;track&gt;</td>
</tr>
</tbody>
</table>
Element reference topic: `<fallback>`

The `<fallback>` element provides content to be presented when multimedia objects cannot be rendered.

Usage information

Formatting expectations

The contents of this element should be displayed only when the media referenced by the containing `<object>` element cannot be displayed.

Processing expectations

None.

Specialization hierarchy

- topic/fallback

Attributes

The following attributes are available on this element: [Universal attributes group](#).

Example

See `<object>` for examples of this element.

Element reference topic: `<video>`

The `<video>` element is used to reference video content in a DITA topic. It is modeled roughly on the HTML5 element of the same name.

Usage information

Media can be referenced either using the `<data>` or `<datakeyref>` attributes or using nested `<media-source>` elements. Extensive configuration of the presentation of the media can be configured using optional nested elements.

Formatting expectations

When possible, the video should be displayed at the location of the `<video>` reference. If `<width>` and/or `<height>` are specified, those dimensions should be honored. When the media cannot be presented in a meaningful way, the contents of the `<fallback>` element, if any, should be presented.
Processing expectations
When converting to HTML5 or HTML5-derived output formats, `<video>` should be mapped to its HTML5-equivalent markup. Processing for other output formats is highly dependent on the capabilities of those formats. Implementers should implement support for presentation of multimedia on a best-effort basis.

Specialization hierarchy
+ topic/object media-d/video

Attributes
The following attributes are available on this element: Universal attributes group and the attributes defined below.

@data
Contains the absolute or relative URI of the video media. If this attribute is specified, @type should also be specified. If the video is available in multiple formats, nested `<media-source>` elements should be used instead.

@datakeyref
Key reference to the location of the video data, as for @data. When specified and the key is resolvable, the key-provided URI is used. A key that has no associated resource, only link text, is considered to be unresolved for the purpose of the @datakeyref attribute. If @data is specified, it is used as a fallback when the key cannot be resolved to a resource.

@type
Indicates the content type (MIME type) for the data specified by the @data or @datakeyref attribute. This attribute should be set when the @data attribute is set to avoid loading unsupported content types. Note that this differs from the @type attribute on many other DITA elements in that it specifies a MIME type rather than a content type. If @type is not specified, the effective type value for the key named by the @datakeyref attribute is used as the this attribute’s value.

@height
Indicates the vertical dimension for the resulting video display. If necessary, the object is scaled to the specified size. The value of this attribute is a real number (expressed in decimal notation) optionally followed by a unit of measure from the set of pc, pt, px, in, cm, mm, em (picas, points, pixels, inches, centimeters, millimeters, and ems respectively). The default unit is px (pixels). Possible values include: "5", "5in", and "10.5cm". If a height value is specified and no width value is specified, the width will be scaled by the same factor as the height. If both a height value and width value are specified, implementations MAY ignore one of the two values when they are unable to scale to each direction using different factors.

@width
Indicates the horizontal dimension for the resulting video display. If necessary, the object is scaled to the specified size. If both a height value and width value are specified, implementations MAY ignore one of the two values when they are unable to scale to each direction using different factors. If a width value is specified and no height value is specified, the height will be scaled by the same factor as the width. If both a height value and width value are specified, implementations MAY ignore one of the two values when they are unable to scale to each direction using different factors.

@tabindex
Position the video in tabbing order.
A very simple video reference

```html
<video data="video.mp4" type="video/mp4"/>
```

A similar example using a key reference:

```html
<video datakeyref="video" type="video/mp4"/>
```

Referencing a video in multiple formats

```html
<video>
  <media-source keyref="video-mp4" value="video.mp4" type="video/mp4"/>
  <media-source keyref="video-ogg" value="video.ogg" type="video/ogg"/>
  <media-source keyref="video-webm" value="video.webm" type="video/webm"/>
</video>
```

Complete example configuring video presentation, with multiple formats and multi-lingual subtitles

The following video reference explicitly defines multiple presentational details for a video available in multiple formats, referenced using key references, with URIs when the keys are not resolvable.

```html
<video width="400px" height="300px">
  <desc>A video illustrating this procedure.</desc>
  <fallback>
    <image keyref="video-not-available" href="video-not-available.png">
      <alt>This video cannot be displayed.</alt>
    </image>
  </fallback>
  <!-- Reference the poster via both key and URI -->
  <video-poster keyref="video-poster" value="poster.png"/>
  <!-- The default value is 'true', so @value is optional on these controls when enabling their features, but mandatory when disabling them. -->
  <media-controls value="true"/>
  <media-autoplay/>
  <media-loop value="false"/>
  <media-muted value="false"/>
  <!-- Multiple formats, referenced via both key and URI -->
  <media-source keyref="video-mp4" value="video.mp4" type="video/mp4"/>
  <media-source keyref="video-ogg" value="video.ogg" type="video/ogg"/>
  <media-source keyref="video-webm" value="video.webm" type="video/webm"/>
  <!-- Subtitle tracks in multiple languages -->
  <media-track xml:lang="en" keyref="video-subtitles-en" value="video-subtitles-en.vtt" type="subtitles"/>
  <media-track xml:lang="fr" keyref="video-subtitles-fr" value="video-subtitles-fr.vtt" type="subtitles"/>
  <media-track xml:lang="de" keyref="video-subtitles-de" value="video-subtitles-de.vtt" type="subtitles"/>
</video>
```
Element reference topic: `<audio>`
The `<audio>` element is used to reference sound content in a DITA topic. It is modeled roughly on the HTML5 element of the same name.

Usage information
Media can be referenced either using the `@data` or `@datakeyref` attributes or using nested `<media-source>` elements. Extensive configuration of the presentation of the media can be configured using optional nested elements.

Formatting expectations
Presentation of the `<audio>` element will vary depending on the presentation format. When possible, HTML-based outputs should present the audio object using the analogous HTML `<audio>` element. When the media cannot be presented in a meaningful way, the contents of the `<fallback>` element, if any, should be presented.

Processing expectations
When converting to HTML5 or HTML5-derived output formats, `<audio>` should be mapped to its HTML5-equivalent markup. Processing for other output formats is highly dependent on the capabilities of those formats. Implementers should implement support for the presentation of multimedia on a best-effort basis.

Specialization hierarchy
+ topic/object media-d/audio

Attributes
The following attributes are available on this element: Universal attributes group and the attributes defined below.

`@data`
Contains the absolute or relative URI of the audio media. If this attribute is specified, `@type` should also be specified. If the audio is available in multiple formats, nested `<media-source>` elements should be used instead.

`@datakeyref`
Key reference to the location of the audio data, as for `@data`. When specified and the key is resolvable, the key-provided URI is used. A key that has no associated resource, only link text, is considered to be unresolved for the purpose of the `@datakeyref` attribute. If `@data` is specified, it is used as a fallback when the key cannot be resolved to a resource.

`@type`
Indicates the content type (MIME type) for the data specified by the `@data` or `@datakeyref` attribute. This attribute should be set when the `@data` attribute is set to avoid loading unsupported content types. Note that this differs from the `@type` attribute on many other DITA elements in that it specifies a MIME type rather than a content type. If `@type` is not specified, the effective type value for the key named by the `@datakeyref` attribute is used as the this attribute’s value.

`@tabindex`
Position the audio in tabbing order.
A very simple audio object reference

```xml
<audio data="message.mp3" type="audio/mp3"/>
```

A similar example using a key reference:

```xml
<audio datakeyref="message" type="audio/mp3"/>
```

Referencing an audio object in multiple formats

```xml
<audio>
  <media-source keyref="message-mp3" value="message.mp3" type="audio/mp3"/>
  <media-source keyref="message-wav" value="message.wav" type="audio/wav"/>
</audio>
```

Complete example configuring audio presentation, with multiple formats

The following video reference explicitly defines multiple presentational details for a video available in multiple formats, referenced using key references, with URIs when the keys are not resolvable.

```xml
<audio>
  <desc>A sound file narrating the execution of this procedure.</desc>
  <fallback>The audio track walking through this procedure is not available.</fallback>
  <!-- The default value is 'true', so @value is optional on these controls when enabling their features, but mandatory when disabling them. -->
  <media-controls value="true"/>
  <media-autoplay/>
  <media-loop value="false"/>
  <media-muted value="false"/>
  <!-- Multiple formats, referenced via both key and URI -->
  <media-source keyref="walkthrough-mp3" value="walkthrough.mp3" type="audio/mp3"/>
  <media-source keyref="walkthrough-wav" value="walkthrough.wav" type="audio/wav"/>
</audio>
```

Element reference topic: `<media-controls>`

The `<media-controls>` element controls whether or not User Interface controls should be presented for controlling the playback of the media referenced by the enclosing `<video>` or `<audio>` element. It is analogous to the `@controls` attribute on HTML5 media elements.

Usage information

The boolean `@value` attribute specifies whether the controls should be presented. The default value for this attribute is `true`, so the mere presence of this element within `<video>` or `<audio>` is sufficient to turn the setting on. The `@value` attribute must be explicitly set to `false` to specify that controls should not be presented.

If this element is not present, the default behavior is determined by the user agent being used to present the media.

Formatting expectations

None. This element configures the behavior when the media is displayed.
Processing expectations
None.

Specialization hierarchy
+ topic/param media-d/media-controls

Attributes
The following attributes are available on this element: Universal attributes group and the attributes defined below.

@value
Specifies whether the media presentation should include user interface controls. The following values are recognized:

true
Default. Controls should be presented.

false
Controls should not be presented.

-dita-use-conref-target
See Using the -dita-use-conref-target value for more information.

@name
This attribute is required due to this element's derivation from the <param> element. The value is fixed to "controls" by the grammar definition.

Example
See <video> and <audio> for examples of this element.

Element reference topic: <media-autoplay>
The <media-autoplay> element controls whether or not the media referenced by the surrounding <video> or <audio> element should begin playing immediately when the topic is displayed. It is analogous to the @autoplay attribute on HTML5 media elements.

Usage information
The boolean @value attribute specifies whether the media should automatically begin playing. The default value for this attribute is true, so the mere presence of this element within <video> or <audio> is sufficient to turn the setting on. The @value attribute must be explicitly set to false to disable automatic starting.

If this element is not present, the default behavior is determined by the user agent being used to present the media.

Formatting expectations
None. This element configures the behavior when the media is displayed.

Processing expectations
None.
Specialization hierarchy
+ topic/param media-d/media-autoplay

Attributes
The following attributes are available on this element: Universal attributes group and the attributes defined below.

@value
   Specifies whether the media should automatically begin playing when the topic is displayed. The following values are recognized:
      true
         Default. Autoplaying is enabled.
      false
         Autoplay is disabled.

-dita-use-conref-target
   See Using the -dita-use-conref-target value for more information.

@name
   This attribute is required due to this element's derivation from the <param> element. The value is fixed to “autoplay” by the grammar definition.

Example
See <video> and <audio> for examples of this element.

Element reference topic: <media-loop>
The <media-loop> element controls whether or not the media referenced by the surrounding <video> or <audio> element should restart automatically when it completes playing. It is analogous to the @loop attribute on HTML5 media elements.

Usage information
The boolean @value attribute specifies whether the media should loop. The default value for this attribute is true, so the mere presence of this element within <video> or <audio> is sufficient to turn the setting on. The @value attribute must be explicitly set to false to disable looped playback.

If this element is not present, the default behavior is determined by the user agent being used to present the media.

Formatting expectations
None. This element configures the behavior when the media is displayed.

Processing expectations
None.

Specialization hierarchy
+ topic/param media-d/media-loop
Attributes

The following attributes are available on this element: Universal attributes group and the attributes defined below.

@value
   Specifies whether the media should loop when played. The following values are recognized:
     true
        Default. Looped playback is enabled.
     false
        Playback will not be looped.

@dita-use-conref-target
   See Using the -dita-use-conref-target value for more information.

@name
   This attribute is required due to this element's derivation from the <param> element. The value is fixed to "loop" by the grammar definition.

Example

See <video> and <audio> for examples of this element.

Element reference topic: <media-muted>

The <media-muted> element controls whether or not the media referenced by the surrounding <video> or <audio> element should play without sound. It is analogous to the @muted attribute on HTML5 media elements.

Usage information

The boolean @value attribute specifies whether the media should be muted. The default value for this attribute is true, so the mere presence of this element within <video> or <audio> is sufficient to mute playback. The @value attribute must be explicitly set to false to unmute playback by default.

If this element is not present, the default behavior is determined by the user agent being used to present the media.

Formatting expectations

None. This element configures the behavior when the media is displayed.

Processing expectations

None.

Specialization hierarchy

+ topic/param media-d/media-muted

Attributes

The following attributes are available on this element: Universal attributes group and the attributes defined below.
@value
Specifies whether the media should be muted. The following values are recognized:

true
Default. Playback will be muted by default.

false
Playback will not be muted.

@dita-use-conref-target
See Using the -dita-use-conref-target value for more information.

@name
This attribute is required due to this element's derivation from the <param> element. The value is fixed to "muted" by the grammar definition.

Example
See <video> and <audio> for examples of this element.

Element reference topic: <video-poster>
The <video-poster> element specifies an image to display in place of the video referenced by the enclosing <video> element before playback begins. It is analogous to the @poster attribute on the HTML5 <video> element.

Usage information
The image to use is specified using the @value or @keyref attribute.

If this element is not present, the default behavior is determined by the user agent being used to present the video.

Formatting expectations
None. This element configures the behavior when the media is displayed.

Processing expectations
None.

Specialization hierarchy
+ topic/param media-d/video-poster

Attributes
The following attributes are available on this element: Universal attributes group and the attributes defined below.

@value
Specifies the URL of the image.

@keyref
A key reference to the image. If both @keyref and @value are specified, the image referenced by @keyref takes precedence unless the key cannot be resolved, in which case the resource specified by @value is used as a fallback.
@type
    Specifies the content type (MIME type) of the image specified by @value.
@name
    This attribute is required due to this element's derivation from the <param> element. The value is fixed to "poster" by the grammar definition.
@valuetype
    This attribute is present due to this element's derivation from the <param> element. The value is fixed to "ref" by the grammar definition.

Example
See <video> for examples of this element.

Element reference topic: <media-source>
The <media-source> element specifies the location of a resource containing a representation of the media being referenced by the enclosing <video> or <audio> element in a particular format. It is analogous to the <source> element used in HTML5 multimedia elements.

Usage information
The resource location is specified using @value or @keyref attribute. The content type (MIME type) of the content is specified using the @type attribute.

Formatting expectations
Not applicable.

Processing expectations
None.

Specialization hierarchy
+ topic/param media-d/media-source

Attributes
The following attributes are available on this element: Universal attributes group and the attributes defined below.
@value
    Specifies the URL of the media resource.
@keyref
    A key reference to the media resource. If both @keyref and @value are specified, the resource referenced by @keyref takes precedence unless the key cannot be resolved, in which case the resource specified by @value is used as a fallback.
@type
    Specifies the content type (MIME type) of the resource specified by @value.
@name
    This attribute is required due to this element's derivation from the <param> element. The value is fixed to "source" by the grammar definition.
@valuetype
This attribute is present due to this element's derivation from the <param> element. The value is fixed to "ref" by the grammar definition.

Example
See <video> and <audio> for examples of this element.

Element reference topic: <media-track>
The <media-track> element specifies the location of a resource containing a supplemental timed text track or other time-based data for the media referenced by the enclosing <video> or <audio> element. It is analogous to the <track> element used in HTML5 multimedia elements.

Usage information
Track resources should be in Web Video Text Track Format (WebVTT). The resource location is specified using @value or @keyref attribute. The kind of track is specified by the @type attribute. The language of the track is specified using the @xml:lang attribute.

Formatting expectations
The display of the track information is determined by the user agent being used to present the media.

Processing expectations
None.

Specialization hierarchy
+ topic/param media-d/media-source

Attributes
The following attributes are available on this element: Universal attributes group and the attributes defined below.

@value
Specifies the URL of the track resource.

@keyref
A key reference to the track resource. If both @keyref and @value are specified, the resource referenced by @keyref takes precedence unless the key cannot be resolved, in which case the resource specified by @value is used as a fallback.

@type
Specifies the usage for the referenced track data. This attribute is analogous to the @kind attribute on the HTML5 <track> element as described by the W3C HTML5 specification. The values recognized for this attribute are derived from the HTML5 standard, from which the below descriptions are copied:

subtitles
Transcription or translation of the dialogue, suitable for when the sound is available but not understood (e.g. because the user does not understand the language of the media resource's soundtrack). Displayed over the video.
captions
Transcription or translation of the dialogue, sound effects, relevant musical cues, and other
relevant audio information, suitable for when the soundtrack is unavailable (e.g. because it is
muted or because the user is deaf). Displayed over the video; labeled as appropriate for the
hard-of-hearing.

descriptions
Textual descriptions of the video component of the media resource, intended for audio synthesis
when the visual component is unavailable (e.g. because the user is interacting with the
application without a screen while driving, or because the user is blind). Synthesized as separate
audio track.

chapters
Chapter titles, intended to be used for navigating the media resource. Displayed as an
interactive list in the user agent’s interface.

metadata
Tracks intended for use from script. Not displayed by the user agent.

-dita-use-conref-target
See Using the -dita-use-conref-target value for more information.

@name
This attribute is required due to this element’s derivation from the <param> element. The value is
fixed to “track” by the grammar definition.

@valuetype
This attribute is present due to this element’s derivation from the <param> element. The value is
fixed to “ref” by the grammar definition.

Example
See <video> and <audio> for examples of this element.

3.1.6 Stage three: #34 Remove <topicset> and <topicsetref>
Remove <topicset> and <topicsetref>

Champion
Eliot Kimber, Individual Member

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>30 May 2017</td>
<td><a href="https://lists.oasis-open.org/archives/dita/201706/msg00013.html">https://lists.oasis-open.org/archives/dita/201706/msg00013.html</a></td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>11 March 2018</td>
<td>DITA PDF</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>7 May 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>14 May 2019</td>
<td>Minutes</td>
</tr>
</tbody>
</table>
### Event

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>02 September 2019</td>
<td>Bill Burns, Healthwise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kristen James Eberlein, Eberlein Consulting LLC</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>05 October 2019</td>
<td></td>
</tr>
</tbody>
</table>

### Approved technical requirements

The `<topicset>` and `<topicsetref>` elements were never clearly defined, provide no obvious value over ordinary `<topicref>`, and have not be implemented by any tool known to the TC.

### Dependencies or interrelated proposals

None.

### Modified grammar files

- mapGroupDomain.rng:

  Remove:

  ```xml
  <define name="topicset">
    <ref name="topicset.element"/>
  </define>
  <define name="topicsetref">
    <ref name="topicsetref.element"/>
  </define>
  ```

  Remove:

  ```xml
  <ref name="topicset.element"/>
  <ref name="topicsetref.element"/>
  ```

  Delete entire declarations for patterns "topicset" and "topicsetref":

  ```xml
  <documentation>Topicset</documentation>
  <define name="topicset.content">
  ...  
  </define>
  <documentation>Topicset Reference</documentation>
  <define name="topicsetref.content">
  ...  
  </define>
  ```

  Remove *.attlist patterns for topicset and topicsetref:

  ```xml
  <define name="topicset.attlist" combine="interleave">
    <ref name="global-atts"/>
    <optional>
      <attribute name="class" a:defaultValue="+ map/topicref mapgroup-d/topicset "/>
    </optional>
  </define>
  <define name="topicsetref.attlist" combine="interleave">
    <ref name="global-atts"/>
    <optional>
      <attribute name="class" a:defaultValue="+ map/topicref mapgroup-d/topicsetref "/>
    </optional>
  </define>
  ```
Remove references to topicset and topicsetref from %mapgroup-d-topicref:

```xml
<!ENTITY % mapgroup-d-topicref
  "anchorref | keydef | mapref | topicgroup | topichead |
  topicset | topicsetref"
>
```

Remove declarations of `%topicset`; and `%topicsetref`; parameter entities:

```xml
<!ENTITY % topicset    "topicset"                                    >
<!ENTITY % topicsetref "topicsetref"                                 >
```

Remove declarations for topicset and topicsetref elements:

```xml
<!ENTITY % topicset.content                                    >
<!ELEMENT  topicset %topicset.content;>                        
<!ATTLIST  topicset %topicset.attributes;>                      
```

```xml
<!ENTITY % topicsetref.content                                 >
<!ELEMENT  topicsetref %topicsetref.content;>                   
<!ATTLIST  topicsetref %topicsetref.attributes;>                
```

Remove *.*attlist declarations for topicset and topicsetref:

```xml
<!ATTLIST  topicset     %global-atts;  class CDATA " + map/topicref mapgroup-d/topicset 
  >
<!ATTLIST  topicsetref  %global-atts;  class CDATA " + map/topicref mapgroup-d/ topicsetref 
  >
```

**Modified terminology**

None.

**Modified specification documentation**

Update the following topics to remove references to `<topicset>` and `<topicsetref>`:

- archSpec/base/ditamap-elements.dita
- langRef/quick-reference/base-elements-a-to-z.dita
- langRef/quick-reference/all-elements-a-to-z.dita
- map-group-elements.ditamap

Remove the following topics entirely:

- langRef/base/topicsetref.dita
- langRef/base/topicset.dita
Table 2: Changes to Topics

<table>
<thead>
<tr>
<th>Topic</th>
<th>DITA 1.3 Text</th>
<th>DITA 2.0 Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>ditamap-elements.dita</td>
<td><code>&lt;topicset&gt;</code> Enables authors to define a branch of navigation in a DITA map so that it can be referenced from another DITA map. <code>&lt;topicsetref&gt;</code> Enables authors to reference a navigation branch that is defined in the current map or in another DITA map.</td>
<td>Delete both definition list entries.</td>
</tr>
<tr>
<td>langRef/quick-reference/base-elements-a-to-z.dita</td>
<td><code>&lt;sli&gt;&lt;xref keyref=&quot;topicset&quot;&gt;&lt;/xref&gt;&lt;/sli&gt; </code>&lt;sli&gt;&lt;xref keyref=&quot;topicsetref&quot;&gt;&lt;/xref&gt;&lt;/sli&gt;</td>
<td>Delete both simple list items.</td>
</tr>
<tr>
<td>langRef/quick-reference/all-elements-a-to-z.dita</td>
<td><code>&lt;sli&gt;&lt;xref keyref=&quot;topicset&quot;&gt;&lt;/xref&gt;&lt;/sli&gt; </code>&lt;sli&gt;&lt;xref keyref=&quot;topicsetref&quot;&gt;&lt;/xref&gt;&lt;/sli&gt;</td>
<td>Delete both simple list items.</td>
</tr>
<tr>
<td>langRef/map-group-elementsditamap</td>
<td><code>&lt;topicref href=&quot;base/topicset.dita&quot; keys=&quot;topicset&quot; /&gt; </code>&lt;topicref href=&quot;base/topicsetref.dita&quot; keys=&quot;topicsetref&quot; /&gt;</td>
<td>Delete both topicref elements.</td>
</tr>
</tbody>
</table>

Migration plans for backwards incompatibilities

Anyone currently using these elements will need to either replace them with normal topicrefs or define their own specializations to replace `<topicset>` or `<topicsetref>`.

Modifying the markup in documents could easily be done in a general DITA 1.x-to-2.0 migration tool or with a simple search and replace on "<topicset", "</topicset", "<topicsetref", and "</topicsetref" to replace "topicset" and "topicsetref" with "topicref".

The following table outlines the basic information for migrating existing content.

<table>
<thead>
<tr>
<th>Removed Element</th>
<th>Strategy</th>
<th>DITA 1.3 markup</th>
<th>DITA 2.0 markup</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;topicset&gt;</code></td>
<td>1. Replace <code>&lt;topicset&gt;</code> with <code>&lt;topicref&gt;</code>.</td>
<td><code>&lt;topicset id=&quot;sqlbasics&quot; href=&quot;sqlOverview.dita&quot;&gt;</code></td>
<td><code>&lt;topicref id=&quot;sqlbasics&quot; href=&quot;sqlOverview.dita&quot;&gt;</code></td>
</tr>
</tbody>
</table>
### 3.1.7 Stage three: #36 Remove deprecated elements and attributes

Remove elements and attributes that have been designated as deprecated, "reserved for future use," or defined by mistake and retained only to maintain backwards compatibility.

**Champion**

Kristen James Eberlein, Eberlein Consulting LLC

#### Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>6 June 2017</td>
<td>Minutes of TC meeting</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>1 February 2018; updated on 19 February 2018</td>
<td>• DITA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• HTML:</td>
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<td></td>
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<td>– 01</td>
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<td>– 02</td>
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<td>– 03</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td></td>
<td>Minutes of TC meetings:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 06 February 2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 13 February 2018</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• 20 February 2018</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>27 February 2018</td>
<td>Minutes of TC meeting: 27 February 2018</td>
</tr>
</tbody>
</table>
| Stage 3 proposal submitted to reviewers | 27 February 2018; revised and resubmitted to reviewers on 1 March 2018 (based on feedback from Robert Anderson); revised and resubmitted to reviewers on 2 March 2018 (based on feedback from Stan Doherty). | • Robert Anderson  
• Stan Doherty  
• Nancy Harrison  
• Keith Schengili-Roberts |
| Stage 3 proposal (this document) submitted to TC | 2 March 2018 | |

#### Approved technical requirements

Remove elements and attributes that have been designated as deprecated, "reserved for future use," or defined by mistake and retained only to maintain backwards compatibility.

<table>
<thead>
<tr>
<th>Removed Element</th>
<th>Strategy</th>
<th>DITA 1.3 markup</th>
<th>DITA 2.0 markup</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;topicsetref&gt;</td>
<td>1. Replace &lt;topicsetref&gt; with &lt;topicref&gt;, adding @format with the value &quot;ditamap&quot;.</td>
<td>&lt;topicsetref href=&quot;#sqlbasics&quot; format=&quot;ditamap&quot;/&gt;</td>
<td>&lt;topicref href=&quot;#sqlbasics&quot; format=&quot;ditamap&quot;/&gt;</td>
</tr>
</tbody>
</table>
Dependencies or interrelated proposals
None

Modified grammar files
The following files must be modified:

DTDs
- commonElements.mod
- map.mod
- mapGroup.mod
- topic.mod

RNG
- commonElementsMod.rng
- mapMod.rng
- mapGroupMod.rng
- topicMod.rng

In the content below, the following conventions are used:
- Bold is used to indicate code to be added.
- Line-through is used to indicate code to be removed.
- Ellipses indicate where code is snipped for brevity.

Figure 37: Removing <boolean>

commonElements.mod

```xml
<!ENTITY % basic.ph
    "%boolean; | 
    %cite; | 
    %keyword; |
    %ph; |
    %q; |
    %term; |
    %text; |
    %tm; |
    %xref; |
    %state;" >
...
<!ENTITY % basic.ph.noxref.nocite
    "%boolean; |
    %cite; |
    %keyword; |
    %ph; |
    %q; |
    %term; |
    %text; |
    %tm; |
    %state;" >
...
<!ENTITY % basic.ph.notm
    "%boolean; |
    %cite; |
    %keyword; |
    %ph; |
    %q; |
    %term; |
    %text; |
    %xref; |
```
Figure 38: Removing <boolean>

commomElementsMod.rng

"state;"

<define name="basic.ph">
  <choice>
    <ref name="boolean"/>
    <ref name="cite"/>
    <ref name="keyword"/>
    <ref name="ph"/>
    <ref name="q"/>
    <ref name="term"/>  
    <ref name="text" dita:since="1.3"/>
    <ref name="tm"/>
    <ref name="xref"/>
    <ref name="state"/>
  </choice>
</define>

<define name="basic.ph.noxref.nocite" dita:since="1.3">
  <choice>
    <ref name="boolean"/>
    <ref name="keyword"/>
    <ref name="ph"/>
    <ref name="q"/>
    <ref name="term"/>
    <ref name="text" dita:since="1.3"/>
    <ref name="tm"/>
    <ref name="state"/>
  </choice>
</define>

<define name="basic.ph.notm">
  <choice>
    <ref name="boolean"/>
    <ref name="cite"/>
    <ref name="keyword"/>
    <ref name="ph"/>
    <ref name="q"/>
    <ref name="term"/>
    <ref name="text" dita:since="1.3"/>
Figure 39: Removing &lt;indextermref&gt;

commonElements.mod

```xml
ENTITY % txt.incl
  "%draft-comment; | %fn; |
  %indextermref; | %indexterm; | %required-cleanup;"
>
...
</ENTITY>

<!ENTITY % indextermref CONTENT "EMPTY"

<!ENTITY % indextermref Attributes
  "keyref CDATA #REQUIRED
  %univ-attr;"

<!ELEMENT indextermref %indextermref.content>
```
Figure 40: Removing <indextermref>

commonElementsMod.rng

Figure 41: Removing @alt and @longdesc on <image>

commonElements.mod
Figure 42: Removing @alt and @longdescref on <image>

commonElementsMod.rng

```xml
<define name="image.attributes">
  <optional>
    <attribute name="href"/>
  </optional>
  <optional>
    <attribute name="scope">
      <choice>
        <value>external</value>
        <value>local</value>
        <value>peer</value>
        <value>-dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="alt"/>
  </optional>
  <optional>
    <attribute name="longdescref"/>
  </optional>
  <optional>
    <attribute name="height">
      <data type="NMTOKEN"/>
    </attribute>
  </optional>
  <optional>
    <attribute name="width">
      <data type="NMTOKEN"/>
    </attribute>
  </optional>
  <optional>
    <attribute name="scale">"#IMPLIED"
  </optional>
  <optional>
    <attribute name="scalefit">
      (yes | no | -dita-use-conref-target) "#IMPLIED"
    </attribute>
  </optional>
  <optional>
    <attribute name="placement">
      (break | inline | -dita-use-conref-target) 'inline'
    </attribute>
  </optional>
  %univ-atts;
  outputclass "#IMPLIED"
</define>
```
Figure 43: Removing @chunk="to-navigation"

No changes are needed to the grammar files.

