# Lightweight <dita>

Introduction and Applications

Frank Wegmann, March 13, 2024

Boston DITA User's Group





### **Agenda**

### Introduction

### **Authoring formats**

### **Examples**

**Applications (at Software AG)** 





## Introduction





### What is Lightweight DITA about?

- It is DITA, but way simpler
- Smaller feature set
- Significantly reduced set of elements and attributes
- It goes beyond XML as the only authoring format
- It helps crossing silo boundaries in enterprises
- LwDITA does not replace DITA, it complements it





### What is Lightweight DITA about?

It's all about simplicity and interoperability...





### **Lightweight DITA is an OASIS story**

- Originated in discussions on DITA 1.3
- A subcommittee of the DITA TC was created to foster work on LwDITA
  - Chaired by Michael Priestley (formerly IBM, now Avalara) from the very beginning
  - Long-time co-chair Carlos Evia (Virginia Tech) until 2021
  - Current co-chair Frank Wegmann (Software AG)
- Objective is to develop a specification for Lightweight DITA





### **OASIS** work timeline

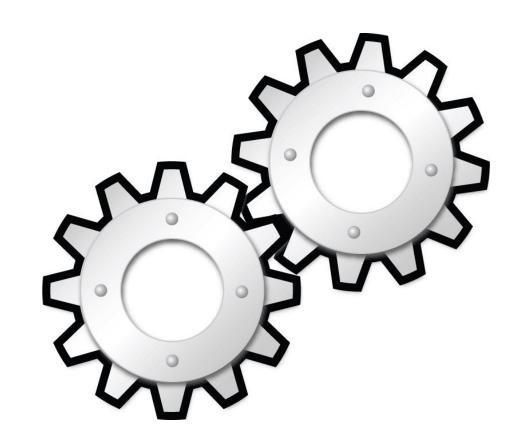
...well, most of it...





### **Lightweight DITA is gaining traction**

- Authoring tools
  - oXygen XML Editor/Author
  - Simply XML
  - DITA-FMx plugin for Adobe FrameMaker
  - Adobe Experience Manager Web editor
  - Adobe RoboHelp (internally)
- Publishing tools
  - DITA-OT
  - XML Mind DITA Converter
  - Adobe Experience Manager





## What? 









### **LwDITA Authoring Formats**

- Lightweight DITA specifies an architecture that provides mappings between different authoring formats
- Currently these are:
  - XDITA (based on DITA XML)
  - MDITA (based on Markdown, with two different profiles)
  - HDITA (based on HTML5)
- In principle, Lightweight DITA is open to other formats as well (for example JSON)





### **LwDITA Features**

- Across different authoring formats, it offers the following reuse mechanisms:
  - Content references (for block-level content, except MDITA core profile)
  - Key references (for phrase-level content)
  - Conditional processing (except MDITA core profile)
- Designed to allow specialization to varying degree depending on authoring format
- Enable authoring, collaboration and publishing across all LwDITA authoring formats and full DITA





### **LwDITA Maps**

- Aggregate and order topics
- Simplified map concept (no bookmaps, no mapref)
- Reduced set of metadata
- Key definitions
- References to topics in these authoring formats:

| Authoring Format     | @format value |
|----------------------|---------------|
| "full" DITA          | dita          |
| XDITA                | dita          |
| HDITA                | hdita         |
| MDITA (all profiles) | mdita         |
| Markdown             | markdown      |

```
<?xml version="1.0"</pre>
                      '-//OASIS//DTD LIGHTWEIGHT DITA Map//EN" "lw-map.dtd"
<!DOCTYPE map PUBLI
<map id="rlnmap">
 <topicmeta>
                                                                 LwDITA map
   <navtitle>Remote Lighting Network</navtitle>
                                                                 identifier
 </topicmeta>
   keydef keys="product-name">
                                                       Key definition
   <topicmeta>
      ktext>Remote Lighting Network</linktext>
                                                                Reference to
   </topicmeta>
   /keydef>
                                                                HDITA topic
 <topicref href="xdita/intro-product.dita" format="dita"/>
 <topicref href="hdita/intro-network-lighting.html format="hdita"</pre>
 <topicref href="mdita/remote-components.md" format= marta //</pre>
 <topicref href="xdita/max-number-bulbs.dita" format="dita"/>
 <topicref href="hdita/low-power.html" format="hdita"/>
 <topicref href="hdita/considerations.html" format="hdita"/>
 <topicref href="xdita/program-bulbs-to-groups.dit</pre>
 <topicref href="dita/turn-on-off-dim-lights.dita" format="dita"/>
 <topicref href="mdita/product-specs.md" format="mdita"</pre>
   <topicref href="xdita/remote-specs.dita" format="dita"/>
   <topicref href="mdita/led-specs.md" format="mdita"</pre>
 </topicref>
                                                       References to
                  Reference to
</map>
                                                       XDITA and full DITA
                  MDITA topic
```



