Ugly DITA

Sheila D'Annunzio, STMicroelectronics
and Marc Speyer, Consultant

STMicroelectronics

About STMicroelectronics

STMicroelectronics is a global leader serving customers across the spectrum of electronics applications with innovative semiconductor solutions.

ST aims to be the undisputed leader in multimedia convergence and power applications leveraging its vast array of technologies, design expertise and combination of intellectual property portfolio, strategic partnerships and manufacturing strength.

In 2009, the Company's net revenues were $8.51 billion. Further information on ST can be found at www.st.com.

Is DITA really ugly?

Google DITA Rechercher Recherche avancée Préférences

Rechercher dans : Web Pages francophones Pages : France

Web Show options...

News results for **DITA von teese**

New York Daily News

Dita Von Teese flaunts her curves for Wonderbra ad - 4 days ago
American Model **Dita Von Teese** has once again sent temperature soaring up by posing in a flimsy piece of lingerie for the latest racy Wonderbra ad. ...
Oneindia - 14 related articles »
Dita Von Teese shows why she's the queen of burlesque as she ... -
Daily Mail - 26 related articles »
'Fashion flu' for **Dita Von Teese** - Stuff.co.nz - 16 related articles »

Image results for **DITA** - Report images

Darwin Information Typing Architecture - Wikipedia, the free ...
The **Darwin Information Typing Architecture** (**DITA**) is an XML-based architecture for authoring, producing, and delivering information. ...
Origin and name - Features and limitations - Creating content in DITA
en.wikipedia.org/.../Darwin_Information_Typing_Architecture - Cached - Similar

Those of you who have ever looked up DITA on the web, will know that DITA is not *ugly*.

Contents

- DITA content model shortcomings
- Single sourcing issues
- Publishing issues
- Adoption challenges
- Implementation challenges

DITA content model shortcomings

DITA’s content model - bloated markup

- DITA’s content model is very relaxed, making it easy to create abundant and inconsistent markup

- But from an author productivity and processing point of view it is recommended to adopt a markup minimization approach

Bloated markup, mixing block elements

- Some elements in DITA allow a mixture of block elements
- For example: note, li, p, etc.

simpletable

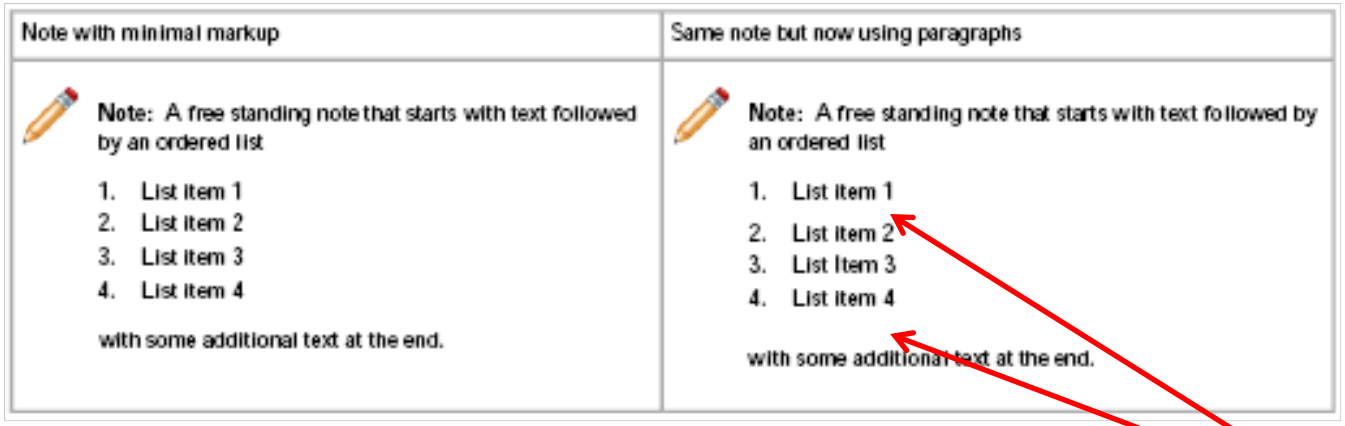
Note with minimal markup	Same note but now using paragraphs
note **Note:** A free standing note that starts with text followed by an ordered list ol 1. li List item 1 /li 2. li List item 2 /li 3. li List item 3 /li 4. li List item 4 /li /ol with some additional text at the end. /note	p note **Note:** A free standing note that starts with text followed by an ordered list ol 1. li p List item 1 /p /li 2. li List item 2 /li 3. li List Item 3 /li 4. li p List item 4 /p /li /ol p with some additional text at the end. /p /note /p
6 tags	10 tags (12 if text of list items 2 and 3 also wrapped in p's)

/simpletable

- This may have a surprising effect on the output

Bloated markup effects on output

- DITA OT PDF output



Note with minimal markup	Same note but now using paragraphs
Note: A free standing note that starts with text followed by an ordered list 1. List item 1 2. List item 2 3. List item 3 4. List item 4 with some additional text at the end.	**Note:** A free standing note that starts with text followed by an ordered list 1. List item 1 2. List item 2 3. List Item 3 4. List item 4 with some additional text at the end.

- DITA OT HTML output

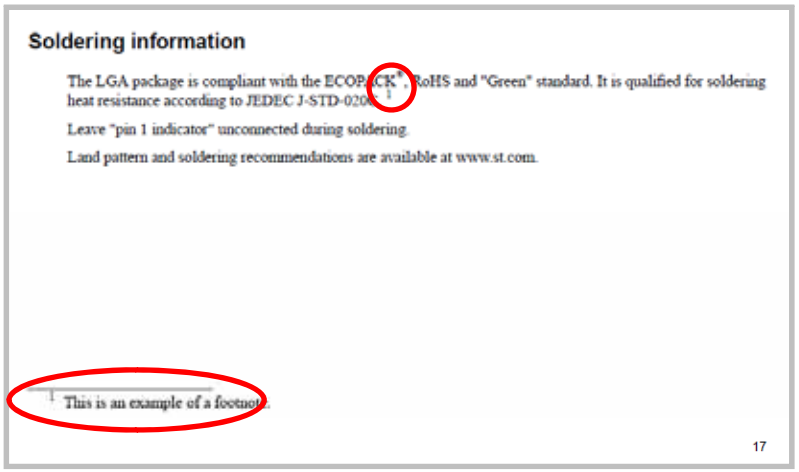
Note with minimal markup	Same note but now using paragraphs
Note: A free standing note that starts with text followed by an ordered list 1. List item 1 2. List item 2 3. List item 3 4. List item 4 with some additional text at the end.	**Note:** A free standing note that starts with text followed by an ordered list 1. List item 1 2. List item 2 3. List Item 3 4. List item 4 with some additional text at the end.