Figure 44: Removing @collection-type="tree" on <linkpool> and <linklist>

The only changes required are to the DTDs.

topic.mod

```xml
<!ENTITY % linklist.attributes "collection-type
(choice | family | sequence | unordered | -dita-use-conref-target | tree)
#IMPLIED
 duplicates
(no | yes | -dita-use-conref-target)
#IMPLIED
 mapkeyref
 CDATA
%relational-atts;
%univ-atss;
 spectitle
 CDATA
#IMPLIED
 outputclass
 CDATA
#IMPLIED
```

Figure 45: Removing @collection-type on <reltable> and <reclspec>

map.mod

Adding a new attribute group:

```xml
<!ENTITY % topicref-atts-for-reltable
"type CDATA #IMPLIED
cascade CDATA #IMPLIED
processing-role (normal | resource-only | #IMPLIED
scope (external | local | peer | #IMPLIED
locktitle (no | yes | #IMPLIED
format CDATA #IMPLIED
linking (none | normal | sourceonly | targetonly | #IMPLIED
toc (no | yes | #IMPLIED
"'>
```
Modifying declarations for `<reltable>` and `<relcolspec>`:

```xml
<!ENTITY % reltable.attributes "title CDATA #IMPLIED
outputclass CDATA #IMPLIED
%topicref-atts-no-toc-no-keyscope
%topicref-atts-for-reltable;
%univ-atts;">
...
<!ENTITY % relcolspec.attributes "outputclass CDATA #IMPLIED
%topicref-atts-no-toc-no-keyscope
%topicref-atts-for-reltable;
%univ-atts;">
```

**Figure 46: Removing @collection-type on `<reltable>` and `<relcolspec>`**

Adding a new attribute group for use on `<reltable>` and `<relcolspec>`:

```xml
<define name="topicref-atts-for-reltable" dita:since="2.0">
  <optional>
    <attribute name="type"/>
  </optional>
  <optional>
    <attribute name="cascade" dita:since="1.3"/>
  </optional>
  <optional>
    <attribute name="processing-role">
      <choice>
        <value>normal</value>
        <value>resource-only</value>
        <value>-dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
  <optional>
    <attribute name="scope">
      <choice>
        <value>external</value>
        <value>local</value>
        <value>peer</value>
        <value>-dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
</define>
```
mapMod.rng

Modifying declarations for `<reltable>` and `<relcolspec>`; changes indicated in bold.
Figure 47: Removing @keyref on <navref>

map.mod

<!ENTITY % navref.attributes "%univ-atts;
   keyref CDATA #IMPLIED
   mapref CDATA #IMPLIED
   outputclass CDATA #IMPLIED">

Figure 48: Removing @keyref on <navref>

mapMod.rng

<define name="navref.attributes">
  <ref name="univ-atts"/>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="mapref"/>
  </optional>
  <optional>
    <attribute name="outputclass"/>
  </optional>
</define>

Figure 49: Removing @locktitle on <topichead> and <topicgroup>

map.mod

Add a new attribute entity

<!ENTITY % topicref-atts-no-locktitle "collection-type
   (choice | family | sequence | unordered |
    -dita-use-conref-target) #IMPLIED
   type CDATA #IMPLIED
   cascade CDATA #IMPLIED
   processing-role
    (normal | resource-only |
     -dita-use-conref-target) #IMPLIED
   scope (external | local |
Figure 50: Removing @locktitle on <topichead> and <topicgroup>
Add a new attribute entity

<define name="topicref-atts-no-locktitle">
  <optional>
    <attribute name="collection-type">
      <choice>
        <value>choice</value>
        <value>family</value>
        <value>sequence</value>
        <value>unordered</value>
      </choice>
    </attribute>
  </optional>
  <optional>
    <attribute name="type"/>
  </optional>
  <optional>
    <attribute name="cascade" dita:since="1.3"/>
  </optional>
  <optional>
    <attribute name="processing-role">
      <choice>
        <value>normal</value>
        <value>resource-only</value>
        <value>dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
  <optional>
    <attribute name="scope">
      <choice>
        <value>external</value>
        <value>local</value>
        <value>peer</value>
        <value>dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
  <optional>
    <attribute name="format"/>
  </optional>
  <optional>
    <attribute name="linking">
      <choice>
        <value>none</value>
        <value>normal</value>
        <value>sourceonly</value>
        <value>targetonly</value>
        <value>dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
  <optional>
    <attribute name="toc">
      <choice>
        <value>no</value>
        <value>yes</value>
        <value>dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
  <optional>
    <attribute name="print">
      <choice>
        <value>no</value>
        <value>printonly</value>
        <value>yes</value>
        <value>dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
</define>
mapGroupDomain.rng

<define name="topichead.attributes">
    <optional>
        <attribute name="navtitle"/>
    </optional>
    <optional>
        <attribute name="outputclass"/>
    </optional>
    <optional>
        <attribute name="keys"/>
    </optional>
    <optional>
        <attribute name="copy-to"/>
    </optional>
    <ref name="topicref-atts"/>
    <ref name="topicref-atts-no-locktitle">
        <ref name="univ-atts"/>
    </ref>
</define>

<define name="topicgroup.attributes">
    <optional>
        <attribute name="outputclass"/>
    </optional>
    <ref name="topicref-atts"/>
    <ref name="topicref-atts-no-locktitle">
        <ref name="univ-atts"/>
    </ref>
</define>

Figure 51: Removing @navtitle

map.mod

<!ENTITY % topicref.attributes "navtitle CDATA #IMPLIED
    href CDATA #IMPLIED
    keyref CDATA #IMPLIED
    keys CDATA #IMPLIED
    query CDATA #IMPLIED
    copy-to CDATA #IMPLIED
    outputclass CDATA #IMPLIED
" DITA TC work product Page 202 of 348
Figure 52: Removing @navtitle

mapMod.rng

```xml
<define name="topicref.attributes">
  <optional>
    <attribute name="navtitle"/>
  </optional>
  <optional>
    <attribute name="href"/>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="keys"/>
  </optional>
  <optional>
    <attribute name="query"/>
  </optional>
  <optional>
    <attribute name="copy-to"/>
  </optional>
  <optional>
    <attribute name="outputclass"/>
  </optional>
  <ref name="topicref-atts"/>
  <ref name="univ-atts"/>
</define>
```

Figure 53: Removing @print

map.mod

Remove the following code:

```xml
print  (no | printonly | yes | -dita-use-conref-target)
#IMPLIED
```

From the following entities:

- %topicref-atts;
- %topicref-atts-no-toc;
- %topicref-atts-no-toc-no-keyscope;
- %topicref-atts-without-format;

Figure 54: Removing @print

mapMod.rng

Remove the following code:

```xml
<optional>
  <attribute name="print">
    <choice>
      <value>no</value>
      <value>printonly</value>
      <value>yes</value>
    </choice>
  </attribute>
</optional>
```
From the following entities:

- `%topicref-atts;`
- `%topicref-atts-no-toc;`
- `%topicref-atts-no-toc-no-keyscope;`
- `%topicref-atts-without-format;`

**Figure 55: Removing @query**

map.mod

```xml
<!ENTITY % topicref.attributes "navtitleCDATA #IMPLIED
hrefCDATA #IMPLIED
keyrefCDATA #IMPLIED
keysCDATA #IMPLIED
queryCDATA #IMPLIED
copy-toCDATA #IMPLIED
outputclassCDATA #IMPLIED
%topicref-atts;
%univ-atts;"
>
```

mapGroup.mod

**Remove the following code:**

```xml
queryCDATA #IMPLIED
```

From the following entities:

- `%anchorref.attributes;`
- `%mapref.attributes;`
- `%topicset.attributes;`
- `%topicsetref.attributes;`
- `%keydef.attributes;`

topic.mod

```xml
<!ENTITY % link.attributes "hrefCDATA #IMPLIED
```
Figure 56: Removing @query

mapMod.rng

Remove the following code:

```xml
<optional>
  <attribute name="query"/>
</optional>
```

From the following entities:

- %anchorref.attributes;
- %mapref.attributes;
- %topicset.attributes;
- %topicsetref.attributes;
- %keydef.attributes;

```xml
<define name="topicref.attributes">
  <optional>
    <attribute name="navtitle"/>
  </optional>
  <optional>
    <attribute name="href"/>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="keys"/>
  </optional>
  <optional>
    <attribute name="query"/>
  </optional>
  <optional>
    <attribute name="copy-to"/>
  </optional>
  <optional>
    <attribute name="outputclass"/>
  </optional>
  <ref name="topicref-atts"/>
  <ref name="univ-atts"/>
</define>
```

mapGroupDomain.rng

```xml
<define name="anchorref.attributes">
  <optional>
    <attribute name="navtitle"/>
  </optional>
  <optional>
    <attribute name="href"/>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="keys"/>
  </optional>
  <optional>
    <attribute name="query"/>
  </optional>
  <optional>
    <attribute name="copy-to"/>
  </optional>
  <optional>
    <attribute name="outputclass"/>
  </optional>
  <ref name="topicref-atts"/>
  <ref name="univ-atts"/>
</define>
```
<value>-dita-use-conref-target</value>
</attribute>
</optional>
<optional>
<attribute name="chunk"/>
</optional>
<ref name="univ-atts"/>
</define>
...
<define name="keydef.attributes">
<optional>
<attribute name="navtitle"/>
</optional>
<optional>
<attribute name="href"/>
</optional>
<optional>
<attribute name="keyref"/>
</optional>
<optional>
<attribute name="keys"/>
</optional>
<attribute name="keyscope" dita:since="1.3"/>
</optional>
<optional>
<attribute name="query"/>
</optional>
<optional>
<attribute name="copy-to"/>
</optional>
<optional>
<attribute name="outputclass"/>
</optional>
<attribute name="collection-type">
<choice>
<value>choice</value>
<value>family</value>
<value>sequence</value>
<value>unordered</value>
<value>-dita-use-conref-target</value>
</choice>
</attribute>
</optional>
<optional>
<attribute name="processing-role" a:defaultValue="resource-only">
<choice>
<value>normal</value>
<value>resource-only</value>
<value>-dita-use-conref-target</value>
</choice>
</attribute>
</optional>
<optional>
<attribute name="type"/>
</optional>
<optional>
<attribute name="cascade" dita:since="1.3"/>
</optional>
<optional>
<attribute name="scope">
<choice>
<value>external</value>
<value>local</value>
<value>peer</value>
<value>-dita-use-conref-target</value>
</choice>
</attribute>
</optional>
<optional>
<attribute name="locktitle">
<choice>
<value>no</value>
<value>yes</value>
</choice>
</attribute>
</optional>
<define name="link.attributes">
  <optional>
    <attribute name="href"/>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="query"/>
  </optional>
  <ref name="relational-atts"/>
  <ref name="univ-atts"/>
</define>
Figure 57: Removing @refcols
commonElements.mod

<!ENTITY % simpletable.attributes "relcolwidth CDATA #IMPLIED
keycol NMTOKEN #IMPLIED
%display-atts; spectitle CDATA #IMPLIED%univ-atts;
outputclass CDATA #IMPLIED"></define>

Figure 58: Removing @refcols
commonElementsMod.rng

<define name="simpletable.attributes">
  <optional>
    <attribute name="relcolwidth"/>
  </optional>
  <optional>
    <attribute name="keycol">
      <data type="NMTOKEN"/>
    </attribute>
  </optional>
  <optional>
    <attribute name="refcols">
      <data type="NMTOKENS"/>
    </attribute>
  </optional>
  %display-atts;
  spectitle CDATA #IMPLIED
  %univ-atts;
  outputclass CDATA #IMPLIED"
</define>

Figure 59: Removing @role="sample" and @role="external"
topic.mod

<!ENTITY % relational-atts "type CDATA #IMPLIED
cascade CDATA #IMPLIED
format CDATA #IMPLIED"/>
Figure 60: Removing @role="sample" and @role="external"
Figure 61: Removing @title on <map>

map.mod

<!--ENTITY % map.attributes "title
    CDATA #IMPLIED
    id
    ID #IMPLIED
    %conref-atts;
    anchorref
    CDATA #IMPLIED
    outputclass
    CDATA #IMPLIED-->
Modified terminology
None

Modified specification documentation
The following architectural spec topics need to be modified as indicated:

- 2.2.2.4 DITA map attributes
  - In @collection-type, remove "Where the @collection-type attribute is available on elements that cannot directly contain elements (such as <retable> or <topicref>), the behavior of the attribute is reserved for future use."
  - Remove @navtitle entry
  - In @locktitle, remove note about @navtitle
- 2.2.2.5.4 Example: How the @cascade attribute functions: Remove @navtitle from example
- 2.2.3.6 Scaling a list of controlled values to define a taxonomy: Remove @navtitle from example
- 2.2.3.8.1 Example: How hierarchies defined in a subject scheme map affect filtering: Remove @navtitle from example
- 2.2.3.8.2 Example: Extending a subject scheme: Remove @navtitle from example
- 2.2.3.8.3 Example: Extending a subject scheme upwards: Remove @navtitle from example
2.2.4.2.1 Conditional processing attributes: In @deliveryTarget, remove "This attribute is a replacement for the now deprecated @print attribute."

2.2.4.4 Cascading of metadata attributes in a DITA map: Remove mention of @print

2.2.4.5 Reconciling topic and map metadata elements: Remove @navtitle from example

2.2.4.6.1 Cascading of attributes from map to map: Remove mention of @print from text and example

2.3.4.9 Processing key references to generate text or link text: Remove "(such as @alt on the <image> element)"

2.4.1.1 Table of contents: Remove list item about @print

2.4.3.4 Conditional processing to generate multiple deliverable types
   - Remove "The map or topic references can still use the deprecated @print attribute to indicate whether they are applicable to print deliverables."
   - In @deliveryTarget, This attribute is a replacement for the now deprecated print attribute."
   - Remove entry for @print

2.4.5.2 Chunking examples: Remove value of "to-navigation"

2.6.3.3 DTD: Coding requirements for element type declarations: Modify declaration of topichead.attributes to include new attribute group entity defined to exclude collection-type

2.6.4.3 RELAX NG: Coding requirements for element type declarations: Modify declaration of topichead.attributes to include new attribute group entity defined to exclude collection-type

The following element-reference topics need to be removed:

3.7.1 <boolean>

3.4.2.2 <indextermref>

The following element-reference topics need to be modified as indicated:

3.1 Base DITA elements, A to Z: Remove links to <boolean> and <indextermref>

3.2.1.5 <navtitle>: Remove mentions of @navtitle

3.2.2.1 <alt>: Remove mention of @alt from the short description

3.2.2.17 <image>: Remove @alt and @longdescref

3.2.2.23 <lq>: Remove "internal" and "external" as specified values for the @type attribute

3.2.2.25 <object>: Remove @longdescref

3.2.4.1 <link>: Remove @query

3.2.4.2 <linklist>: Remove paragraph about "tree" as a value for @collection-type

3.2.4.3 <linkpool>: Remove paragraph about "tree" as a value for @collection-type

3.3.1.5 <navref>: Remove @keyref

3.3.1.1 <map>: Remove @title

3.3.1.6 <reltable>: Modify attributes section to indicate that <reltable> does not have @collection-type

3.3.1.10 <relcolspec>: Modify attributes section to indicate that <relcolspec> does not have @collection-type

3.3.2.4 <topicgroup>: Modify attributes section to indicate that <topicgroup> does not have @locktitle

3.3.2.5 <topichead>: Modify attributes section to indicate that <topichead> does not have @locktitle

3.4.1.22 <resourceid>: Remove paragraph about deprecated usage of @id
- 3.5.1.3 `<hazardsymbol>`: Remove `@longdesceref`
- 3.6.1.2 `<schemeref>`: Remove mention of `@navtitle`
- 3.6.1.15 `<relatedSubjects>`: Remove mention of `@navtitle` from text AND the example
- 3.6.2.2 `<topicapply>`: Remove mention of `@navtitle`
- 3.10.1.2 Metadata attribute group: In description of `@deliveryTarget`, remove mention of `@print`
- 3.10.3 Attributes common to many map elements:
  - Remove the following paragraph: "Usage of the `@collection-type` attribute on `<relatable>` and `<relcolspec>` is currently undefined and reserved for future use."
  - Remove `@print`
- 3.10.10 Simpletable attribute group: Remove `@refcols`
- 3.10.12 Topicref element attributes group: Remove `@navtitle` and `@query`
- 3.10.13.5.1 Using the `-dita-use-conref-target` value: Remove note about `@navtitle` and usage of `@navtitle` in the examples
- 3.10.13.12 The `@role` and `@otherrole` attributes: Remove values of "sample" and "external"
- B.6 Element-by-element recommendations for translators
  - In "Topic elements," remove rows for `<boolean>` and `<indextermref>`
  - In "Topic elements," remove `@alt` on `<image>`
  - In "Map elements," remove paragraph about `@navtitle`
  - In "Map elements," remove `@title` on `<map>` and footnote 8
  - In "Subject scheme elements," remove mentions of `@navtitle`
  - Remove footnote 5 about `@alt` on `<image>`

The following element-reference topics contain examples that must be modified to remove instances of `@navtitle`. The `@navtitle` attribute can be removed (and the file name made more descriptive) or replaced by either an XML comment or a `<navtitle>` element.

- 3.3.1.4 `<anchor>`
- 3.3.2.3 `<mapref>`
- 3.4.1.14 `<metadata>`
- 3.6.1.1 `<subjectScheme>`
- 3.6.1.3 `<hasInstance>`
- 3.6.1.4 `<hasKind>`
- 3.6.1.5 `<hasNarrower>`
- 3.6.1.6 `<hasPart>`
- 3.6.1.7 `<hasRelated>`
- 3.6.1.8 `<enumerationdef>`
- 3.6.1.10 `<attributedef>`
- 3.6.1.14 `<subjectdef>`
- 3.6.2.1 `<subjectref>`
- 3.6.2.3 `<topicsubject>`
- 3.6.2.4 `<topicSubjectTable>`

The following table contains precise suggestions for the changes to be made.
<table>
<thead>
<tr>
<th>Topic</th>
<th>DITA 1.3 content</th>
<th>DITA 2.0 content</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3.1.4 &lt;anchor&gt;</td>
<td>&lt;map&gt;</td>
<td>&lt;map&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;title&gt;MyComponent tasks&lt;/title&gt;</td>
<td>&lt;title&gt;MyComponent tasks&lt;/title&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;topicref navtitle=&quot;Start here&quot; href=&quot;start.dita&quot; toc=&quot;yes&quot;&gt;</td>
<td>&lt;topicref href=&quot;start.dita&quot; toc=&quot;yes&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;navref mapref=&quot;othermap2.ditamap&quot;/&gt;</td>
<td>&lt;navref mapref=&quot;othermap2.ditamap&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;navref mapref=&quot;othermap3.ditamap&quot;/&gt;</td>
<td>&lt;navref mapref=&quot;othermap3.ditamap&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;anchor id=&quot;a1&quot;/&gt;</td>
<td>&lt;anchor id=&quot;a1&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/anchorref&gt;</td>
<td>&lt;/topicref&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/map&gt;</td>
<td>&lt;/map&gt;</td>
</tr>
<tr>
<td>3.3.2.3 &lt;mapref&gt;</td>
<td>Figure 65: Map that reuses lib.ditamap</td>
<td>Figure 66: Map that reuses lib.ditamap</td>
</tr>
<tr>
<td></td>
<td>&lt;map id=&quot;standardlib&quot;&gt;</td>
<td>&lt;map id=&quot;standardlib&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;topichead navtitle=&quot;Developing with standard libraries&quot;&gt;</td>
<td>&lt;topichead navtitle=&quot;Developing with standard libraries&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;mapref href=&quot;lib.ditamap&quot;/&gt;</td>
<td>&lt;mapref href=&quot;lib.ditamap&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;topichead&gt;</td>
<td>&lt;topichead&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;!-- ... --&gt;</td>
<td>&lt;!-- ... --&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/map&gt;</td>
<td>&lt;/map&gt;</td>
</tr>
<tr>
<td>3.4.1.14 &lt;metadata&gt;</td>
<td>Metadata within a map:</td>
<td>Metadata within a map:</td>
</tr>
<tr>
<td></td>
<td>&lt;topicref href=&quot;metadata.dita&quot; navtitle=&quot;metadata element&quot;&gt;</td>
<td>&lt;topicref href=&quot;metadata.dita&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;topicmeta&gt;</td>
<td>&lt;topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;metadata&gt;</td>
<td>&lt;metadata&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;keywords&gt;</td>
<td>&lt;keywords&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;indexterm&gt;metadata element&lt;/indexterm&gt;</td>
<td>&lt;indexterm&gt;metadata element&lt;/indexterm&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/metadata&gt;</td>
<td>&lt;/metadata&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/topicmeta&gt;</td>
<td>&lt;/topicmeta&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/topicref&gt;</td>
<td>&lt;/topicref&gt;</td>
</tr>
<tr>
<td>3.6.1.1 &lt;subjectScheme&gt;</td>
<td>Same as &lt;enumerationdef&gt;</td>
<td>Same as &lt;enumerationdef&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;hasInstance&gt;</td>
<td>&lt;hasInstance&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;city&quot; navtitle=&quot;City&quot;&gt;</td>
<td>&lt;subjectdef keys=&quot;city&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;nyc&quot; navtitle=&quot;New York City&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;nyc&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;reykjavik&quot; navtitle=&quot;Reykjavik&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;reykjavik&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;moscow&quot; navtitle=&quot;Moscow&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;moscow&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;/subjectdef&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/hasInstance&gt;</td>
<td>&lt;/hasInstance&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td>3.6.13 &lt;hasInstance&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;subjectScheme&gt;</td>
<td>&lt;subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;hasInstance&gt;</td>
<td>&lt;hasInstance&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;city&quot; navtitle=&quot;City&quot;&gt;</td>
<td>&lt;subjectdef keys=&quot;city&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;nyc&quot; navtitle=&quot;New York City&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;nyc&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;reykjavik&quot; navtitle=&quot;Reykjavik&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;reykjavik&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;moscow&quot; navtitle=&quot;Moscow&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;moscow&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;/subjectdef&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/hasInstance&gt;</td>
<td>&lt;/hasInstance&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td>Topic</td>
<td>DITA 1.3 content</td>
<td>DITA 2.0 content</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>3.6.1.4 &lt;hasKind&gt;</td>
<td>This example specifies that cities, towns, and villages are each a kind of settlement. Additionally, bigcity, mediumcity, and smallcity are each a kind of city.</td>
<td>This example specifies that cities, towns, and villages are each a kind of settlement. Additionally, big-city, medium-city, and small-city are each a kind of city.</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectScheme&gt;</td>
<td>&lt;subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;hasKind&gt;</td>
<td>&lt;hasKind&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef</td>
<td>&lt;subjectdef</td>
</tr>
<tr>
<td></td>
<td>keys=&quot;settlement&quot; navtitle=&quot;Human settlement&quot;&gt;</td>
<td>keys=&quot;settlement&quot; navtitle=&quot;City&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;city&quot; navtitle=&quot;City&quot;&gt;</td>
<td>&lt;subjectdef keys=&quot;city&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;bigcity&quot; navtitle=&quot;Big city&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;big-city&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;mediumcity&quot; navtitle=&quot;Medium city&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;medium-city&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;smallcity&quot; navtitle=&quot;Small city&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;small-city&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td>3.6.1.5 &lt;hasNarrower&gt;</td>
<td>&lt;subjectScheme&gt;</td>
<td>&lt;subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;hasNarrower&gt;</td>
<td>&lt;hasNarrower&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;horticulture&quot; navtitle=&quot;Horticulture&quot;&gt;</td>
<td>&lt;subjectdef keys=&quot;horticulture&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;plantrose&quot; navtitle=&quot;Planting Roses&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;planting-roses&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td>3.6.1.6 &lt;hasPart&gt;</td>
<td>&lt;subjectScheme&gt;</td>
<td>&lt;subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;hasPart&gt;</td>
<td>&lt;hasPart&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;car&quot; navtitle=&quot;Car&quot;&gt;</td>
<td>&lt;subjectdef keys=&quot;car&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;tire&quot; navtitle=&quot;Tire&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;tire&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;horn&quot; navtitle=&quot;Horn&quot;/&gt;</td>
<td>&lt;subjectdef keys=&quot;horn&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td>3.6.1.7 &lt;hasRelated&gt;</td>
<td>&lt;subjectScheme&gt;</td>
<td>&lt;subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef keys=&quot;myProgram&quot; navtitle=&quot;My Program&quot;&gt;</td>
<td>&lt;subjectdef keys=&quot;myProgram&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;hasRelated keys=&quot;platforms&quot;&gt;</td>
<td>&lt;hasRelated keys=&quot;platforms&quot;&gt;</td>
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<td>Topic</td>
<td>DITA 1.3 content</td>
<td>DITA 2.0 content</td>
</tr>
<tr>
<td>-------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td></td>
<td>keys=&quot;runsOn&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>navtitle=&quot;runs on&quot;&gt;</td>
<td>keys=&quot;linux&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef</td>
<td>&lt;subjectdef</td>
</tr>
<tr>
<td></td>
<td>keys=&quot;linux&quot;&gt;</td>
<td>keys=&quot;windows&quot;&gt;</td>
</tr>
<tr>
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<td>navtitle=&quot;Linux&quot;/&gt;</td>
<td>navtitle=&quot;Microsoft Windows&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef</td>
<td>&lt;hasRelated&gt;</td>
</tr>
<tr>
<td></td>
<td>keys=&quot;mswin&quot;</td>
<td>&lt;/subjectdef&gt;</td>
</tr>
<tr>
<td></td>
<td>navtitle=&quot;Microsoft Windows&quot;/&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/hasRelated&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;/subjectdef&gt;</td>
</tr>
<tr>
<td>3.6.18</td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;!-- Pull in a scheme that defines unix OS values --&gt;</td>
<td>&lt;!-- Pull in a scheme that defines unix OS values --&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectScheme</td>
<td>&lt;subjectScheme</td>
</tr>
<tr>
<td></td>
<td>&lt;schemeref</td>
<td>&lt;schemeref</td>
</tr>
<tr>
<td></td>
<td>href=&quot;unixOS.ditamap&quot;/&gt;</td>
<td>href=&quot;unixOS.ditamap&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef</td>
<td>&lt;subjectdef</td>
</tr>
<tr>
<td></td>
<td>keys=&quot;os&quot;&gt;</td>
<td>keys=&quot;operating-systems&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>navtitle=&quot;Applications&quot;&gt;</td>
<td>keys=&quot;windows&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef</td>
<td>&lt;subjectdef</td>
</tr>
<tr>
<td></td>
<td>keys=&quot;windows&quot;/&gt;</td>
<td>keys=&quot;windows&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;subjectdef</td>
<td>&lt;subjectdef</td>
</tr>
<tr>
<td></td>
<td>keys=&quot;zos&quot;&gt;</td>
<td>keys=&quot;os&quot;&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;/subjectdef&gt;</td>
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<tr>
<td></td>
<td>&lt;/subjectdef&gt;</td>
<td>&lt;/subjectdef&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;attributedef</td>
<td>&lt;attributedef</td>
</tr>
<tr>
<td></td>
<td>name=&quot;platform&quot;/&gt;</td>
<td>name=&quot;platform&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;attributedef</td>
<td>&lt;attributedef</td>
</tr>
<tr>
<td></td>
<td>name=&quot;otherprops&quot;/&gt;</td>
<td>name=&quot;otherprops&quot;/&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/enumerationdef&gt;</td>
<td>&lt;/enumerationdef&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td></td>
<td>&lt;/subjectScheme&gt;</td>
<td>&lt;/subjectScheme&gt;</td>
</tr>
<tr>
<td>Topic</td>
<td>DITA 1.3 content</td>
<td>DITA 2.0 content</td>
</tr>
<tr>
<td>-------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>3.6.1.10</td>
<td>Same as &lt;enumerationdef&gt;</td>
<td>Same as &lt;enumerationdef&gt;</td>
</tr>
<tr>
<td>3.6.1.14</td>
<td>Same as &lt;enumerationdef&gt;</td>
<td>Same as &lt;enumerationdef&gt;</td>
</tr>
<tr>
<td>3.6.2.1</td>
<td>&lt;subjectref&gt; In the following example, the map is classified as covering the Linux subject, and the &quot;Developing web applications&quot; topic is classified as covering the web and development subjects. These subjects (and their keys) are defined externally in a subject scheme map; in order to reference the subject directly without the subject scheme map, the @href attribute would be used in place of @keyref.</td>
<td>&lt;map&gt; In the following example, the map is classified as covering the Linux subject, and developing-web-applications.dita is classified as covering the web and development subjects. These subjects (and their keys) are defined externally in a subject scheme map; in order to reference the subject directly without the subject scheme map, the @href attribute would be used in place of @keyref.</td>
</tr>
<tr>
<td>3.6.2.3</td>
<td>Same as &lt;subjectref&gt;; should be reused</td>
<td>Same as &lt;subjectref&gt;; should be reused</td>
</tr>
<tr>
<td>3.6.2.4</td>
<td>The following &lt;topicSubjectTable&gt; classifies several topics according to subjects defined in the previous map. As with any &lt;topicSubjectTable&gt;, the first column is used to specify topics. In this specific example, the second column is used to specify a goal, based on the “goal” subject in the header. The third column is used to specify an operating system. Based on those definitions, the following</td>
<td>The following &lt;topicSubjectTable&gt; classifies several topics according to subjects defined in the previous map. As with any &lt;topicSubjectTable&gt;, the first column is used to specify topics. In this specific example, the second column is used to specify a goal, based on the “goal” subject in the header. The third column is used to specify an operating system. Based on those definitions, the following</td>
</tr>
</tbody>
</table>
classifications are made by this table:

- The topics “Configuring cron for efficient startup” and “Allocating raw storage” are each classified by the goal of “performance”; they also are classified by the operating systems “linux” and “unix”.
- The topics “Analyzing web logs for service issues” and “Detecting denial-of-service attacks” are each classified by the goal of “reliability”; they also are classified by the operating systems “linux”, “unix”, and “windows”.
- No relationship is defined between subjects in the table, meaning that this table does not define any relationship between the goal of “performance” and the operating systems “linux” or “unix”.

<table>
<thead>
<tr>
<th>Topic</th>
<th>DITA 1.3 content</th>
<th>DITA 2.0 content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

```xml
<map>
  <!-- ... -->
  <topicSubjectTable>
    <topicSubjectHeader>
      <topicCell type="task"/>
      <subjectCell>
        <topicsubject keyref="goal"/>
      </subjectCell>
      <subjectCell>
        <topicapply keyref="os"/>
      </subjectCell>
    </topicSubjectHeader>
    <topicSubjectRow>
      <topicCell>
        <topicref href="configure-cron-for-efficiency.dita" navtitle="Configuring cron for efficient startup"/>
        <topicref href="allocating-raw-storage.dita" navtitle="Allocating raw storage"/>
      </topicCell>
      <subjectCell>
        <topicsubject keyref="performance"/>
      </subjectCell>
      <subjectCell>
        <topicapply keyref="linux"/>
        <topicapply keyref="unix"/>
      </subjectCell>
    </topicSubjectRow>
  </topicSubjectTable>
</map>
```
Information architects and content strategists will need to search their content for elements, attributes, and attribute values that were removed from DITA 2.0:

- `<boolean>`
- `<indextermref>`
- `@alt`
- `@chunk="to-navigation"`
- `@collection-type="tree" on <linkpool> and <linklist>`
- `@collection-type on <reltable> and <relcolspec>`
- `@keyref on <navref>`
- `@locktitle on <topichead> and <topicgroup>`
- `<image>@longdescref`
- `@navtitle`
- `@print`
- `@query`
- `<refcols>`
- `@role="sample" and @role="external"`
- `<title>map`
- `@type="internal" and @type="external" on <lq>`

The deprecated elements, attributes, and attribute values will need to be removed.