### **XDITA**

- XML authoring format
- Subset of full DITA, without all its wrinkles
- Designed to allow for specializations
- Target Audience
  - Technical writers shying away from the complexity of full DITA
  - ...but not intimidated by XML per se
  - Departments cutting down on costs for development and maintenance





### **XDITA Topics**

- One topic type only
- Significantly reduced set of elements and attributes
- <section> the only means to organize divisions of content
- Sections cannot be nested
- Content reuse with references to keys and content

```
<?xml version="1.0" enc
                                                                                   XDITA topic
<!DOCTYPE topic PUBLIC
                      "-//OASIS//DTD LIGHTWEIGHT DITA Topic//EN" "lw-topic.dtd
                                                                                   identifier
<topic id="program-bulbs-to-gr</pre>
 <title>Programming Light Bulbs to a Lighting Group</title>
 <shortdesc>You can program one or more light bulbs to a lighting group to operate that group with
   your remote control.</shortdesc>
                                               Key reference
  <body>
    <section
                                         emote control can manage up to 250 network light bulbs on
        the same righting network, when you add a light bulb to the network, you can program it to
       one or more lighting groups. You must assign a light bulb to at least one lighting group to
       operate that light bulb A network light bulb that is not programmed to a lighting group will
        still operate when controlling all network light bulbs from the remote control.
    (section id="steps
                               Content container
        <1i>>
          Make sure your remote control is in range of the light bulbs you are adding.
       <1i>>
         If a network light bulb is new, you must install it by performing the following
           steps:
         <01>
           <1i>>
             Make sure power to the fixture where you are installing the light bulb is turned
                conref="intro-product.dita#intro-product/warning"
                                                                           Content reference
           <1i>>
             Remove any existing light bulb from the light fixture.
           <1i>>
             Install the network light bulb into the light fixture as you would any standard
               light bulb.
```



### **Content reuse**

```
<?xml version="1.0" encoding="UTF-8"?>
                                                                                                                   <!DOCTYPE map PUBLIC "-//OASIS//DTD LIGHTWEIGHT DITA Map//EN" "lw-map.dtd">
                                                                                                                   <map id="rlnmap">
<?xml version="1.0" encoding="UTF-8"?>
                                                                                                                     <topicmeta>
<!DOCTYPE topic PUBLIC "-//OASIS//DTD LIGHTWEIGHT DITA Topic//EN" "lw-topic.dtd">
                                                                                                                       <navtitle>Remote Lighting Network</navtitle>
<topic id="program-bulbs-to-groups">
                                                                                                                     </topicmeta>
 <title>Programming Light Bulbs to a Lighting Group</title>
 <shortdesc>You can program one or more light bulbs to a lighting group to operate that group with
                                                                                                                      <keydef keys="product-name">
   your remote control.</shortdesc>
                                                                                                                       <topicmeta>
 <body>
                                                                      key reference
                                                                                                                        ktext>Remote Lighting Network</linktext</pre>
    <section id="context">
                                                                                                                       </topicmeta>
                                           mote control can manage up to 250 network light bulbs on
                                                                                                                      :/keydef>
        the same lighting network. When you add a light bulb to the network, you can program it to
                                                                                                                                       ita/intro-product.dita" format="dita"/>
       one or more lighting groups. You must assign a light bulb to at least one lighting group to
                                                                                                                                                                                            remotelighting.ditamap
                                                                                                                     <topicref href='
                                                                                                                                        ita/remote-components.md" format="mdita"/>
        operate that light bulb A network light bulb that is not programmed to a lighting group will
        still operate when controlling all network light bulbs from the remote control.
    </section>
    <section id="steps">
                                                                                                               <?xml version="1.0" encoding="UTF-8"?>
                                                                                                               <!DOCTYPE topic PUBLIC
                                                                                                                                      -//OASIS//DTD LIGHTWEIGHT DITA Topic//EN" "lw-topic.dtd">
     <01>
        <1i>>
         Make sure your remote control is in range of the light bulbs you are adding.
                                                                                                                                                    Overview</title>
                                                                                                                                         f="product-name"/> kit allows you to operate network-based home lighting [1 line]
        <shortdesc>The <ph
        <1i>>
                                                                                                                 <body>
                                                                                                                                     "product-name"/
                                                                                                                                                      kit includes a wireless smart lighting system that helps make [2 lines]
         If a network light bulb is new, you must install it by performing the following
                                                                                                                   The <ph
                                                                                                                   <dl> [13 lines]
           steps:
         <01>
                                                                                                                   <fiq>
                                                                                                                                                       ready for installation</title>
           <1i>>
                                                                                                                           <ph keyref="product-name",
                                                                                                                     <image href="../images/kit.png">
             Make sure power to the fixture where you are installing the light bulb is turned
                                                                                                                                                       multiple references to the same key
                                                                                                                       <alt>Remote Lighting Kit</alt>
                     f="intro-product.dita#intro-product/warning
                                                                                                                    </image>
                                                                                         content reference
                                                                                                                   </fig>
                                                                                                                      id="warning">Electrical hazards can cause burns, shocks and electrocution (death).
                                                            program-bulbs-to-groups.dita
                                                                                                                 </body>
                                                                                                                                                                                           intro-product.dita
```

