

An OASIS DITA Adoption Technical Committee Publication

DITA 1.2 Whitepaper: Tools and DITA-Awareness

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On behalf of the OASIS DITA Adoption Technical Committee

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The OASIS DITA Adoption Technical Committee members collaborate to provide expertise and resources to educate the marketplace on the value of the DITA OASIS standard. By raising awareness of the benefits offered by DITA, the DITA Adoption Technical Committee expects the demand for, and availability of, DITA conforming products and services to increase, resulting in a greater choice of tools and platforms and an expanded DITA community of users, suppliers, and consultants.

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About Tools and DITA-Awareness

The DITA Specification explicitly or implicitly prescribes behaviors for "processors" or "tools", and sometimes refers to them as being "DITA-aware" or "specialization-aware." The term "processor" and "tool" are used interchangeably in the specification. This document describes the concepts of DITA-awareness and specialization-awareness, and explains how these concepts apply to processors.

A **processor** is a tool that transforms content or assists in working with content. For example, the following types of tools are all DITA processors:

- **Publishing system:** An application that takes as input one or more DITA documents and produces as output final-form renderings of those documents, such as HTML pages, paginated PDF, and compiled online help. Processor behaviors that are prescribed by the DITA specification are most often written with publishing systems in mind.
- **Authoring tool:** An interactive application that enables the creation and modification of DITA documents.
- **Content management or information management system:** An application that stores DITA documents and facilitates the management of those documents through a development and/or delivery process.
- **Source-to-source transformer:** An application that takes as input one or more DITA or non-DITA documents and produces as output a different XML document.

Examples of DITA-Awareness

"DITA-awareness" means taking advantage of DITA-specific aspects of documents in order to provide useful functionality, either directly to a human or to another tool or process. Here are some examples of DITA-awareness:

- *Styling content according to element semantics:* A publishing tool could present <step> elements as numbered items in a list, and also style any specializations of <step> elements the same way by default. Many XML publishing tools can be configured to style DITA elements appropriately if they do not do so out-of-the-box.
- *Providing guidance or shortcuts for creating appropriate DITA structures:* An authoring tool could insert related groups of elements for convenience, such as automatically inserting a <cmd> element when a <step> element is inserted.
- *Assembling content according to DITA processing rules:*
 - A publishing system that transforms a DITA map into PDF could collate all the topics referenced by a map into a single PDF file.
 - An authoring tool used for editing DITA topics could resolve <image> elements in a topic, so that the author can see the referenced image file.
 - A source-to-source transformer could transform a topic that has a content reference to an element in another file, into a single file that contains content from the parent topic as well as the referenced content.
- *Using link semantics to present content interactively:*
 - A publishing system that transforms DITA map into HTML could use a relationship table to display a list of links to related topics at the bottom of each topic.
 - A content management system could prompt the user to check out the topics that are referenced by a map file, if the user checks out the map.

Adopters will find some types of behavior that the DITA Specification prescribes to be more important to some types of processors than others. For example, a processor could transform DITA content that contains

<indexterm> elements into an alphabetized list of index markers with page numbers. Being able to process <indexterm> elements this way is usually considered more important in a processor that is used to convert DITA content to PDF than in a processor that is primarily used for editing or storing DITA content.

It is worth noting that tools, or particular features within tools, can be of use to DITA users even if they are not DITA-aware at all. For example, an XML document spellchecker would be useful for checking spelling in a DITA document even if the spellchecker has no awareness of the meaning of DITA element types.

Conformance Requirements for DITA-Aware Processing

DITA-aware processors must fulfill certain criteria in order to be considered DITA-conforming according to the DITA Specification Conformance Statement. Here is a non-normative overview of some key aspects of processor conformance:

- **Specialization-awareness:** If a tool provides features for working with DITA content, it is considered specialization-aware if it uses the @class attribute so as to provide equivalent features for arbitrarily specialized DITA content automatically or with trivial re-configuration. For example, consider a processor which resolves an <image> element to display the contents of the referenced image file. If the processor is specialization-aware, it will also resolve any element that is specialized from the <image> element.
- **Addressing:** If a processor creates or follows *addresses*, it must do so correctly in order for the processor to be considered DITA-conforming. *Addressing* includes the pointers from one DITA construct to another or from a DITA construct to a non-DITA construct. Examples of addressing attributes are @href, @keyref, @conref, and @conkeyref. When creating or following an address, a processor must follow the requirements described in the DITA Specification so that all processors find exactly the same target for the address.
- **Content references:** If a processor creates or follows *addresses*, it must do so correctly in order for the processor to be considered DITA-conforming. When resolving content references, a processor must follow the requirements described in the DITA Specification so that the resolved output for a given input is effectively the same for all processors.
- **Linking:** If a processor creates or follows *links*, it must do so correctly in order for the processor to be considered DITA-conforming, although variation is allowed in terms of how links are presented. Links establish relationships among components. Examples of link elements are <topicref>, <xref>, <reltable>, and <data-about>. For a given relationship, processors must follow the requirements described in the DITA Specification when determining which components are related and what their roles are in the relationship.
- **Rendition:** Processors that display or present DITA content to a human are given wide latitude for displaying the content in different ways. However, there is an intent that the rendition of a given element type be consistent with its core semantic. For example, a <pre> element should generally be rendered as text that preserves the original white space, such as line breaks, to be consistent with the basic semantics of <pre>.

Summary

Many types of tools can use the semantics of DITA markup to make it easier for adopters to work with DITA. While this brief guide may suggest some things to look for, it is up to adopters to assess what aspects of DITA-awareness are useful for them, and in what types of tools.