The DITA TC should offer migration advice only for deprecated elements and attributes (highlighted in the list above); we cannot guess at how users have used attribute and attribute values that were never
formally defined. In addition, we cannot provide migration advice to vendors who have directly modified the OASIS-provided grammar files.

The following table outlines the basic information for migrating existing content.

<table>
<thead>
<tr>
<th>Deprecated item</th>
<th>Strategy</th>
<th>DITA 1.3 markup</th>
<th>DITA 2.0 markup</th>
</tr>
</thead>
</table>
| @alt            | **1.** Remove the @alt attribute.  
**2.** Create an `<alt>` element as child of `<image>`.  
**3.** Insert the value of the @alt into the `<alt>` element. | `<image href="bike.gif" alt="Two-wheeled bicycle"/>`                            | `<image href="bike.gif" alt="Two-wheeled bicycle"/>`                          |
| `<boolean>`     | Replace the `<boolean>` with a `<state>` or `<data>` element.             | She said "<boolean state="yes"/>" when I asked her to marry me!                 | "She said <state name="answer" value="yes"/>" when I asked her to marry me!   |
|                 | **Note** This is the example from the specification. It is very stupid and embarrassing. The element only had value as a specialization base. |                                                                                 | **Note** Again, this is also a very stupid example.                             |
| @print          | **1.** Identify maps that use the @print attribute.  
**2.** Develop a subjectScheme map with appropriate values for the @deliveryTarget attribute.  
**3.** Replace the @print attribute with a @deliveryTarget attribute and a appropriate value. | `<topicref href="foo.dita" print="no"/>`                                       | `<topicref href="foo.dita" deliveryTarget="Web-only"/>`                        |
| @navtitle       | **1.** Identify maps that use the @navtitle attribute.                   | `<subjectScheme>  
  <subjectdef keys="os" navtitle="Operating system">  
    <subjectdef>  
      <navtitle>Operating  
    </subjectdef>  
  </subjectdef>  
</subjectScheme>` | `<subjectScheme>  
  <subjectdef keys="os">  
    <topicmeta>  
      <navtitle>Operating  
    </topicmeta>  
  </subjectdef>  
</subjectScheme>` |
<table>
<thead>
<tr>
<th>Deprecated item</th>
<th>Strategy</th>
<th>DITA 1.3 markup</th>
<th>DITA 2.0 markup</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Remove the @navtitle attribute and replace it with an XML comment or a @navtitle element, whichever is appropriate</td>
<td>The DITA TC suggests simply removing @navtitle if the @locktitle attribute is not set. If the @locktitle attribute is set to &quot;yes,&quot; add a &lt;navtitle&gt; element.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

```xml
<subjectScheme keys="linux">
  <subjectdef navtitle="Linux">
    <topicmeta>
      <navtitle>Linux</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="RedHat Linux">
    <topicmeta>
      <navtitle>RedHat Linux</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="SuSE Linux">
    <topicmeta>
      <navtitle>SuSE Linux</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="Windows">
    <topicmeta>
      <navtitle>Windows</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="z/OS">
    <topicmeta>
      <navtitle>z/OS</navtitle>
    </topicmeta>
  </subjectdef>
</subjectScheme>
```

```xml
<subjectScheme keys="linux">
  <subjectdef navtitle="Linux">
    <topicmeta>
      <navtitle>Linux</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="RedHat Linux">
    <topicmeta>
      <navtitle>RedHat Linux</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="SuSE Linux">
    <topicmeta>
      <navtitle>SuSE Linux</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="Windows">
    <topicmeta>
      <navtitle>Windows</navtitle>
    </topicmeta>
  </subjectdef>
  <subjectdef navtitle="z/OS">
    <topicmeta>
      <navtitle>z/OS</navtitle>
    </topicmeta>
  </subjectdef>
</subjectScheme>
```
Deprecated item

@longdescref on <image>

1. Remove the @longdescref attribute.
2. Insert a <longdescref> element.

DITA practitioners who have developed specialization and constraint modules that enumerate any of the deprecated elements and attributes will need to remove them from the modules.

3.1.8 Stage three: #46 Remove @xtrf and @xtrc

The @xtrf and @xtrc attributes were added in DITA 1.0 purely for processing purposes, to add a standard way for processors to store mid-conversion debug information while (in theory) retaining validity against an original DTD. This is a legacy concern outside the scope of the standard / outside of the usual interoperability concern; they should be removed as part of the effort to clean up DITA 2.0 and remove obsolete or unnecessary markup.

Champion

Robert Anderson

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>11 July 2017</td>
<td>Minutes</td>
</tr>
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<td>Date</td>
<td>Links</td>
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<td>--------------------------------------------</td>
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<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>2 Feb 2018</td>
<td>HTML, DITA</td>
</tr>
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<td>Stage 2 proposal discussed</td>
<td>6 Feb 2018</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>1 March 2018</td>
<td>Carsten Brennecke, Kris Eberlein</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>6 March 2018</td>
<td></td>
</tr>
</tbody>
</table>

**Approved technical requirements**

1. Remove declarations of @xtrf and @xtrc from the grammar files.
2. Remove use of the %global-atts; attribute group, which is currently used solely to define those two attributes.

**Dependencies or interrelated proposals**

N/A

**Modified grammar files**

For RNG, the following group and declarations will be removed from commonElementsMod.rng:

```xml
<define name="global-atts">
  <optional>
    <attribute name="xtrc"/>
  </optional>
  <optional>
    <attribute name="xtrf"/>
  </optional>
</define>
```

In addition, all uses of the following should be removed; this is currently used on every RNG element declaration, so there is no benefit to listing every instance in the grammar:

```xml
<ref name="global-atts"/>
```

For DTDs, the following entity and declarations will be deleted from commonElements.mod:

```xml
<!ENTITY % global-atts "xtrc
  CDATA #IMPLIED
xtrf
  CDATA #IMPLIED"
>
```

In addition, all uses of the following should be removed; this is currently used on every DTD element declaration, so there is no benefit to listing every instance in the grammar:

```xml
%global-atts;
```
Modified terminology
N/A

Modified specification documentation

The Debug Attributes topic will be removed from the specification. None of the content will be preserved and no new content is required elsewhere. It is currently referenced from ditaref-attributes.ditamap.

Links to this topic will need to be removed from any attribute definitions that currently include them (a small number of elements that modify or do not include most of “universal attributes” group):

- 3.2.1.11 <dita> (new text in italics): “The following attributes are available on this element: xmlns:ditaarch and @DITAArchVersion from Architectural attribute group, and the Localization attribute group and Debug attribute group.

- 3.3.1.11 <ux-window>: “The following attributes are available on this element: ID attribute group, Metadata attribute group, Debug attribute group, class (Not for use by authors), and the attributes defined below.”

- 3.6.1.8 <enumerationdef>: The following attributes are available on this element: ID attribute group, @status and @base from Metadata attribute group, outputclass, Debug attribute group, class (Not for use by authors), and the attributes defined below.

- 3.6.1.9 <elementdef>: The following attributes are available on this element: ID attribute group, @status and @base from Metadata attribute group, outputclass, Debug attribute group, class (Not for use by authors), and the attributes defined below.

- 3.6.1.10 <attributedef>: “The following attributes are available on this element: ID attribute group, @status and @base from Metadata attribute group, outputclass, Debug attribute group, class (Not for use by authors), and the attributes defined below.”

- 3.7.7 <no-topic-nesting>: “The following attributes are available on this element: Debug attribute group and class (Not for use by authors), and the attributes defined below.”

Migration plans for backwards incompatibilities

- Any documents that specify @xtrf or @xtrc in the source will need to remove the attributes.

  Note  There is no migration plan for moving information to other attributes; these attributes were never intended for use in source, so any existing use is non-standard and we cannot predict the proper migration path. One option for this scenario is to create specialization modules that define @xtrf and @xtrc as specializations of @base, which will restore them to all elements. Alternatively, a better solution might be to create new specialized attributes with names that correspond to the content, and to migrate @xtrf and @xtrc to those new attributes.

- Specialization or constraint modules that include references to the global-atts group or parameter entity will need to remove those references. This will most easily be accomplished with a search/replace operation that replaces the reference with an empty value.

- Any specialization or constraint modules that explicitly add these attributes to an attribute list will need to remove the attribute declarations, but this is less likely as the most common design pattern is to reference the group as we do in every OASIS element declaration.
3.1.9 Stage three: #73 Remove delayed conref domain

Given the complexity of this feature, lack of implementation support, and lack of evidence that it is actually used by DITA adopters, the TC proposes to remove this feature from DITA 2.0. This proposal details the changes to the DITA 2.0 doctypes and specification.

Champion
Alan Houser

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
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<td>Stage 3 proposal submitted to reviewers</td>
<td>10 June 2018</td>
<td>Robert Anderson, Kris Eberlein</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>18 June 2018</td>
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Approved technical requirements
Not applicable; does not support any new technical requirements. Proposal meets DITA 2.0 goals of reducing complexity of the DITA 2.0 specification, and reducing complexity for implementors.

Dependencies or interrelated proposals
None.

Modified grammar files
Remove grammar files (RNG): base/rng/delayResolutionDomain.rng
Modified grammar files:
base/rng/basemap.rng
Remove <include href="delayResolutionDomain.rng"/>
Modified terminology
No new terminology.

Modified specification documentation
Removed topics:
- containers/delayedconref-d.dita
- base/exportanchors.dita
- base/anchorid.dita
- base/anchorkey.dita

Modified topics:
langRef/base-elements.ditamap
Delete lines:
  <topicref href="containers/delayconref-d.dita">
  <topicref href="base/exportanchors.dita" keys="exportanchors" navtitle="exportanchors"/>
  <topicref href="base/anchorid.dita" keys="anchorid" navtitle="anchorid"/>
  <topicref href="base/anchorkey.dita" keys="anchorkey" navtitle="anchorkey"/>
  </topicref>
  </topicref>

langRef/quick-reference/base-elements-a-to-z.dita
Delete lines:
  <sli><xref keyref="anchorid"></xref></sli>
  <sli><xref keyref="anchorkey"></xref></sli>
  <sli><xref keyref="exportanchors"></xref></sli>

langRef/quick-reference/all-elements-a-to-z.dita
Delete lines:
  <sli><xref keyref="anchorid"></xref></sli>
  <sli><xref keyref="anchorkey"></xref></sli>
  <sli><xref keyref="exportanchors"></xref></sli>

common/commonNavLibraryTable.dita
Delete lines:
  <reference id="contentmodel-anchorid" product="base">
    <section id="contains" otherprops="contains containedby">
      <title>Content models</title>
      <p>See <xref keyref="moda/anchorid" type="reference" appendix="desc"/></xref> for information about this element in OASIS document type shells.</p>
    </section>
  </reference>
  <reference id="contentmodel-anchorkey" product="base">
    <section id="contains" otherprops="contains containedby">
      <title>Content models</title>
      <p>See <xref..." product="base"></xref>..." product="base"></xref>
    </section>
  </reference>
non-normative/basedoctypes.dita
Remove two instances of: <li>Conref delayed resolution (map/topic)</li>

non-normative/basedomains.dita
Remove:

non-normative/oasisdomains.dita
Remove:

(Also remove commented reference to domain).

non-normative/elementsMerged.dita
Remove:

DITA TC work product
Migration plans for backwards incompatibilities

The DITA TC will not explicitly support migration or provide a mechanism to retain backwards compatibility. DITA 2.0 adopters who use this feature can integrate the DITA 1.3 delayed conref domain; or support this feature in some other way.

3.1.10 Stage three: #105 Redesign chunking

Simplify how the @chunk attribute is defined to 1) make it easier for authors to use, and 2) make implementation easier and more reliable.

Champion

Provide information about the champion. If the proposal is submitted by a subcommittee, include the name of the point person. He or she should have prepared this proposal and thoroughly understand all of the content. The point person must be present at the TC calls when this proposal is discussed.

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
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<tr>
<td>Stage 1 proposal accepted</td>
<td>13 March 2018</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>Submitted 26 March 2018, updated 9 April 2018</td>
<td>DITA source, HTML</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>3 April and 10 April</td>
<td>Minutes for 3 April 2018, 10 April 2018</td>
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<tr>
<td>Stage 2 proposal approved</td>
<td>17 April</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>December 2018</td>
<td>Stan Doherty, Eliot Kimber (extra review from Chris Nitchie)</td>
</tr>
<tr>
<td>Stage 3 proposal (initial version) submitted to TC</td>
<td>22 April 2019</td>
<td>Email to TC</td>
</tr>
<tr>
<td>Stage 3 proposal (with updated examples) submitted to TC</td>
<td>06 May 2019</td>
<td>SVN link</td>
</tr>
</tbody>
</table>
Approved technical requirements

- No change to grammar files. The attribute name is the same; chunk tokens are not defined in the grammar for 1.x and this will not change in 2.x.
- For some processors or output formats, chunking is irrelevant. Where it is irrelevant, nothing changes for processors.
- All previously defined tokens for @chunk will be removed from the specification.
- Two new tokens will be defined in the specification:
  1. chunk="combine" This is roughly equivalent to chunk="to-content" in DITA 1.x.
     - When specified on a map, everything within the scope of that map is published as a single result document.
     - When specified on a branch of a map (or reference to a map), everything within the scope of that branch or reference is published as a single result document.
     - There is no way to undo the combine action for something within that scope.
  2. chunk="split" This is roughly equivalent to chunk="by-topic" in DITA 1.x.
     - When specified on a <topicref>, it indicates that all topics within the referenced document should be split into multiple documents. For example, in a context where each individual DITA document is published as a single HTML file, specifying chunk="split" on a reference to a document that contains five topics will result in 5 documents + 5 output files.
     - When a document is split, the effective map hierarchy remains the same. In the example from the previous item, this means that evaluating @chunk for the one map reference would result in five references, which preserve any nesting hierarchy from that document.
     - When specified on a root map, it indicates that all references should treat chunk="split" as the default operation. Setting chunk="combine" anywhere will override that default for that section of the map.
     - When specified on a nested map, it indicates that the all references within the scope of that nested map should treat chunk="split" as the default operation. Setting chunk="combine" anywhere will override that default for that section of the map.
     - Specifying chunk="split" on any other container element that does not reference a document (such as on <topicgroup>) has no meaning.
  3. While we view this use as unlikely, the attribute is left open for application-specific tokens.

Dependencies or interrelated proposals

N/A

Modified grammar files

N/A

Modified terminology

N/A
Modified specification documentation

The following section of the specification should be removed, and replaced with the updated topics attached below:

- 2.4.5 Chunking
  - 2.4.5.1 Using the @chunk attribute
  - 2.4.5.2 Chunking examples

The current definition of @chunk in the Attributes common to many map elements is general enough that it applies equally to DITA 1.3 and DITA 2.0.

Migration plans for backwards incompatibilities

The best way to address this change is a search/replace type operation that finds values in the @chunk attribute. When the value contains to-content, replace the entire value with combine. When the value contains by-topic, replace the entire value with split.

chunk="combine"

The combine token in @chunk is intended for cases where a publishing process normally results in a single output artifact for each source XML document. When some or all of those source XML documents are better presented as a single output artifact, setting chunk="combine" instructs a processor to combine the referenced source documents for rendering purposes.

chunk="split"

The split token in @chunk is intended for cases where a publishing process normally results in a single output artifact for each single source XML document, regardless of how many DITA topics exist within each source document. When a source XML document containing many topics is better rendered as multiple output artifacts, setting chunk="split" instructs a processor to split each topic from the referenced source document into its own document for rendering purposes.

The following rules apply to all values of the @chunk attribute:

- The @chunk attribute describes how a processor can split or combine source DITA documents into alternate organizational schemes for rendering purposes. This means that the @chunk attribute is only relevant when the organization of source DITA documents has an effect on organization of published documents. When the source document organization has no effect on published output, such as when producing a single PDF or EPUB, implementations MAY ignore the @chunk attribute.
• When the @chunk attribute results in more or fewer documents based on the combine or split tokens, the hierarchy of topics within the resulting map and topic organization SHOULD match the hierarchy in the original topics and maps.

• When the @chunk attribute results in more or fewer documents, implementations MAY create their own naming schemes for those reorganized documents.

• The @chunk attribute does not cascade to nested <topicref> elements or to nested map references.

• @chunk attribute values apply to DITA topic documents referenced from a map. Processors MAY apply equivalent processing to non-DITA documents.

Using the @chunk attribute to combine documents

The @chunk attribute can be set to chunk="combine" to produce a single result document out of topic documents that are best managed independently.

The combine token in @chunk is intended for cases where a publishing process normally results in a single output artifact for each source XML document. When some or all of those source XML documents are better presented as a single output artifact, setting chunk="combine" instructs a processor to combine the referenced source documents for rendering purposes.

Processing chunk="combine"

• When specified on a map, all source DITA documents referenced by the map are treated as one DITA document.

• When specified on a branch of a map, all source DITA documents referenced within that branch are treated as one DITA document.

  Note This is true regardless of whether the element that specifies @chunk refers to a topic or specifies a heading. In cases such as <topicgroup> where a grouping element specifies chunk="combine", the equivalent DITA document would be a single DITA document with a <dita> root element grouping peer topics.

• When specified on a reference to a map, all source DITA documents within the scope of the referenced map are treated as one DITA document.

• Once chunk="combine" is specified on a map, branch, or map reference, all source DITA documents grouped by that reference are treated as a single resource. Any additional @chunk attributes on elements within the hierarchy are ignored.

Using the @chunk attribute to split documents

The @chunk attribute can be set to chunk="split" to produce multiple result documents out of topics that are best managed within a single source document.

The split token in @chunk is intended for cases where a publishing process normally results in a single output artifact for each single source XML document, regardless of how many DITA topics exist within each source document. When a source XML document containing many topics is better rendered as multiple output artifacts, setting chunk="split" instructs a processor to split each topic from the referenced source document into its own document for rendering purposes.

Processing chunk="split"

• When specified on a <topicref> element that refers to a source DITA document, it indicates that all topics within the referenced document should be rendered as individual documents.

• When specified on an element such as <topicgroup> that does not refer to a topic or result in a published topic, the attribute has no meaning.
When specified on a map, `chunk="split"` sets a default operation for all source DITA documents in the map (outside the context of relationship tables). The default `split` value is used except where a `combine` value is encountered, in which case `combine` takes over for that entire branch.

**Using the @chunk attribute for other purposes**
Additional tokens can be defined by applications for use in the `@chunk` attribute. These tokens are necessarily implementation dependent and might not be supported by other applications.

**Examples of the @chunk attribute**
These examples illustrate the processing expectations for various scenarios that involve the `@chunk` attribute. Processing examples use either before and after sample markup or expanded syntax that shows the equivalent markup without the `@chunk` attribute.

**Note**  Examples use sample files with modified file names to help illustrate equivalent before and after resolution of `@chunk` attributes. However, there is no requirement for implementations processing `@chunk` to generate files, as long as the rendered result is split or combined as described. If generating files, actual file names are implementation dependent.

**Example: Using @chunk to combine all documents into one**
Where a publishing system would typically render each topic document as an independent result document, a single `@chunk` attribute can be used to render all content as a single document.

Consider the following source documents, with root map `input.ditamap`:

**Figure 67: Input map without chunking**

```xml
input.ditamap:
<map>
  <title>Lesson plan</title>
  <topicref href="background.dita">
    <!-- more background topics -->
  </topicref>
  <topicref href="goals.dita">
    <!-- more goal topics -->
  </topicref>
  <!-- more topics -->
</map>

background.dita:
<topic id="background">
  <title>Prerequisite concepts</title>
  <shortdesc>This information is necessary before starting</shortdesc>
  <body><!-- ...background content... --></body>
</topic>

goals.dita:
<topic id="goals">
  <title>Lesson gals</title>
  <shortdesc>After you complete the lesson, ...</shortdesc>
  <body><!-- ...goal content... --></body>
</topic>
```

For many systems or output formats, each document in the map will be rendered as an independent document. For example, rendering this map as HTML5 might result in `background.html` and `goals.html` (along with other HTML5 files). In such cases, if output requirements demand only a single
result document, adding chunk="combine" to the root map element instructs a processor to render one document that combines all topics.

Figure 68: Root map with chunking specified

```xml
input.ditamap:
<map chunk="combine">
  <title>Lesson plan</title>
  <topicref href="background.dita">
  <!-- more background topics -->
  </topicref>
  <topicref href="goals.dita">
  <!-- more goal topics -->
  </topicref>
  <!-- more topics -->
</map>
```

The result of evaluating this `@chunk` attribute is equivalent to the following map and topic document; content from all topics within the map has now been combined into a single result, with the topic order and topic nesting structure matching the original map hierarchy.

Figure 69: Equivalent source content

```xml
input.ditamap:
<map>
  <title>Lesson plan</title>
  <topicref href="input.dita"/>
</map>

input.dita:
<dita>
 <!-- original content of background.dita -->
 <topic id="background">
   <title>Prerequisite concepts</title>
   <shortdesc>This information is necessary before starting</shortdesc>
   <body><!-- ...background content... --></body>
   <!-- more background topics -->
 </topic>
 <!-- original content of goals.dita -->
 <topic id="goals">
   <title>Lesson goals</title>
   <shortdesc>After you complete the lesson, ...</shortdesc>
   <body><!-- ...goal content... --></body>
   <!-- more goal topics -->
 </topic>
 <!-- more topics -->
</dita>
```

Example: Using `@chunk` to render a single document from one branch
Where a publishing system would typically render each topic document as an independent result document, a single `@chunk` attribute can be used to render individual branches of a map as single documents.

Consider the following source documents, with root map `input.ditamap`:

Figure 70: Input map without chunking

```xml
input.ditamap:
<map>
  <title>Lesson plan</title>
  <topicref href="goals.dita">
  <!-- more goal topics -->
  </topicref>
  <topicref href="firstLesson.dita">
  <!-- more tasks in the first lesson -->
</map>
```
For many systems or output formats, each document in the map will be rendered as an independent document. For example, rendering this map as HTML5 might result in goals.html, firstLesson.html, and nextLesson.html, while child documents within each branch would each result in their own HTML files.

When output requirements demand some portions of the map be combined into a single document, adding chunk="combine" to a branch of the map instructs a processor to render one document that combines all topics in that branch. This is particularly useful when the topics need to be rendered independently for other contexts, or when the way topics are contributed makes creating a single source document impossible.

In the following sample, the original map is updated with @chunk attributes to indicate that each lesson branch should render as a single result document; topics in the first branch with goals.dita are not affected as a result of the @chunk attribute.

**Figure 71: Map with chunking specified for one branch**

```
<input.ditamap:
  <map>
    <title>Lesson plan</title>
    <topicref href="goals.dita"> <!-- more goal topics -->
    </topicref>
    <topicref href="firstLesson.dita" chunk="combine"> <!-- more tasks in the first lesson -->
    </topicref>
    <topicref href="nextLesson.dita" chunk="combine"> <!-- more tasks in the next lesson -->
    </topicref>
    <!-- More branches -->
  </map>
```

The result of evaluating this @chunk attribute is equivalent to the following map and topic documents.

Content from each combined branch has now been combined into a single result document for each branch, with the order and topic nesting structure matching the original map hierarchy. Content from outside of those branches remains unchanged.

**Figure 72: Equivalent source content**

```
<input.ditamap:
  <map>
    <title>Lesson plan</title>
    <topicref href="goals.dita"> <!-- more goal topics -->
    </topicref>
```
Example: Using @chunk to combine a group of topics

The @chunk attribute can be used on grouping elements to combine multiple source documents into one result document.

Assume the following map input.ditamap, where @chunk is used on both <topicgroup> and <topichead>.

• The result of evaluating the @chunk attribute on <topicgroup> is equivalent to a single DITA document with the content of both ingroup1.dita and ingroup2.dita.

• The @chunk attribute on <topichead> also results in a single DITA document. In many applications, a <topichead> is equivalent to a single title-only topic; in that case, the chunked result is equivalent to a root topic with the title "Heading for a branch", containing as child topics the content of both inhead1.dita and inhead2.dita. If <topichead> is ignorable in the current processing context, the chunked result would be equivalent to processing <topicgroup> (a single DITA document with the content of both inhead1.dita and inhead2.dita).

Figure 73: Equivalent source content
Example: Using @chunk to combine nested documents

Special attention is necessary when combining a nested map hierarchy that includes documents with their own nested topics.

Consider the following source map input.ditamap:

**Figure 74: Input map without chunking**

In this case, the @chunk attribute instructs a processor to treat the three topics as a single combined DITA document, while preserving the original map hierarchy. Now consider the following three topic documents, each of which includes nested or peer topics:

**Figure 75: Source documents with nested structures**
When chunk="combine" is evaluated, the three source documents are combined into one. Both the
ancestor and middle documents have child topics that must be taken into account.

- **ancestor.dita** has a root <dita> element, so content from each nested topic reference is
  located after any nested topics within the final child of the <dita> element.
- **middle.dita** does not have <dita> but does have a nested topic, so content from any nested
  topic references is located after that nested topic.

**Figure 76: Equivalent source content**

```
input.ditamap:
<map>
  <title>Generation example</title>
  <topicref href="input.dita"/>
</map>

input.dita:
<dita>
  <topic id="ancestor-first">
    <title>First major topic in ancestor composite doc</title>
    <!-- ...topic content... -->
  </topic>
  <!-- more topics in ancestor composite doc -->
  <topic id="ancestor-last">
    <title>Last major topic in ancestor composite doc</title>
    <!-- ...topic content... -->
  </topic>
  <topic id="ancestor-last-child">
    <title>Child of last major topic in ancestor composite doc</title>
    <!-- ...topic content... -->
  </topic>
  <!-- content of middle.dita combined here -->
  <topic id="middle-root">
    <title>Root topic in middle doc</title>
    <body><!-- ... --></body>
    <topic id="middle-child">
      <title>Child of root topic in middle doc</title>
      <!-- body content, maybe more children of middle topic's root -->
    </topic>
  </topic>
  <!-- content of child.dita combined here -->
  <topic id="child">
    <title>Small child topic</title>
    <!-- small child topic content -->
  </topic>
</dita>
```

**Example: Using @chunk to split documents**

When topics are most easily created or generated in a single DITA document, chunk="split" will
instruct processors to render them individually when possible.

**Splitting a single document in the map**

Consider the following example, where a map includes generated topics used to document message
numbers from an application:

**Figure 77: Source map and topics**

```
<map>
  <title>Message guide for WidgetAnalyzer</title>
  <topicref href="about.dita">
    <topicref href="messages-install.dita"/>
    <topicref href="messages-run.dita"/>
  </topicref>
</map>
```
In a normal build to HTML5, this map might result in four result documents about.html, messages-install.html, messages-run.html, and messages-other.html. With hundreds of messages in messages-run.dita, it will be better in some situations to render one result document for each message topic in the document. This is done by setting chunk="split" on the topic reference.

Figure 78: Splitting all topics in one document

The result of evaluating @chunk in this case is equivalent to the following map and topics. While messages-run.dita is now split into hundreds of topics, other topics in the map are unaffected.

Figure 79: Equivalent source content
Note Because the @chunk attribute does not cascade, even if the reference to messages-install.dita had child topic references, they would be unaffected by the chunk="split" value in this example.

Splitting every document in the map

Similarly, because setting chunk="split" on the map element sets a default for the entire map, the following change to the original map would result in every referenced DITA document being split into one document per topic. The only source document not affected by this split is about.dita, because it only contained a single topic to begin with.

Figure 80: Splitting every topic in the map

Using chunk="split" on the map is equivalent to the following structure:

- about.dita is unchanged.
- messages-install.dita is split into one document per message (as in the previous example that split messages-run.dita).
- messages-run.dita is split exactly as in the previous example.
- messages-other.dita contains a root topic and two child topics, so it results in three documents. The hierarchy of those documents is preserved in the map.

Figure 81: Equivalent source content
Example: Using @chunk to split nested documents

Special attention is necessary when evaluating the map hierarchy that results from splitting a documents with their own nested topics.

Consider the following source map input.ditamap:

Figure 82: Input map without chunking

In this case, the @chunk attribute instructs a processor to render every topic in each of the three documents as its own document, while preserving any hierarchy from those documents. Now consider the following three topic documents, each of which includes nested or peer topics:

Figure 83: Source documents with nested structures
When chunk="split" is evaluated, both ancestor.dita and middle.dita are split and treated as multiple DITA topic documents. child.dita is only a single topic and has nothing to split.

- ancestor.dita has a root <dita> element, so it results in multiple peer topic references (or branches) in the map. Topic references nested within the original reference to ancestor.dita are now located within the reference to "ancestor-last" (the last topic child of the <dita> element).
- middle.dita has nested topics, so results in its own new hierarchy within the map. Content from the nested topic reference is now located within the reference to the root topic from middle.dita, but after any references to child topics.

Figure 84: Equivalent source content
Example: When @chunk is ignored

The @chunk attribute is ignored in some cases, such as when chunk="combine" is already in effect or when chunk="split" is specified on a grouping element.

Ignoring @chunk when already combining topics

In the following example, evaluating @chunk results in one rendered document for each branch of the map. Any additional @chunk values within that branch are ignored (including @chunk values within any referenced maps).

Figure 85: Chunk within a combined branch

```xml
<map>
  <title>Ignoring chunking when already combined</title>
  <topicref href="branchOne.dita" chunk="combine">
    <!-- @chunk ignored for branchOneChild.dita -->
    <topicref href="branchOneChild.dita" chunk="split"/>
  </topicref>
  <topicref href="branchTwo.dita" chunk="combine">
    <!-- Any @chunk within submap.ditamap is ignored -->
    <topicref href="submap.ditamap" format="ditamap"/>
  </topicref>
</map>
```

Ignoring @chunk on a grouping element

In the following example, chunk="split" is specified on two grouping elements.

Figure 86: Chunk within a combined branch

```xml
<map>
  <title>Trying to "split" groups</title>
  <topicgroup chunk="split">
    <topicref href="ingroup1.dita">...</topicref>
    <topicref href="ingroup2.dita">...</topicref>
  </topicgroup>
  <topichead chunk="split">
    <topicmeta><navtitle>Heading for a branch</navtitle></topicmeta>
    <topicref href="inhead1.dita">...</topicref>
    <topicref href="inhead2.dita">...</topicref>
  </topichead>
</map>
```

- The @chunk attribute on the <topicgroup> is ignored; it does not cascade, and there is no referenced topic, so it has no effect.
- In some cases, an implementation might treat the <topichead> element as equivalent to a single title-only topic, while in other cases it might be ignored. In either case the @chunk value has no effect. If the <topichead> is treated as a title-only topic, it cannot be split further; if it is ignored for the current processing context, it is no different than the <topicgroup>.
Example: Combining topics within a split context

While @chunk attributes are ignored when a "combine" action is already in effect, it is possible to use chunk="combine" when split is otherwise in effect.