</topic>



### **HDITA**

- HTML5-based authoring format
- Custom data attributes allow for content reuse and DITA compatibility

- Target Audience
  - Bloggers and developers comfortable with HTML
  - DocOps integrating HTML-based documentation artifacts





### **HDITA Topics**

- <article> and <section> work fine for organizing content
- Content reuse
  - @data-keyref for referencing keys
  - @data-conref for referencing content

```
<!DOCTYPE html>
<html>
 <head>
   <meta charset="UTF-8">
   <title>Considerations for Planning Your Lighting Network</title>
 </head>
                                                             Key reference
 <body>
   <article id="considerations">
     <h1>Considerations for Planning Your
                                                                  you should plan how you
     Before installing your (span data-keyref="product-name"></span>
       want your lighting network to behave. 
     Whether you have only one wireless light bulb or you are replacing your entire home with
       wireless light bulbs, you should plan how you want the lighting on your network to
       behave.
     <section>
       <h2>Example</h2>
       <u1>
         <1i>>
          If you only have one light bulb, you might want to place it in a central location
            that would be optimum for turning on and off when you are away or arrive home.
         <1i>>
          If you have multiple light bulbs, you might want to set them up in rooms and lighting
            groups to be able to better manage them across your home.
         Content reference
       </body>
</html>
```



### **Content reuse with HDITA**

```
<!DOCTYPE html>
<html>
 <head>
   <meta charset="UTF-8">
   <title>Considerations for Planning Your Lighting Network</title>
 </head>
 <body>
   <article id="considerations">
     <h1>Considerations for Planking Your Lighting Nets
     Before installing your <span data-keyref="product-name"></span>,
                                                                     should plan how you
       want your lighting network to bek
     Whether you have only one wireless light bulb or you are replacing your entire home with
       wireless light bulbs, you should plan how you want the lighting on your network to
      behave.
     <section>
       <h2>Example</h2>
       <u1>
         <1i>>
          If you only have one light bulb, you might want to place it in a central location
            that would be optimum for turning on and off when you are away or arrive home.
        <1i>>
          If you have multiple light bulbs, you might want to set them up in rooms and lighting
            groups to be able to better manage them across your home.
        </body>
</html>
```

#### **Considerations for Planning Your Lighting Network**

Before installing your Remote Lighting Network, you should plan how you want your lighting network to behave.

Whether you have only one wireless light bulb or you are replacing your entire home with wireless light bulbs, you should plan how you want the lighting on your network to behave.

#### Example

- If you only have one light bulb, you might want to place it in a central location that would be optimum for turning on and off when you are away or arrive home.
- If you have multiple light bulbs, you might want to set them up in rooms and lighting groups to be able to better manage them across your home.

Electrical hazards can cause burns, shocks and electrocution (death).