Additional spacing

DITA's content model - footnotes

- DITA has a footnote element <fn> which can be introduced in many places
- For print-oriented output the default behavior is to skip the content and reproduce the footnote at the bottom of the page

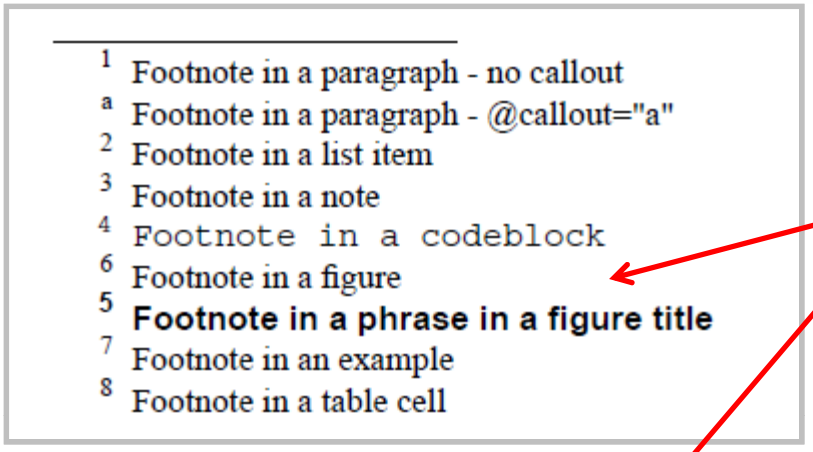
PDF

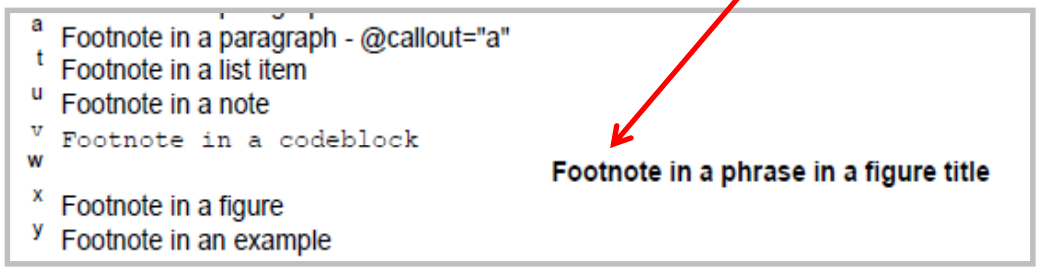


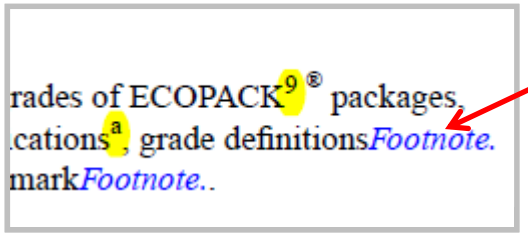
HTML

- In DITA OT HTML content of footnote is not displayed, footnote callout may be displayed depending on where it is used.

DITA's content model - footnotes







Issues

- A stylesheet may have different logic depending where the footnote is used
- Referring to the same footnote multiple times
- Clashes of footnote numbering (footnotes in tables and on other places on the page)

Nested footnotes

- The fn-element has the same flexibility as many block level elements allowing a mixture of phrase level and block level elements.
- It is even possible to created nested footnotes.

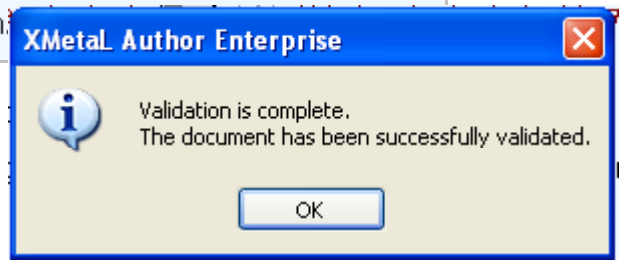
topic title Soldering information /title

body p The LGA package is compliant with the ECOPACK sup ® /sup, RoHS and "Green" standard. It is qualified for soldering heat resistance according to JEDEC J-STD-020C. fn *FN: This is an example of a footnote.*

p *This is a paragraph inside a footnote.* fn *FN: This is a footnote inside a paragraph which is nested in a footnote* /fn /p /fn /p

p Leave "pin 1 indicator" unconnected during soldering. /p

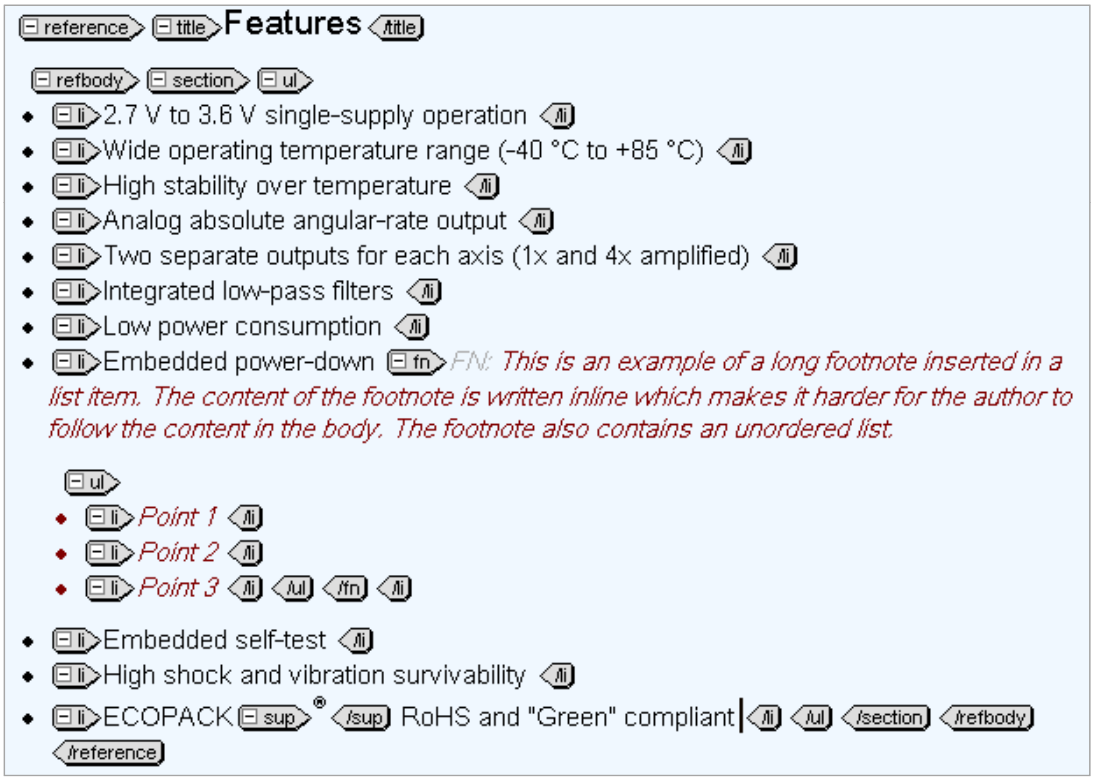
p Land pattern and soldering recommendations are available at www.st.com



- The example shown is valid DITA, but the DITA OT could not generate a PDF from it!