Assume the following map, where chunk="split" on the root element means that all topic documents within this map structure are split by default, but a branch within the map sets chunk="combine".

Figure 87: Map with default "split" action, that also uses "combine"

```xml
<map chunk="split">
  <title>Split most, but not one branch</title>
  <topicref href="splitme.dita">...</topicref>
  <topicref href="exception.dita" chunk="combine">...</topicref>
  <topicref href="splitmetoo.dita">...</topicref>
</map>
```

Assume as well that no other @chunk attributes are specified in this map. The following points are true when @chunk is evaluated:

1. The document splitme.dita is treated as multiple split documents when it contains more than one topic. The same is true for any other document within that branch.
2. The second branch (beginning with exception.dita) is treated as a single DITA document, combining all topic documents within that branch.
3. The document splitmetoo.dita is treated as multiple split documents when it contains more than one topic. The same is true for any other document within that branch.

Example: Managing links when chunking

Link management with @chunk is often straightforward; in most cases where URI-based linking is ambiguous, using indirect links and @keyref will give the correct result.

Input topics for following examples

The following map and topics are used for all examples in this topic.

Figure 88: input.ditamap

```xml
<map>
  <title>Map with chunks and links</title>
  <keydef href="splitThis.dita" keys="splitThisKey"/>
  <keydef href="splitThis.dita#splitThisChild" keys="splitThisChildKey"/>
  <topicref href="splitThis.dita" chunk="split" keys="explicitSplitKey"/>
  <topicref href="combineThis.dita" keys="combineThisKey">
    <topicref href="combinedChild.dita" keys="combinedChildKey"/>
  </topicref>
</map>
```

Figure 89: Topics used by input.ditamap

```xml
splitThis.dita:
<topic id="splitThisRoot">
  <title>Root topic in split document</title>
  <!-- ... -->
  <topic id="splitThisChild">
    <title>Child topic in split document</title>
    <!-- ... -->
  </topic>
</topic>
```

```xml
combineThis.dita:
```
Topics that are rendered only once when publishing

Assume that the map above is a root map or is used by another map does not otherwise render the three topic documents. In that case, the following is true:

- **splitThis.dita** is rendered as two documents. For this example, assume a processor creates two documents with names taken from the topic ID, so that topic becomes `splitThisRoot.dita` and `splitThisChild.dita`.
- The branch with `combineThis.dita` is rendered as one document together with the content of `combinedChild.dita`. For this example, assume a processor merges the child topic into the file `combineThis.dita`.
- All links using `href="splitThis.dita"`, `keyref="splitThisKey"`, or `keyref="explicitSplitKey"` will resolve to `splitThisRoot.dita` (the only rendered instance of that topic).
- All links using `href="splitThis.dita#splitThisChild"` or `keyref="splitThisChildKey"` will resolve to `splitThisChild.dita` (the only rendered instance of that topic).
- All links using `href="combinedChild.dita"` or `keyref="combinedChildKey"` will resolve to that topic within `combineThis.dita` (the only rendered instance of that topic).

Topics that are rendered twice when publishing

Now assume that the map above is reused in another context that also renders all three topic documents as originally authored. As a result, each of the three documents in this map (`splitThis.dita`, `combineThis.dita`, and `combinedChild.dita`) are rendered more than once.

When each of these documents is rendered twice, the following is true:

- The original source document `splitThis.dita` is rendered twice. Based on the map above, assume a processor creates two documents with names taken from the topic ID, so that topic becomes `splitThisRoot.dita` and `splitThisChild.dita`. At the same time, `splitThis.dita` is rendered in another context as a single document, with a different name.
- Based on the map above, the branch that starts with the original source document `combineThis.dita` is rendered as one document combined with the content of `combinedChild.dita`. At the same time, those two documents are rendered in another context as individual documents. For this example, assume a processor generates the combined document using the generated name `combinThis-2.dita`, while the documents `combineThis.dita` and `combinedChild.dita` retain their names in their other context.
- All links in this map using the direct URI references `href="splitThis.dita"`, `href="splitThis.dita#splitThisChild"`, `href="combineThis.dita"`, or `href="combinedChild.dita"` are now ambiguous. They could go to the chunked instance from this map, or to the individual topics in the other context. Implementations will have to guess
which topic to target: the split or combined instances from this map or versions in the alternate context from the root map.

- All links using indirect key-based references `keyref="splitThisKey"` or `keyref="splitThisChildKey"` are also ambiguous, because the key definitions are not associated explicitly with the chunked or not-chunked instance. If key scopes are used, applications might more reliably guess that the intended target is the split copy in this map, but this is not guaranteed.
- All links using `keyref="explicitSplitKey"`, `keyref="combinedThisKey"`, or `keyref="combinedChildKey"` are unambiguous; they can only resolve to the chunked instance from this submap, because they are defined directly within the chunk context.
- There is no way to unambiguously link to the child document that will result from splitting `splitThis.dita`. This is because it is only possible for the element using `@chunk` to associate a key definition with the first or root topic in the document. While other key definition elements can be used to associate keys with other topics in the same document, that can only be done outside of the navigation context that uses `@chunk`; as a result, a processor cannot guarantee whether the intended link target is the split topic from the `@chunk` context, or a use of the same topic in the second context. It is possible for an implementation to define its own way to resolve this ambiguity; however, if a situation requires both multiple instances of split topics and unambiguous cross-implementation links to those split topics, alternate reuse mechanisms need to be considered.

### 3.1.11 Stage three: #107 Add `<strong>` and `<em>` elements, and redefine `<b>` and `<i>` in a more semantic manner

Add `<strong>` and `<em>` elements to a new domain, and redefine `<b>` and `<i>` in a more semantic manner.

**Champion**

Keith Schengili-Roberts

**Tracking information**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
</table>
• HTML version: [https://lists.oasis-open.org/archives/dita/201803/msg00065.html](https://lists.oasis-open.org/archives/dita/201803/msg00065.html) |
| Stage 2 proposal approved     | 30 October 18| [https://www.oasis-open.org/apps/org/workgroup/dita/download.php/64192/minutes20181030.txt](https://www.oasis-open.org/apps/org/workgroup/dita/download.php/64192/minutes20181030.txt) |
| Stage 3 proposal submitted to reviewers | 2 March 2020 | • Bill Burns  
• Scott Hudson |
**Approved technical requirements**

1. Creation of a new domain ("emphasis") which will hold two new elements: `<strong>` and `<em>`.
2. Clarification of the definitions for the existing elements `<b>` and `<i>` within the highlighting domain, along with additional examples.

**Dependencies or interrelated proposals**

Not applicable.

**Modified grammar files**

<table>
<thead>
<tr>
<th>highlightDomain.rng (before)</th>
<th>highlightDomain.rng (after)</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&amp;lt;define name=&quot;b.element&quot;&gt;</code></td>
<td><code>&amp;lt;define name=&quot;b.element&quot;&gt;</code></td>
</tr>
<tr>
<td><code>&amp;lt;element name=&quot;b&quot; dita:longName=&quot;Bold&quot;&gt;</code></td>
<td><code>&amp;lt;element name=&quot;b&quot; dita:longName=&quot;Bold&quot;&gt;</code></td>
</tr>
<tr>
<td><code>&amp;lt;a:documentation&gt;The bold ( &amp;lt;b&amp;gt;) element is used to apply bold highlighting to the content of the element. Use this element only when there is not some other more proper element. For example, for specific items such as GUI controls, use the &amp;lt;uicontrol&amp;gt; element. This element is part of the DITA highlighting domain. Category: Typographic elements</code></td>
<td><code>&amp;lt;a:documentation&gt;Bold text is used to draw attention to a word or phrase for utilitarian purposes without implying that there is any extra importance. Category: Typographic elements</code></td>
</tr>
<tr>
<td><code>&amp;lt;/a:documentation&amp;gt;</code></td>
<td><code>&amp;lt;/a:documentation&amp;gt;</code></td>
</tr>
<tr>
<td><code>&amp;lt;/element&amp;gt;</code></td>
<td><code>&amp;lt;/element&amp;gt;</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>highlightDomain.rng (before)</th>
<th>highlightDomain.rng (after)</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&amp;lt;define name=&quot;i.element&quot;&gt;</code></td>
<td><code>&amp;lt;define name=&quot;i.element&quot;&gt;</code></td>
</tr>
<tr>
<td><code>&amp;lt;element name=&quot;i&quot; dita:longName=&quot;Italic&quot;&gt;</code></td>
<td><code>&amp;lt;element name=&quot;i&quot; dita:longName=&quot;Italic&quot;&gt;</code></td>
</tr>
<tr>
<td><code>&amp;lt;a:documentation&gt;The italic ( &amp;lt;i&amp;gt;) element is used to apply italic highlighting to the content of the element. Category: Typographic elements</code></td>
<td><code>&amp;lt;a:documentation&gt;Italic text is used to indicate either an alternate voice or mood, or to otherwise offset it from the content around it to indicate a different quality of text. Category: Typographic elements</code></td>
</tr>
<tr>
<td><code>&amp;lt;/a:documentation&amp;gt;</code></td>
<td><code>&amp;lt;/a:documentation&amp;gt;</code></td>
</tr>
<tr>
<td><code>&amp;lt;/element&amp;gt;</code></td>
<td><code>&amp;lt;/element&amp;gt;</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>taskMod.rng (new)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&amp;lt;?xml version=&quot;1.0&quot; encoding=&quot;UTF-8&quot;?&gt;</code></td>
<td><code>&amp;lt;?xml version=&quot;1.0&quot; encoding=&quot;UTF-8&quot;?&gt;</code></td>
</tr>
</tbody>
</table>
DOMAIN EXTENSION PATTERNS

<define name="emphasis-ph">
  <choice>
    <ref name="strong.element"/>
    <ref name="em.element"/>
  </choice>
</define>

<define name="ph" combine="choice">
  <ref name="emphasis-ph"/>
</define>

ELEMENT TYPE NAME PATTERNS

<define name="strong">
  <ref name="strong.element"/>
</define>

<define name="em">
  <ref name="em.element"/>
</define>

ELEMENT TYPE DECLARATIONS

<define name="strong.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="basic.ph"/>
      <ref name="data.elements.incl"/>
      <ref name="draft-comment" dita/>
    </choice>
  </zeroOrMore>
</define>
<ref name="foreign.unknown.incl"/>
</ref name="required-cleanup" dita/>
</choice>
</zeroOrMore>
</define>
</define name="strong.attributes">
<ref name="univ-atts"/>
<optional>
<attribute name="outputclass"/>
</optional>
</define>
</define name="strong.element">
<element name="strong" dita:longName="Strong">
<a:documentation>Strong text can be used to indicate content that is considered to be important or serious, or that has some form of urgency. Category: Emphasis elements</a:documentation>
<ref name="strong.attlist"/>
<ref name="strong.content"/>
</element>
</define>
</define name="em.content">
<zeroOrMore>
<choice>
<text/>
<ref name="basic.ph"/>
<ref name="data.elements.incl"/>
<ref name="draft-comment" dita/>
<ref name="foreign.unknown.incl"/>
<ref name="required-cleanup" dita/>
</choice>
</zeroOrMore>
</define>
</define name="em.attributes">
<ref name="univ-atts"/>
<optional>
<attribute name="outputclass"/>
</optional>
</define>
</define name="em.element">
<element name="em" dita:longName="Emphasis">
<a:documentation>Emphasized text is used to indicate stress or to otherwise highlight content. Category: Emphasis elements</a:documentation>
<ref name="em.attlist"/>
<ref name="em.content"/>
</element>
</define>
</define name="em.attlist" combine="interleave">
<ref name="em.attributes"/>
</define>
</define name="strong.attlist" combine="interleave">
<ref name="global-atts"/>
<optional>
<attribute name="class" a:defaultValue="+ topic/ph emphasis-d/strong "/>
</optional>
</define>
</define name="em.attlist" combine="interleave">
<ref name="global-atts"/>
<optional>
<attribute name="class" a:defaultValue="+ topic/ph emphasis-d/em "/>
</optional>
</define>
Modified terminology
N/A

Modified specification documentation

The following changes are necessary for existing DITA 2.0 documentation:

1. Changed/expanded descriptions and accompanying example code for `<b>` and `<i>`
2. New documentation plus examples to describe the emphasis domain and the how `<strong>` and `<em>` are to be used

<table>
<thead>
<tr>
<th><code>&lt;b&gt;</code> element reference topic (before)</th>
<th><code>&lt;b&gt;</code> element reference topic (after)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bold text is used to draw a reader's attention to a phrase without otherwise adding meaning to the content.</td>
<td>Bold text is used to draw attention to a word or phrase for utilitarian purposes without implying that there is any extra importance.</td>
</tr>
<tr>
<td>Specialization hierarchy</td>
<td>There is also no implication of an alternate voice or mood, or that its content should be actionable. For example, it can be used to indicate product names within a review, highlighting roles within a process, or for use in spans of text where the typical presentation is expected to be in a boldface.</td>
</tr>
<tr>
<td>The <code>&lt;b&gt;</code> element is specialized from <code>&lt;ph&gt;</code>. It is defined in the highlighting-domain module.</td>
<td>Redefining <code>&lt;b&gt;</code> in this manner brings DITA more into alignment with its equivalent in the current HTML specification.</td>
</tr>
<tr>
<td>Attributes</td>
<td>Specialization hierarchy</td>
</tr>
<tr>
<td>The following attributes are available on this element: , <code>@class</code>, <code>@keyref</code>, and <code>@outputclass</code>.</td>
<td><code>&lt;b&gt;</code> is specialized from <code>&lt;ph&gt;</code>. It is defined in the highlighting-domain module.</td>
</tr>
<tr>
<td>Example</td>
<td>Attributes</td>
</tr>
<tr>
<td>The following code sample shows bold highlighting used to draw a reader's attention to a phrase:</td>
<td>The following attributes are available: , <code>@class</code>, <code>@keyref</code>, and <code>@outputclass</code></td>
</tr>
<tr>
<td><code>&lt;p&gt;</code>Use the bold tag <code>&lt;b&gt;</code> for visual emphasis only <code>&lt;/b&gt;</code>; do not use it if another phrase-level element better signifies the reason for the emphasis.<code>&lt;/p&gt;</code></td>
<td>Examples</td>
</tr>
<tr>
<td><code>&lt;b&gt;</code> can be used to indicate a product name within a review:</td>
<td><code>&lt;b&gt;</code> can be used to indicate a product name within a review:</td>
</tr>
<tr>
<td><code>&lt;p&gt;</code>One of the best features of <code>&lt;b&gt;Mr. Flip-it&lt;/b&gt;</code> is its ability to manipulate objects within a three-dimensional space so that you can see the other side.<code>&lt;/b&gt;</code></td>
<td><code>&lt;p&gt;</code>One of the best features of <code>&lt;b&gt;Mr. Flip-it&lt;/b&gt;</code> is its ability to manipulate objects within a three-dimensional space so that you can see the other side.<code>&lt;/b&gt;</code></td>
</tr>
</tbody>
</table>
**<b> element reference topic (before)**

**<b> element reference topic (after)**

**<b> can be used to highlight related concepts within a topic:**

```
<p>The <b>Solid Waste Operations Manager</b> plans and manages the countywide transfer station and landfill operations, coordinates solid waste processing operations with the planning and engineering staff, and performs related duties as required.</p>```

```
[... Lots of intervening text.]```

```
<p>The <b>Sanitation Engineer</b> creates strategies for landfill sites that minimize the impact on the environment.</p>```

**<b> can also be used in situations where boldfaced text is expected for stylistic purposes, such as when the house style for an article lede is to be rendered in boldface:**

```
<p><b>Know where to get help.</b> Before proceeding to wrangle your first ostrich, ensure you know the location of the closest first aid station.</p>```

**<i> element reference topic (before)**

**<i> element reference topic (after)**

**<i> can be used to emphasize the key points in printed text, or when quoting a speaker, a way to show which words the speaker stressed.**

**Specialization hierarchy**

The **<i>** element is specialized from **<ph>**. It is defined in the highlighting-domain module.

**Attributes**

The following attributes are available on this element: , @class, @keyref, and @outputclass.

**Example**

The following code sample shows italic highlighting that is used to emphasize the importance of unplugging the unit before using the screwdriver:

```
<p>Unplug the unit <i>before</i> placing the metal screwdriver against the terminal screw.</p>
```

**<i> can be used for indicating text in a different voice, such as when foreign words or phrases are used:**

```
<note type="caution">Even highly experienced operators of heavy machinery should remain alert for dangerous situations. Having a
```

**Italic text is used to emphasize the key points in printed text, or when quoting a speaker, a way to show which words the speaker stressed.**

**Specialization hierarchy**

The **<i>** element is specialized from **<ph>**. It is defined in the highlighting-domain module.

**Attributes**

The following attributes are available: , @class, @keyref, and @outputclass.

**Example**

The following code sample shows italic highlighting that is used to emphasize the importance of unplugging the unit before using the screwdriver:

```
<p>Unplug the unit <i>before</i> placing the metal screwdriver against the terminal screw.</p>
```
Laissez-faire attitude is a recipe for disaster.

*i* can also be used to indicate different character voices:

```html
<edgar>
I know thee well—a serviceable villain, as duteous to the vices of thy mistress as badness would desire.</edgar>
```

```html
<gloucester>
What, is he dead?</gloucester>
```

It can also be used to indicate a taxonomic designation:

```html
When wrangling ostriches (*Struthio camelus*), people are advised that while they are a type of bird (Class: *Aves*), they are thought to be descendants of their extinct dinosaur (Suborder: *Theropoda*) relatives and share the same type of temperament.
```

*i* can also be used to designate the name of a ship:

```html
The *MV Rena* was a container ship that ran aground near Tauranga, New Zealand, resulting in an oil spill.
```

**Strong** text can be used to indicate content that is considered to be important or serious, or that has some form of urgency.

Typically, its content will be rendered in bold at output. Use this only when something more semantically appropriate is not available. For example, for a specific warning, consider using something from the hazard statement domain, such as `<hazardstatement>`.

**Strong** is part of the emphasis domain. The addition of **Strong** brings DITA more into alignment with its equivalent in the current HTML specification.

**Specialization hierarchy**

**Strong** is specialized from `<ph>`. It is defined in the emphasis module.

**Attributes**

The following attributes are available: `@class`, `@keyref`, and `@outputclass`.

**Examples**

The following examples show how it can be used.
<strong>element reference topic</strong>

Emphasizing an important detail:

<p>Your doctor prescribed this medicine to treat an infection. It is important that you <strong>take all of the medicine</strong> as described.</p>

Another example:

<p>When starting a car with a keyless ignition, you must <strong>step on the brake pedal</strong> before pressing the start button.</p>

Underscoring a serious point:

Use the word <em>very</em> <strong>sparingly</strong>. Where emphasis is necessary, use words strong in themselves.

Pointing out a critical/urgent detail:

<p>SERVICE HEADLIGHT—<strong>Black</strong> wire with <strong>red tracer</strong> from handlebar toggle switch to large terminal screw; <strong>red</strong> wire with <strong>yellow tracer</strong> from handlebar toggle switch to small terminal screw.</p>

<em>element reference topic</em>

Emphasized text is used to indicate stress or to otherwise highlight content.

A stress emphasis is designed to change the meaning of a phrase or sentence, or stressing the importance of a particular noun, verb or adjective. Typically, its content will be rendered in italics at output. Use this only when a more semantically appropriate equivalent is not available. For example, when indicating a different mood or voice, <i>may be more relevant.</i>

Specialization hierarchy

<em>is specialized from <ph>. It is defined in the emphasis module.</ph>

Attributes

The following attributes are available: , @class, @keyref, and @outputclass.

Examples

The following examples show how it can be used.

Emphasizing meaning within a sentence:

<p>What was previously called <em>block-level</em> content up to HTML 4.1 is now called <em>flow</em> content in HTML5.</p>

Stressing the importance of a noun within a sentence:

<p>A <em>condenser</em> is an apparatus for condensing a large quantity of electricity on a comparatively small surface.</p>

Stressing the importance of a verb or actions within a sentence:

To remove a message from a pigeon, first <em>catch</em> the bird, then <em>hold</em> it in one hand, <em>extend</em> its leg, and <em>remove</em> the message holder with the other hand.
Stressing the importance of an adjective or adjectival phrase within a sentence:

```html
<p>A good plan once adopted and put into execution <em>should not be abandoned</em> unless it becomes clear that it can not succeed.</p>
```

<em>is part of the emphasis domain. The addition of <em>brings DITA more into alignment with its equivalent in the current HTML specification.

Migration plans for backwards incompatibilities

Not applicable. Two new elements are created, and two existing ones are redefined but not substantially changed.

Element reference topic: <b>

Bold text is used to draw attention to a word or phrase for utilitarian purposes without implying that there is any extra importance.

Usage information

<b>can be used to indicate product names within a review, highlighting roles within a process, or for use in spans of text where the typical presentation is expected to be in a boldface.

Rendering expectations

Content enclosed by <b> ought to be rendered using a bold font.

Processing expectations

N/A

Specialization hierarchy

<b> is specialized from <ph>. It is defined in the highlighting-domain module.

Attributes

The following attributes are available: , @class, @keyref, and @outputclass

More specific contexts for using <b>

<b> can be used to indicate a product name within a review:

```html
<p>One of the best features of <b>Mr. Flip-it</b> is its ability to manipulate objects within a three-dimensional space so that you can see the other side.</p>
```

<b> can be used to highlight related concepts within a topic:

```html
<p>The <b>Solid Waste Operations Manager</b> plans and manages the countywide transfer station and landfill operations, coordinates solid waste processing operations with the planning and</p>
```
engineering staff, and performs related duties as required.</p>

[... Lots of intervening text.]

The **Sanitation Engineer** creates strategies for landfill sites that minimize the impact on the environment.</p>

**<b>can also be used in situations where boldfaced text is expected for stylistic purposes, such as when the house style for an article lede is to be rendered in boldface:**

**<p><strong>Know where to get help.</strong> Before proceeding to wrangle your first ostrich, ensure you know the location of the closest first aid station.</p>

The redefining of **brings DITA more into alignment with its equivalent in the current HTML specification.**

**Element reference topic: <i>**

Emphasized text is used to indicate stress or to otherwise highlight content.

**Usage information**

The redefining of **brings DITA more into alignment with its equivalent in the current HTML specification.**

**Formatting expectations**

Content enclosed within **ought to be rendered using an italic font.**

**Processing expectations**

N/A

**Specialization hierarchy**

**is specialized from **. It is defined in the highlighting-domain module.

**Attributes**

The following attributes are available: , @class, @keyref, and @outputclass

**More specific contexts for using **

**can be used for indicating text in a different voice, such as when foreign words or phrases are used:**

<note type="caution">Even highly experienced operators of heavy machinery should remain alert for dangerous situations. Having a **laissez-faire** attitude is a recipe for disaster.</note>

**can also be used to indicate different character voices:**

<p><i>Edgar</i>: I know thee well—a serviceable villain, as duteous to the vices of thy mistress as badness would desire.</p>

<p><i>Gloucester</i>: What, is he dead?</p>
It can also be used to indicate a taxonomic designation:

When wrangling ostriches (<i>Struthio camelus</i>) people are advised that while they are a type of bird (Class: <i>Aves</i>), they are thought to be descendants of their extinct dinosaur (Suborder: <i>Theropoda</i>) relatives and share the same type of temperament.

<i>can also be used to designate the name of a ship:</i>

The <i>MV Rena</i> was a container ship that ran aground near Tauranga, New Zealand, resulting in an oil spill.

**Emphasis elements**

The emphasis domain is intended for marking up content that is important, serious, or requires emphasis. It is comprised of <strong>and</strong> <em>, and are designed as semantic alternatives to bold (<b>) and italic (<i>) from the highlighting domain.

*<strong>* is typically used to indicate content that is considered to be important or serious, or that has some form of urgency (without being a specific warning). It is part of the emphasis domain.

*<em>* is typically used to indicate content that should be stressed. It is part of the emphasis domain.

**Element reference topic: <strong>**

Strong text can be used to indicate content that is considered to be important or serious, or that has some form of urgency.

**Usage information**

Use this only when a more semantically appropriate alternative is not available. For example, for a specific warning, consider using something from the hazard statement domain, such as <hazardstatement>.

*<strong>* is part of the emphasis domain. The addition of <strong> brings DITA more into alignment with its equivalent in the current HTML specification.

**Formatting expectations**

Content enclosed within <strong> ought to be rendered using an bold font.

**Processing expectations**

N/A

**Specialization hierarchy**

*<strong>* is specialized from <ph>. It is defined in the emphasis-domain module.

**Attributes**

The following attributes are available: , @class, @keyref, and @outputclass
How `<strong>` can be used in context

The following examples show how it can be used.

Emphasizing an important detail:

```html
<p>Your doctor prescribed this medicine to treat an infection. It is important that you <strong>take all of the medicine</strong> as described.</p>
```

Another example:

```html
<p>When starting a car with a keyless ignition, you must <strong>step on the brake pedal</strong> before pressing the start button.</p>
```

Underscoring a serious point:

```html
Use the word <em>very</em> <strong>sparingly</strong>. Where emphasis is necessary, use words strong in themselves.
```

Pointing out a critical/urgent detail:

```html
<p>SERVICE HEADLIGHT—<strong>Black</strong> wire with <strong>red tracer</strong> from handlebar toggle switch to large terminal screw; <strong>red</strong> wire with <strong>yellow tracer</strong> from handlebar switch to small terminal screw.</p>
```

**Element reference topic: `<em>`**

Emphasized text is used to indicate stress or to otherwise highlight content.

**Usage information**

Typically, its content will be rendered in italics at output. Use this only when something more semantically appropriate is not available. For example, when indicating a different mood or voice, `<i>` may be more relevant.

`<em>` is part of the emphasis domain. The addition of `<em>` brings DITA more into alignment with its equivalent in the current HTML specification.

**Formatting expectations**

Content enclosed within `<em>` ought to be rendered using an italic font.

**Processing expectations**

N/A

**Specialization hierarchy**

`<em>` is specialized from `<ph>`. It is defined in the emphasis-domain module.

**Attributes**

The following attributes are available: `@class`, `@keyref`, and `@outputclass`
How <em> can be used in context

The following examples show how it can be used.

Emphasizing meaning within a sentence:

<p>What was previously called <em>block-level</em> content up to HTML 4.1 is now called <em>flow</em> content in HTML5.</p>

Stressing the importance of a noun within a sentence:

<p>A <em>condenser</em> is an apparatus for condensing a large quantity of electricity on a comparatively small surface.</p>

Stressing the importance of a verb or actions within a sentence:

To remove a message from a pigeon, first <em>catch</em> the bird, then <em>hold</em> it in one hand, <em>extend</em> its leg, and <em>remove</em> the message holder with the other hand.

Stressing the importance of an adjective or adjectival phrase within a sentence:

<p>A good plan once adopted and put into execution <em>should not be abandoned</em> unless it becomes clear that it can not succeed.</p>

3.1.12 Stage three: #164 Redesign <hazardstatement>

Redesign the hazard statement domain to better support current standards, authoring requirements, and rendering requirements.

Champion

Kristen James Eberlein, Eberlein Consulting LLC

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted and moved to stage 2</td>
<td>20 August 2019</td>
<td>Minutes Note</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The minutes for the 20 August 2019 meeting are incomplete; they do not clearly identify issue #164 as the proposal moved to stage two and assigned to Kris Eberlein and Dawn Stevens.</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>16 September 2019</td>
<td>DITA PDF</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>17 September 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>01 October 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>01 October 2019</td>
<td>Bill Burns, Healthwise</td>
</tr>
<tr>
<td>Event</td>
<td>Date</td>
<td>Links</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>14 October 2019</td>
<td>Eliot Kimber, Individual member</td>
</tr>
<tr>
<td>Reviewed by:</td>
<td></td>
<td>DITA PDF</td>
</tr>
<tr>
<td>Deb Bissantz, Vasont</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bill Burns, Healthwise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 3 proposal updated</td>
<td>15 October 2019</td>
<td>DITA PDF</td>
</tr>
<tr>
<td>Incorporates review comments from Eliot Kimber, Individual member.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrects a typo and uses @keyref to reference &lt;hazardsymbol&gt; in all examples.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Approved technical requirements**

- Restrict the values of the @type attribute on `<hazardstatement>` to "danger", "caution", "warning", "notice", and "-dita-use-conref-target"
- Require the @type attribute on `<hazardstatement>`
- Improve the element-reference topic for `<hazardstatement>` to include definitions of the values for the @type attribute that match those in the ANSI Z535.6 standard. The following definition descriptions are taken verbatim from ANSI Z535.6:

**DANGER**

Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

**WARNING**

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

**CAUTION**

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

**NOTICE**

Indicates information considered important, but not hazard-related (e.g. messages relating to property damage).

**Note** that the DITA spec will not use these definitions verbatim. They will be edited to match our style guidelines.

- Expand the content model of `<messagepanel>` to enable greater flexibility in the order of the child elements. While `<typeofhazard>` will remain required and the first child of `<messagepanel>`, it now can be followed by either of the following:
  - `<consequence>` (zero or more), `<howtoavoid>` (one or more)
  - `<howtoavoid>` (one or more), `<consequence>` (zero or more)
- Expand the content model of `<howtoavoid>` to permit `<ol>` and `<ul>`, in addition to `<sl>`
- Change the specialization base of `<messagepanel>`, `<typeofhazard>`, `<consequence>`, and `<howtoavoid>` to `<div>`
- Add `<hazardsymbol>` to the content models of `<messagepanel>`, `<typeofhazard>`, `<consequence>`, and `<howtoavoid>`
- Remove `<hazardsymbol>` from the content model of `<hazardstatement>`
Dependencies or interrelated proposals

None

Modified grammar files

The following files must be modified:

- (DTD) hazardstatementDomain.mod
- (RNG) hazardstatementDomain.rng

In the content below, the following conventions are used:

- Bold is used to indicate code to be added, for example, **addition**.
- Line-through and red text is used to indicate code to be removed, for example, *removal*.
- Ellipses (…) indicate where code is snipped for brevity.

