S1000D way ahead - Modularization

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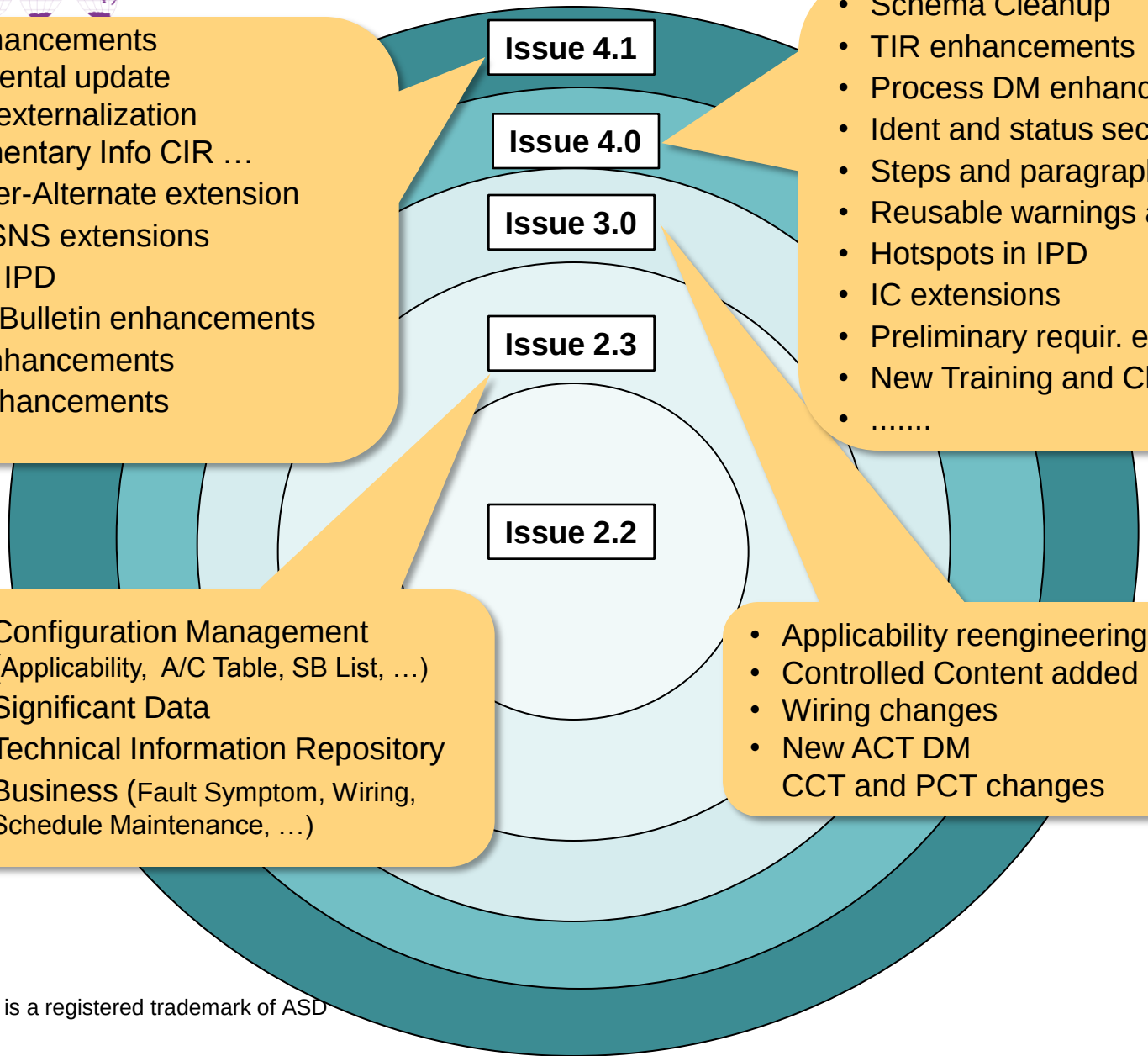
Specification Growth



- CIR Enhancements
  - incremental update
  - applic externalization
  - Documentary Info CIR …
- Container-Alternate extension
- IC and SNS extensions
- Generic IPD
- Service Bulletin enhancements
- CMM enhancements
- Fault enhancements
- …

- Schema Cleanup
- TIR enhancements
- Process DM enhancements
- Ident and status section changes
- Steps and paragraphs recursive
- Reusable warnings and cautions
- Hotspots in IPD
- IC extensions
- Preliminary requir. enhancements
- New Training and Checklist DMs
- .....

- Configuration Management (Applicability, A/C Table, SB List, …)
- Significant Data
- Technical Information Repository
- Business (Fault Symptom, Wiring, Schedule Maintenance, …)

- Applicability reengineering
- Controlled Content added
- Wiring changes
- New ACT DM
  CCT and PCT changes

Specification Growth - Consequences

Permanent conflict between 2 basic requirements:

- Keep the spec simple, easy to implement and stable
- Provide new advanced mechanisms required for new projects

2 orthogonal methods of production and delivery of DMs and publication:

- Self-contained (publication)
- Repository-dependent data modules (data exchange)

- Long and controversial consensus process
- New mechanisms lead to more project decision points and to more complex Business Rules
- Sometimes different ways to do it (consensus)
- More complex and costly to implement

Re-engineering of S1000D – Why?

Reduce S1000D complexity

Increase S1000D stability

Timely support of future evolutions

Support the different use cases of specification

Re-engineering of S1000D – Why?

Reduce S1000D complexity

Increase S1000D stability

Timely support of future evolutions

Support the different use cases of specification

- For projects – easier to decide what to take or not, and how to do it (specially for small projects)
- For vendors – consistent customer requirements
- For software providers – easier coverage of S1000D

Re-engineering of S1000D – Why?