### **MDITA**

- Markdown authoring format
- Comes in two "profiles"
  - Core profile (corresponds mostly to "GHM", GitHub-flavored Markdown<sup>[7]</sup>)
  - Extended profile (include advanced features for better DITA interoperability)

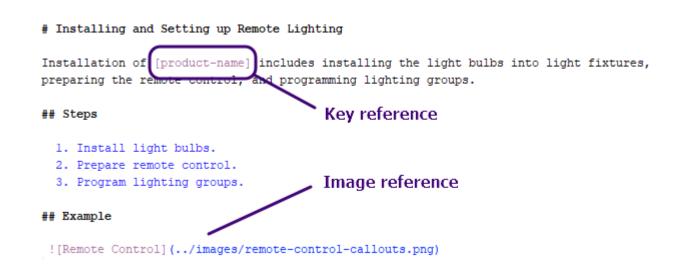


- Target Audience
  - Developers who contribute to documentation with no XML editor at hand
  - External contributors who quickly author content for later inclusion
  - Writers on mobile devices that have no direct XML support
  - DocOps integrating Markdown content for processing in a DITA/LwDITA toolchain



### **MDITA Core Profile**

- Supports common Markdown features
  - Titles
  - Ordered and unordered lists
  - Tables
  - Code blocks
  - Formatted text
- Mostly aligns with GitHub Flavored Markdown ("GHM")
- Automatic ID generation from text of headings





### **MDITA Extended Profile**

- Optional YAML header e.g. to explicitly set an @id value or provide author information
- Markdown features not present in the core profile
  - Definition lists
  - Footnotes
- HDITA snippets going beyond Markdown syntax to:
  - Define keys
  - Define link text
  - Subscript and superscript text



# Installing and Setting up Remote Lighting

Key reference

Installation of your [product-name] includes installing the light bulbs into light fixtures, preparing the remote control, and programming lighting groups.

Before you attempt to install your lighting kit, please turn off the power in your electrical circuit panel.

#### ## Important Terms

Circuit panel

: Also known as the breaker panel, it represents the main point of distribution circuits in a building.

#### Footnote

> Definition list

The commercial product covered by this information material.

[^1]: <

This document occasionally uses the term "lighting kit" (all lowercase letters) for generic statements that do not apply exclusively to your product.

#### ## Example

The following video demonstrates a recommended installation:

<video src="remote.mp4" controls poster="../images/remote-control-callouts.png" />





# Applications

Readme

Integrate

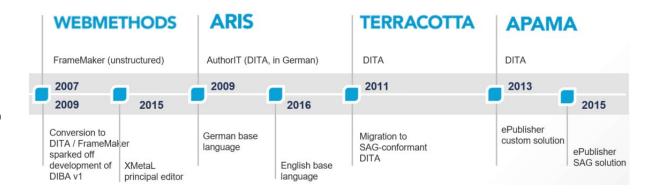
Review & Validate



### Why LwDITA Applications at Software AG?

- Software AG expands over time by mergers and acquisitions
  - Raising the recurring question: integrate or merge "foreign" documentation?
  - If there is no direct migration path to DITA, we try to integrate foreign documentation artifacts

### ACQUISITIONS DOCUMENTATION INTEGRATION CHALLENGES



- In-house developer affinity for lightweight documentation formats
  - Git platforms foster adaption of Markdown
  - Internal move from other repositories to Git across RnD
  - Integrate developer-(co-)authored markdown into publication process



### **README Files**

- In the past, README files have been delivered in text format or as PDF
- Also, source formats varied: XML, ASCII, HTML, MS
   Word
- We want to encourage responsible developers to more actively engage in the README writing process
- This means... a GitHub-based procedure:
   We write in Markdown, we deliver HTML

#### # October 2021

This file contains important information you must read before using webMethods Task Engine 10.7. You can find system requirements, user documentation, and installation and upgrade instructions on the [Documentation website] (https://documentation.softwareag.com/) or the [TECHcommunity website] (https://techcommunity.softwareag.com/). At those locations, you can also find suite-related security and globalization information.