Figure 90: Changes to hazardstatementDomain.mod

```xml
<!-- ============================================================= -->
<!--                    ELEMENT DECLARATIONS                      -->
<!-- ============================================================= -->
<!ENTITY % hazard.cnt "#PCDATA |
%basic.ph; |
%sl; |
%simpletable;" >
<!ENTITY % hazardstatement.content "((%messagepanel;)+,
%(hazardsymbol;)*)" "(%messagepanel;)+" >
<!ENTITY % hazardstatement.attributes "type
(attention | caution | danger | fastpath | important | note | notice | other | remember | restriction | tip | warning | #IMPLIED
#REQUIRED
spectitle CDATA
othertype CDATA #IMPLIED
%univ-atts; outputclass CDATA #IMPLIED"

> ...
<!-- -- ELEMENT DECLARATIONS -->
<!-- -- ELEMENT DECLARATIONS -->

```

DITA TC work product
Figure 91: Changes to hazardstatementDomain.rng
<define name="hazardstatement.content">
<oneOrMore>
<ref name="messagepanel"/>
</oneOrMore>
<zeroOrMore>
<ref name="hazardsymbol"/>
</zeroOrMore>
</define>
<define name="hazardstatement.attributes">
<optional>
<attribute name="type">
<choice>
<value>attention</value>
<value>caution</value>
<value>danger</value>
<value>fastpath</value>
<value>important</value>
<value>note</value>
<value>notice</value>
<value>other</value>
<value>remember</value>
<value>restriction</value>
<value>tip</value>
<value>warning</value>
<value>-dita-use-conref-target</value>
</choice>
</attribute>
</optional>
<attribute name="type">
<choice>
<value>caution</value>
<value>danger</value>
<value>notice</value>
<value>warning</value>
<value>-dita-use-conref-target</value>
</choice>
</attribute>
<optional>
<attribute name="spectitle"/>
</optional>
<optional>
<attribute name="othertype"/>
</optional>
</define>

<define name="messagepanel.content">
<optional>
<attribute name="data" dita:since="1.3"/>
</optional>
<optional>
<attribute name="data-about"/>
</optional>
</define>

LONG NAME: The Type of Hazard

define name="typeofhazard.content">
<zeroOrMore>
<choice>
<ref name="words.cnt"/>
<ref name="ph"/>
<ref name="tm"/>
<ref name="hazardsymbol"/>
</choice>
</zeroOrMore>
</define>

...<div>
<documentation>LONG NAME: Consequences of not Avoiding the Hazard</documentation>
define name="consequence.content">
<zeroOrMore>
<choice>
<ref name="words.cnt"/>
<ref name="ph"/>
<ref name="tm"/>
<ref name="hazardsymbol"/>
</choice>
</zeroOrMore>
</define>

...<div>
<documentation>LONG NAME: How to Avoid the Hazard</documentation>
define name="howtoavoid.content">
<ref name="hazard.cnt"/>
<ref name="basic.ph"/>
<ref name="sl"/>
<ref name="ol"/>
<ref name="ul"/>
<ref name="simpletable"/>
<ref name="hazardsymbol"/>
</define>

...<div>
<documentation>Specialization attributes. Global attributes and class defaults</documentation>
Modified terminology

None

Modified specification documentation

**Note**  All numeric references here are to the DITA 2.0 specification, working draft 11.

The following table contains precise suggestions for changes to be made to topics. Deletions are indicated with line through and red text, for example, deletion.

<table>
<thead>
<tr>
<th>Topic</th>
<th>DITA 2.0, working draft 11 content</th>
<th>New content</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.6.2.1 &lt;consequence&gt;</td>
<td>Specialization hierarchy&lt;br&gt;The &lt;consequence&gt; element is specialized from &lt;div&gt;. It is defined in the hazard-statement domain module.</td>
<td>Specialization hierarchy&lt;br&gt;The &lt;consequence&gt; element is specialized from &lt;div&gt;. It is defined in the hazard-statement domain module.</td>
</tr>
<tr>
<td>10.6.2.2 &lt;hazardstatement&gt;</td>
<td>Attributes&lt;br&gt;The following attributes are available on this element: and , and the attributes defined below. &lt;br&gt;@type &lt;br&gt;Describes the level of hazard. Safety hazard level definitions</td>
<td>Attributes&lt;br&gt;The following attributes are available on this element: and , and the attributes defined below. &lt;br&gt;@type &lt;br&gt;Indicates the level of hazard. The values correspond to the</td>
</tr>
</tbody>
</table>
## Topic

**DITA 2.0, working draft 11 content**

- correspond to the same values in the ANSI Z535 and the ISO 2864 standards. Note that this differs from the `@type` attribute on many other DITA elements. See for detailed information on supported values and processing implications.
- Available values are note, tip, fastpath, restriction, important, remember, attention, caution, notice, danger, warning, other, and `-dita-use-conref-target`.

- **@othertype**
  - Indicates an alternate note type, when the type is not available in the `@type` attribute value list. This value is used as the user-provided note title when the `@type` attribute value is set to "other."

## New content

- signal words defined by the ANSI Z535.6 standard:
  - **caution**
    - Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
  - **danger**
    - Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.
  - **notice**
    - Indicates information considered important but not hazard-related, for example, messages relating to property damage.
  - **warning**
    - Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

<table>
<thead>
<tr>
<th>10.6.2.3 <code>&lt;hazardsymbol&gt;</code></th>
<th>Not applicable</th>
<th>Usage information</th>
</tr>
</thead>
<tbody>
<tr>
<td>When a <code>&lt;hazardsymbol&gt;</code> element is directly contained by <code>&lt;messagepanel&gt;</code>, the <code>&lt;hazardsymbol&gt;</code> is assumed to be associated with the <code>&lt;typeofhazard&gt;</code> element.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.6.2.4 <code>&lt;howtoavoid&gt;</code></th>
<th>Specialization hierarchy</th>
<th>Specialization hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <code>&lt;howtoavoid&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the hazard-statement domain module.</td>
<td>The <code>&lt;howtoavoid&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the hazard-statement domain module.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10.6.2.5 <code>&lt;messagepanel&gt;</code></th>
<th>Specialization hierarchy</th>
<th>Specialization hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <code>&lt;messagepanel&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the hazard-statement domain module.</td>
<td>The <code>&lt;messagepanel&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the hazard-statement domain module.</td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>DITA 2.0, working draft 11 content</td>
<td>New content</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>10.6.2.6 &lt;typeofhazard&gt;</td>
<td>Specialization hierarchy The <code>&lt;typeofhazard&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the hazard-statement domain module.</td>
<td>Specialization hierarchy The <code>&lt;typeofhazard&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the hazard-statement domain module.</td>
</tr>
</tbody>
</table>

The following figures contain new content for the examples in the hazard-statement domain topics.

**Figure 92: Changes to `<consequence>` example**

In the following code sample, a hazard statement is assigned a "CAUTION" signal word. The hazard image is explicitly associated with the type of hazard.

```xml
<hazardstatement type="caution">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="hazard-hotsurface"/>
      HOT SURFACES
    </typeofhazard>
    <consequence>Contact may cause a burn.</consequence>
    <howtoavoid>Wear gloves before servicing internal parts.</howtoavoid>
  </messagepanel>
</hazardstatement>
```

**Figure 93: Changes to `<hazardstatement>` example**

The following code sample defines a hazard statement with a signal word of "DANGER."

```xml
<hazardstatement type="danger">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="hazard-rotatingblade"/>
      Rotating blade
    </typeofhazard>
    <consequence>Moving parts can crush and cut.</consequence>
    <howtoavoid>Follow lockout procedure before servicing.</howtoavoid>
  </messagepanel>
</hazardstatement>
```

**Figure 94: Changes to `<hazardsymbol>` example**

The following code sample defines a hazard statement with a signal word of "DANGER." The `<hazardsymbol>` element is explicitly associated with the `<typeofhazard>` element.

```xml
<hazardstatement type="danger">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="hazard-rotatingblade"/>
      Rotating blade
    </typeofhazard>
    <consequence>Moving parts can crush and cut.</consequence>
    <howtoavoid>Follow lockout procedure before servicing.</howtoavoid>
  </messagepanel>
</hazardstatement>
```

In the following code sample, the `<hazardsymbol>` is contained by the `<messagepanel>` element. By default, this markup also associates the `<hazardsymbol>` element with the `<typeofhazard>` element. This markup can be useful when migrating hazard statements from earlier versions to DITA 2.0.

```xml
<hazardstatement type="danger">
  <messagepanel>
    <typeofhazard>Rotating blade</typeofhazard>
  </messagepanel>
</hazardstatement>
```
**Figure 95: Changes to `<howtoavoid>` example**

The following code sample illustrates a hazard statement with the signal word of “NOTICE”, which is reserved for situations that only involve possible property damage or other undesirable states. The `<howtoavoid>` element provides instructions about how to avoid the undesirable state.

```xml
<hazardstatement type="notice">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="hazard-agressivesolvent"/>
      Machinery Damage</typeofhazard>
    <howtoavoid>
      <hazardsymbol keyref="hazard-readmanual"/>
      <ul>
        <li>Do NOT use solvents to clean the drum surface</li>
        <li>Read manual for proper drum cleaning procedure</li>
      </ul>
    </howtoavoid>
  </messagepanel>
</hazardstatement>
```

**Figure 96: Changes to `<messagepanel>` example**

The following code sample generates an ANSI Z535.6 grouped safety message that specifies information about multiple hazards.

```xml
<hazardstatement type="warning">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="hazard-electricshock"/>
      ELECTRIC SHOCK HAZARD</typeofhazard>
    <consequence>The equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock</consequence>
    <howtoavoid>
      <hazardsymbol keyref="hazard-groundpowersource"/>
      <ul>
        <li>Turn off and disconnect power at main switch before disconnecting any cables or before servicing or installing any equipment.</li>
        <li>Connect only to grounded power sources.</li>
        <li>All electric wiring must be done by a qualified electrician and comply with all local codes and regulations.</li>
      </ul>
    </howtoavoid>
  </messagepanel>
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="hazard-hotsurface"/>
      BURN HAZARD</typeofhazard>
    <consequence>Electric surfaces and fluid can become very hot during operation.</consequence>
    <howtoavoid>
      To avoid burns:
      <ul>
        <li>Do not touch hot fluid or equipment.</li>
      </ul>
    </howtoavoid>
  </messagepanel>
</hazardstatement>
```
Figure 97: Changes to `<typeofhazard>` example

The following code sample generates a "CAUTION" hazard statement, which warns users against lifting heavy objects without referring to the product safety manual.

```xml
<hazardstatement type="caution">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="hazard-heavyobject"/>
      Lifting hazard
    </typeofhazard>
    <consequence>May result in injury.</consequence>
    <howtoavoid>See safety manual for lifting instructions.</howtoavoid>
  </messagepanel>
</hazardstatement>
```

Migration plans for backwards incompatibilities

This proposal contains three backwards-incompatible changes:

- Making the `@type` attribute on `<hazardstatement>` required
- Removal of certain values for the `@type` attribute on `<hazardstatement>`
- Removal of `<hazardsymbol>` from the content model of `<hazardstatement>`

While search or utilities can be used to locate `<hazardstatement>` elements that need to be migrated to DITA 2.0, the content and images referenced by the `<hazardsymbol>` element will need to be examined in order to determine how to rework the hazard statement for DITA 2.0.

The following table outlines a basic strategy for migrating existing hazard statements to DITA 2.0.

<table>
<thead>
<tr>
<th>Backwards-incompatible change</th>
<th>Migration approach</th>
</tr>
</thead>
</table>
| `<hazardstatement>` elements without a `@type` attribute | 1. Search DITA source to locate `<hazardstatement>` elements that do not have a `@type` attribute.  
2. If such elements exist, either assign a `@type` attribute or change the `<hazardstatement>` element to a `<note>`. |
| Removed values for `@type` on `<hazardstatement>` | 1. Search DITA source to determine if `<hazardstatement>` elements use any of the following values for the `@type` attribute:
  - fastpath
  - important
  - note
  - other
  - remember
  - restriction
  - tip  
2. If any such elements are found, assess the hazard statement and do one of the following:
  - Change the value of the `@type` attribute on the `<hazardstatement>` element
  - Convert the `<hazardstatement>` element to a `<note>` element |
### Backwards-incompatible change

<table>
<thead>
<tr>
<th>Backwards-incompatible change</th>
<th>Migration approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;hazardsymbol&gt;</code> contained by</td>
<td>1. Identify <code>&lt;hazardstatement&gt;</code> elements that contain <code>&lt;hazardsymbol&gt;</code> elements.</td>
</tr>
<tr>
<td><code>&lt;hazardstatement&gt;</code></td>
<td>2. If such elements are found, move <code>&lt;hazardsymbol&gt;</code> elements into one of the following elements:</td>
</tr>
<tr>
<td></td>
<td>• <code>&lt;consequence&gt;</code></td>
</tr>
<tr>
<td></td>
<td>• <code>&lt;howtoavoid&gt;</code></td>
</tr>
<tr>
<td></td>
<td>• <code>&lt;typeofhazard&gt;</code></td>
</tr>
<tr>
<td></td>
<td>• (Discouraged, except as an interim migration step) <code>messagepanel</code></td>
</tr>
</tbody>
</table>

The following figures contain examples of DITA 1.3 and DITA 2.0 markup for the backwards-incompatible changes:

#### Figure 98: `<hazardstatement>` element without a `@type` attribute

The following code sample represents DITA 1.3 markup; it contains a `<hazardstatement>` element that lacks a `@type` attribute.

```xml
<hazardstatement>
  <messagepanel>
    <typeofhazard>GENERAL HAZARDS</typeofhazard>
    <howtoavoid>Before initializing the system, verify that all electrical, communications, and utility connections are secure.</howtoavoid>
  </messagepanel>
</hazardstatement>
```

After examining the content, the information developer decides to recast it as a `<note>` for DITA 2.0:

```xml
<note type="other" othertype="GENERAL HAZARDS">
  <p>Before initializing the system, verify that all electrical, communications, and utility connections are secure.</p>
</note>
```

#### Figure 99: `<hazardstatement>` element with a `@type` attribute removed in DITA 2.0

The following code sample represents DITA 1.3 markup; it contains a `<hazardstatement>` element that uses a value for the `@type` attribute that is removed in DITA 2.0.

```xml
<hazardstatement type="restriction">
  <messagepanel>
    <typeofhazard>Lifting hazard</typeofhazard>
    <consequence>May result in injury.</consequence>
    <howtoavoid>See safety manual for lifting instructions.</howtoavoid>
  </messagepanel>
</hazardstatement>
```

After examining the content, the information developer decides that the content is appropriate for a hazard statement, and changes the value of the `@type` attribute to "caution".

```xml
<hazardstatement type="caution">
  <messagepanel>
    <typeofhazard>Lifting hazard</typeofhazard>
    <consequence>May result in injury.</consequence>
    <howtoavoid>See safety manual for lifting instructions.</howtoavoid>
  </messagepanel>
</hazardstatement>
```
The following code sample represents DITA 1.3 markup; it contains a `<hazardstatement>` element that contains a `<hazardsymbol>` element.

```
<hazardstatement type="warning">
  <messagepanel>
    <typeofhazard>FLAMMABLE MATERIAL</typeofhazard>
    <consequence>Isopropyl Alcohol (IPA) vapors are flammable and can cause serious injury or death.</consequence>
    <howtoavoid>Remove ignition sources and do not use near heaters.</howtoavoid>
  </messagepanel>
  <hazardsymbol keyref="flammable-materials"/>
</hazardstatement>
```

The information developer reviews the image referenced by the `<hazardsymbol>` element, and decides that it represents the type of hazard. She modifies the markup as follows for DITA 2.0:

```
<hazardstatement type="warning">
  <messagepanel>
    <typeofhazard>
      <hazardsymbol keyref="flammable-materials"/>
      FLAMMABLE MATERIAL
    </typeofhazard>
    <consequence>Isopropyl Alcohol (IPA) vapors are flammable and can cause serious injury or death.</consequence>
    <howtoavoid>Remove ignition sources and do not use near heaters.</howtoavoid>
  </messagepanel>
</hazardstatement>
```

She also could have simply moved the `<hazardsymbol>` element into the `<messagepanel>` element:

```
<hazardstatement type="warning">
  <messagepanel>
    <typeofhazard>FLAMMABLE MATERIAL</typeofhazard>
    <consequence>Isopropyl Alcohol (IPA) vapors are flammable and can cause serious injury or death.</consequence>
    <howtoavoid>Remove ignition sources and do not use near heaters.</howtoavoid>
    <hazardsymbol keyref="flammable-materials"/>
  </messagepanel>
</hazardstatement>
```

### 3.1.13 Stage three: #217 Remove @domains attribute

Remove the domains attribute, and the tokens used for the domains attribute; for specialized attributes, replace the existing parenthetical syntax with a simpler token syntax.

**Champion: Robert D. Anderson**

Provide information about the champion. If the proposal is submitted by a subcommittee, include the name of the point person. He or she should have prepared this proposal and thoroughly understand all of the content. The point person must be present at the TC calls when this proposal is discussed.
Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>14 May 2019</td>
<td><a href="https://lists.oasis-open.org/archives/dita/201905/msg00043.html">https://lists.oasis-open.org/archives/dita/201905/msg00043.html</a></td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>14 June 2019</td>
<td>PDF, DITA</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>2 December 2019</td>
<td>Carsten Brennecke, Eliot Kimber</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>9 December 2019</td>
<td></td>
</tr>
</tbody>
</table>

Approved technical requirements

1. Remove the grammar file definition of @domains
2. Remove definitions for tokens currently used in @domains
3. Define a new attribute @specializations on those elements that previously allowed @domains
4. Define a new syntax for the attribute; currently it is defined only for attribute domains, using the syntax @props/thing1 where "thing1" is an attribute specialization of @props, @props/thing1/thing2 where "thing2" is a further specialization of @thing1, and so on.
5. The attribute syntax will be used for all specializations of @props and @base.

Dependencies or interrelated proposals

N/A.

Modified grammar files

<table>
<thead>
<tr>
<th>basemap.rng (before)</th>
<th>basemap.rng (after)</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;a:documentation&gt;DOMAINS ATTRIBUTE&lt;/a:documentation&gt;</code></td>
<td><code>&lt;a:documentation&gt;SPECIALIZATIONS ATTRIBUTE&lt;/a:documentation&gt;</code></td>
</tr>
<tr>
<td><code>&lt;define name=&quot;domains-att&quot;&gt;</code></td>
<td><code>&lt;define name=&quot;specializations-att&quot;&gt;</code></td>
</tr>
<tr>
<td><code>&lt;optional&gt;</code></td>
<td><code>&lt;optional&gt;</code></td>
</tr>
<tr>
<td><code>&lt;attribute name=&quot;domains&quot; a:defaultValue=&quot;&quot;&gt;</code></td>
<td><code>&lt;attribute name=&quot;specializations&quot; a:defaultValue=&quot;&quot;&gt;</code></td>
</tr>
<tr>
<td>(map ditavalref-d)</td>
<td>@props/audience</td>
</tr>
<tr>
<td>(topic hazard-d)</td>
<td>@props/</td>
</tr>
<tr>
<td>(topic hi-d)</td>
<td>platform</td>
</tr>
<tr>
<td>(topic indexing-d)</td>
<td>product</td>
</tr>
<tr>
<td>(map mapgroup-d)</td>
<td>otherprops)=&quot;/&gt;`</td>
</tr>
<tr>
<td>(topic ut-d)</td>
<td></td>
</tr>
<tr>
<td>a(props/audience)</td>
<td></td>
</tr>
<tr>
<td>a(props)</td>
<td></td>
</tr>
<tr>
<td>deliveryTarget)</td>
<td></td>
</tr>
<tr>
<td>a(props/platform)</td>
<td></td>
</tr>
<tr>
<td>a(props/product)</td>
<td></td>
</tr>
<tr>
<td>otherprops)=&quot;/&gt;`</td>
<td></td>
</tr>
<tr>
<td>&lt;/optional&gt;</td>
<td></td>
</tr>
<tr>
<td><code>&lt;/define&gt;</code></td>
<td><code>&lt;/define&gt;</code></td>
</tr>
</tbody>
</table>
Most RNG elements use the `<domainsContribution>` element as metadata. That metadata contains the token added to 1.3 level RNG shells to assemble the `[domains]` attribute, and was also used to generate DTD and XSD files with 1.3. For example:

```xml
<domainsContribution>a(props audience)</domainsContribution>
```

Using this pattern:

```xml
<domainsContribution>a(props audience)</domainsContribution>
```

This element is not an externally defined part of our RNG grammar, but we should still update it based on the name change, so that `<domainsContribution>` becomes `<specializationsContribution>`. For example:

```xml
<specializationsContribution>@props/audience</specializationsContribution>
```

Keep the XML syntax the same because this is for external tools (not part of the grammar), but change the token for the new syntax:

```xml
<specializationsContribution>@props/audience</specializationsContribution>
```
Each base element domain module (before) | Each base element domain module (after)
--- | ---
Find this pattern: <domainsContribution>(topic hazard-d)</domainsContribution> | Remove the <domainsContribution>

**Modified terminology**

N/A

**Modified specification documentation**

Remove topics *Weak and strong constraints* and *Conref compatibility with constraints* (without domain contributions, there is no longer a distinction and no need for processors to process differently).

Remove the topic *Processing documents with different values of the domains attribute* which no longer applies.

For example topics *Specializing to include non-DITA content*, *Example: Redefine the content model for the topic element*, *Example: Constrain a domain module*, *Example: Replace a base element with the domain extensions*, and *Example: Apply multiple constraints to a single document-type shell*, remove the example sections that define `@domains`.

From **domains attribute rules and syntax**:

<table>
<thead>
<tr>
<th>Before</th>
<th>After: replace with the following</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <code>@domains</code> attribute enables processors to determine whether two elements or two documents use compatible domains. The attribute is declared on the root element for each topic or map type. Each structural, domain, and constraint module defines its ancestry as a parenthesized sequence of space-separated module names; the effective value of the <code>@domains</code> attribute is composed of these parenthesized sequences. Document type shells collect the values that are provided by each module to construct the effective value of the <code>@domains</code> attribute. Processors can examine the collected values when content from one document is used in another, in order to determine whether the content is compatible. For example, when an author pastes content from one topic into another topic within an XML editor, the application can use the <code>@domains</code> attribute to determine if the two topics use compatible domains. If not, copied content from the first topic might need to be generalized before it can be placed in the other topic. The <code>@domains</code> attribute serves the same function when an element uses the <code>@conref</code> attribute to reference a more specialized version of the element. For example, a <code>&lt;note&gt;</code> element in a concept topic conrefs a <code>&lt;hazardstatement&gt;</code> element in a reference document. If the hazard statement domain is not available in the concept topic, the</td>
<td>The <code>@specializations</code> attribute enables processors to determine what attribute extensions are available in a document. The attribute is declared on the root element for each topic or map type. Each attribute domain defines a token to declare the extension; the effective value of the <code>@specializations</code> attribute is composed of these tokens.</td>
</tr>
</tbody>
</table>
Before | After: replace with the following

**Example of task with element domains**

Syntax and rules
Each domain and constraint module MUST provide a value for use by the `@domains` attribute. Each structural vocabulary module SHOULD provide a value for use by the `@domains` attribute, and it MUST do so when it has a dependency on elements from any module that is not part of its specialization ancestry.

Values provided for the `@domains` attribute values are specified from root module (map or topic) to the provided module.

Delete all of these sections from 2.0

**attribute domains**
The value uses an "a" before the initial parenthesis to indicate an attribute domain. Within the parenthesis, the value includes the attribute specialization hierarchy, starting with `@props` or `@base`:

```
'a(', props-or-base, (' ', attname) +, ')
```

For example, the `mySelectAttribute` specialized from `@props` results in the following value: `a(props mySelectAttribute)`

The `@specializations` token for an attribute specialization begins with either `@props` or `@base` followed by a slash, followed by the name of the new attribute:

```
'@', props-or-base, ('/', attname)+
```

For example:

- If `@props` is specialized to create `@myNewProp`, this results in the following token: `@props/myNewProp`
- If `@base` is specialized to create `@myFirstBase`, this results in the following token: `@base/myFirstBase`
- If that specialized attribute `@myFirstBase` is further specialized to create `@mySecondBase`, this results in the following token: `@base/myFirstBase/mySecondBase`

From **Element generalization**, remove the section on "Generalization and conref", which no longer applies.

From **Processor expectations when generalizing elements**, remove the middle table which involves checking `@domains`. 
From DTD: Coding requirements for attribute domain modules:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>The vocabulary modules that define attribute domains have additional coding requirements. The module must include a parameter entity for the new attribute, which can be referenced in document-type shells, as well as a text entity that specifies the contribution to the @domains attribute for the attribute domain.</td>
<td>The vocabulary modules that define attribute domains have additional coding requirements. The module must include a parameter entity for the new attribute, which can be referenced in document-type shells, as well as a text entity that specifies the contribution to the @specializations attribute for the attribute domain.</td>
</tr>
<tr>
<td>The text entity name is the attribute domain name, followed by the literal -d-Att. The value of the text entity is the @domains attribute contribution for the module; see domains attribute rules and syntax for details on how to construct this value.</td>
<td>The text entity name is the attribute domain name, followed by the literal -d-Att. The value of the text entity is the @specializations attribute contribution for the module; see @specializations attribute rules and syntax for details on how to construct this value.</td>
</tr>
</tbody>
</table>

From DTD: Coding requirements for constraint modules:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural constraint modules have the following requirements:</td>
<td>[delete full&lt;dlentry&gt; about @domains]</td>
</tr>
<tr>
<td><strong>@domains contribution entity name and value</strong></td>
<td></td>
</tr>
<tr>
<td>The constraint module needs to contain a declaration for a text entity with the name tagname-constraints, where tagname is the name of the element type to which the constraints apply. The value of the text entity is the @domains attribute contribution for the module; see domains attribute rules and syntax for details on how to construct this value.</td>
<td></td>
</tr>
<tr>
<td>For example, the following text entity provides the declaration for the strict task constraint that is shipped with the DITA standard.</td>
<td></td>
</tr>
<tr>
<td>&lt;!ENTITY taskbody-constraints &quot;(topic task strictTaskbody-c)&quot; &gt;</td>
<td></td>
</tr>
<tr>
<td>Domain constraint modules have the following requirements:</td>
<td>[delete full&lt;dlentry&gt; about @domains]</td>
</tr>
<tr>
<td><strong>@domains contribution entity name and value</strong></td>
<td></td>
</tr>
<tr>
<td>The constraint module needs to contain a declaration for a text entity with the name domainDomain-constraints, where domain is the name of the domain to which the constraints apply, for example, &quot;Highlighting&quot; or &quot;Programming&quot;. The value of the text entity is the @domains attribute contribution for the module; see domains attribute rules and syntax for details on how to construct this value.</td>
<td></td>
</tr>
</tbody>
</table>
For example, the following text entity provides the declaration for a constraint module that restricts the highlighting domain:

```xml
<!ENTITY HighlightingDomain-constraints "(topic hi-d basic=HighlightingDomain-c)"`
```

When element domains are used to extend a base element, those extensions can be used to replace the base element. This form of constraint is done inside the document-type shell.

Within a document-type shell, domain extensions are implemented by declaring an entity for a base element. The value of the entity can omit any base element types from which the other element types that are listed are specialized. Omitting a base type constitutes a form of constraint; as with any other constraint, this form of constraint must contribute a token to the @domains attribute. That token can be defined in a module file (which does not define any other entities or values), or the token can be placed directly into the document-type shell definition for the included-domains entity.

In the following example, the `<pre>` base type is removed from the entity declaration, effectively allowing only specializations of `<pre>` but not `<pre>` itself. This omission would require the use of a @domains contribution token within the included-domains entity.

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>For example, the following text entity provides the declaration for a</td>
<td>When element domains are used to extend a base element, those</td>
</tr>
<tr>
<td>constraint module that restricts the highlighting domain:</td>
<td>extensions can be used to replace the base element. This form of</td>
</tr>
<tr>
<td></td>
<td>constraint is done inside the document-type shell.</td>
</tr>
<tr>
<td></td>
<td>Within a document-type shell, domain extensions are</td>
</tr>
</tbody>
</table>
|                                                                       | implemented by declaring an entity for a base element. The value of |}
|                                                                       | the entity can omit any base element types from which the other      |
|                                                                       | element types that are listed are specialized. Omitting a base type  |
|                                                                       | constitutes a form of constraint; as with any other constraint, this  |
|                                                                       | form of constraint must contribute a token to the @domains attribute.|
|                                                                       | That token can be defined in a module file (which does not define    |
|                                                                       | any other entities or values), or the token can be placed directly   |
|                                                                       | into the document-type shell definition for the included-domains     |
|                                                                       | entity.                                                              |
|                                                                       | In the following example, the `<pre>` base type is                   |
|                                                                       | removed from the entity declaration, effectively allowing only        |
|                                                                       | specializations of `<pre>` but not `<pre>` itself. This omission      |
|                                                                       | would require the use of a @domains contribution token within the    |
|                                                                       | included-domains entity.                                             |

From DTD: Coding requirements for document-type shells:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domains attribute override</strong></td>
<td><strong>Specializations attribute override</strong></td>
</tr>
<tr>
<td>This section sets the effective value of the @domains attribute for</td>
<td>This section sets the effective value of the @specializations</td>
</tr>
<tr>
<td>the top-level document type that is configured by the document type</td>
<td>attribute for the top-level document type that is configured by the</td>
</tr>
<tr>
<td>shell. It redefines the included-domains entity to include the text</td>
<td>document type shell. It redefines the included-domains entity to</td>
</tr>
<tr>
<td>entity for each domain, constraint, and structural specialization that</td>
<td>include the text entity for each attribute domain for each domain,</td>
</tr>
<tr>
<td>is either included or reused in the document type shell.</td>
<td>constraint, and structural specialization that is either included or</td>
</tr>
<tr>
<td>In the following example, entities are included for both the</td>
<td>reused in the document type shell.</td>
</tr>
<tr>
<td>troubleshooting specialization and the task specialization on which</td>
<td>In the following example, entities are included for both the</td>
</tr>
<tr>
<td>the troubleshooting specialization depends; for the highlighting and</td>
<td>troubleshooting specialization and the task specialization on which</td>
</tr>
<tr>
<td>utilities element domains; for the newAtt-d attribute domain, and for</td>
<td>the troubleshooting specialization depends; for the highlighting and</td>
</tr>
<tr>
<td>the noBasePre-c constraint module:</td>
<td>utilities element domains; for the newAtt-d and deliveryTarget-d</td>
</tr>
<tr>
<td></td>
<td>attribute domains:</td>
</tr>
<tr>
<td></td>
<td><code>&lt;!ENTITY included-domains &quot;&amp;troubleshooting-att;</code></td>
</tr>
<tr>
<td></td>
<td><code>&lt;!ENTITY included-domains &quot;&amp;deliveryTarget-d-att;</code></td>
</tr>
</tbody>
</table>
Although parameter entities (entities that begin with "%") must be defined before they are referenced, text entities (entities that begin with ";") can be referenced before they are defined. This allows the included-domains entity to include the constraint entity, which is not defined until the constraint module is referenced later in the document type shell.

This topic covers general coding requirements for defining element types in both structural and element-domain vocabulary modules. In addition, it covers how to create the @domains attribute contribution for these modules.

A domain declaration entity is used to construct the effective value of the @domains attribute for a map or topic type.

The name of the text entity is the structural type name or the domain abbreviation, followed by a hyphen ("-") and the literal att.

The value of the text entity is the @domains attribute contribution for the current module. See domains attribute rules and syntax for details on how to construct this value.

For example, the @domains attribute contributions for the concept structural module and the highlighting domain module are constructed as follows.