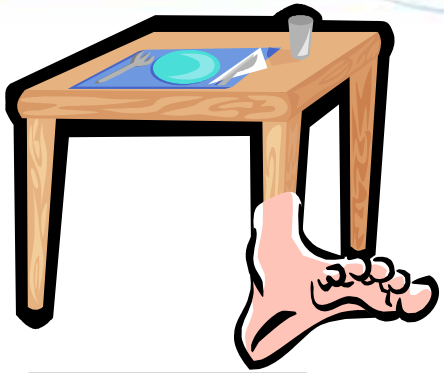
Authoring footnotes inline

- In most authoring tools footnotes are edited inline i.e. at the place of insertion
- This method makes authoring complex footnotes almost impossible or a very frustrating experience

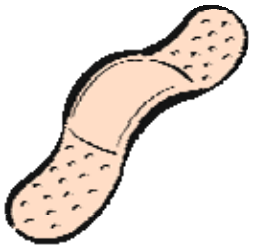


- FrameMaker does a good job here by allowing you to author the footnote in a separate area.

DITA's content model - table limitations



- The DITA table model has no footer area which makes table footnotes hard or impossible to do



- Possible workaround
  - Use <fn> element
  - Use @outputclass attribute to style the transformation process to put <fn> at bottom of table

- Issues
  - Complex transformation process
    - Place fn at bottom of table
    - Align with different sized tables
    - multiple references to the same footnote
    - Numbering
  - Editing inline can be very clumsy for long or complex footnotes

Pin no.	Pin name	Type
1	NRST	I/O
2	PA1/ OSCI fn *FN: When the MCU is in Halt/Active-halt mode, PA1 is automatically configured in input weak pull up and cannot be used for waking up the device. In this mode, the output state of PA1 is not driven.* /fn	I/O

Table limitations – ST's workaround

- Workaround
  - Add a <tgroup>
  - Insert <p> element
  - Make <xref> from table cell
  - Design transformation process to handle the output format

- Issues
  - <p> need ID to make <xref>
  - ID needs to be easy to identify
  - If set to generate automatically all <p> have IDs and the footnote is very difficult to identify

- Definitive solution
  - Create a table footer section in DITA <tfoot> and maybe a table footnote element <tfn>
  - ……..coming in DITA 1.3

Table footnote - example of workaround

table title *STM8S103xx access line features* /title

tgroup

Device	STM8S103K3	STM8S103F3	STM8S103F2
Pin count	32	20	20
No. of maximum GPIO (I/O)	28	16	16
Ext. interrupt pins	27	16	16
Timer CAPCOM channels	7	7	7
Timer complem. outputs	3	0	0
A/D converter channels	4	5	5
High sink I/Os	21	12	12
Low density Flash program memory (bytes)	8K	8K	4K
Data EEPROM (bytes)	640 xref xref: /xref	640 xref xref: /xref	640 xref xref: /xref
RAM (bytes)	1K	1K	1K
Peripheral set	Multipurpose timer (TIM1), SPI, I sup 2 /sup C, UART window WDG, independent WDG, ADCPWM timer (TIM2), 8-bit timer (TIM4)		

/tgroup

tgroup

p No read-while-write (RWW) capability /p

/tgroup

/table /body /topic

<p> must have ID to make cross-ref, need to make a readable ID to make it easy for the author to identify the correct <p>

```
<p outputclass="TableFootnote-8E02596" id="fnD_Salf_290609_1107_1">
  No read-while-write (RWW) capability
</p>
```

Table footnote example using ST workaround

Symbol	Ratings	Maxxref:	Unit
I_{VDD}	Total current into V_{DD} power lines (source)xref:	100	mA
I_{VSS}	Total current out of V_{SS} ground lines (sink)xref:	80	
I_{IO}	Output current sunk by any I/O and control pin	20	
	Output current source by any I/Os and control pin	- 20	
$I_{INJ(PIN)}$xref: xref:	Injected current on NRST pin	± 4	
	Injected current on OSCIN pin	± 4	
	Injected current on any other pinxref:	± 4	
$\Sigma I_{INJ(PIN)}$xref:	Total injected current (sum of all I/O and control pins)xref:	± 20	

Data based on characterization results, not tested in production.

All power (V_{DD}) and ground (V_{SS}) pins must always be connected to the external supply.

$I_{INJ(PIN)}$ must never be exceeded. This is implicitly insured if V_{IN} maximum is respected. If V_{IN} maximum cannot be respected, the injection current must be limited externally to the $I_{INJ(PIN)}$ value. A positive injection is induced by $V_{IN}>V_{DD}$ while a negative injection is induced by $V_{IN}<V_{SS}$. For true open-drain pads, there is no positive injection current, and the corresponding V_{IN} maximum must always be respected

Negative injection disturbs the analog performance of the device. See note in xref: .

When several inputs are submitted to a current injection, the maximum $\Sigma I_{INJ(PIN)}$ is the absolute sum of the positive and negative injected currents (instantaneous values). These results are based on characterization with $\Sigma I_{INJ(PIN)}$ maximum current injection on four I/O port pins of the device.

