



# Management of issues, limitation and assumptions in safety cases and safety case hierarchies

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# Issues and Assumption management

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- In safety cases often there is a need to manage collections of issues, requirements and constraints:
  - List of limitations
  - List of requirements
  - List of assumptions
  - List of actions
  - ... and so on
- Crucial at key project milestones, e.g.
  - Main Gate (Start of development)
  - Technical transfer (Start of use)
- Some standards require explicit list
  - E.g. Airworthiness Release to Service (RTS) document

# Some technical options if using ASCE

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- 0. Use existing capabilities for managing textual items and linking to them
  - Use embedded links to pull headings over
  - Use "Other" node types
  - Use a table and ASCE node mapping DNR
- 1. Use an external tool for managing these (spreadsheet, Requirements Management system etc)
  - You might already be required to use a specific tool
  - You can track changes from ASCE
  - *(see next talk!)*

# More options

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- 2. Develop/Use a custom schema that has these items
  - E.g. GSN has "Assumption and Context"
  - Could extend further with other node types
  - But this can get verbose, possibly cluttered
- 3. Use the Issues Embedding plugin
  - Benefit in keeping them in the context of the safety analysis that identified them
  - High degree of readability and comprehension in reports

# Enter the Issues Embedding Plugin

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- A DNR plugin that lets you raise a number of specific elements within your ASCE network:
  - Requirements, Issues, Limitations
  - Assumptions, Action, Risk, Custom
- Summary table collated and can be published into Safety case report, or into other ASCE networks
  - A simple approach to support for safety case modules
- Simple but effective
  - Can drag select to create new item
- Could be extended for other uses

# Challenges

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- Plugin needs to analyse and extract content from its own HTML node narratives
  - HTMLTidy used to convert HTML to XML
  - XPath then used to extract DNR content
- Otherwise fairly straightforward
  - a couple of hours to write basic prototype

# Demo

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