Included in this file is information about functionality that has been added, removed, deprecated, or changed for this product. Deprecated functionality continues to work and is supported by Software AG, but may be removed in a future release. Software AG recommends against using deprecated functionality in new projects.

```
[1.0 Critical Information
[2] (#critical-information)] (#critical-information)
[2.0 Known Issues [2] (#known-issues)] (#known-issues)
[3.0 Usage Notes [2] (#_Toc3373288)] (#_Toc3373288)
[4.0 Fixes Included in Each Release
[3] (#fixes-included-in-each-release)] (#fixes-included-in-each-release)
[5.0 Other Resolved Issues
[9] (#other-resolved-issues)] (#other-resolved-issues)
[6.0 Documentation Changes
[11] (#documentation-changes)] (#documentation-changes)
[7.0 Terminology Changes
[11] (#terminology-changes)] (#terminology-changes)
[8.0 Added, Removed, Deprecated, or Changed Items
[11] (#added-removed-deprecated-or-changed-items)] (#added-removed-deprecated-or-changed-items)]
```



### Integrate Documentation Delivered as HTML

Use Case: HTML documentation generated by Author-IT

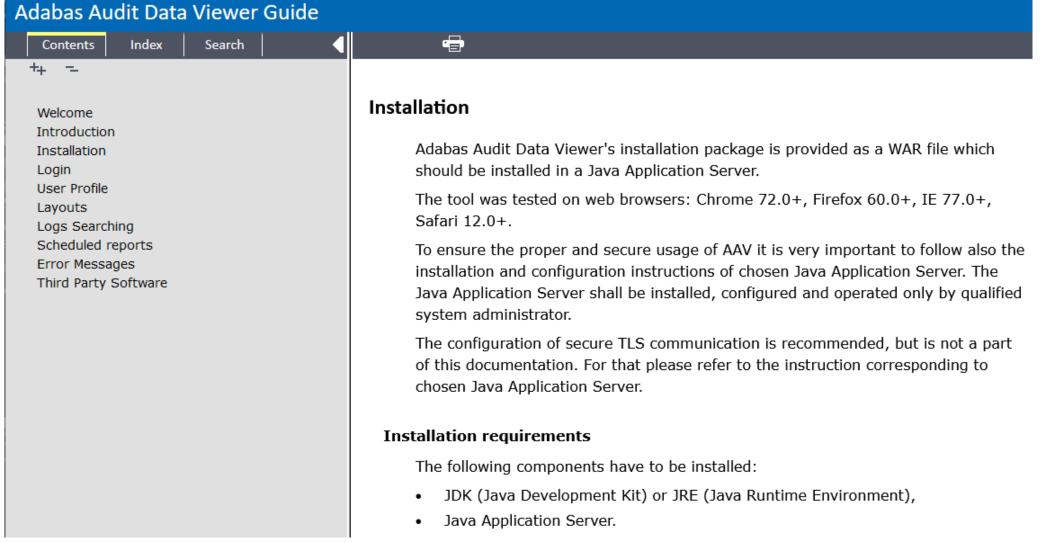
- External documentation contributors sometimes deliver HTML sets as only viable choice
- Practical or economical reasons may prevent a clear migration path to full DITA
- In the past, we handled this by processing that data as "legacy" HTML in a non-DITA XML environment (e. g. Adobe RoboHelp 8 HTML output<sup>[8]</sup>)
- Proof of concept using HDITA instead...

```
<!DOCTYPE html>
<html>
 <title>Installation</title>
 <article id="installation">
   <hl>Installation</hl>
   Adabas Audit Data Viewer's installation package is provided as a WAR file which should be
     installed in a Java Application Server.
   The tool was tested on web browsers: Chrome 72.0+, Firefox 60.0+, IE 77.0+, Safari
     12.0+.
   To ensure the proper and secure usage of AAV it is very important to follow also the
     installation and configuration instructions of chosen Java Application Server. The Java
     Application Server shall be installed, configured and operated only by qualified system
     administrator.
   <The configuration of secure TLS communication is recommended, but is not a part of this</p>
     documentation. For that please refer to the instruction corresponding to chosen Java
     Application Server.
   <section id="installation requirements">
     <h2>Installation requirements</h2>
     The following components have to be installed:
     <u1>
       JDK (Java Development Kit) or JRE (Java Runtime Environment),
       Java Application Server.
     </section>
   <section id="installation processor">
     <h2>Installation process</h2>
     AAV installation package consist of two parts:
     <u1>
       </l></l></l></l></l
         Application Server, 
       <1i>Web application, that contains static files and can be deployed on any web server
         (including Java Application Server).
     </section>
```



### Integrate Documentation Delivered as HTML

Original HTML documentation generated by Author-IT





### **Integrate Documentation Delivered as HTML**

Modern WebHelp from full DITA and HDITA sources generated by WebWorks ePublisher







 ➤ About this Documentation **Document Conventions** Online Information and Support

Data Protection

Adabas Audit Data Viewer Introduction

Installation

Login

User Profile

Layouts

Logs Searching

Scheduled Reports

**Error Messages** 

Third Party Software

Adabas Auditing | Adabas Audit Data Viewer | Installation

#### Installation

Adabas Audit Data Viewer's installation package is provided as a WAR file which should be installed in a Java Application Server.