Table footnote example using <fn> element

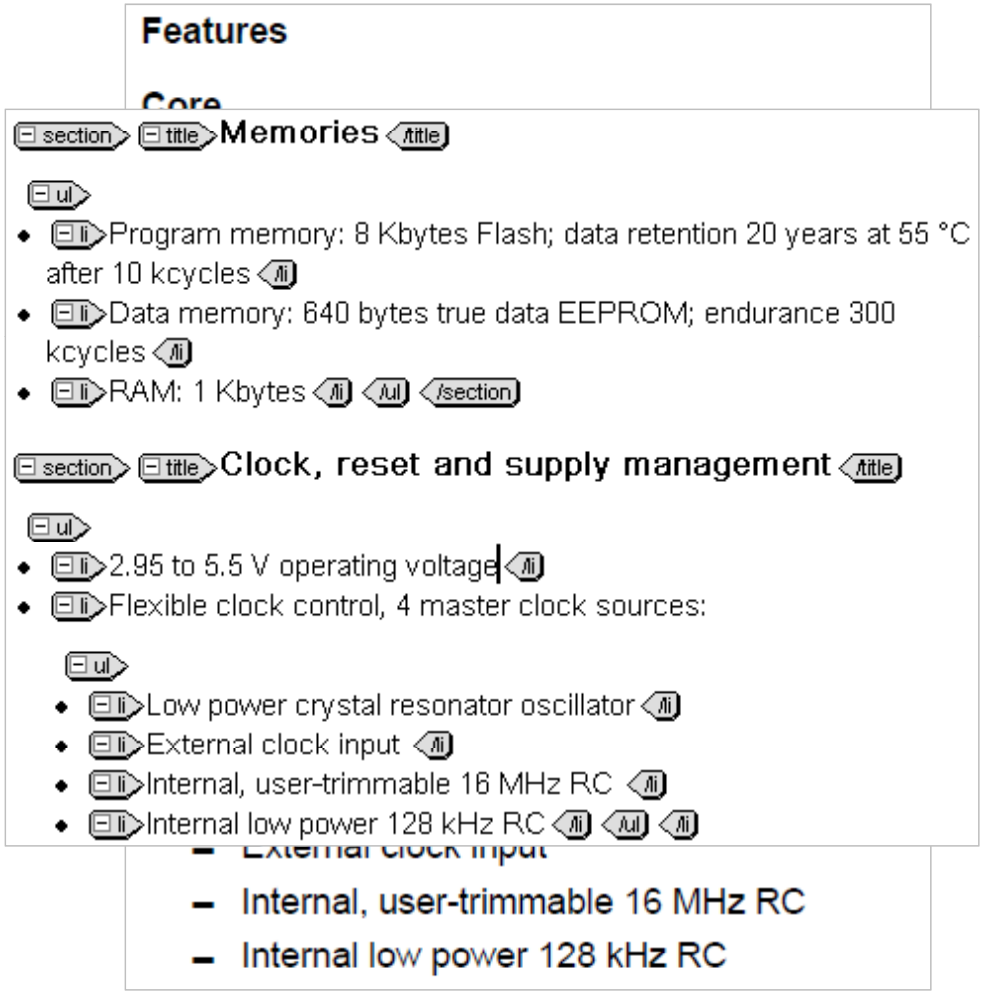
Current characteristics

Symbol	Ratings	Max *FN: Data based on characterizatio results, not tested in production.*	Unit
I_{VDD}	Total current into V_{DD} power lines (source) *FN: All power (V_{DD}) and ground (V_{SS}) pins must always be connected to the external supply.*	100	mA
I_{VSS}	Total current out of V_{SS} ground lines (sink) xref:	80	
I_{IO}	Output current sunk by any I/O and control pin	20	
	Output current source by any I/Os and control pin	- 20	
$I_{INJ(PIN)}$ *FN: $I_{INJ(PIN)}$ must never be exceeded. This is implicitly insured if V_{IN} maximum is respected. If V_{IN} maximum cannot be respected, the injection current must be limited externally to the $I_{INJ(PIN)}$ value. A positive injection is induced by $V_{IN}>V_{DD}$ while a negative injection is induced by $V_{IN}<V_{SS}$. For true open-drain pads, there is no positive injection current, and the corresponding V_{IN} maximum must always be respected FN: Negative injection disturbs the analog performance of the device. See note in xref:.*	Injected current on NRST pin	± 4	
	Injected current on OSCIN pin	± 4	
	Injected current on any other pin xref:	± 4	
$\Sigma I_{INJ(PIN)}$ xref:	Total injected current (sum of all I/O and control pins) *FN: When several inputs are submitted to a current injection, the maximum $\Sigma_{INJ(PIN)}$ is the absolute sum of the positive and negative injected currents (instantaneous values). These results are based on characterization with $\Sigma_{INJ(PIN)}$ maximum current injection on four I/O port pins of the device.*	± 20	

DITA's content model – list flexibility

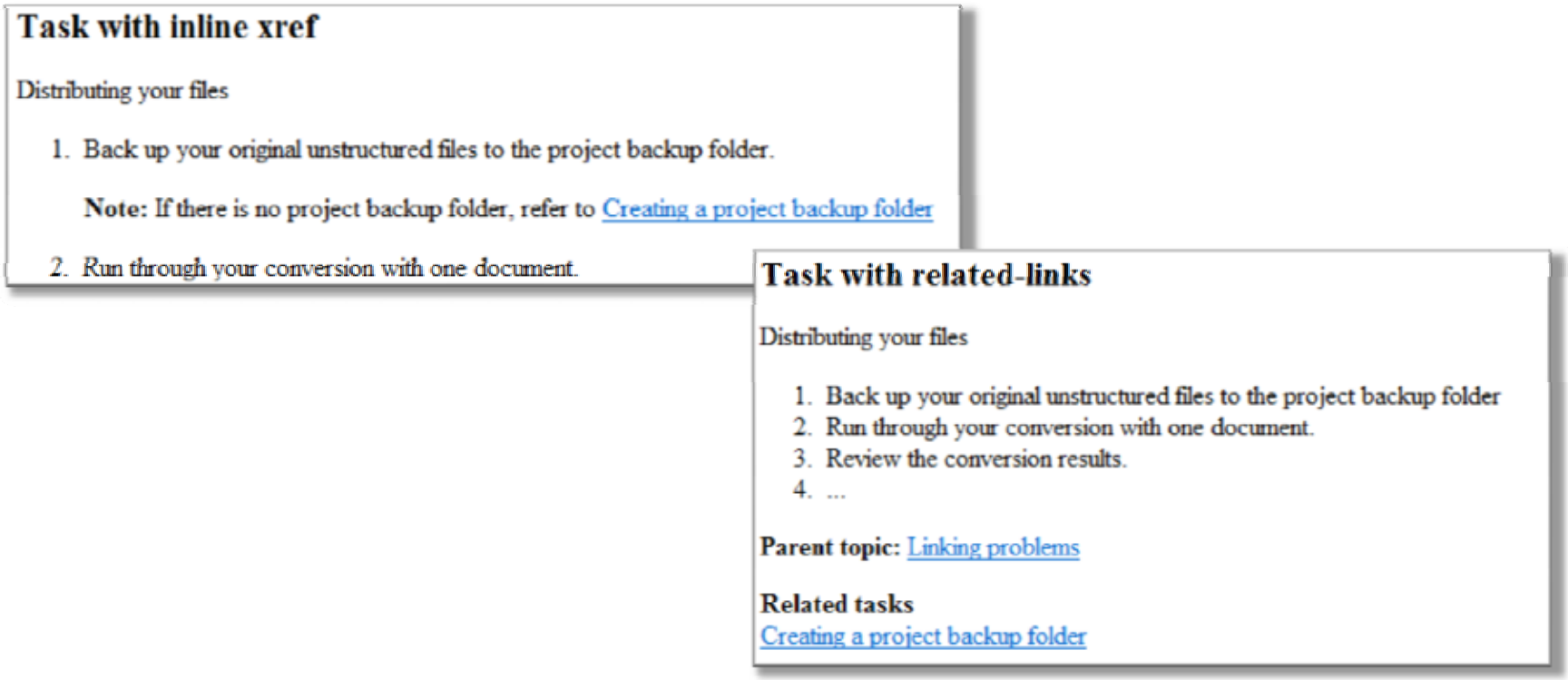
- Types of lists
  - Simple (no nesting)
  - Ordered
  - Unordered
- Issues with lists
  - Cannot have a title
  - No grouping of list items (with group title)
  - Bloated markup problem for

