

Review J: Hazard statement domain and related links elements

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1 Hazard-statement domain elements

The `<hazardstatement>` domain adds markup to support hazard statements. It is based on the regulations of ANSI Z535 and ISO 3864. The domain enables authors to provide all the information necessary for a hazard statement: a signal word, description of the hazard and its consequences, how to avoid the hazard, and one or more images.

1.1 `<consequence>`

A consequence is a result or effect of an action or condition. In the context of a hazard statement, it is the result of failing to avoid a hazard.

Specialization hierarchy

The `<consequence>` element is specialized from `<div>`. It is defined in the hazard-statement domain module.

Attributes

The following attributes are available on this element: [universal attributes](#).

Example

The following code sample shows the markup for a hazard statement that warns about hot surfaces. The `<consequence>` element provides information about what might happen: "Contact might cause a burn."

```
<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>
```

1.2 `<hazardstatement>`

A hazard statement provides information about a hazard and its consequences. It also explains how to avoid the hazard. It can also associate an image.

Specialization hierarchy

The `<hazardstatement>` element is specialized from `<note>`. It is defined in the hazard-statement domain module.

Attributes

The following attributes are available on this element: [universal attributes](#) and the attribute defined below.

@type (REQUIRED)

Specifies the level of hazard. The values correspond to the signal words that are 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.

-dita-use-conref-target

See for more information.

Examples

This section contains examples of how the <hazardstatement> element can be used.

Figure 1: Simple hazard statement

The following code sample shows the markup for a hazard statement that warns about rotating blades:

```
<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 2: Example of a hazard statement that contains multiple hazards

The following code sample generates an ANSI Z535.6 grouped safety message that specifies information about multiple hazards:

```
<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>
```

1.3 <hazardsymbol>

The <hazardsymbol> element specifies a graphic. The graphic might represent a hazard, a hazardous situation, a result of not avoiding a hazard, or any combination of these messages.

Usage information

When a <hazardsymbol> element is directly contained by <messagepanel>, the <hazardsymbol> is assumed to be associated with the <typeofhazard> element. Otherwise, the image is associated with the containing element.

Rendering expectations

Processors **SHOULD** scale the object when values are provided for the @height and @width attributes. The following expectations apply:

- If a height value is specified and no width value is specified, processors **SHOULD** scale the width by the same factor as the height.
- If a width value is specified and no height value is specified, processors **SHOULD** scale the height 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.

Specialization hierarchy

The <hazardsymbol> element is specialized from <image>. It is defined in the hazard-statement domain module.

Attributes

The following attributes are available on this element: [universal attributes](#), @format, @href, @keyref, @scope, and the attributes defined below.

For this element, @href specifies an image.

@height

Specifies the vertical dimension for the resulting display. The value of this attribute is a real number expressed in decimal notation, optionally followed by a unit of measure. The following units of measurement are supported: cm, em, in, mm, pc, pt, and px (centimeters, ems, inches, millimeters, picas, points, and pixels, respectively). The default unit is px (pixels). Possible values include:"5", "5in", and "10.5cm".

@width

Specifies the horizontal dimension for the resulting display. The value of this attribute is a real number expressed in decimal notation, optionally followed by a unit of measure. The following units of measurement are supported: cm, em, in, mm, pc, pt, and px (centimeters, ems, inches, millimeters, picas, points, and pixels, respectively). The default unit is px (pixels). Possible values include:"5", "5in", and "10.5cm".

@align

Specifies the horizontal alignment of an image when placement is specified as "break". Common values include "left", "right", and "center".

@scale

Specifies a percentage as an unsigned integer by which to scale the image in the absence of any specified image height or width; a value of 100 implies that the image should be presented at its intrinsic size. If a value has been specified for the @height or @width attribute (or both), the @scale attribute is ignored.

It is an error if the value of this attribute is not an unsigned integer. In this case, the implementation might give an error message and might recover by ignoring this attribute.

@scalefit

Specifies whether an image is scaled up or down to fit within available space. Allowable values are "yes", "no", and [-dita-use-conref-target](#). For a given image, if any one of @height, @width, or @scale is specified, those attributes determine the graphic size and any setting of @scalefit is ignored. If none of those attributes are specified and scalefit="yes", then the image is scaled by the same factor in both dimensions, so that the graphic will just fit within the available height or width (whichever is more constraining).

The available width would be the prevailing column (or table cell) width—that is, the width a paragraph of text would have if the graphic were a paragraph instead. The available height is implementation dependent, but if feasible, it is suggested to be the page (or table cell) height or some other reasonable value.

@placement

Specifies whether an image is displayed inline or on a separate line. The default value is "inline". Allowable values are: "inline", "break", and [-dita-use-conref-target](#).

Example

The following code sample defines a hazard statement that specifies an image that illustrates the type of hazard:

```
<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>
```

1.4 <howtoavoid>

The <howtoavoid> element contains information about how a user can avoid a hazard, for example, "Do not use solvents to clean the drum surface."

Specialization hierarchy

The <howtoavoid> element is specialized from <div>. It is defined in the hazard-statement domain module.

Attributes

The following attributes are available on this element: [universal attributes](#).

Example

The following code sample shows the markup for a hazard statement that warns about possible damage to machinery. The `<howtoavoid>` element provides specific information about what the reader needs to do to avoid the hazard.