- `<!ENTITY concept-att "(topic concept)">`
- `<!ENTITY hi-d-att "(topic hi-d)">`.

From DTD: Coding requirements for structural modules
The topic or map element type must set the `@DITAArchVersion` attribute to the version of DITA in use, typically by referencing the `arch-atts` parameter entity. It must also set the `@domains` attribute to the `included-domains` entity. These attributes give processors a reliable way to check the architecture version and look up the list of domains available in the document type.

The following example shows how these attributes are defined for the `<concept>` element in DITA 1.3:

```
<!ATTLIST concept
  %concept.attributes;
  %arch-atts;
  domains  CDATA  "&included-domains;">
```

The topic or map element type must set the `@DITAArchVersion` attribute to the version of DITA in use, typically by referencing the `arch-atts` parameter entity. It must also set the `@specializations` attribute to the `included-domains` entity. These attributes give processors a reliable way to check the architecture version and look up the list of specialized attributes available in the document type.

The following example shows how these attributes are defined for the `<concept>` element in DITA 2.0:

```
<!ATTLIST concept
  %concept.attributes;
  %arch-atts;
  specializations  CDATA  "&included-domains;">
```

From RELAX NG: Coding requirements for attribute domain modules:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>All vocabulary and constraint modules must document their <code>@domains</code> attribute contribution. The value of the contribution is constructed according to the rules found in <code>domains attribute rules and syntax</code>.</td>
<td>All vocabulary and constraint modules must document their <code>@specializations</code> attribute contribution. The value of the contribution is constructed according to the rules found in <code>@specializations attribute rules and syntax</code>.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Domains attribute contribution</th>
<th>Specializations attribute contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <code>@domains</code> contribution must be documented in the module. The value is constructed according to the rules found in <code>domains attribute rules and syntax</code>.</td>
<td>The <code>@specializations</code> contribution must be documented in the module. The value is constructed according to the rules found in <code>@specializations attribute rules and syntax</code>.</td>
</tr>
</tbody>
</table>

From RELAX NG: Coding requirements for document-type shells: change equivalent to matching DTD topic above.

From DTD: Coding requirements for element type declarations: change equivalent to matching DTD topic above.

From RELAX NG: Coding requirements for structural modules: change equivalent to matching DTD topic above.

From RELAX NG: Coding requirements for element domain modules: change equivalent to matching DTD topic above.

From RELAX NG: Coding requirements for constraint modules: change equivalent to matching DTD topic above.

From architectural attributes:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>@domains</code>&lt;br&gt;This attribute identifies the domain modules (and optionally the structural modules) that are used in a</td>
<td><code>@specializations</code>&lt;br&gt;This attribute identifies the specialized attributes that are used in a map or topic.</td>
</tr>
</tbody>
</table>
### From Processing conrefs:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each module also declares its module dependencies.</td>
<td></td>
</tr>
</tbody>
</table>

#### When pulling content with the conref mechanism, if the referenced element is the same type as the referencing element, and the set of domains declared on the @domains attribute in the referenced topic or map instance is the same as or a subset of the domains declared in the referencing document, the element set allowed in the referenced element is guaranteed to be the same as, or a subset of, the element set allowed in the referencing element.

When pushing content with the conref mechanism, the domain checking algorithm is reversed. In this case, if the set of domains declared on the @domains attribute in the referencing topic or map instance is the same as or a subset of the domains declared in the referenced document, the element set allowed in the pushed content is guaranteed to be the same as, or a subset of, the element set allowed in the new location.

When both pulling or pushing content with the conref mechanism, processors resolving conrefs **SHOULD** tolerate specializations of valid elements and generalize elements in the pushed or pulled content fragment as needed for the resolving context.

Except where allowed by weak constraints, a conref processor **MUST NOT** permit resolution of a reuse relationship that could be rendered invalid under the rules of either the reused or reusing content.

#### When pulling content with the conref mechanism, if the referenced element is the same type as the referencing element, and the set of domains declared on the @domains attribute in the referenced topic or map instance is the same as or a subset of the domains declared in the referencing document, the element set allowed in the referenced element is guaranteed to be the same as, or a subset of, the element set allowed in the referencing element.

When pushing content with the conref mechanism, the domain checking algorithm is reversed. In this case, if the set of domains declared on the @domains attribute in the referencing topic or map instance is the same as or a subset of the domains declared in the referenced document, the element set allowed in the pushed content is guaranteed to be the same as, or a subset of, the element set allowed in the new location.

When content is reused between two documents with different domains or constraints, it is possible for the reused content to include domain extensions that are not defined for the new context, or to include elements that would be constrained out of the new context. When both pulling or pushing content with the conref mechanism, processors resolving conrefs **SHOULD** tolerate specializations of valid elements. Processors **MAY** generalize elements in the pushed or pulled content fragment as needed for the resolving context.

Except where allowed by weak constraints, a conref processor **MUST NOT** permit resolution of a reuse relationship that **could be rendered** is known to be invalid under the rules of either the reused or reusing content.

### From constraint rules:

<table>
<thead>
<tr>
<th>Contribution to the @domains attribute</th>
<th>Contribution to the @domains attribute</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Before</strong></td>
<td><strong>After</strong></td>
</tr>
<tr>
<td>Each constraint that is integrated into a DITA document type <strong>MUST</strong> be declared in the @domains attribute for each structural type that is integrated into the document type.</td>
<td>Each constraint that is integrated into a DITA document type <strong>MUST</strong> be declared in the @domains attribute for each structural type that is integrated into the document type.</td>
</tr>
<tr>
<td>For DTDs, the contribution for the @domains attribute is specified in the constraint module file; for XSD and RELAX NG, the contribution to the</td>
<td>For DTDs, the contribution for the @domains attribute is specified in the constraint module file; for XSD and RELAX NG, the contribution to the</td>
</tr>
</tbody>
</table>
Remove the topic **Conref compatibility with constraints**, which explains how to resolve conref with weak vs strong constraints; this process is obsolete with the removal of the domain tokens.

Remove the topic **Weak and strong constraints**, which explains weak vs strong constraints; this distinction is obsolete with the removal of the domain tokens.

From **Equivalence of document-type shells**:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>@domains attribute is specified directly in the document type shell.</td>
<td>@domains attribute is specified directly in the document type shell.</td>
</tr>
</tbody>
</table>

From **Overview of document type shells**:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>A DITA document type is defined by the following:</td>
<td>A DITA document type is defined by the following:</td>
</tr>
<tr>
<td>• The set of modules that are declared in the @domains attribute on the</td>
<td>• The set of vocabulary and constraint modules that are integrated by</td>
</tr>
<tr>
<td>root element of the document</td>
<td>the document type shell</td>
</tr>
<tr>
<td>• The values of the @class attributes of all the elements in the</td>
<td>• The values of the @class attributes of all the elements in the</td>
</tr>
<tr>
<td>document</td>
<td>document</td>
</tr>
<tr>
<td>• Rules for topic nesting</td>
<td>• Rules for topic nesting</td>
</tr>
</tbody>
</table>

From **Vocabulary modules**:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>The name (or short name) of an element domain module is used to</td>
<td>The name (or short name) of an element domain module is used to</td>
</tr>
<tr>
<td>identify the module in @class and @domains attribute values.</td>
<td>identify the module in @class and @domains attribute values.</td>
</tr>
</tbody>
</table>

**Migration plans for backwards incompatibilities**

Processors will need to be updated to understand the new attribute name and syntax.

The specification already recommends against specifying @domains in source files (it can instead be read from the grammar files). However, it is legal to include it in source. If included, a search/replace expression that finds the @domains attribute in source files can be used to rename it to @specializations.
Remaining modifications affect grammar files rather than source, which cannot easily be automated. The following items in grammar files will need to be migrated manually:

- Specialized topics and maps must change the declaration of @domains on the topic or map element to be named @specializations.
- Attribute domains will need to be updated to use the new @domains token syntax.
- Configured document type shells will remove all domain tokens (apart from attribute domains) from the included-domains entity.
- Configured document type shells will remove references to ENT files that do nothing but declare an entity for structural domain contributions to @domains.
- All modules (except attribute domain modules) will remove declarations of existing tokens.

### 3.1.14 Stage three: #252 Add @outputclass to DITAVAL

For flagging purposes, DITAVAL today allows you to associate a variety of styles with a specific property or revision. Today, the @outputclass attribute is frequently used to associate a much broader range of processing or even CSS styling with an element or group of elements; allowing DITAVAL to associate that same token as a flag will give DITAVAL based flagging the same full range of possibilities.

**Champion**

Robert D. Anderson

**Tracking information**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>June 11 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>Sept 4 2019</td>
<td>PDF, DITA Source</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>Sept 10 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>Sept 17 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>October 1, October 8</td>
<td>Eliot Kimber, Scott Hudson, Eric Sirois, Carsten Brennecke</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>October 10, 2019</td>
<td></td>
</tr>
</tbody>
</table>

**Approved technical requirements**

Add @outputclass to the <prop> and <revprop> elements in the DITAVAL format. The attribute is CDATA, allowing one or more tokens (exactly the same syntax as @outputclass in DITA).

**Dependencies or interrelated proposals**

Feature #17 made @outputclass universal. These features do not depend on each other, just noting that the already-completed proposal #17 ensures that @outputclass is already available as a universal attribute, so this new feature is not providing a new way to add output classes to elements that would otherwise not allow them.
Modified grammar files

Add @outputclass declaration to ditaval.rng:

```xml
<define name="attlist.prop" combine="interleave">
    <optional>
        <attribute name="att"/>
    </optional>
    <optional>
        <attribute name="val"/>
    </optional>
    <attribute name="action">
        <choice>
            <value>flag</value>
            <value>include</value>
            <value>exclude</value>
            <value>passthrough</value>
        </choice>
    </attribute>
    <optional>
        <attribute name="outputclass"/>
    </optional>
    <optional>
        <attribute name="color"/>
    </optional>
    <optional>
        <attribute name="backcolor"/>
    </optional>
    <optional>
        <attribute name="style">
            <a:documentation>
                The style attribute should be a color value (either a name, or a SRGB value).
                See below for the supported color names (taken from the XHTML DTD).
            </a:documentation>
            <data type="NMTOKENS" dita:since="1.3"/>
        </attribute>
    </optional>
</define>

<define name="attlist.revprop" combine="interleave">
    <optional>
        <attribute name="val"/>
    </optional>
    <attribute name="action">
        <choice>
            <value>include</value>
            <value>passthrough</value>
            <value>flag</value>
        </choice>
    </attribute>
    <optional>
        <attribute name="outputclass"/>
    </optional>
    <optional>
        <attribute name="changebar"/>
    </optional>
    <optional>
        <attribute name="color"/>
    </optional>
    <optional>
        <attribute name="backcolor"/>
    </optional>
    <optional>
        <attribute name="style">
            <a:documentation>
                There are 16 widely known color names with their sRGB values:
            </a:documentation>
            black = #000000  green = #008000
            silver = #C0C0C0  lime = #00FF00
            gray = #808080  olive = #808000
            white = #FFFFFF  yellow = #FFFF00
            maroon = #800000  navy = #000080
            red = #FF0000  blue = #0000FF
        </attribute>
    </optional>
</define>
```
Add `@outputclass` to `ditaval.dtd`:

```xml
<!ATTLIST prop
  att    CDATA       #IMPLIED
  val    CDATA       #IMPLIED
  action (flag|include|exclude|passthrough)  #REQUIRED
  outputclass CDATA     #IMPLIED
  color   CDATA       #IMPLIED
  bgcolor CDATA       #IMPLIED
  style   NMTOKENS    #IMPLIED />

<!ATTLIST revprop
  val       CDATA       #IMPLIED
  action    (include|passthrough|flag)  #REQUIRED
  outputclass CDATA     #IMPLIED
  changebar CDATA       #IMPLIED
  color     CDATA       #IMPLIED
  bgcolor   CDATA       #IMPLIED
  style     NMTOKENS    #IMPLIED />
```

**Modified terminology**

N/A

**Modified specification documentation**

Add a definition of `@outputclass` to the following topics: `<prop>`, `<revprop>`.

`@outputclass`

If flag has been set, treat the flagged element as if the full `@outputclass` value in the DITAVAL was specified on that element's `@outputclass` attribute. If two or more DITAVAL properties apply `@outputclass` flags to the same element, treat the flagged element as if each value was specified on that element's `@outputclass` attribute; in that case, the order of those DITAVAL-based tokens is undefined. If the flagged element already specifies `@outputclass`, treat the flagged element as if all DITAVAL-based `@outputclass` values come first in the attribute.

**Migration plans for backwards incompatibilities**

N/A

**3.1.15 Stage three: #253 Indexing changes**

Refactor indexing to remove redundant elements and reduce complexity

**Champion**

Kristen James Eberlein, Eberlein Consulting LLC
Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>11 June 2019</td>
<td>Minutes, 11 June 2019</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>14 June 2019</td>
<td>DITA PDF</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>18 June 2019</td>
<td>Minutes, 18 June 2019</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>02 July 2019</td>
<td>Minutes, 02 July 2019</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>02 July 2019</td>
<td>Bill Burns, Eliot Kimber, Dawn Stevens</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>18 July 2019</td>
<td>DITA PDF</td>
</tr>
</tbody>
</table>

Approved technical requirements

- Remove the indexing domain, and add `<index-see>` and `<index-see-also>` to the base
- Remove `<index-base>`
- Remove `<index-sort-as>`

Dependencies or interrelated proposals

None

Modified grammar files

The following files must be modified:

DTDs

- basemap.dtd
- basetopic.dtd
- commonElementsMod.dtd
- commonElementsMod.ent

RNG

- basemap.rng
- basetopic.rng
- commonElementsMod.rng

In the content below, the following conventions are used:

- Bold is used to indicate code to be added, for example, `addition`.
- Line-through is used to indicate code to be removed, for example, `removal`. 
• Ellipses (…) indicate where code is snipped for brevity.

**Figure 101: Changes to basemap.dtd**

```xml
<!-- ============================================================= -->
<!--             DOMAIN ENTITY DECLARATIONS                        -->
<!-- ============================================================= -->
...
<!ENTITY % indexing-d-dec
PUBLIC "//OASIS//ENTITIES DITA 1.3 Indexing Domain//EN"
"indexingDomain.ent">

<!-- ============================================================= -->
<!--                    DOMAIN EXTENSIONS                          -->
<!-- ============================================================= -->
<!--                    One for each extended base element, with    -->
<!--                    the name of the domain(s) in which the       -->
<!--                    extension was declared                     -->
...
<!ENTITY % index-base   "index-base +

 indexing-d-index-base;

 m">

 <!-- ============================================================= -->
<!--                    DOMAINS ATTRIBUTE OVERRIDE                 -->
<!-- ============================================================= -->
<!ENTITY included-domains
"&mapgroup-d-att;
&delay-d-att;
&deliveryTargetAtt-d-att;
&ditavalref-d-att;
 indexing-d-att;
 hazard-d-att;
 hi-d-att;
 ut-d-att;
"
>

<!-- ============================================================= -->
<!--                    DOMAIN ELEMENT INTEGRATION                 -->
<!-- ============================================================= -->

...  
<!ENTITY % indexing-d-def
PUBLIC "//OASIS//ELEMENTS DITA 1.3 Indexing Domain//EN"
"indexingDomain.mod">

**Figure 102: Changes to basetopic.dtd**

```xml
<!-- ============================================================= -->
<!--             DOMAIN ENTITY DECLARATIONS                        -->
<!-- ============================================================= -->
...
<!ENTITY % indexing-d-dec
PUBLIC "//OASIS//ENTITIES DITA 1.3 Indexing Domain//EN"
"indexingDomain.ent">

<!-- ============================================================= -->
<!--                    DOMAIN EXTENSIONS                          -->
<!-- ============================================================= -->
<!--                    One for each extended base element, with    -->
<!--                    the name of the domain(s) in which the       -->
<!--                    extension was declared                     -->
...
<!ENTITY % index-base   "index-base +

 indexing-d-index-base;

 m"

...  
<!ENTITY % indexing-d-def
PUBLIC "//OASIS//ELEMENTS DITA 1.3 Indexing Domain//EN"
"indexingDomain.mod">
Figure 103: Changes to commonElements.ent

Figure 104: Changes to commonElements.mod
Figure 105: Changes to basemap.rng

...<div>
  <a:documentation>DITA DOMAINS ATTRIBUTE</a:documentation>
  <define name="domains-att">
    <optional>
      <attribute name="domains"
        a:defaultValue=""
        (topic delay-d)
        (map ditavalref-d)
        (topic hazard-d)
        (topic hi-d)
        (topic indexing-d)
        (map mapgroup-d)
        (topic ut-d)
        a(props deliveryTarget)="/">
    </optional>
  </define>
</div>

...<div>
  <a:documentation>MODULE INCLUSIONS</a:documentation>
  <include href="mapMod.rng"/>
  <include href="mapGroupDomain.rng"/>
  <include href="delayResolutionDomain.rng" dita:since="1.3"/>
  <include href="deliveryTargetAttDomain.rng" dita:since="1.3"/>
  <include href="indexingDomain.rng"/>
  <include href="hazardstatementDomain.rng"/>
  <include href="highlightDomain.rng"/>
  <include href="utilitiesDomain.rng"/>
</div>
Figure 106: Changes to basetopic.rng

...  

Figure 107: Changes to commonElementsMod.rng

...
An `<indexterm>` element allows the author to indicate that a certain word or phrase should produce an index entry in the generated index. Category: Miscellaneous elements

```
<define name="indexterm.element">
  <element name="indexterm" dita:longName="Index Term">
    <a:documentation>An `<indexterm>` element allows the author to indicate that a certain word or phrase should produce an index entry in the generated index. Category: Miscellaneous elements</a:documentation>
    <ref name="indexterm.attlist"/>
    <ref name="indexterm.content"/>
  </element>
</define>
```
Modified terminology

None

Modified specification documentation

Note  All numeric references here are to the DITA 2.0 specification, working draft 04.

The following topic cluster needs to be modified and relocated:

- 9.5.4 Indexing-group domain elements
9.5.4.1 <indexterm>  
9.5.4.2 <index-see>  
9.5.4.3 <index-see-also>  
9.5.4.4 <index-sort-as>

The topic cluster should be re-named “Indexing elements”; the <index-sort-as> topic removed; and the cluster relocated to be a child of “9.2 “Body elements”.

The cross reference to the <index-sort-as> topic should be removed from “9.1 DITA elements, A to Z.”

The relationship-table link from 6.8 “Sorting” to 9.5.44.4 <index-sort-as> should be removed.

Any index entries to <index-sort-as> need to be removed.

Content from 9.5.44.4 <index-sort-as> is either incorporated into a new Index sorting (296) topic or moved into 9.5.6.5 <sort-as>.

The following table contains precise suggestions for changes to be made to other topics. The following conventions are used to indicate textual changes:

- Deletions are indicated with line through and red text, for example, deletion.
- Insertions are indicated with underlining and green text, for example, insertion.

<table>
<thead>
<tr>
<th>Topic</th>
<th>DITA 2.0, working draft 04 content</th>
<th>New content</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 DITA processing</td>
<td>DITA processing is affected by a number of factors, including attributes that indicate the set of</td>
<td>DITA processing is affected by a number of factors, including attributes</td>
</tr>
<tr>
<td></td>
<td>vocabulary and constraint modules on which a DITA document depends; navigation; linking; content</td>
<td>that indicate the set of vocabulary and constraint modules on which a</td>
</tr>
<tr>
<td></td>
<td>reuse (using direct or indirect addressing); conditional processing; branch filtering; chunking;</td>
<td>DITA document depends; navigation; linking; content reuse (using</td>
</tr>
<tr>
<td></td>
<td>and more. In addition, translation of DITA content is expedited through the use of the @dir, @translate, and @xml:lang attributes, and the &lt;index-sort-as&gt; element.</td>
<td>direct or indirect addressing); conditional processing; branch filtering;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>chunking; and more. In addition, translation of DITA content is</td>
</tr>
<tr>
<td></td>
<td></td>
<td>expedited through the use of the @dir, @translate, and @xml:lang</td>
</tr>
<tr>
<td></td>
<td></td>
<td>attributes, and the &lt;index-sort-as&gt; element.</td>
</tr>
<tr>
<td>6.6 Translation and localization</td>
<td>DITA has features that facilitate preparing content for translation and working with multilingual</td>
<td>DITA has features that facilitate preparing content for translation and</td>
</tr>
<tr>
<td></td>
<td>content, including the @xml:lang attribute, the @dir attribute, and the @translate attribute. In</td>
<td>working with multilingual content, including the @xml:lang attribute,</td>
</tr>
<tr>
<td></td>
<td>addition, the &lt;sort-as&gt; and &lt;index-sort-as&gt; elements provide support for sorting in languages in</td>
<td>the @dir attribute, and the @translate attribute. In addition, the &lt;sort-as&gt; and &lt;index-sort-as&gt; elements provide element provides support for sorting in languages in</td>
</tr>
<tr>
<td></td>
<td>which the correct sorting of an element requires text that is different from the base content of the</td>
<td>languages in which the correct sorting of an element requires text that is</td>
</tr>
<tr>
<td></td>
<td>element.</td>
<td>different from the base content of the element.</td>
</tr>
<tr>
<td>6.8 Sorting</td>
<td>See the Sorting (296) topic below.</td>
<td>See the modified Sorting (296) topic below. I want TC members to view</td>
</tr>
</tbody>
</table>
### Migration plans for backwards incompatibilities

See the "Migration plan" section of the stage two proposal.

### Index sorting

**The `<index-sort-as>` element**  The combination of an `<indexterm>` and `<sort-as>` element specifies a sort phrase under which an index entry would be sorted.

This element gives an author the flexibility to sort an index entry in an index differently from how its text normally would be sorted. The common use for this is to disregard insignificant leading text, such as punctuation or words like "the" or "a". For example, the author might want `<data>` to be sorted under the letter D rather than the left angle bracket (<). An author might want to include such an entry under both the punctuation heading and the letter D, in which case there can be two index entry directives differentiated only by the sort order.

Certain languages have special sort order needs. For example, Japanese index entries might be written partially or wholly in kanji, but need to be sorted in phonetic order according to its hiragana/katakana rendition. There is no reliable automated way to map written to phonetic text: for kanji text, there can be multiple phonetic possibilities depending on the context. The only way to correctly sort Japanese index entries is to keep the phonetic counterparts with the written forms. The phonetic text would be presented as the sort order text for indexing purposes.

### Sorting

Processors can be configured to sort elements. Typical processing includes sorting glossary entries, index entries, lists of parameters or reference entries in custom navigation structures, and tables based on the contents of cells in specific columns or rows.

Each element to be sorted must have some inherent text on which it will be sorted. This text is the base sort phrase for the element. For elements that have titles, the base sort phrase usually is the content of the `<title>` element. For elements that do not have titles, the base sort phrase might be literal content in the DITA source, or it might be generated or constructed based on the semantics of the element involved; for example, it could be constructed from various attribute or metadata values.

Processors that perform sorting SHOULD explicitly document how the base sort phrase is determined for a given element.

The `<sort-as>` element can be used to specify an effective sort phrase when the base sort phrase is not appropriate for sorting. For index terms, the `<index-sort-as>` `<sort-as>` element can be used to specify the effective sort phrase for an index entry.

The details of sorting and grouping are implementation specific. Processors might provide different mechanisms for defining or configuring collation and grouping details. Even where the `<sort-as>` element is specified, two processors might produce different sorted and grouped results because they might use different collation and grouping rules. For example, one processor might be configured to sort English terms before non-English terms, while another might be configured to sort them after. The grouping and sorting of content is subject to local editorial rules.
When a `<sort-as>` element is specified, processors that sort the containing element **MUST** construct the effective sort phrase by prepending the content of the `<sort-as>` element to the base sort phrase. This ensures that two items with the same `<sort-as>` element but different base sort phrases will sort in the appropriate order.

For example, if a processor uses the content of the `<title>` element as the base sort phrase, and the title of a topic is "24 Hour Support Hotline" and the value of the `<sort-as>` element is "twenty-four hour", then the effective sort phrase would be "twenty-four hour24 Hour Support Hotline".

**<sort-as>**

For elements that are sorted, the `<sort-as>` element provides text that is combined with the base sort phrase to construct the effective sort phrase. The text can be specified in the content of the `<sort-as>` element or in the value attribute on the `<sort-as>` element. The `<sort-as>` element also is useful for elements where the base sort phrase is inadequate or non-existent, for example, a glossary or index entry for a Japanese Kanji phrase.

**Usage information**

The `<sort-as>` element can contain `<text>` and `<keyword>` elements in order to enable content referencing. If a `<keyword>` element is used within `<sort-as>`, the @keyref attribute can be used to set the sort phrase. If a `<keyword>` uses @keyref and would otherwise also act as a navigation link, the link aspect of the @keyref attribute is ignored.

Some elements in the base DITA vocabulary are natural candidates for sorting, including topics, definition list entries, index entries, and rows in tables and simple tables. Authors are likely to include `<sort-as>` elements in the following locations:

- For topics, the `<sort-as>` element can be included directly in `<title>`, `<searchtitle>`, or `<navtitle>` when the different forms of title need different effective sort phrases. If the effective sort phrase is common to all the titles for a topic, the `<sort-as>` element can be included as a direct child of the topic prolog anywhere `<data>` is allowed the `<prolog>` element in the topic.
- For glossary entry topics, the `<sort-as>` element can be included directly in `<glossterm>` or as a direct child of the `<prolog>` element.
- For topic references, the `<sort-as>` element can be included directly in the `<navtitle>` or `<title>` element within `<topicmeta>` or as a child of `<topicmeta>`.
- For definition list items, include the `<sort-as>` element can be included in the `<dt>` element.
- For index entries, the `<sort-as>` can be included as a child of `<indexterm>`. In a multilevel index entry, the `<sort-as>` element only affects the level in which it occurs.

**Processing expectations**

As a specialization of `<data>`, the `<sort-as>` element is allowed in any context where `<data>` is allowed. However, the presence of `<sort-as>` within an element does not, by itself, indicate that the containing element should be sorted. Processors can choose to sort any DITA elements for any reason. Likewise, processors are not required to sort any elements. See [sorting topic] for more information on sorting.

Processors **SHOULD** expect to encounter `<sort-as>` elements in the above locations. Processors that sort **SHOULD** use the following precedence rules:

- A `<sort-as>` element that is specified in a title takes precedence over a `<sort-as>` element that is specified as a child of the topic prolog.
• Except for instances in the topic prolog, processors only apply `<sort-as>` elements that are either a direct child of the element to be sorted or a direct child of the title- or label-defining element of the element to be sorted.

• When an element contains multiple, direct-child, `<sort-as>` elements, the first direct-child `<sort-as>` element in document order takes precedence.

• When located within the `<indexterm>` element, the `<sort-as>` element is equivalent to `<index-sort-as>`. It is an error for an `<indexterm>` element to directly contain both `<sort-as>` and `<index-sort-as>` elements.

• It is an error if there is more than one `<sort-as>` child for a given `<indexterm>`. An implementation might give an error message.

• Sort phrases are determined after filtering and content reference resolution occur.

When a `<sort-as>` element is specified, processors that sort the containing element **MUST** construct the effective sort phrase by prepending the content of the `<sort-as>` element to the base sort phrase. This ensures that two items with the same `<sort-as>` element but different base sort phrases will sort in the appropriate order.

For example, if a processor uses the content of the `<title>` element as the base sort phrase, and the title of a topic is "24 Hour Support Hotline" and the value of the `<sort-as>` element is "twenty-four hour", then the effective sort phrase would be "twenty-four hour24 Hour Support Hotline".

**Specialization hierarchy**

The `<sort-as>` element is specialized from `<data>`. It in defined in the utilities-domain module.

**Attributes**

The following attributes are available on this element: Universal attribute group and the attributes defined below.

@name

Names the metadata item that the element represents. The default value is "sort-as". Specializations of `<sort-as>` can set the default value of the @name attribute to reflect the tag name of the specialized element.

@value

The value of the metadata item. When the `<sort-as>` element has content and the @value attribute is specified, the @value attribute takes precedence. If the @value attribute is not specified and the `<sort-as>` element does not contain content, then the `<sort-as>` element has no effect.

**Examples**

Intro goes here ...

**Figure 108: Sorting glossary entries**

The following code samples show how a glossary entry for the Chinese ideographic character for "big" might specify an effective sort phrase of "dada" (the Pin-Yin transliteration for Mandarin):

The `<sort-as>` element can be located within `<glossterm>`:

```xml
<glossentry id="gloss-dada">
  <glossterm value="dada">&#x5927;&#x5927;</glossterm>
  <glossdef>Literally "big big".</glossdef>
</glossentry>
```
Or the `<sort-as>` element can be located within `<prolog>`:

```xml
<glossentry id="gloss-dada">
  <glossterm>&#x5927;&#x5927;</glossterm>
  <prolog>
    <sort-as>dada</sort-as>
  </prolog>
  <glossdef>Literally "big big".</glossdef>
</glossentry>
```

**Figure 109: Sorting index entries**

This following code sample shows an index entry for `<data>` that will be sorted as “data”:

```xml
<indexterm>&lt;data&gt;&lt;sort-as&gt;data&lt;/sort-as&gt;&lt;/indexterm>
```

### 3.1.16 Stage three: #277 Change specialization base for `<imagemap>`

Change the specialization base for `<imagemap>` to enable image maps to be treated as images.

**Champion**

Kristen James Eberlein, Eberlein Consulting LLC

**Tracking information**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>16 July 2019</td>
<td>Minutes, 16 July 2019</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>17 July 2019</td>
<td>DITA PDF</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>06 August 2019</td>
<td>Minutes, 06 August 2019</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>13 August 2019</td>
<td>Minutes, 13 August 2019</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>13 August 2019</td>
<td>Scott Hudson, Eliot Kimber, Zoe Lawson</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>18 August 2019; updated 20 August with link to minutes when stage 2 proposal approved</td>
<td></td>
</tr>
</tbody>
</table>

**Approved technical requirements**

Change the specialization base of `<imagemap>` and `<area>` to `<div>`

**Dependencies or interrelated proposals**

None

**Modified grammar files**

The following files must be modified:
DTDs

- basemap.dtd
- basetopic.dtd
- utilitiesDomain.ent
- utilitiesDomain.mod

RNG

utilitiesDomain.rng

In the content below, the following conventions are used:

- **Bold** is used to indicate code to be added, for example, **addition**.
- Line-through is used to indicate code to be removed, for example, **removal**.
- Ellipses (…) indicate where code is snipped for brevity.