Unordered list



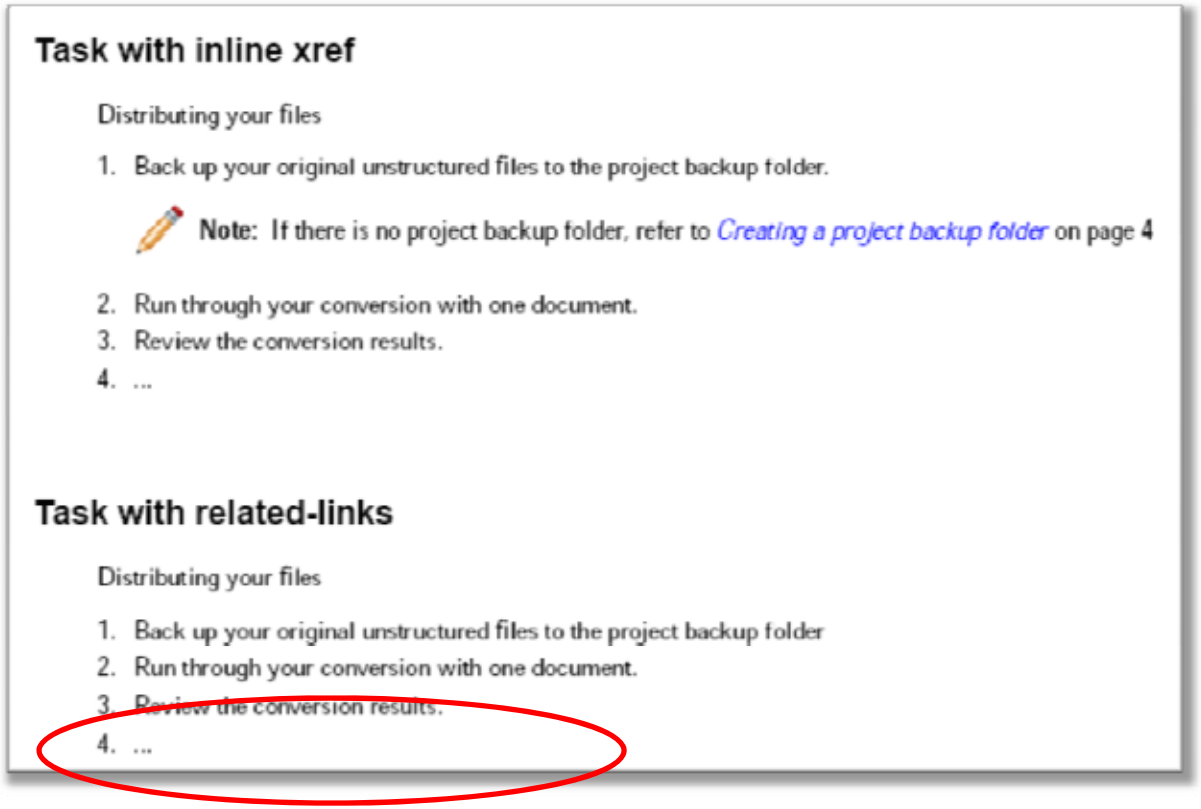
DITA's content model – linking issues

- Recommendations for linking
  - Link at the topic level through the use of related-links
  - Avoid the use of inline cross references
- Cross references can often be rewritten



Linking - PDF output

- But for PDF output, rewriting cross references does not always generate the desired result



Task with inline xref

Distributing your files

1. Back up your original unstructured files to the project backup folder.

   Note: If there is no project backup folder, refer to *Creating a project backup folder* on page 4

2. Run through your conversion with one document.
3. Review the conversion results.
4. ...

Task with related-links

Distributing your files

1. Back up your original unstructured files to the project backup folder
2. Run through your conversion with one document.
3. Review the conversion results.
4. ...

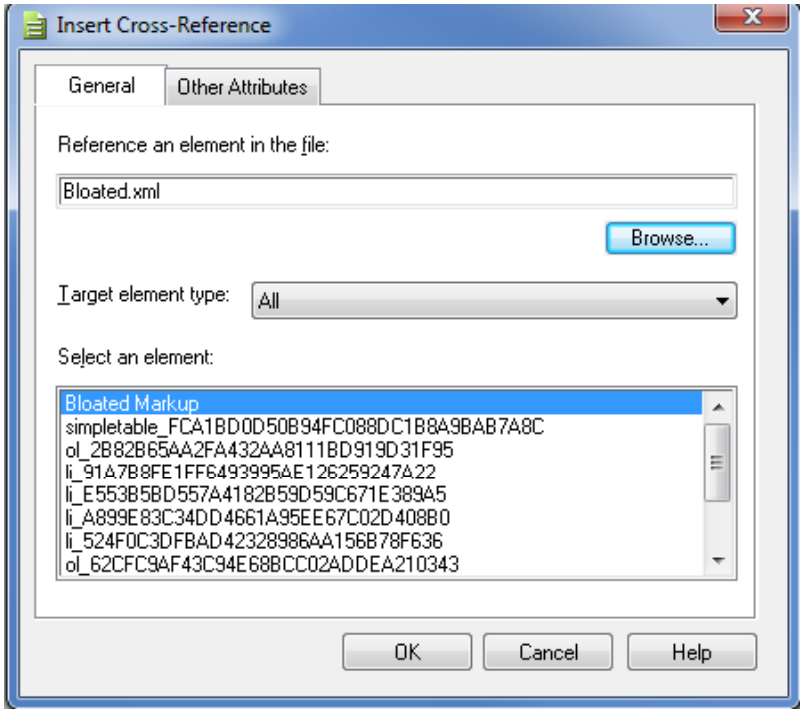
The related-links cross-reference is not output in the PDF.

Note : The transformation process can be designed to do it but is not done in the DITA OT.