```
<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>
```

1.5 <messagepanel>

The `<messagepanel>` element contains the textual information that is displayed on the hazard statement. This information identifies the hazard, specifies how to avoid the hazard, states the probable consequences of failing to avoid the hazard, and might specify one or more images.

Specialization hierarchy

The `<messagepanel>` element is specialized from `<div>`. It is defined in the hazard-statement domain module.

Attributes

The following attributes are available on this element: [universal attributes](#) and `@compact`.

Example

See `<hazardstatement>`. (4)

1.6 <typeofhazard>

The `<typeofhazard>` element contains a description of the type of hazard, for example, "Hot surfaces inside."

Specialization hierarchy

The `<typeofhazard>` element is specialized from `<div>`. It is defined in the hazard-statement domain module.

Attributes

The following attributes are available on this element: [universal attributes](#).

Example

The following code sample shows the markup for a hazard statement that warns about a lifting hazard:

```
<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>
```

2 Related links elements

The related links elements define, group, and describe hyperlinks that are embedded in a DITA topic. The links are contained by the `<related-links>` element and apply to the DITA topic as a whole.

2.1 `<link>`

A link is a reference to another DITA topic or a non-DITA resource.

Processing expectations

When displayed, links are typically sorted based on their attributes, which define the type or role of the link target in relation to the current topic.

Attributes

The following attributes are available on this element: [universal attributes](#), [@keyref](#), [link-relationship attributes](#), [@otherrole](#), and [@role](#).

Example

The following code sample shows a simple collection of links in a DITA topic. There are four links: two to DITA topics and two to HTML pages. The `<linktext>` element provides link text for the HTML pages, and the `<desc>` element contain text that describes the resource that the link targets.

```
<related-links>
  <link href="covid-19.dita"/>
  <link href="covid-19-testing.dita"/>
  <link format="html" href="covid-19-nc.html">
    <linktext>COVID-19 in North Carolina</linktext>
  </link>
  <link format="html" href="239fh49.html#resources">
    <linktext>Public health resources in Durham, NC</linktext>
    <desc>When you work as a contact tracer, you need to know ...</desc>
  </link>
</related-links>
```

2.2 `<linkinfo>`

Link information is a description of the links that are contained in a `<linklist>` element. It can provide additional information about those links.

Rendering expectations

The `<linkinfo>` element is considered part of the content flow and typically rendered as a paragraph.

Attributes

The following attributes are available on this element: [universal attributes](#).

Example

See `<linklist>` (10).

2.3 <linklist>

A link list is an author-ordered group of links that can include a title.

Processing expectations

Attributes that cascade between topic references in a map, such as the @scope and @format attributes, also cascade from this element to contained links.

Rendering expectations

When rendering links, processors preserve the order of links that are specified within <linklist> elements.

Attributes

The following attributes are available on this element: [universal attributes](#), [@collection-type](#), [@duplicates](#), [@format](#), [@otherrole](#), [@role](#), [@scope](#), and [@type](#).

Example

The following code sample shows how the <linklist> element is used to construct a list of related links. The <linkinfo> element provides additional information about the list of links.

```
<linklist>
  <title>Repairing widgets</title>
  <link href="debug.dita"/>
  <link href="repair.dita"/>
  <link href="test.dita"/>
  <linkinfo>To repair a reciprocating widget, follow the instructions carefully
    and in the specified order.</linkinfo>
</linklist>
```

2.4 <linkpool>

A link pool is a group of links. The order that the links are rendered in the output is determined by the processor.

Rendering expectations

The order in which links in a <linkpool> element are rendered is processor-specific. A processor might sort links based on role or type. A processor might move or remove links based on the context. For example, prerequisite links might be rendered at the beginning of a Web page, or links to the next topic might be removed if the two topics are rendered on the same page in a PDF.

Processing expectations

Attributes that cascade between topic references in a map, such as the @scope and @format attributes, also cascade from this element to contained links.

Attributes

The following attributes are available on this element: [universal attributes](#), [@collection-type](#), [@duplicates](#), [@format](#), [@otherrole](#), [@role](#), [@scope](#), and [@type](#).

Example

The following code sample shows how a `<linkpool>` element is used to group a set of conceptual information. The order in which the links are rendered in the output is processor-dependent. **In this example, the `@type` attribute on the `<linkpool>` element cascades to nested `<link>` elements.**

```
<related-links>
  <linkpool type="concept">
    <link href="ceze.dita#ceze" role="next"/>
    <link href="czunder.dita"/>
    <link format="html" href="czovert.htm#sqljsupp" role="parent">
      <linktext>Overview of the CZ</linktext>
    </link>
    <link format="html" href="czesqlj.htm#sqljemb">
      <linktext>Working with CZESQLJ</linktext>
      <desc>When you work with CZESQLJ, you need to know...</desc>
    </link>
  </linkpool>
</related-links>
```

2.5 <linktext>

Link text is the label for a link or resource.

Usage information

The `<linktext>` element provides descriptive text for a link. It is most commonly used when the target cannot be resolved during processing or when a title for the reference cannot be determined by a processor. For example, link text might be required when the link is to a peer, external, or non-DITA resource.

Rendering expectations

When a link contains a `<linktext>` element, the content of the `<linktext>` element is rendered instead of the text that retrieved from the resource.

Attributes

The following attributes are available on this element: [universal attributes](#).

Example

The following code sample shows how a `<linktext>` element can be used to provide link text for a related link to a non-DITA resource:

```
<related-links>
  <link href="SQLJ-example.html" format="html" scope="local">
    <linktext>Accessing relational data with SQLJ</linktext>
  </link>
</related-links>
```

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