**Figure 110: Changes to basemap.dtd**

```xml
...  
<!-- ============================================================== -->  
<!--                    DOMAIN EXTENSIONS                          -->  
<!-- ============================================================== -->  
<!--                    One for each extended base element, with -->  
<!-- the name of the domain(s) in which the extension was declared -->  
<!-- ============================================================== -->  
<!ENTITY % topicref     "topicref |  
%mapgroup-d-topicref; |  
%ditavalref-d-topicref;  
"  
<!ENTITY % keywords     "keywords |  
%delay-d-keywords;  
"  
<!ENTITY % index-base   "index-base |  
%indexing-d-index-base;  
"  
<!ENTITY % note         "note |  
%hazard-d-note;  
"  
<!ENTITY % ph           "ph |  
%hazard-d-ph;  
"  
<!ENTITY % fig          "fig |  
%ut-d-fig;  
"  
<!ENTITY % data         "data |  
%ut-d-data;  
"  
<!ENTITY % div          "div |  
%ut-d-div;  
"  
...  
```

**Figure 111: Changes to basetopic.dtd**

```xml
...  
<!-- ============================================================== -->  
<!--                    DOMAIN EXTENSIONS                          -->  
<!-- ============================================================== -->  
<!--                    One for each extended base element, with -->  
<!-- the name of the domain(s) in which the extension was declared -->  
<!-- ============================================================== -->  
<!ENTITY % index-base   "index-base |  
%indexing-d-index-base;  
"  
<!ENTITY % note         "note |  
```
Figure 112: Changes to utilitiesDomain.ent

```xml
<!ELEMENT ut-d-fig "imagemap">
<!ELEMENT ut-d-div "imagemap">
<!ELEMENT ut-d-data "sort-as">
```

Figure 113: Changes to utilitiesDomain.mod

```xml
<!ATTLIST imagemap %global-atts; class CDATA "+ topic/fig ut-d-imagemap">
<!ATTLIST imagemap %global-atts; class CDATA "+ topic/div ut-d-imagemap">
<!ATTLIST area %global-atts; class CDATA "+ topic/div ut-d-area">
<!ATTLIST shape %global-atts; class CDATA "+ topic/keyword ut-d/shape">
<!ATTLIST coords %global-atts; class CDATA "+ topic/ph ut-d/coords">
<!ATTLIST sort-as %global-atts; class CDATA "+ topic/data ut-d/sort-as">
```

Figure 114: Changes to utilitiesDomain.rng

```xml
<define name="ut-d-fig">
  <ref name="imagemap.element"/>
</define>
<define name="fig" combine="choice">
  <ref name="ut-d-fig"/>
</define>
<define name="ut-d-div">
  <ref name="imagemap.element"/>
</define>
<define name="div" combine="choice">
  <ref name="ut-d-div"/>
</define>
<define name="ut-d-data">
  <ref name="sort-as.element"/>
</define>
```
Modified terminology

None

Modified specification documentation

The following table lists the changes that need to be made to element reference topics.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Current GitHub source</th>
<th>Post-accepted proposal DITA source</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;area&gt;</code></td>
<td>The <code>&lt;area&gt;</code> element is specialized from <code>&lt;figgroup&gt;</code>. It is defined in the utilities-domain module.</td>
<td>The <code>&lt;area&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the utilities-domain module.</td>
</tr>
<tr>
<td><code>&lt;imagemap&gt;</code></td>
<td>The <code>&lt;imagemap&gt;</code> element is specialized from <code>&lt;fig&gt;</code>. It is defined in the utilities-domain module.</td>
<td>The <code>&lt;imagemap&gt;</code> element is specialized from <code>&lt;div&gt;</code>. It is defined in the utilities-domain module.</td>
</tr>
</tbody>
</table>
Migration plans for backwards incompatibilities

See the "Migration plan" section of the stage two proposal.

3.1.17 Stage three: #278 Remove @lockmeta attribute

Remove the @lockmeta attribute from the <topicmeta> and <bookmeta> elements.

Champion

Bill Burns, Healthwise, Inc.

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>July 16, 2019</td>
<td></td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>20 August 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>Aug. 27, 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>Oct. 8, 2019</td>
<td>Kristen James Eberlein, Eberlein Consulting LLC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scott Hudson, The Boeing Company</td>
</tr>
<tr>
<td>Stage 3 proposal (this document)</td>
<td></td>
<td>submitted to TC</td>
</tr>
</tbody>
</table>

Approved technical requirements

The @lockmeta attribute is ambiguous and poorly defined. While it was present in the DITA 1.0 DTDs, it was not defined in the spec. An ambiguous definition was added in the DITA 1.1 time frame. Rather than work to define an attribute that we do not understand clear use cases for, the DITA TC recommends removing the @lockmeta attribute.

Dependencies or interrelated proposals

None

Modified grammar files

<table>
<thead>
<tr>
<th>map.mod (1.3)</th>
<th>map.mod (2.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;!ENTITY % topicmeta.attributes &quot;lockmeta {no</td>
<td>yes</td>
</tr>
<tr>
<td>%univ-atts;&quot;</td>
<td></td>
</tr>
</tbody>
</table>
Modified terminology

None

Modified specification documentation

2.2.4.3, 3.3.1.3, and 3.10.6.2.1

The following table contains precise suggestions for changes to be made to topics. Deletions are indicated with line through and red text, for example, deletion.

<table>
<thead>
<tr>
<th>Topic</th>
<th>DITA 2.0, working draft 11 content</th>
<th>Updated content</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.4.3 - Metadata in maps and topics</td>
<td>In a topic, the metadata elements apply to the entire topic. In a map,</td>
<td>In a topic, the metadata elements apply to the entire topic. In a map,</td>
</tr>
</tbody>
</table>
they supplement or override any metadata that is provided in the referenced topics. When the same metadata element or attribute is specified in both a map and a topic, by default the value in the map takes precedence; the assumption here is that the author of the map has more knowledge of the reusing context than the author of the topic. The @lockmeta attribute on the <topicmeta> element controls whether map-specified values override values in the referenced topic.

### 3.3.1.3 <topicmeta>

The following attributes are available on this element: Universal attribute group and the attribute defined below.

**@lockmeta**

By default, metadata in the map supplements or overrides metadata that is specified at the topic level, unless the @lockmeta attribute of the <topicmeta> element is set to "no". Allowable values are "yes", "no", and Using the -dita-use-conref-target value.

### 3.10.6.2.1 <bookmeta>

The following attributes are available on this element: Universal attribute group and the attribute defined below.

**@lockmeta**

By default, metadata in the map supplements or overrides metadata that is specified at the topic level, unless the @lockmeta attribute of the <topicmeta> element is set to "no". Allowable values are "yes", "no", and Using the -dita-use-conref-target value.

---

**Migration plans for backwards incompatibilities**

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Migration approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>DITA source</td>
<td>Remove @lockmeta from any maps that contain the attribute</td>
</tr>
<tr>
<td>Processing</td>
<td>Since processing expectations in earlier specifications were unclear, impacts are unlikely. If implementations built custom processing for @lockmeta, they will need to modify it.</td>
</tr>
<tr>
<td>Impacts</td>
<td>Migration approach</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>Existing specializations or constraints</td>
<td>Remove @lockmeta from existing specializations.</td>
</tr>
</tbody>
</table>

### 3.1.18 Stage three: #292: Add `@colspan`, `@rowspan`, `@headers`, `@scope`, and `<title>` to `<simpletable>`

The `<simpletable>` in DITA 1.3 does not allow custom definition of the number of columns or rows that a cell should span. Likewise, the `<simpletable>` content model in DITA 1.3 does not include a caption or title for a table. Allowing column/row spanning and title will make the `<simpletable>` element more similar to the HTML5 table, which should make it more usable for authors working in web contexts and also more compatible with content structures in HDITA (the Lightweight DITA authoring format that is based on HTML5).

**Champion**

Carlos Evia

**Tracking information**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>Mar 18 2020; revised Mar 25 2020</td>
<td>Sent to Robert Anderson, Carsten Brenneckwe</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted</td>
<td>Mar 27 2020</td>
<td><a href="Issue292-stage3-simpletableUpdate.dita">Issue292-stage3-simpletableUpdate.dita</a></td>
</tr>
</tbody>
</table>
Approved technical requirements

- Add `<title>` as optional first child of `<simpletable>`
- Add `@colspan`, `@rowspan`, `@headers`, and `@scope` as optional attributes to `<stentry>`

Dependencies or interrelated proposals

The grammar file changes presented in this proposal are needed in the entries for `<properties>` and `<choicetable>` in the technical content package.

Modified Grammar files

The following files must be modified:

- **(DTD)**: commonElements.mod
- **(RNG)**: commonElementsMod.rng

Figure 115: Changes to commonElements.mod

```
<!--                    LONG NAME: Simple Table                    -->
<!ENTITY % simpletable.content
     "((%title;)?,
      (%sthead;)?,
      (%strow;)+)
>
<!--                    LONG NAME: Simple Table                    -->
<!ENTITY % stentry.attributes
     "specentry
    CDATA          #IMPLIED
     %univ-atts;
     outputclass
     CDATA          #IMPLIED"
     colspan
     NMTOKEN        #IMPLIED
     rowspan
     NMTOKEN        #IMPLIED
     scope
     (row |
     coi |
     rowgroup |
     colgroup |
     -dita-use-conref-target)
     #IMPLIED
     headers
     NMTOKENS       #IMPLIED"
>
```

Figure 116: Changes to commonElementsMod.rng

```
<define name="simpletable.content">
  <optional>
    <ref name="title"/>
  </optional>
</define>
```
Modified terminology
No new or updated terminology.

Modified specification documentation

Changes to simpletable.dita

Table 3: Before/after changes

<table>
<thead>
<tr>
<th>Current language</th>
<th>Proposed language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short description: Simple tables are tables that are regular in structure and do not need a caption.</td>
<td>Short description: Simple table is a basic tabular environment to present organized content.</td>
</tr>
<tr>
<td>Usage information: Choose the &lt;simpletable&gt; element when you want to show information in regular rows and columns.</td>
<td>Usage information: Choose the simple table environment when close control of tabular formatting is not as important. The main advantage of simple table is for compatibility with HTML5 tables.</td>
</tr>
</tbody>
</table>
Changes to table.dita

Table 4: Before/after changes

Changes to stentry.dita

The short description for <stentry> in the 2.0 draft spec still works for this proposal. List of attributes and examples would need to be updated. The example should be reused from <simpletable>.

Changes to simpletableAttributes.dita

Append the following to the existing paragraph on attributes:

@colspan
  Specifies the number of columns that a cell is to span inside a simple table.

@headers
  Content can be reused from attribute in entry.dita (as long as the TC approves its usage in <stentry>)

@rowspan
  Specifies the number of rows that a cell is to span inside a simple table.

@scope
  Content can be reused from attribute in entry.dita (as long as the TC approves its usage in <stentry>)
Changes to table-elements.dita

Table 5: Before/after changes

<table>
<thead>
<tr>
<th>Current language</th>
<th>Proposed language</th>
</tr>
</thead>
<tbody>
<tr>
<td>The other table structure in DITA is called <code>&lt;simpletable&gt;</code>. As the name implies, it is structurally less complex than the OASIS table, and it can be used as a very simple, regular table for which close control of formatting is not as important. The main advantage of <code>&lt;simpletable&gt;</code> is for describing lists of data with regular headings, such as telephone directory listings, display adapter configuration data, or API properties.</td>
<td>The other table structure in DITA is called <code>&lt;simpletable&gt;</code>. As the name implies, it is structurally less complex than the OASIS table, and it can be used as a table for which close control of formatting is not as important. The main advantage of <code>&lt;simpletable&gt;</code> is for compatibility with HTML5 tables.</td>
</tr>
</tbody>
</table>

Migration plans for backwards incompatibilities

The proposed changes will not affect backwards compatibility because the `<title>` (for `<simpletable>`) element and `@rowspan`, `@colspan`, `@headers`, and `@scope` attributes (for `<stentry>`) will be optional. Existing `<simpletable>` implementations will not need the proposed changes.

3.1.19 Stage three: #297 Allow `<example>` in more places

The `<example>` element is not allowed in several elements, which means that content cannot be tagged as examples in certain contexts. Adding `<example>` to more contexts solves the issue.

Champion
Scott Hudson

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>10JUN2019</td>
<td>• <a href="https://lists.oasis-open.org/archives/dita/201906/msg00026.html">https://lists.oasis-open.org/archives/dita/201906/msg00026.html</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• <a href="https://lists.oasis-open.org/archives/dita/201907/msg00061.html">https://lists.oasis-open.org/archives/dita/201907/msg00061.html</a></td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>08OCT2019</td>
<td>• <a href="https://lists.oasis-open.org/archives/dita/201909/msg00074.html">https://lists.oasis-open.org/archives/dita/201909/msg00074.html</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• <a href="https://lists.oasis-open.org/archives/dita/201910/msg00077.html">https://lists.oasis-open.org/archives/dita/201910/msg00077.html</a></td>
</tr>
</tbody>
</table>
Event | Date | Links
---|---|---
Stage 3 proposal submitted to reviewers | 23 OCT 2019 | • Carsten Brennecke, SAP
| | | • Stan Doherty, Oracle
Stage 3 proposal (this document) submitted to TC | 29 OCT 2019 | 

**Approved technical requirements**

Allow `<example>` everywhere that `<fig>` can go in DITA 1.3, except do not allow `<example>` directly within `<example>`. Also allow `<example>` as a child of `<fig>`.

1. This feature allows `<example>` to exist where it does in DITA 1.3. Use of the element is fully backward-compatible.
2. This feature allows `<example>` in most block elements:

   - `<abstract>`
   - `<cause>`
   - `<chdesc>`
   - `<chdeschd>`
   - `<choice>`
   - `<choption>`
   - `<choptionhd>`
   - `<condition>`
   - `<context>`
   - `<dd>`
   - `<div>`
   - `<draft-comment>`
   - `<entry>`
   - `<fig>`
   - `<fn>`
   - `<glossScopeNote>`
   - `<glossUsage>`
   - `<glossdef>`
   - `<info>`
   - `<itemgroup>`
   - `<li>`
   - `<lq>`
   - `<note>`
   - `<p>`
   - `<pd>`
   - `<postreq>`
   - `<prereq>`
   - `<propdeschd>`
   - `<proptypehd>`
   - `<propvaluehd>`
   - `<refsyn>`
3. This feature does not create a new context for titled areas, since the additional contexts already allow for titled elements. Processors can process the new context without extra difficulty.

4. This feature avoids the "why did they do this" condition since it prevents nesting of `<example>` as a child of `<example>`.

**Dependencies or interrelated proposals**

N/A

**Modified grammar files**

This solution can be achieved by adding `<example>` to the following common element sets in `dita/doctypes/rng/base/commonElementsMod.rng`:

- basic.block
- basic.block.notbl
- basic.block.nonote
- basic.block.nopara
- basic.block.nolq

```xml
<define name="basic.block">  
  <a:documentation>Elements common to most body-like contexts</a:documentation>  
  <choice>  
    <ref name="dl"/>  
    <ref name="div" dita:since="1.3"/>  
    <ref name="example"/>  
    <ref name="fig"/>  
    <ref name="image"/>  
    <ref name="lines"/>  
    <ref name="lq"/>  
    <ref name="note"/>  
    <ref name="object"/>  
    <ref name="ol"/>  
    <ref name="p"/>  
    <ref name="pre"/>  
    <ref name="simpletable"/>  
    <ref name="sl"/>  
    <ref name="table"/>  
    <ref name="ul"/>  
  </choice>  
</define>

<define name="basic.block.notbl">  
  <choice>  
    <ref name="dl"/>  
    <ref name="div" dita:since="1.3"/>  
    <ref name="example"/>  
    <ref name="fig"/>  
  </choice>  
</define>
```
The solution requires the addition of a new common element set:

```xml
<define name="basic.block.noex">
    <a:documentation>Elements common to most body-like contexts</a:documentation>
    <choice>
        <ref name="dl"/>
        <ref name="div" dita:since="1.3"/>
        <ref name="fig"/>
        <ref name="image"/>
        <ref name="lines"/>
        <ref name="lq"/>
        <ref name="note"/>
        <ref name="object"/>
        <ref name="ol"/>
        <ref name="p"/>
        <ref name="pre"/>
        <ref name="simpletable"/>
        <ref name="sl"/>
        <ref name="table"/>
        <ref name="ul"/>
    </choice>
</define>
```

The solution requires the modification of the example.cnt model in `dita/doctypes/rng/base/topicMod.rng` to use the new common element set (to prevent nesting of example):

```xml
<define name="example.cnt">
    <choice>
        <text/>
        <ref name="basic.block.noex"/>
        <ref name="basic.ph"/>
        <ref name="data.elements.incl"/>
        <ref name="foreign.unknown.incl"/>
        <ref name="title"/>
        <ref name="txt.incl"/>
    </choice>
</define>
```

**Modified terminology**

N/A

**Modified specification documentation**

Since content models are autogenerated for the language reference, no changes to existing topics are needed.

**Migration plans for backward incompatibilities**

Backward compatibility is not affected, since the `<example>` element is an addition to existing content models.

No existing content requires migration, since the `<example>` element is an addition to existing content models.
Element reference topic: <example>
The <example> element is a section that contains examples that illustrate or support the current topic.

Usage information
Use <example> to contain both sample code (or similar artifacts) and the discussion that illustrates the sample. For example, a DITA topic about programming code could use the <example> element to contain both the sample code and the text that describes the code. Similarly, a sample that included preformatted text might use the <pre> element along with a paragraph or list to elaborate upon sections of that text.

Rendering expectations
Example content is rendered as a block.

Processing expectations
N/A

Specialization hierarchy
- topic/example

Attributes
The following attributes are available on this element: Universal attribute group, outputclass, and spectitle.

Intermixing examples with paragraphs

```xml
<section id="sect_Content">
<title>My code description</title>
<sectiondiv product="productname">
<p><synph>variable</synph></p>
<example><codeph>var=123</codeph></example>
</sectiondiv>
<example><title>Scenario: when to use this code</title>
<p>Lorem ipsum.</p>
<codeblock>var=123</codeblock></example></section>
```

New <example> context within a table entry

```xml
<p>File maintenance commands create, modify, and delete records in the database. An explanation and example of each maintenance command is shown in the following table.</p>
<table colsep="1" frame="all" rowsep="1" id="tb_FileMaintenace">
<thead>
<tr>
<entry>Command</entry>
<entry>Description</entry>
</tr>
</thead>
<tbody>
<tr>
<entry><cmdname>ADD</cmdname></entry>
<entry>The following example illustrates the creation of a new record.</entry>
</tr>
</tbody>
</table>
```
3.1.20 Stage three: #350 Remove Machinery Task

Remove the machinery task and the associated Task requirements domain from the DITA 2.0 specification.

Champion
Zoë L Lawson

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
</table>
| Stage 3 proposal submitted to reviewers |          | Preliminary Review: 28 June 2020  
|                              |               | First Review: 4 July 2020                                             |
| Stage 3 proposal (this document) submitted to TC |           | Kris Eberlein  
|                              |               | Robert Anderson  
|                              |               | Dawn Stevens  
|                              |               | Eliot Kimber                                                  |

Approved technical requirements

- Remove the Machinery Task shell and the associated Task requirements domain from the Tech Comm package.
- The RNG and DTD files to support the Machinery Task shell and Task requirements domain will be uploaded to a DITA GitHub repository similar to (https://github.com/oasis-open/dita-stylesheets)

Dependencies or interrelated proposals
None
Modified grammar files

The following files must be removed:

- dtd/machineryIndustry/catalog.xml
- dtd/machineryIndustry/machineryTask.dtd
- dtd/machineryIndustry/machineryTaskbodyConstraint.mod
- dtd/technicalContent/dtd/taskreqDomain.ent
- dtd/technicalContent/dtd/taskreqDomain.mod
- rng/machineryIndustry/rng/catalog.xml
- rng/machineryIndustry/rng/machineryTask.rng
- rng/machineryIndustry/rng/machineryTaskbodyConstraintMod.rng
- rng/technicalContent/rng/taskreqDomain.rng

The entire folder machineryIndustry can be removed from both the dtd and rng folders.

Modified catalog files

The following catalogs must be modified:

In the content below, the following conventions are used:

- Strike-through is used to indicate code to be removed, for example, remove.
- Ellipses (…) indicate where code is snipped for brevity.
- The root dtd and rng catalogs that reference <nextCatalog catalog="machineryIndustry/catalog.xml"/>

- dtd/catalog.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<catalog xmlns="urn:oasis:names:tc:entity:xmlns:xml:catalog">
  <nextCatalog catalog="bookmap/catalog.xml"/>
  <nextCatalog catalog="classificationMap/catalog.xml"/>
  <nextCatalog catalog="machineryIndustry/catalog.xml"/>
  <nextCatalog catalog="technicalContent/catalog.xml"/>
  <nextCatalog catalog="xnal/catalog.xml"/>
</catalog>
```

- rng/catalog.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<catalog xmlns="urn:oasis:names:tc:entity:xmlns:xml:catalog">
  <nextCatalog catalog="bookmap/catalog.xml"/>
  <nextCatalog catalog="classificationMap/catalog.xml"/>
  <nextCatalog catalog="machineryIndustry/catalog.xml"/>
  <nextCatalog catalog="technicalContent/catalog.xml"/>
  <nextCatalog catalog="xnal/catalog.xml"/>
</catalog>
```

- The Technical Content catalog that references the Task Requirements Domain.

- dtd/technicalContent/catalog.xml

```
...<public-publicId"://OASIS//ELEMENTS-DITA-2.0-Task-Requirements-Domain//EN" url="dtd/taskreqDomain.mod"/>
<public-publicId"://OASIS//ELEMENTS-DITA-2.0-Task-Requirements-Domain//EN" url="dtd/taskreqDomain.mod"/>
<public-publicId"://OASIS//ENTITIES-DITA-2.0-Task-Requirements-Domain//EN" url="dtd/taskreqDomain.ent"/>
<public-publicId"://OASIS//ENTITIES-DITA-2.0-Task-Requirements-Domain//EN"
```
Modified terminology
None

Modified specification documentation
Modify the following topics and maps:

- dita-techcomm/specification/archSpec/archSpec-technicalContent.ditamap

- dita-techcomm/specification/langRef/technicalContent-elements.ditamap
• Confirm the elements are removed from https://dita-techcomm/specification/langRef/quick-reference/technicalContent-elements-a-to-z.dita

• Confirm the elements are removed from https://dita-techcomm/specification/non-normative/elementsMerged.dita
<table>
<thead>
<tr>
<th>Translatable attributes?</th>
<th>closereqs</th>
<th>section, postreq</th>
<th>yes</th>
<th>block</th>
<th>block</th>
<th>yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>esttime</td>
<td></td>
<td>yes</td>
<td>block</td>
<td>block</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>noconds</td>
<td></td>
<td>yes</td>
<td>block</td>
<td>block</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>nosafety</td>
<td></td>
<td>yes</td>
<td>block</td>
<td>block</td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>nospareq</td>
<td></td>
<td>yes</td>
<td>N/A (metadata)</td>
<td>block</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>nosupaq</td>
<td></td>
<td>yes</td>
<td>N/A (metadata)</td>
<td>block</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>nosupply</td>
<td></td>
<td>yes</td>
<td>N/A (metadata)</td>
<td>block</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>perscat</td>
<td></td>
<td>yes</td>
<td>block</td>
<td>block</td>
<td>yes</td>
</tr>
</tbody>
</table>
safety

---

spare

---

spare

---

spares

---

sparesli

---

supeqi

---

supequip

---

supplies
- Confirm machinery is removed from the description in specification\archSpec 
  \technicalContent\dita-technicalContent-InformationTypes.dita

```xml
<concept id="dita-technicalContent-InformationTypes" xml:lang="en-US">
  <shortdesc>The Technical Content package contains various document types:
  concept, reference, general task, strict task, machinery task,
  troubleshooting, glossary entry, and glossary group. These document types are designed specifically for information that describes how to use products and processes. The Technical Content package also includes the map document type.</shortdesc>
</concept>
```

- Confirm machinery is removed from the description in specification\introduction 
  \about-the-technical-content-specification.dita

```xml
<concept id="about-the-technical-content-specification">
  <shortdesc>The DITA technical content specification is designed for users who use information typing and document complex applications and devices, such as software, hardware, medical devices, machinery, and more.</shortdesc>
</concept>
```

Remove the following topics:

- archSpec/base/example-contraints-correct-machinery-task-constraint.html (if exists)
- dita-techcomm/specification/archSpec/technicalContent/dita-machinerytask-topic.dita
- dita-techcomm/specification/langRef/task-requirements-domain.ditamap
- dita-techcomm/specification/langRef/containers/mitask-d.dita
- dita-techcomm/specification/langRef/technicalContent/prelreqs.dita
- dita-techcomm/specification/langRef/technicalContent/closereqs.dita
- dita-techcomm/specification/langRef/technicalContent/reqconds.dita
- dita-techcomm/specification/langRef/technicalContent/reqcond.dita
- dita-techcomm/specification/langRef/technicalContent/noconds.dita
Migration plans for backwards incompatibilities

The Machinery Task domain is going to be removed from DITA 2.0. However, the files will be modified to work with 2.0 and be made available in a DITA GitHub repository similar to (https://github.com/oasis-open/dita-stylesheets).

3.2 Technical Content edition

3.2.1 Stage three: #29 Update <bookmap>

Revise book map design to remediate problems but avoid breaking backwards compatibility.

Champion

Kristen James Eberlein, Eberlein Consulting LLC

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>23 May 2017</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>14 October 2019</td>
<td>DITA PDF</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>15 October 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Event</td>
<td>Date</td>
<td>Links</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>22 October 2019</td>
<td>Minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>17 November 2019</td>
<td>PDF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nancy Harrison, Individual member</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eliot Kimber, Individual member</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Eric Sirois, IXIASOFT</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to TC</td>
<td>01 December 2019</td>
<td>PDF</td>
</tr>
<tr>
<td>Stage 3 proposal discussed</td>
<td>03 December 2019</td>
<td><a href="https://lists.oasis-open.org/archives/dita/201912/msg00029.html">https://lists.oasis-open.org/archives/dita/201912/msg00029.html</a></td>
</tr>
<tr>
<td>Stage 3 proposal approved</td>
<td>10 December 2019</td>
<td>Minutes not yet available</td>
</tr>
</tbody>
</table>

**Approved technical requirements**

- Modify the content model of `<bookmap>` to allow zero or more `<ditavalref>` elements after `<bookmeta>`
- Add a `<mapresources>` element to the map group domain. The `<mapresources>` element will:
  - Be specialized from `<topicref>`
  - Have a content model of:
    - Zero or one `<topicmeta>` elements
    - Zero or more `%data.elements.incl;` elements
    - Zero or more `<topicref>` elements
  - Have the following attributes: `@href`, `@keys`, `@keyref`, `@keyscope`, `@processing-role`, `@type`, `@cascade`, `@scope`, `@format`, `@linking`, `@toc`, `@search`, and `%univ-atts;` attributes
  - The attributes should have the same values as the corresponding attributes in `<keydef>`, with the following exception: the `@keys` attribute is not required.
- Modify the content model of `<bookmap>` to allow zero or more `<mapresources>` elements after `<ditavalref>`
- Modify the content model of `<booklists>` to allow zero or more `<amendments>`

**Note** This solution adds hard dependencies on two domains to the bookmap module: DITAVALref and map group. This is something that the TC has not previously done in document-type shells and will need to be clearly documented and explained to DITA practitioners.

**Dependencies or interrelated proposals**

None

**Modified grammar files**

The following files will need to be modified:

- DTDS:
  - bookmap.dtd
  - bookmap.mod
  - mapGroup.mod
In the content below, the following conventions are used:

- **Bold** is used to indicate code to be added, for example, **addition**.
- Line-through and **red text** is used to indicate code to be removed, for example, **removal**.
- Ellipses (…) indicate where code is snipped for brevity.

