



Working with PDF and Word documents with ASCE

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Introduction

- Working with PDF as evidence
 - Recap of existing functionality
 - Progress since last user group
 - Demo
- Publishing to MS Word
 - One click export
 - Recap of existing functionality
 - Recent progress
 - Demo
- Working with MS Word as evidence

Linking to PDF

- PDF is ubiquitous – particularly for 3rd party documents
 - PDF spec open, but v complex
 - Generally rather inaccessible data once in PDF
 - (unlike, say XML, HTML, DOC, database etc.)
 - Document structure generally lost
- Ability to link to any file from ASCE already exists
- But users want to link to a specific page in PDF
 - E.g specific requirements, regulations etc
 - Be able to navigate to this page from ASCE
 - Have link propagated through to (HTML, DOC) export
- Linking to PDF plugin
 - Allows this navigation.
 - Also generates links that in theory, can be clicked in final export. Via #page=10 on link
 - But mileage may vary

Navigation into PDF - challenges

- Only Full Acrobat (not Acrobat Reader) has useful COM interface – not widely deployed
 - Perhaps Acrobat reader crippled for commercial reasons?
 - Various versions of Acrobat Reader are deployed
 - V5 ... V8
 - All slightly different
 - Only latest ones have the ability to start with a specific page
- Approach – automate the user interface layer
 - Start Acrobat and send it keystrokes to navigate
 - Essentially we find the text control [Page "1 of 25"]
 - Send it the number of the page to navigate to
 - An intriguing, yet elegant Hack. It works!

Beyond simple navigation

- More interesting perhaps to refer to content in a PDF
- Could a PDF DNR exist?
 - Needs to provide a block of HTML for node editor
 - Possible scenarios:
 - Refer to text on a page of a PDF file
 - Show compliance against a particular requirement
- Some PDF COM libraries exist
 - But a bit expensive, maybe overkill

Extended PDF plugin

- We can use libraries from XPDF project
 - <http://www.foolabs.com/xpdf/>
 - Open source project to provide libraries onto PDF documents
 - Includes command line application [pdftotext.exe]
 - Does a pretty good job, even with layout
- Provides route to get PDF content:
 - PDF -> [pdftotext] -> Plain text -> ASCE plugin DNR ->HTML -> ASCE
- Extended PDF plugin
 - Now supports page extraction, highlighting, and sub page extraction

Demo

One click export

- Probably the most useful plugin of all
 - Has the most work done over the years
- Allows publication of ASCE networks directly into Microsoft Word
- How it works:
 - Crawls over ASCE network following export path
 - Creates temporary HTML files
 - Imports into Word
 - Does a lot of tidying up
 - Works with Corporate Document templates

One click export options

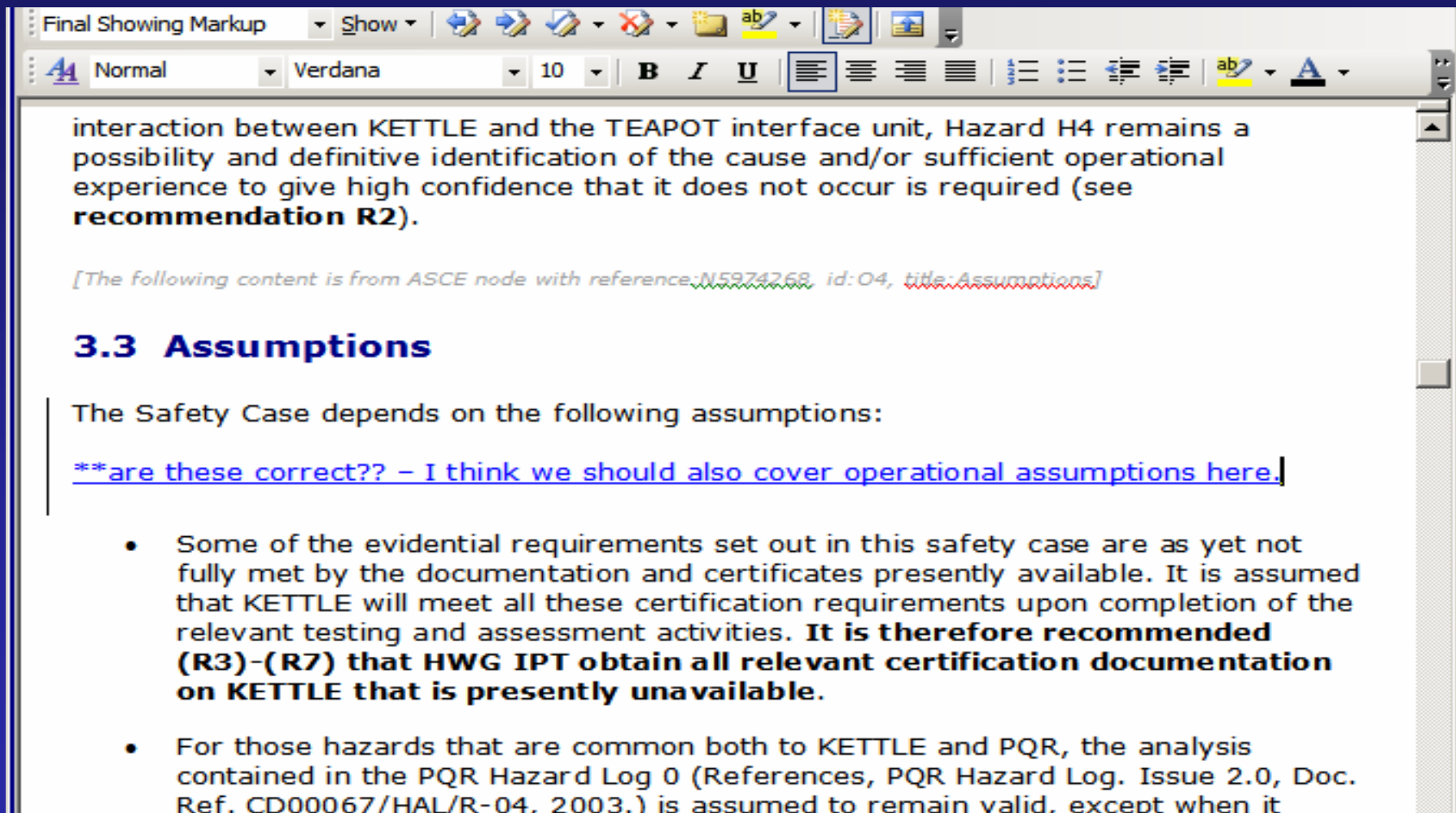
- Select corporate Word Doc template (*.dot)
 - Much improved
- Choose export path
- Conversion options for cross references
- Convert H5 or H6 to bibliographic references
- Insert traceability [NEW]
- Insert global numbering scheme