Linking – unique IDs

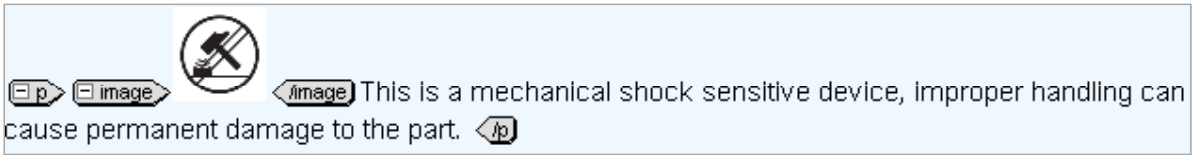
- If linking beneath the topic level is required the problems of unique ID's start to appear
  - It is not easy for an author to know what ID to link to
  - With **conref**-ing we have the same problem

- The standard only requires ID's to be unique within a topic but this causes problems with the OT

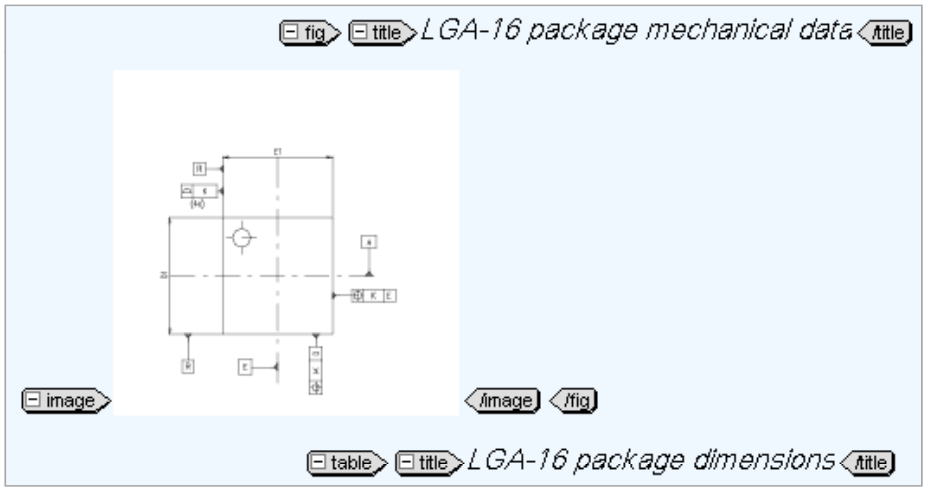


DITA's content model - images

- Two ways to include an image:
  - Image inline

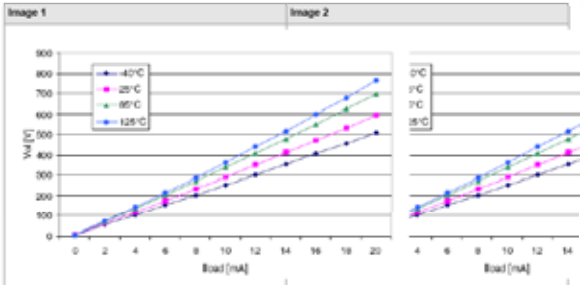


  - The container fig-element with/without title

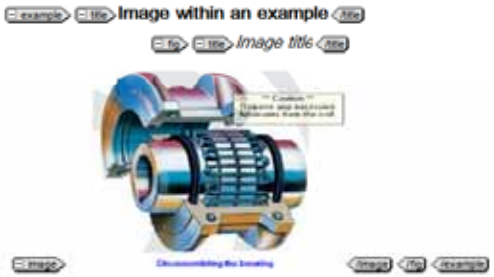


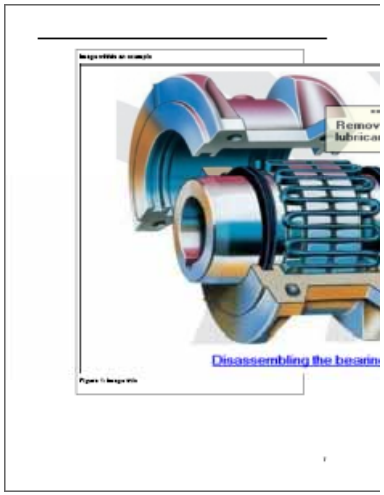
- Combining multiple image-like objects such as a drawing, a table and a formula can be problematic
- Biggest issues today are presentation related, such as resizing, including in tables, side-by-side images and borders

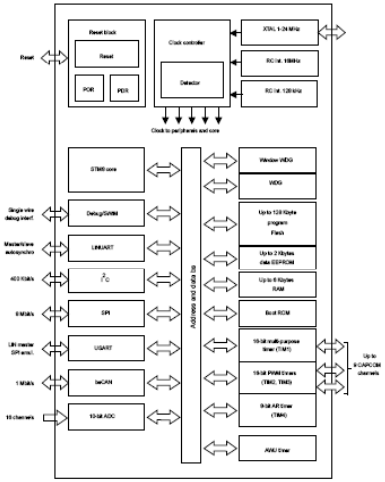
Examples of image presentation issues



These images should be automatically scaled to fit the available column width







This image should have a border around it because @frame="all" was specified

This image does not scale within the example even if scale="..%" is specified

If you start from the DITA OT, as well as adapting the stylesheet to your look and feel, you will also need to take into account all your content use cases.

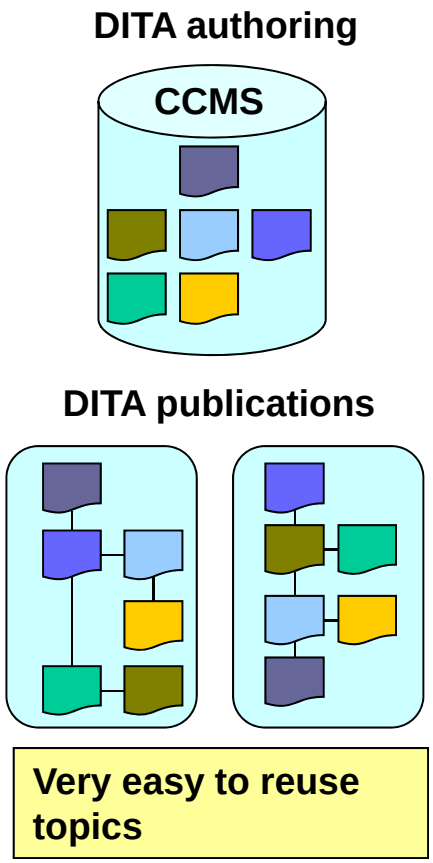
Single-sourcing

Single-sourcing

- DITA was made for single-sourcing
- Reusing a topic in many maps is one of the fundamentals of DITA and is very easy to do

But……..

- Single sourcing is not so easy when working with legacy content
- Reusing content at a more granular level than topics can quickly become very UGLY……..