**Figure 117: Changes to bookmap.dtd**

```xml
...  <!-- ---------------------------------------------------------- -->
<!--  DOMAIN ENTITY DECLARATIONS  -->
<!--  ---------------------------------------------------------- -->
<!-- Do not remove references to the map group or DITAVALref domains. The bookmap specialization requires these domains.  -->
<!--  domains. The bookmap specialization requires these domains.  -->
<!ENTITY % mapgroup-d-dec
    PUBLIC "//OASIS//ENTITIES DITA 2.0 Map Group Domain//EN"
    "../..base/dtd/mapGroup.ent"
>%mapgroup-d-dec;

<!ENTITY % ditavalref-d-dec
    PUBLIC "//OASIS//ENTITIES DITA 2.0 DITAVAL Ref Domain//EN"
    "../..base/dtd/ditavalrefDomain.ent"
>%ditavalref-d-dec;

<!ENTITY % abbrev-d-dec
    PUBLIC "//OASIS//ENTITIES DITA 2.0 Abbreviated Form Domain//EN"
    "../..technicalContent/dtd/abbreviateDomain.ent"
>%abbrev-d-dec;

<!ENTITY % ditavalref-d-dec
    PUBLIC "//OASIS//ENTITIES DITA 2.0 DITAVAL Ref Domain//EN"
    "../..base/dtd/ditavalrefDomain.ent"
>%ditavalref-d-dec;
...

<!--  MAP ELEMENT INTEGRATION  -->
<!--  ---------------------------------------------------------- -->
<!ENTITY % map-type
    PUBLIC "//OASIS//ELEMENTS DITA 2.0 Map//EN"
    "../..base/dtd/map.mod"
>%map-type;

<!ENTITY % mapgroup-type
    PUBLIC "//OASIS//ELEMENTS DITA 2.0 Map Group Domain//EN"
    "../..base/dtd/mapGroup.mod"
>%mapgroup-type;

<!ENTITY % ditavalref-type
    PUBLIC "//OASIS//ELEMENTS DITA 2.0 DITAVAL Ref Domain//EN"
    "../..base/dtd/ditavalrefDomain.mod"
>%ditavalref-type;

<!ENTITY % bookmap-type
    PUBLIC "//OASIS//ELEMENTS DITA 2.0 BookMap//EN"
```
Figure 118: Changes to bookmap.mod

```xml
<!-- ENTITY % bookmap.content -->
"((%title; | %booktitle;)?, (%bookmeta;)?, (%ditavalref;)*, (%mapresources;)*, (%frontmatter;)?, (%chapter;)*, (%part;)*, (%appendices;)? | (%appendix;)*, (%backmatter;)?, (%reltable;)*)"
```

Figure 119: Changes to mapGroup.ent

```xml
<!-- ENTITY % mapgroup-d-topicref -->
"anchorref | keydef | mapref | mapresources | topicgroup |"```
Figure 120: Changes to mapGroup.mod

```xml
<!-- ELEMENT NAME ENTITIES -->
<!ENTITY % topichead "topichead" >
<!ENTITY % topicgroup "topicgroup" >
<!ENTITY % anchorref "anchorref" >
<!ENTITY % mapref "mapref" >
<!ENTITY % keydef "keydef" >
<!ENTITY % mapresources "mapresources" >

<!-- LONG NAME: Map resources -->
<!ENTITY % mapresources.content "(
 (%topicmeta;)?,
 (%data.elements.incl; | %topicref;)*
 )" >

<!ENTITY % mapresources.attributes "href CDATA #IMPLIED
 keyref CDATA #IMPLIED
 keys CDATA #IMPLIED
 keyspace CDATA #IMPLIED
 processing-role (normal | resource-only | -dita-use-conref-target) 'resource-only'
 type CDATA #IMPLIED
 cascade CDATA #IMPLIED
 scope (external | local | peer | -dita-use-conref-target) #IMPLIED
 format CDATA #IMPLIED
 linking (none | normal | sourceonly | targetonly | -dita-use-conref-target) #IMPLIED
 toc (no | yes | -dita-use-conref-target) #IMPLIED
 search (no | yes |) -->
```
Figure 121: Changes to bookmap.rng

...<div>
  <a:documentation>MODULE INCLUSIONS</a:documentation>
  <!-- Do not remove references to the map group or DITAVALref domains. The bookmap specialization requires these domains. -->
  ...
</div>

Figure 122: Changes to bookmapMod.rng

...<div>
  <a:documentation>ELEMENT TYPE PATTERNS</a:documentation>
  ...
  <a:documentation>LONG NAME: Book Map</a:documentation>
  <define name="bookmap.content">
    <optional>
      <choice>
        <ref name="title"/>
        <ref name="booktitle"/>
      </choice>
    </optional>
    <optional>
      <ref name="bookmeta"/>
    </optional>
    <zeroOrMore>
      <ref name="ditavalref"/>
    </zeroOrMore>
    <zeroOrMore>
      <ref name="mapresources"/>
    </zeroOrMore>
    <optional>
      <ref name="frontmatter"/>
    </optional>
  </define>
  ...
  <a:documentation>LONG NAME: Book Lists</a:documentation>
  <define name="booklists.content">
    <zeroOrMore>
      <choice>
        <ref name="abbrevlist"/>
        <ref name="amendments"/>
        <ref name="bibliolist"/>
        <ref name="booklist"/>
        <ref name="figurelist"/>
        <ref name="glossarylist"/>
        <ref name="indexlist"/>
        <ref name="tablelist"/>
        <ref name="trademarklist"/>
        <ref name="toc"/>
      </choice>
    </zeroOrMore>
  </define>
</div>
Figure 123: Changes to mapGroupMod.rng

```xml
<define name="mapref">
  <ref name="mapref.element"/>
</define>
<define name="mapresources">
  <ref name="mapresources.element"/>
</define>
<define name="topicgroup">
  <ref name="topicgroup.element"/>
</define>
<define name="mapgroup-d-topicref">
  <choice>
    <ref name="anchorref.element"/>
    <ref name="keydef.element"/>
    <ref name="mapref.element"/>
    <ref name="mapresources.element"/>
    <ref name="topicgroup.element"/>
    <ref name="topichead.element"/>
  </choice>
</define>
<define name="topicref" combine="choice">
  <ref name="mapgroup-d-topicref"/>
</define>
<define name="mapresources.content">
  <optional>
    <ref name="topicmeta"/>
  </optional>
  <zeroOrMore>
    <choice>
      <ref name="data.elements.incl"/>
      <ref name="topicref"/>
    </choice>
  </zeroOrMore>
</define>
<define name="mapresources.attributes">
  <optional>
    <attribute name="href"/>
  </optional>
  <optional>
    <attribute name="keyref"/>
  </optional>
  <optional>
    <attribute name="keys"/>
  </optional>
  <optional>
    <attribute name="keyscope" dita:since="1.3"/>
  </optional>
  <optional>
    <attribute name="processing-role" a:defaultValue="resource-only">
      <choice>
        <value>normal</value>
        <value>resource-only</value>
        <value>-dita-use-conref-target</value>
      </choice>
    </attribute>
  </optional>
</define>
```
The `mapresources` element is a convenience element that is used to...
Modified terminology
None

Modified specification documentation

The following topics need to be modified:

- `<amendments>`
- `<booklists>`
- "DITA elements, A to Z" (add link to new `<mapresources>` topic)

The following new topics need to be added:

- `<mapresources>` topic (add to map group submap)

Note  All numeric references here are to the DITA 1.3 Errata 02 specification.

The following table contains precise suggestions for changes to be made to topics. Deletions are indicated with line through and red text, for example, deletion.

<table>
<thead>
<tr>
<th>Topic</th>
<th>DITA 1.3 content</th>
<th>DITA 2.0 content</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.10.6.1.3</td>
<td>The <code>&lt;amendments&gt;</code> element references a list of amendments or updates to the book. It indicates to the processing software that the author wants an amendments list generated at the particular location.</td>
<td>The <code>&lt;amendments&gt;</code> element references a list of amendments or updates to the publication.</td>
</tr>
<tr>
<td><code>&lt;amendments&gt;</code></td>
<td><strong>Processing expectations</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The <code>&lt;amendments&gt;</code> element indicates that an amendments list will be generated at that location. If the <code>&lt;amendments&gt;</code> element does not specify a resource, the amendments list is auto-generated by the processor.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Example</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>See bookmark.</td>
<td></td>
</tr>
<tr>
<td>3.10.6.1.11</td>
<td>The <code>&lt;booklists&gt;</code> element references lists of various kinds within the book publication. For example, it can be used within <code>&lt;frontmatter&gt;</code> to reference a <code>&lt;toeplist</code>, <code>&lt;tablelist&gt;</code>, and <code>&lt;figurallist&gt;</code>, or within <code>&lt;backmatter&gt;</code> to reference a <code>&lt;glossarylist</code>, <code>&lt;indexlist&gt;,</code></td>
<td>The <code>&lt;booklists&gt;</code> element references lists of various kinds within the publication.</td>
</tr>
<tr>
<td><code>&lt;booklists&gt;</code></td>
<td><strong>Processing expectations</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The <code>&lt;booklists&gt;</code> element indicates to processors that lists are to be generated at that location in the front or back matter.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Example</strong></td>
<td></td>
</tr>
<tr>
<td>Topic</td>
<td>DITA 1.3 content</td>
<td>DITA 2.0 content</td>
</tr>
<tr>
<td>-------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
</tbody>
</table>
|       | <abbrevlist> It indicates to the processing software that the author wants the lists generated at the <booklists> location. | **Example** The following code sample indicates that lists are generated in the front and back matter of the publication.  
```xml
<bookmap>  
  <booktitle>Sample publication</booktitle>  
  <frontmatter>  
    <booklists>  
      <toc>  
        <amendments/>  
        <figurelist/>  
        <tablelist/>  
      </toc>  
    </booklists>  
  </frontmatter>  
  <backmatter>  
    <booklists>  
      <abbrevlist/>  
      <glossarylist/>  
      <indexlist/>  
    </booklists>  
  </backmatter>  
</bookmap>
```
|       | ... |  
|       | **Example** See the example in bookmap. |  

**Migration plans for backwards incompatibilities**

Not applicable

**<mapresources>**

The `<mapresources>` element serves as an intuitive location for map authors to place objects with `@processing-role` set to "resource-only", for example, key definitions and subject scheme maps.

**Specialization hierarchy**

The `<mapresources>` element is specialized from `<topicref>`. It is defined in the map group module.

**Attributes**

The following attributes are available on this element: , (with the exclusion of `@chunk`, `@collection-type`, `@locktitle`, and a narrowed definition of `@href`, given below), (with a narrowed definition of `@processing-role`, given below), `@keys`, `@keyref`, and the attributes defined below.

**@href**

Points to the resource that is represented by the `<topicref>` element. See for detailed information on supported values and processing implications. References to DITA content cannot be below the topic level: that is, you cannot reference individual elements inside a topic. References to content other than DITA topics should use the `@format` attribute to identify the kind of resource being referenced.

**@processing-role**

The default value for `@processing-role` is set to "resource-only". Otherwise, the definition matches the one in.
Examples
This section provides examples of how the `<mapresources>` element can be used.

Figure 124: Specifying resource-only objects in an intuitive location in a book map

The following code sample illustrate how the `<mapresources>` element can group references to key definitions, subject schemes, and other resources in a bookmap:

```xml
<bookmap>
  <booktitle>
    <mainbooktitle>Test bookmap</mainbooktitle>
  </booktitle>
  <mapresources>
    <mapref href="key-definitions.ditamap"/>
    <mapref href="subject-scheme.ditamap" type="subjectscheme"/>
    <topicref href="cover-page.dita outputclass="cover-page"/>
  </mapresources>
  ...
</bookmap>
```

Note that this example illustrates that `<mapresources>` can be used to make topics available for resource-only processing. In this scenario, the company uses a processor that uses content contained in the `cover-page.dita` file to generate a PDF cover page.

Figure 125: Specifying resource-only objects in a map

The following code sample shows a map that contains information for a specific model of a controller. This map is referenced in an omnibus publication that contains information for an entire family of controllers.

```xml
<map keyscope="model-XNP09">
  <title>Model XNP09</title>
  <mapresources>
    <keydef keys="model-illustration" href="model-XNP09.png" format="png"/>
    <keydef keys="remove-cover" href="remove-cover-XNP09.png" format="png"/>
  </mapresources>
  <topicref href="model-overview.dita"/>
  <topicref href="installing.dita"/>
  <topicref href="uninstalling.dita"/>
  ...
</map>
```

3.2.2 Stage three: #85 Add @sub and <sup> to glossary elements

The `<sub>` and `<sup>` elements are not allowed in several elements from glossentry, which means that terms cannot be used properly in certain contexts. Since `<sub>` and `<sup>` are specialized from `<ph>`, adding the `<ph>` element solves the issue.

Champion
Scott Hudson

Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Event</td>
<td>Date</td>
<td>Links</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>--------------</td>
<td>-----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>22 May 2018</td>
<td>Bill Burns, Nancy Harrison</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Approved technical requirements**

Modify the content models to allow the `<ph>` element within the following elements:

- `<glossSurfaceForm>`
- `<glossAcronym>`
- `<glossSynonym>`
- `<glossShortForm>`
- `<glossAbbreviation>`

**Dependencies or interrelated proposals**

None.

**Modified grammar files**

**Renaming or refactoring elements and attributes**

<table>
<thead>
<tr>
<th>Content model name / location</th>
<th>Original model</th>
<th>Proposed model</th>
</tr>
</thead>
<tbody>
<tr>
<td>glossSurfaceForm.content</td>
<td>&lt;!ENTITY % glossSurfaceForm.content &quot;(#PCDATA</td>
<td>%keyword;</td>
</tr>
<tr>
<td>(glossentry.mod)</td>
<td>&lt;define name=&quot;glossSurfaceForm.content&quot;&gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt;</td>
<td>&lt;define name=&quot;glossSurfaceForm.content&quot;&gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt;</td>
</tr>
<tr>
<td>glossSurfaceForm.content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(glossentryMod.rng)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content model name / location</td>
<td>Original model</td>
<td>Proposed model</td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>glossAcronym.content</td>
<td>&lt;define name=&quot;glossAcronym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</td>
<td>&lt;define name=&quot;glossAcronym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;ref name=&quot;ph&quot; dita:since=&quot;2.0&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</td>
</tr>
<tr>
<td>glossSynonym.content</td>
<td>&lt;define name=&quot;glossSynonym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</td>
<td>&lt;define name=&quot;glossSynonym.content&quot; &gt; &lt;zeroOrMore&gt; &lt;choice&gt; &lt;text/&gt; &lt;ref name=&quot;keyword&quot;/&gt; &lt;ref name=&quot;term&quot;/&gt; &lt;ref name=&quot;text&quot; dita:since=&quot;1.3&quot;/&gt; &lt;ref name=&quot;tm&quot;/&gt; &lt;ref name=&quot;ph&quot; dita:since=&quot;2.0&quot;/&gt; &lt;/choice&gt; &lt;/zeroOrMore&gt; &lt;/define&gt;</td>
</tr>
<tr>
<td>Content model name / location</td>
<td>Original model</td>
<td>Proposed model</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| glossShortForm.content (glossentry.mod) | ```
<define name="glossShortForm.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="keyword"/>
      <ref name="term"/>
      <ref name="text" dita:since="1.3"/>
    </choice>
  </zeroOrMore>
</define>
``` | ```
<define name="glossShortForm.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="keyword"/>
      <ref name="term"/>
      <ref name="text" dita:since="1.3"/>
      <ref name="tm"/>
    </choice>
  </zeroOrMore>
</define>
``` |
| glossAbbreviation.content (glossentry.mod) | ```
<define name="glossAbbreviation.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="keyword"/>
      <ref name="term"/>
      <ref name="text" dita:since="1.3"/>
    </choice>
  </zeroOrMore>
</define>
``` | ```
<define name="glossAbbreviation.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="keyword"/>
      <ref name="term"/>
      <ref name="text" dita:since="1.3"/>
      <ref name="tm"/>
      <ref name="ph" dita:since="2.0"/>
    </choice>
  </zeroOrMore>
</define>
``` |
| glossAbbreviation.content (glossentryMod.rng) | ```
<define name="glossAbbreviation.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="keyword"/>
      <ref name="term"/>
      <ref name="text" dita:since="1.3"/>
    </choice>
  </zeroOrMore>
</define>
``` | ```
<define name="glossAbbreviation.content">
  <zeroOrMore>
    <choice>
      <text/>
      <ref name="keyword"/>
      <ref name="term"/>
      <ref name="text" dita:since="1.3"/>
      <ref name="tm"/>
      <ref name="ph" dita:since="2.0"/>
    </choice>
  </zeroOrMore>
</define>
``` |
Modified terminology

None.

Modified specification documentation

The automatically generated content model descriptions include the `<ph>` for the affected content models:

- `<glossSurfaceForm>`
- `<glossAcronym>`
- `<glossSynonym>`
- `<glossShortForm>`
- `<glossAbbreviation>`

No further topic changes are expected.

Migration plans for backward incompatibilities

There are no backward compatibility issues, since the `<ph>` element is an addition to existing content models.

No existing content needs to be migrated, since the `<ph>` element is an addition to existing content models.

Existing constraints or specializations might need to be adjusted or updated to remove unwanted elements from the glossary content models. One benefit, is that any elements or domains constrained in the shell DTDs (particularly from the equation, highlight, programming, software, user interface, and XML mention domains) are not allowed in the glossary models of the constrained shell.

All `@domains`- and `@class`-based processing of specialized elements and attributes continue to function exactly as before. Processors might need to be adjusted to account for the allowed children and specializations of `<ph>`, such as `<xref>`.

3.2.3 Stage three: #106 Nest steps

Allow the `<steps>` element to nest, in order to address one of our more common authoring pain points, simplify reuse, and reduce overall element count.

Champion

Robert D. Anderson
Tracking information

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Links</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1 proposal accepted</td>
<td>13 March 2018</td>
<td><a href="https://lists.oasis-open.org/archives/dita/201803/msg00052.html">https://lists.oasis-open.org/archives/dita/201803/msg00052.html</a></td>
</tr>
<tr>
<td>Stage 2 proposal submitted</td>
<td>19 March 2018</td>
<td>HTML, DITA</td>
</tr>
<tr>
<td>Stage 2 proposal discussed</td>
<td>20 March 2018</td>
<td>Meeting minutes</td>
</tr>
<tr>
<td>Stage 2 proposal approved</td>
<td>27 March 2018</td>
<td>Meeting minutes</td>
</tr>
<tr>
<td>Stage 3 proposal submitted to reviewers</td>
<td>17 April 2018</td>
<td>Nancy Harrison, Bob Thomas, Carsten Brennbeck</td>
</tr>
<tr>
<td>Stage 3 proposal (this document) submitted to TC</td>
<td>4 September 2018</td>
<td>DITA version in SVN</td>
</tr>
</tbody>
</table>

Approved technical requirements

1. Delete the `<substeps>` and `<substep>` elements.
2. Add `<steps>` and `<steps-unordered>` to the content model of `<step>`, after the command (where `<substeps>` is currently allowed)

Dependencies or interrelated proposals

N/A

Modified grammar files

```xml
<!ENTITY % substeps "substeps"

<!ENTITY % step.content "(%note;)*,
%cmd;,
%choices; |
%choicetable; |
%info; |
%itemgroup; |
%stepxmp; |
%substeps; |
%tutorialinfo;)*,
(%stepresult;)?,
(%steptroubleshooting;)?">

<!ENTITY % step.content "(%note;)*,
%cmd;,
%choices; |
%choicetable; |
%info; |
%itemgroup; |
%stepxmp; |
%substeps; |
%steps; |
%steps-unordered; |
%tutorialinfo;)*,
(%stepresult;)?,
(%steptroubleshooting;)?">
```

```
<-- LONG NAME: Substeps -->
```

```
<-- ------------------------- LONG NAME: Substeps -->
```
<choice>
  <ref name="choices"/>
  <ref name="choicetable"/>
  <ref name="itemgroup"/>
  <ref name="stepxmp"/>
  <ref name="substeps"/>
  <ref name="tutorialinfo"/>
</choice>
</zeroOrMore>

</choice>
</ref name="choices"/>
  <ref name="choicetable"/>
  <ref name="info"/>
  <ref name="itemgroup"/>
  <ref name="stepxmp"/>
  <ref name="substeps"/>
  <ref name="tutorialinfo"/>
</choice>
</zeroOrMore>

<choice>
  <ref name="choices"/>
  <ref name="choicetable"/>
  <ref name="info"/>
  <ref name="itemgroup"/>
  <ref name="stepxmp"/>
  <ref name="substeps"/>
  <ref name="tutorialinfo"/>
</choice>
</zeroOrMore>

<define name="substeps.content">
  <zeroOrMore dita:since="1.3">
    <choice>
      <ref name="data"/>
      <ref name="data-about"/>
    </choice>
  </zeroOrMore>
  <oneOrMore>
    <ref name="substep"/>
  </oneOrMore>
</define>

<define name="substeps.attributes">
  <ref name="univ-atts"/>
  <optional>
    <attribute name="outputclass"/>
  </optional>
</define>

<define name="substeps.element">
  <element name="substeps" dita:longName="Sub-steps">
    <a:documentation>
      <![[CDATA[The <substeps> element allows you to break a step down into a series of separate actions, and should be used only if necessary. Try to describe the steps of a task in a single level of steps. If you need to use more than one level of substep nesting, you should probably rewrite the task to simplify it.]]]>
    </a:documentation>
    <ref name="substeps.attlist"/>
    <ref name="substeps.content"/>
  </element>
</define>

<define name="substeps.attlist">
  <ref name="substeps.attributes"/>
  <define name="substeps.attlist">
    <ref name="univ-atts"/>
    <optional>
      <attribute name="outputclass"/>
    </optional>
  </define>
</define>

<define name="substeps.element">
  <element name="substeps" dita:longName="Sub-step">
    <a:documentation>
      <![[CDATA[The <substep> element allows you to break a step down into a series of separate actions, and should be used only if necessary. Try to describe the steps of a task in a single level of steps. If you need to use more than one level of substep nesting, you should probably rewrite the task to simplify it.]]]>
    </a:documentation>
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    <ref name="substeps.content"/>
  </element>
</define>

<define name="substeps.attlist">
  <ref name="substeps.attributes"/>
  <define name="substeps.attlist">
    <ref name="univ-atts"/>
    <optional>
      <attribute name="outputclass"/>
    </optional>
  </define>
</define>

<define name="substeps.element">
  <element name="substep">
    <a:documentation>
      <![[CDATA[The <substep> element allows you to break a step down into a series of separate actions, and should be used only if necessary. Try to describe the steps of a task in a single level of steps. If you need to use more than one level of substep nesting, you should probably rewrite the task to simplify it.]]]>
    </a:documentation>
    <ref name="substep.attlist"/>
    <ref name="substep.content"/>
  </element>
</define>

<define name="substep.attlist">
  <ref name="substep.attributes"/>
  <define name="substep.attlist">
    <ref name="univ-atts"/>
    <optional>
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    </optional>
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      <![[CDATA[The <substep> element allows you to break a step down into a series of separate actions, and should be used only if necessary. Try to describe the steps of a task in a single level of steps. If you need to use more than one level of substep nesting, you should probably rewrite the task to simplify it.]]]>
    </a:documentation>
    <ref name="substep.attlist"/>
    <ref name="substep.content"/>
  </element>
</define>

<define name="substep.attlist">
  <ref name="substep.attributes"/>
  <define name="substep.attlist">
    <ref name="univ-atts"/>
    <optional>
      <attribute name="outputclass"/>
    </optional>
  </define>
</define>

<define name="substep.element">
  <element name="substep">
    <a:documentation>
      <![[CDATA[The <substep> element allows you to break a step down into a series of separate actions, and should be used only if necessary. Try to describe the steps of a task in a single level of steps. If you need to use more than one level of substep nesting, you should probably rewrite the task to simplify it.]]]>
    </a:documentation>
    <ref name="substep.attlist"/>
    <ref name="substep.content"/>
  </element>
</define>

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  <ref name="substep.attributes"/>
  <define name="substep.attlist">
    <ref name="univ-atts"/>
    <optional>
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    </optional>
  </define>
</define>

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  <element name="substep">
    <a:documentation>
      <![[CDATA[The <substep> element allows you to break a step down into a series of separate actions, and should be used only if necessary. Try to describe the steps of a task in a single level of steps. If you need to use more than one level of substep nesting, you should probably rewrite the task to simplify it.]]]>
    </a:documentation>
    <ref name="substep.attlist"/>
    <ref name="substep.content"/>
  </element>
</define>

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  <ref name="substep.attributes"/>
  <define name="substep.attlist">
    <ref name="univ-atts"/>
    <optional>
      <attribute name="outputclass"/>
    </optional>
  </define>
</define>
### Modified terminology

**N/A**
Modified specification documentation

Content models will not be published in the same document as the specification with DITA 2.0, so there are no changes required based on the DITA 1.3 content model appendices.

Existing element reference topics for `<substeps>` and `<substep>` will be deleted.

The task table in topic B.6 Element-by-element recommendations for translators: Technical content edition needs to delete the rows for `<substep>` and `<substeps>`.

In addition, the following changes are required:

<table>
<thead>
<tr>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;step&gt;</code> element reference topic (before)</td>
<td><code>&lt;step&gt;</code> element reference topic (after)</td>
</tr>
</tbody>
</table>
| Definition of `@importance`:
  importance
  Describes whether the current `<step>` or `<substep>` is optional or required. Output processors might highlight steps that are optional or required. Allowed values are "optional", "required", or `-dita-use-conref-target`. | Definition of `@importance`:
  importance
  Describes whether the current `<step>` or `<substep>` is optional or required. Output processors might highlight steps that are optional or required. Allowed values are "optional", "required", or `-dita-use-conref-target`. |

Task topic (strict task) (before)  Task topic (strict task) (after)

From topic 2.7.1.4 in DITA 1.3, the description of `<steps>`:

The `<step>` element represents an action that a user must follow to accomplish a task. Each `<step>` in a `<task>` must contain a command `<cmd>` element which describes the particular action the user must perform to accomplish the overall task. The `<step>` element can also contain information `<info>`, `<substeps>` `<substeps>`, tutorial information `<tutorialinfo>`, a step example `<stepxmp>`, choices `<choices>`, a step result `<stepresult>`, or troubleshooting `<steptroubleshooting>`, although these are optional.

From topic 2.7.1.4 Task topic (strict task) in DITA 1.3, the description of `<steps>`:

The `<step>` element represents an action that a user must follow to accomplish a task. Each `<step>` in a `<task>` must contain a command `<cmd>` element which describes the particular action the user must perform to accomplish the overall task. The `<step>` element can also contain information `<info>`, `<substeps>` `<substeps>`, tutorial information `<tutorialinfo>`, a step example `<stepxmp>`, choices `<choices>`, a step result `<stepresult>`, or troubleshooting `<steptroubleshooting>`, although these are optional.
Before troubleshooting `<steptroubleshooting>`, although these are optional.

The following changes are required in `TroubleshootingElements.dita`:

<table>
<thead>
<tr>
<th>“Troubleshooting information” concept topic (before)</th>
<th>“Troubleshooting information” concept topic (after)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The <code>&lt;steptroubleshooting&gt;</code> element can occur following the <code>&lt;cmd&gt;</code> element in the <code>&lt;step&gt;</code> or <code>&lt;substep&gt;</code> element. The <code>&lt;steptroubleshooting&gt;</code> element ends the <code>&lt;step&gt;</code> or <code>&lt;substep&gt;</code> element. Another element, such as <code>&lt;info&gt;</code> or <code>&lt;stepxmp&gt;</code>, cannot be added after the <code>&lt;steptroubleshooting&gt;</code> element.</td>
<td>The <code>&lt;steptroubleshooting&gt;</code> element can occur following the <code>&lt;cmd&gt;</code> element in the <code>&lt;step&gt;</code> or <code>&lt;substep&gt;</code> element. The <code>&lt;steptroubleshooting&gt;</code> element ends the <code>&lt;step&gt;</code> or <code>&lt;substep&gt;</code> element. Another element, such as <code>&lt;info&gt;</code> or <code>&lt;stepxmp&gt;</code>, cannot be added after the <code>&lt;steptroubleshooting&gt;</code> element.</td>
</tr>
</tbody>
</table>

The following changes are required to the examples in the element reference topics for `<choicetable>`, `<chrow>`, `<chdesc>`, and `<chhead>`:

<table>
<thead>
<tr>
<th>Example (before)</th>
<th>Example (after)</th>
</tr>
</thead>
</table>
| `<step>` `<cmd>` Then this</cmd> `<substeps>` `<substep>` importance="optional">
  `<cmd>` which is done by doing this</cmd></substep> `<substep>` importance="required">
  `<cmd>` and then this.</cmd></substep> </substeps> [choicetable elided] | `<step>` `<cmd>` Then this</cmd> `<steps>` `<step>` importance="optional">
  `<cmd>` which is done by doing this</cmd></step> `<step>` importance="required">
  `<cmd>` and then this.</cmd></step> </steps> [choicetable elided] |

**Migration plans for backwards incompatibilities**

1. Because any element allowed in `<substep>` is already allowed in `<step>`, content migration is most easily handled with a search/replace tool to change element names.
   - Replace `<substep>` with `<step>` (this will change the start tag for `<substeps>` to `<steps>` and also change `<substep>` to `<step>`, regardless of what attributes are specified).
   - Replace `</substep>` with `</step>` (this will change the end tag for `</substeps>` to `</steps>` and also change `</substep>` to `</step>`)

2. Because constraint or specialization modules may use these elements in ways that do not follow normal patterns, it is not possible to handle all possible extensions with a tool or common search/replace expression. The following incompatibilities are possible, though likely to be less common:
   - Specializations of `<substeps>` and `<substep>` will need to change ancestry in their `@class` attributes (replacing the token `task/substeps` with `task/steps` and `task/substep` with `task/step`)
   - Constraints or specialized elements that explicitly include either `<substeps>` or `<substep>` will need to be updated to use `<steps>` or `<step>`
3. Rendering tools that automatically add headings to either `<steps>` or `<steps-unordered>` may need a conditional test to only render the heading when those elements appear as a child of `<taskbody>`. Rendering processes can be written in any number of tools or languages, so it is not possible to automate this migration; for tools that need this update, it should require a test such as "If @class of parent element contains task/taskbody " before generating any heading.

4 Revision history

The following table contains information about revisions to this document.

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Editor</th>
<th>Description of changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>15 July 2019</td>
<td>Kristen James Eberlein</td>
<td>Generated working draft #01.</td>
</tr>
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</table>
| 02       | 01 October 2019 | Kristen James Eberlein  | Generated working draft #02.  
Added the following proposals:  
**Stage two**  
• #16: Add `<titlealts>` element to map  
• #21 Resolve inconsistent class values for `<shortdesc>`, `<linktext>`, and `<searchtitle>`  
• #34 Remove `<topicset>` and `<topicsetref>`  
• #252 Add @outputclass to DITAVAL  
• #277 Change specialization base for `<imagemap>`  
• #279 Remove @lockmeta attribute  
**Stage three**  
• #253: Indexing changes  
• #277 Change specialization base for `<imagemap>` |
| 03       | 05 October 2019 | Kristen James Eberlein  | Generated working draft #03.  
Referenced correct DITA source for #16 Improvements to `<titlealts>`. |
| 04       | 09 October 2019 | Kristen James Eberlein  | Generated working draft #04.  
Added approved stage three proposal for #34 Remove `<topicset>` and `<topicsetref>`. |
| 05       | 22 October 2019 | Kristen James Eberlein  | Generated working draft #05.  
Added the following approved proposals:  
**Stage two**  
• #297 Allow example in more places  
**Stage three**  
• #164 Redesign `<hazardstatement>` |
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<th>Date</th>
<th>Editor</th>
<th>Description of changes</th>
</tr>
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<td>06</td>
<td>30 November 2019</td>
<td>Kristen James Eberlein</td>
<td>Generated working draft #06. Edited “Overview” and added the following approved proposals:</td>
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<tr>
<td></td>
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<td></td>
<td><strong>Stage two</strong></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• #29 (Revised) Bookmap updates</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Stage three</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• #21 Resolve inconsistent class values for <code>&lt;shortdesc&gt;</code>, <code>&lt;linktext&gt;</code>, and <code>&lt;searchtitle&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• #297 Allow <code>&lt;example&gt;</code> in more places</td>
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<td>07</td>
<td>17 December 2019</td>
<td>Kristen James Eberlein</td>
<td>Generated working draft #07. Added the following approved stage three proposals:</td>
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<td>• #29 Bookmap updates</td>
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<td></td>
<td></td>
<td></td>
<td>• #217 Remove <code>@domains</code> attribute</td>
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<tr>
<td>08</td>
<td>11 May 2020</td>
<td>Kristen James Eberlein</td>
<td>Generated working draft #08. Edited “Overview” and added the following approved proposals:</td>
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<td><strong>Stage two</strong></td>
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<td></td>
<td></td>
<td>• #35 Remove fastpath value from <code>@type</code></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• #292 Add <code>@colspan</code>, <code>@rowspan</code>, and <code>&lt;title&gt;</code> to <code>&lt;simpletable&gt;</code></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Stage three</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• #292 Add <code>@colspan</code>, <code>@rowspan</code>, and <code>&lt;title&gt;</code> to <code>&lt;simpletable&gt;</code></td>
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<td>Kristen James Eberlein</td>
<td>Generated working draft #09. Edited “Overview” and added the following approved stage three proposal:</td>
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<td>• #107 Add <code>&lt;strong&gt;</code> and <code>&lt;em&gt;</code> elements</td>
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<td>• #257 Add hardware domain</td>
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<td>11</td>
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<td>Kristen James Eberlein</td>
<td>Generated working draft #11. Edited “Overview” and added the following approved stage two proposals:</td>
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<td>• #316 Add <code>&lt;diagnostics&gt;</code> element to troubleshooting topic</td>
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<td>Revision</td>
<td>Date</td>
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<tr>
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<tr>
<td></td>
<td></td>
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<td>• #350 Remove machinery task and task requirements domain</td>
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