Recent updates

- Improved performance
 - used to be quite slow for larger networks
- Improved reliability for wider range of document templates
- Word 97, NT4 reinstated

- Traceability information
 - Publish ASCE network to Word
 - Get comments back from Client on Word document
 - Know where these comments apply in ASCE document

Get comments back on Word doc



Final Showing Markup Show

Normal Verdana 10 B I U

interaction between KETTLE and the TEAPOT interface unit, Hazard H4 remains a possibility and definitive identification of the cause and/or sufficient operational experience to give high confidence that it does not occur is required (see **recommendation R2**).

[The following content is from ASCE node with reference: N5974268, id: O4, title: Assumptions]

3.3 Assumptions

The Safety Case depends on the following assumptions:

**are these correct?? – I think we should also cover operational assumptions here.

- Some of the evidential requirements set out in this safety case are as yet not fully met by the documentation and certificates presently available. It is assumed that KETTLE will meet all these certification requirements upon completion of the relevant testing and assessment activities. **It is therefore recommended (R3)-(R7) that HWG IPT obtain all relevant certification documentation on KETTLE that is presently unavailable.**
- For those hazards that are common both to KETTLE and PQR, the analysis contained in the PQR Hazard Log 0 (References, PQR Hazard Log. Issue 2.0, Doc. Ref. CD00067/HAL/R-04, 2003.) is assumed to remain valid, except when it

Know where to Edit in ASCE

- Look up the node
- Text search for title
- Use table view trick to find node by id

Drag open column header here




Table view – normal display			Hidden Reference column displayed after dragging open its column header			
Node Table View			Node Table View			
File			File			
	Id	Title	Reference	Id	Title	
<input type="radio"/>	05	Safety Case approach	N5768234	<input type="radio"/>	05	Safety
<input type="radio"/>	03	Prerequisites	N643825	<input type="radio"/>	02	Abbrev
<input type="radio"/>	04	Assumptions	N8324842	<input type="radio"/>	06	Conclu
<input type="radio"/>	02	Abbreviations	N3802707	<input type="radio"/>	07	Current
<input type="radio"/>	01	References	N1169989	<input type="radio"/>	01	Refere
			N5974268	<input type="radio"/>	04	Assumj
			N6094344	<input type="radio"/>	03	Prerea

Find the node and edit

Insert new
content here

[OTHER] 04 - Assumptions - ASCE Node Editor

File Edit View Tools Insert Format Table

B *I* U [List icons]

Assumpti 04 Assumptions

Assumptions

The Safety Case depends on the following assumptions:

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- For those hazards that are common both to KETTLE and PQR, the analysis contained in the PQR Hazard Log **References, PQR Hazard Log. Issue 2.0, Doc. Ref. CD00067/HAL/R-04, 2003.** is assumed to remain valid, except when it relies specifically on aspects and features of the PQR system. For some of these hazards, the same target probabilities of occurrence have been assumed as applying to KETTLE as to PQR.

Working with Word as evidence

- Can obviously link to a document as a whole using File links
- Beyond that we have been investigating linking to a specific section in Word document
 - Link to navigate into Word document
 - In theory possible – Word object model exists
 - But number of performance issues
- Possible way forward exists
 - Convert to HTML silently and work with that
 - Office 2000 and later only
 - Could provide route for navigation and N

Availability

- Latest PDF plugin and one click about to be published
 - Final review cycle this week
 - *Email us and we will send you a copy now*
- *Word linking, DNR still under development*
- Or check the ASCE plugins section of the website shortly

Thanks for listening.

Any questions or comments?