De-duplicating after legacy conversion

- Implementing single-sourcing in converted legacy content is tedious and time consuming

Situation	Options	Issues
Identical topics	Delete all except one version, make all map references to single topic	Time consuming to find all occurrences
Some content identical	Re-write to cover all uses	Requires resources to re-write
	Chunk topics at a more granular level	More files to manage
	Create one topic with all content. Use filtering attributes to create the correct output.	Difficult for editors to follow, can easily make mistakes in output.
	Keep separate topics	No benefit from single-sourcing
Repeated content	Search for all occurrences and replace with a <conref> attribute	Difficult to find all occurrences

Example of re-write

Section in topic of publication

section title Prequalification trials /title /section

p Most of the common failures (unexpected reset and program counter corruption) can be reproduced by manually forcing a low state on the NRST pin or the oscillator pins for 1 second. /p

p To complete these trials, ESD stress can be applied directly on the device, over the range of specification values. When unexpected behavior is detected, the software can be hardened to prevent unrecoverable errors occurring. /p

Section in topic of publication 2

section title Prequalification trials /title /section

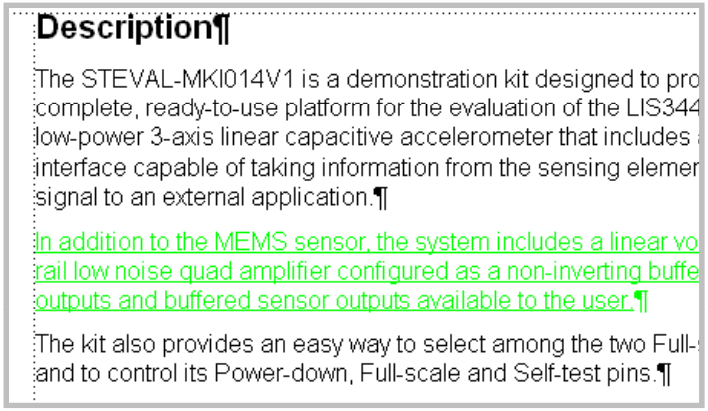
p Most of the common failures (unexpected reset and program counter corruption) can be recovered by applying a low state on the NRST pin or the oscillator pins for 1 second. /p

p To complete these trials, ESD stress can be applied directly on the device, over the range of specification values. When unexpected behavior is detected, the software can be hardened to prevent unrecoverable errors occurring. /p

- Second version was chosen to replace the first one
- Note we often de-duplicated topics by removing the part number and replacing it with “the device”

Tip to make single-sourcing easier

- To find identical content in legacy documents compare original docs (PDF, FrameMaker files etc)


Description¶

The STEVAL-MKI014V1 is a demonstration kit designed to pro complete, ready-to-use platform for the evaluation of the LIS344 low-power 3-axis linear capacitive accelerometer that includes interface capable of taking information from the sensing elemer signal to an external application.¶

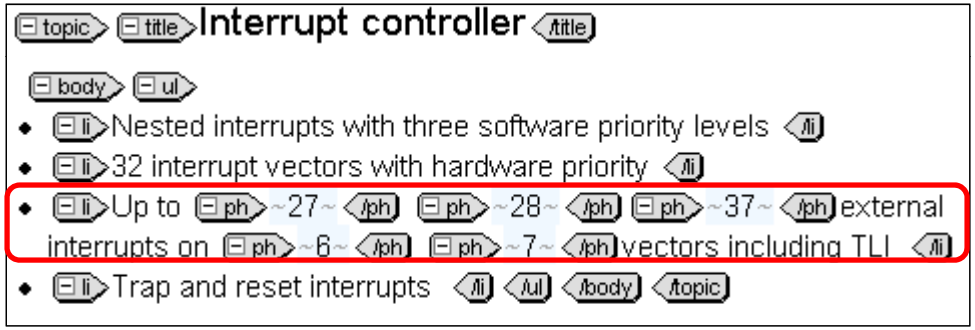
In addition to the MEMS sensor, the system includes a linear vo rail low noise quad amplifier configured as a non-inverting buffe outputs and buffered sensor outputs available to the user.¶

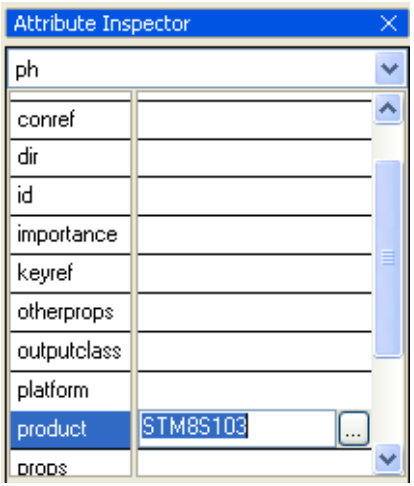
The kit also provides an easy way to select among the two Full- and to control its Power-down, Full-scale and Self-test pins.¶

- Can even use this method for converting legacy docs
  - Convert 1 doc in the family
  - Compare the others
  - Make new maps based on 1st doc
  - Convert remaining content

Single sourcing - filtering attributes

- DITA provides a filtering attribute mechanism where content can be included or excluded during transformation process



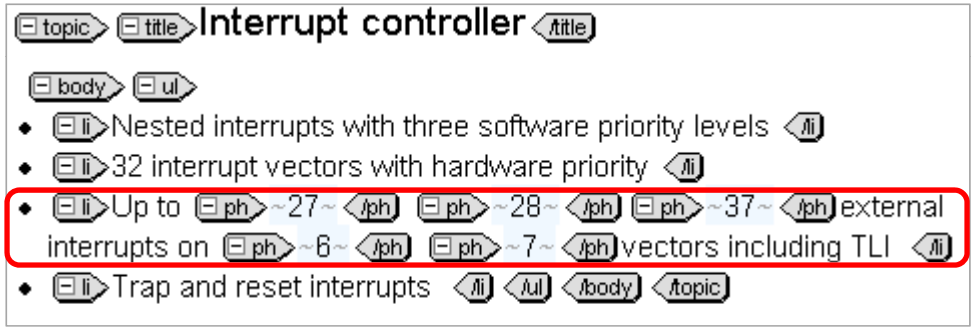


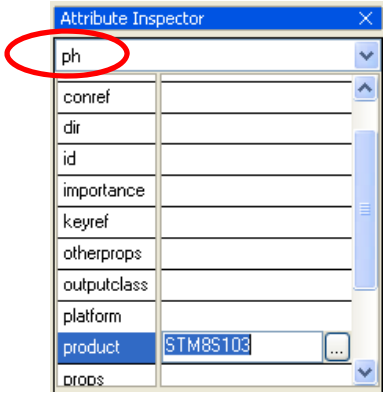
Ditaval file

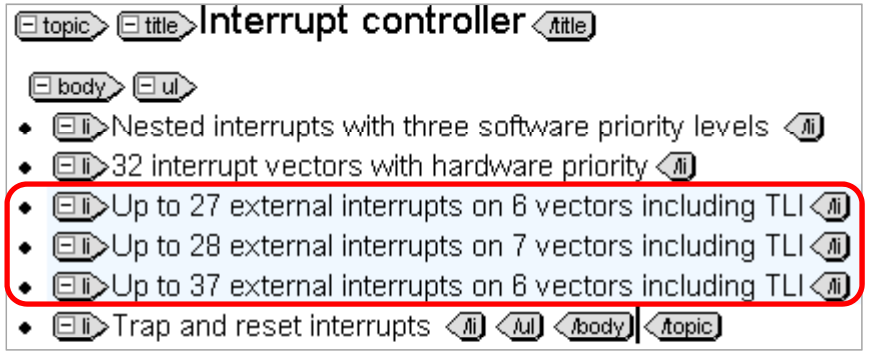
```
<?xml version="1.0" ?>
<val>
<prop att="product" val="STM8S103" action="include" />
<prop att="product" val="STM8S903" action="exclude" />
<prop att="product" val="STM8S105" action="exclude" />
</val>
```

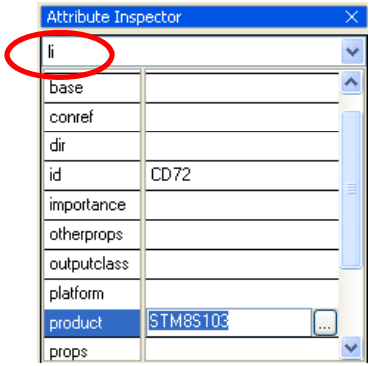
Single sourcing - filtering issues

- Filtering can quickly get out of hand if you use too many attributes
- Difficult to see filtered content in authoring tool









- Avoid filtering content at a low level

Using content referencing with filtering

- DITA's conref mechanism is very useful for variable or volatile content that can be kept and updated in a single place
- But what if you want to use a different note in a certain output deliverable?