The tool was tested on web browsers: Chrome 72.0+, Firefox 60.0+, IE 77.0+, Safari 12.0+.

To ensure the proper and secure usage of AAV it is very important to follow also the installation and configuration instructions of chosen Java Application Server. The Java Application Server shall be installed, configured and operated only by qualified system administrator.

The configuration of secure TLS communication is recommended, but is not a part of this documentation. For that please refer to the instruction corresponding to chosen Java Application Server.

#### Installation requirements

The following components have to be installed:

- JDK (Java Development Kit) or JRE (Java Runtime Environment),
- Java Application Server.



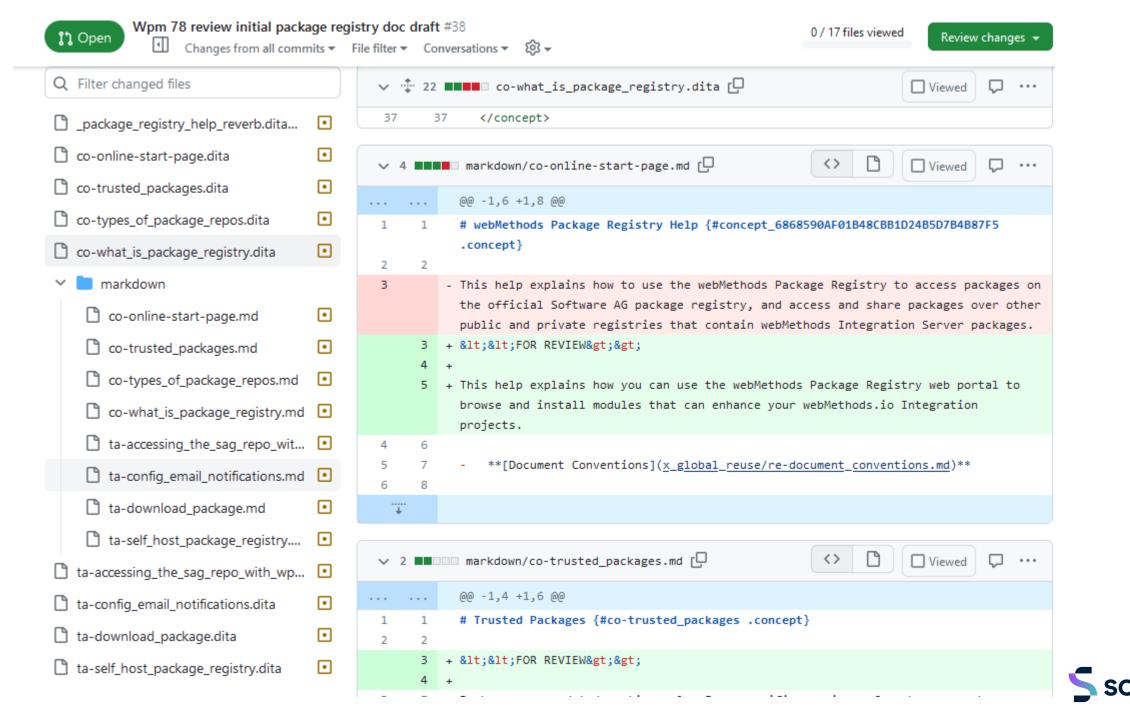
### **Review and Validate Documentation**

Using a docs-as-code approach

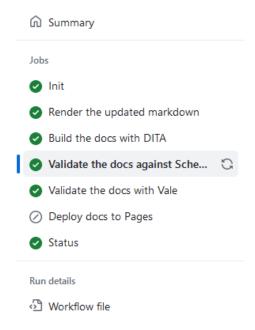
- Replace reviews based on HTML snapshots and annotated PDFs
- Proof of concept 2023 at an internal hackathon
- For every PR of DITA documentation stored in GitHub:
  - Establish a review process based on Markdown
  - Validate the DITA files
  - Check text against business rules and style guide
  - Publish HTML output to GitHub Pages