- Today you have to combine the conref mechanism with filtering attributes
- DITA 1.2 addresses this by means of the key/keyref mechanism

Publishing issues

Publishing

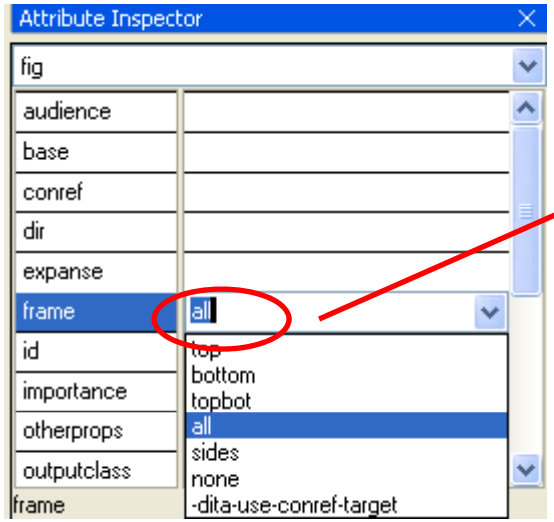
- Publishing process is much more complex than for classical documents

Possibilities:

- Customize the DITA Open Tool Kit
- Create stylesheets from scratch

DITA OT limitations

- DITA OT is not part of the DITA standard
- It was created by volunteers to give an example output
- It does not cover all the scenarios given in the DITA standard
- Example: <fig> @frame



No frame in DITA OT ouptut

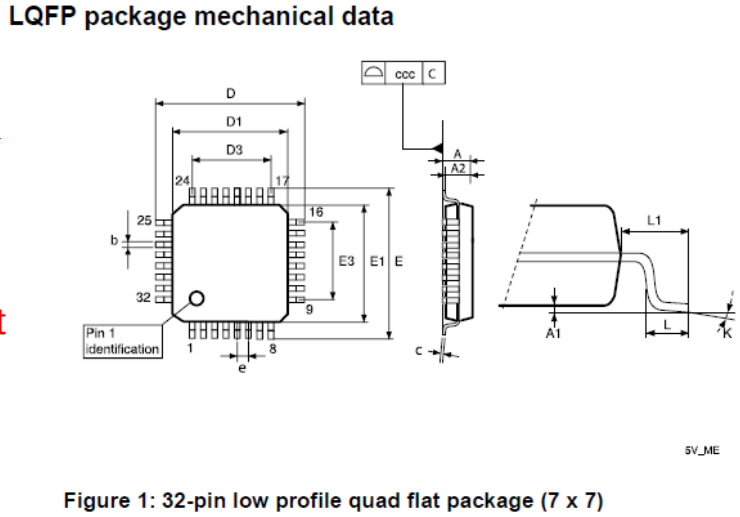
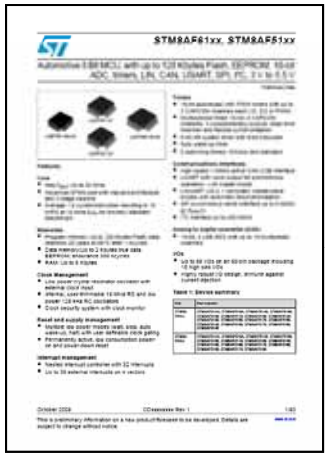


Figure 1: 32-pin low profile quad flat package (7 x 7)

Stylesheet challenges

- Stylesheet development challenges
  - Difficult to develop an all encompassing stylesheet (see bloated markup)
  - Multiple page geometries
  - Test case development
  - Page fidelity for paged media

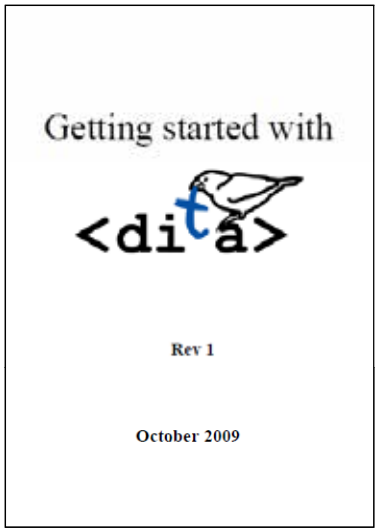


- Roll-out considerations
  - Synchronizing local stylesheet versions
  - Deployment in embedded OT, e.g. authoring tools or CCMS

Adoption challenges

Adoption challenges

- Adoption challenges
  - Availability of documentation and getting started and training content
  - Show cases
  - Business case development



- Today it is very hard to work with DITA without a substantial investment in time or help from an expert
- Soon the Oasis DITA Adoption TC will bring improvements in documentation and getting started guides

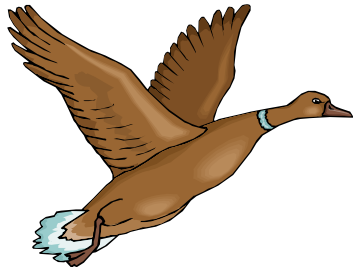
Implementation challenges

Implementation challenges

- Budget and timeline constraints

- Cost of Component Content Management System

- Legacy migration
  - Most documents still require a lot of work after migration
  - For example:
    - Checking the content
    - Graphic conversion
    - Checking cross-reference text
    - Rewriting the content to de-duplicate the topics
    - Filling in attributes



But despite all these challenges……..

- It really is worth it
- ST example of content reuse

MEMS content reuse	
LP/LY product family content reuse	
# topics after each conversion	19
# unique topics per doc	9
# topics reused in all docs	10
# docs converted	29
% reuse per document	**53%**
Total # topics before de-duplication	551
Total # topics after de-duplication	271
Total # topics deleted	280
% Content reduction	**51%**

And to finish

And to prove that we believe in DITA and will go to extremes to promote it……..


CATANIA
DITA

The challenge……for next year

- Can anyone do better than this?

Photo taken near the top of the Etna volcano, on the occasion of the STMicroelectronics DITA training in Sicily, October 2009.