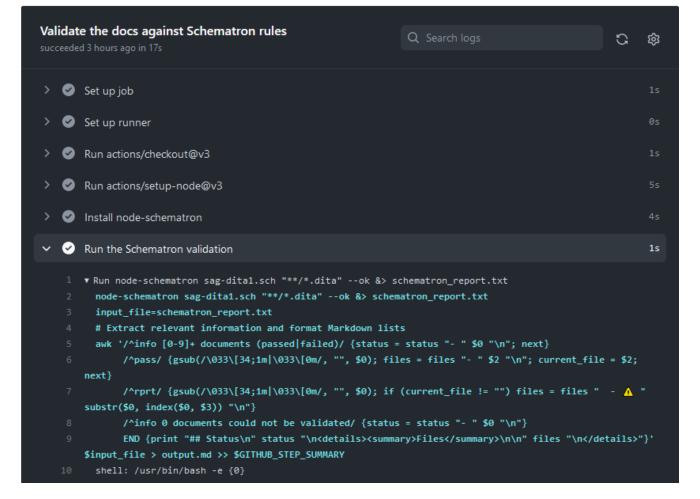






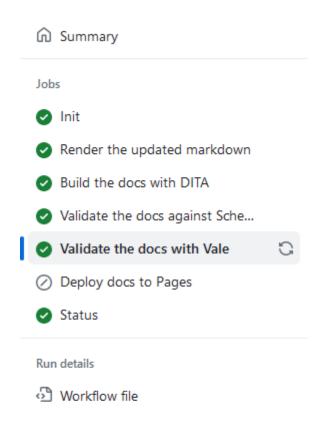
### **Validation ongoing**







### **Validation ongoing**



```
Validate the docs with Vale
                                                                  Q Search logs
succeeded 3 hours ago in 5s
       Validate docs with Vale
                                                                                                              0s
         markdown/re-listing_package_versions.md
              suggestion 'REST' has no definition.
                                                            vale-rules.Acronyms
         3:144 suggestion 'are marked' looks like
                                                            vale-rules.Passive
                           passive voice.
         markdown/x_global_reuse/re-document_conventions.md
         22:2
                warning
                             In general, don't use an
                                                             vale-rules.Ellipses
                             ellipsis.
                suggestion Consider using 'many' instead
                                                           vale-rules.ComplexWords
                             of 'multiple'.
         22:123 warning
                             In general, don't use an
                                                             vale-rules.Ellipses
                             ellipsis.
         markdown/ta-self_host_package_registry.md
         3:9 suggestion 'FOR' has no definition. vale-rules.Acronyms
```

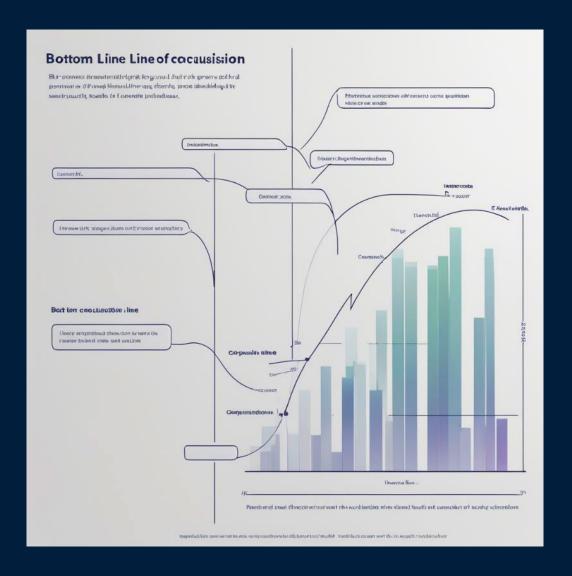


### **LwDITA Application Wrap-up**

| Use Case                          | LwDITA/M↓ Application                | Status           |
|-----------------------------------|--------------------------------------|------------------|
| README                            | Markdown as source format            | Living process   |
| Integrate original HTML sets      | HDITA as intermediate format         | Proof of concept |
| Review and validate (Lw)DITA sets | Transient Markdown for collaboration | Field test ahead |



## The Bottom Line



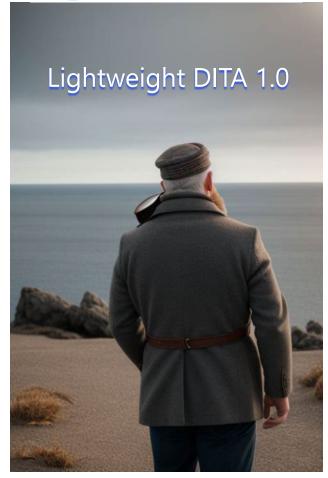


### **State of Affairs**

Do not wait... engage!

- There is progress in the committee work, but not enough
- Results and decisions from previous months trickle into new spec drafts and smaller changes to the LwDITA XDITA DTD
- For orientation, read the OASIS LwDITA committee note<sup>[4]</sup>, if you haven't yet done so
- Think about sending someone over to the Lightweight DITA SC, we're too small
- Contribute with bug alerts and, ideally, bug fixes for the DITA-OT plugin<sup>[9]</sup>
- We want to finish this...



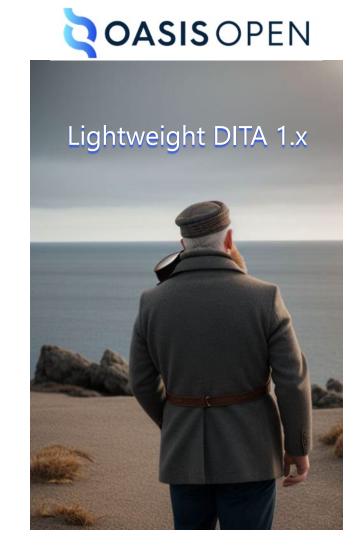




### LwDITA in a Fractured Markdown Environment

#### Discussion

- LwDITA 1.0 consolidates on current features, not picking up any new ones
- Act as a least common denominator, with OASIS blessing
- Beyond 1.0, we'll take a careful look at features, most requested and used in current practice
- LwDITA will presumably never act as the standard for Markdown





### References

- [1] DAY, D. (2011, April 4): Consideration of a profile for modest needs. Retrieved from https://wiki.oasis-open.org/dita/LimitedDitaProfile/.
- [2] PRIESTLEY, M. (2013, April 16): *Lightweight DITA. A preview of the proposed DITA 1.3 feature*. Retrieved from https://www.slideshare.net/mpriestley/lw-dita20130424/.
- [3] OASIS LIGHTWEIGHT DITA SUBCOMMITTEE (2014, September 15). Conference Call. Last retrieved from https://www.oasis-open.org/apps/org/workgroup/dita-lightweight-dita/event.php?event\_id=38311. Currently not available.
- [4] EVIA, C. ET AL. (eds.): *Lightweight DITA: An Introduction Version 1.0* (2018, October 30). Committee Note 02. Retrieved from http://docs.oasis-open.org/dita/LwDITA/v1.0/LwDITA-v1.0.html.
- [5] EVIA, C.: Creating Intelligent Content with Lightweight DITA (2019). New Tork, NY: Routledge, 2019. ATTW Series in Technical and Professional Communication.
- [6] DOHERTY, S.: Lightweight DITA Testing (2022, April). Retrieved from https://github.com/StanDoherty/LightweightDITATesting/.
- [7] GITHUB: GitHub Flavored Markdown Spec (2019, April 6). Version 0.29-gfm. Retrieved from https://github.github.com/gfm/.
- [8] WEGMANN, F.: *Becoming a Safe Harbor for Your Data Immigrants* (2019, November 8). At: CIDM: 15<sup>th</sup> DITA Europe Conference. Brussels: Crowne Plaze. Abstract retrieved from https://ditaeurope.infomanagementcenter.com/2019-agenda-day-2/Wegmann/.
- [9] ELOVIRTA, J. (2024, January 4): Lightweight DITA for DITA-OT. Version 5.7.0. Retrieved from https://github.com/jelovirt/org.lwdita/.
- [10] MACFARLANE, J.: CommonMark Spec (2024, January 28). Version 0.31.2. Retrieved from https://spec.commonmark.org/.

Some images have been generated by GenCraft and at perchance.org, some were taken from the Microsoft 365 image library. Any prompts for Al-generated images on request.



# Software