Reduce S1000D complexity

Increase S1000D stability

- Allow contracting against S1000D
- Decrease cost for all actors

Timely support of future evolutions

Support the different use cases of specification

Re-engineering of S1000D – Why?

Reduce S1000D complexity

Increase S1000D stability

Timely support of future evolutions

Support the different use cases of specification

- Allow integration of new concepts without legacy data migration
- Integrate other standards from PLCS/ILS, ATA, SCORM, etc.
- Manage the competition in the standardization world
- Avoid proprietary add-ons for projects

Re-engineering of S1000D – Why?

Reduce S1000D complexity

Increase S1000D stability

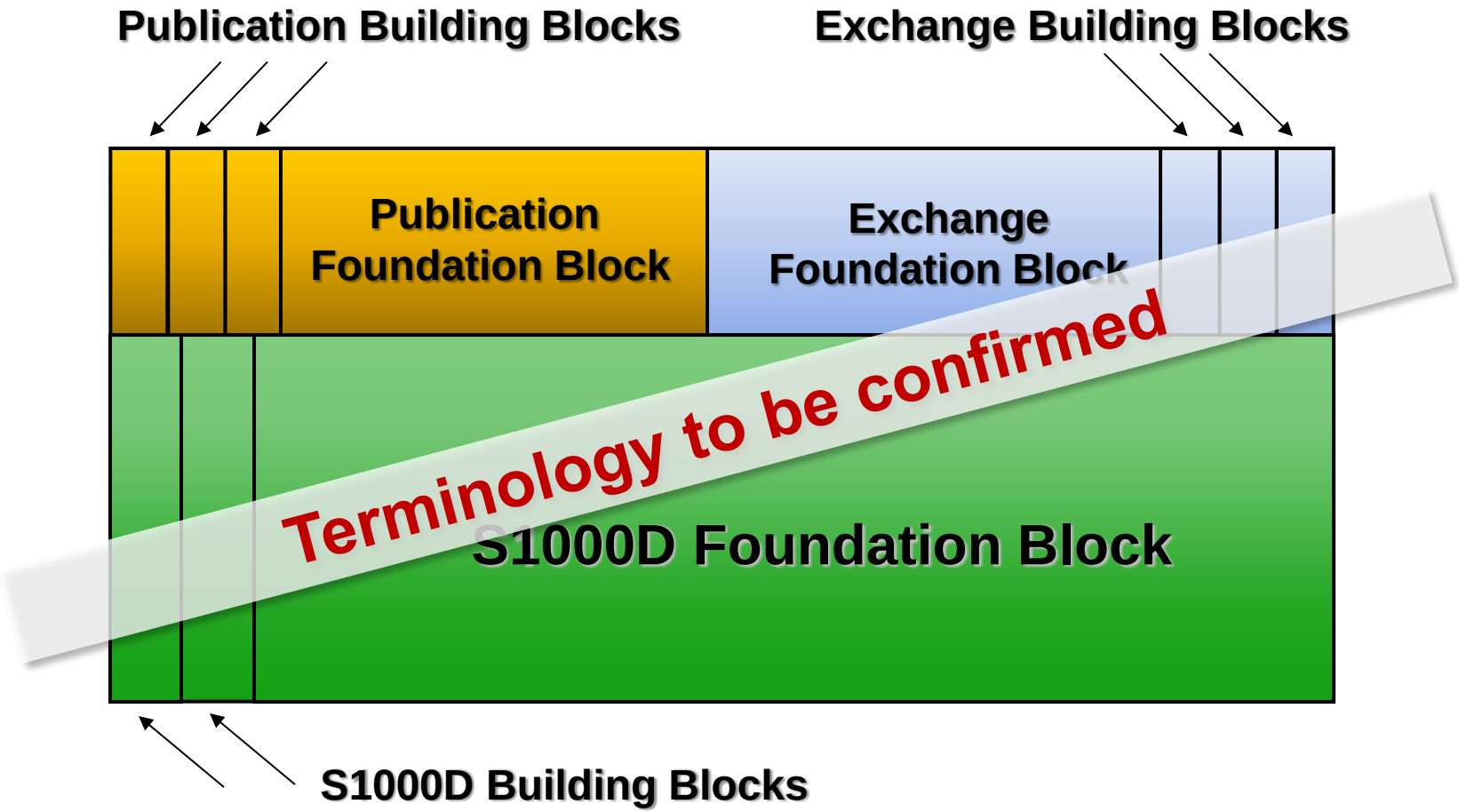
Timely support of future evolutions

Support the different use cases of specification

- Self-contained vs. repository-dependent data modules
- Publication vs. data exchange

The Council Goals

A modular based specification
Foundations and optional building blocks



Modularization: High Level Requirements

Stabilize and simplify the Foundation

Eliminate duplication

Reduce development effort/time for new issues

Reduce implementation costs/time for projects

Enable integration with other standards

Modularization: High Level Requirements

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Reduce implementation costs/time for projects

Enable integration with other standards

- Avoid inclusion of project specific requirements and constructs in the Foundation and mature Building Blocks:
  - Objective: no BRDPs in the Foundation / mature Building Blocks
  - No project unique requirements to be covered in the Foundation
  - Specific Foundation change process
- Foundation to be stable
  - New Building Blocks should not affect the Foundation
  - High barrier needed to avoid breaking upward compatibility on the Foundation
  - Restrictive criteria/change process

Modularization: High Level Requirements

Stabilize and simplify the Foundation

Eliminate duplication

Reduce development effort/time for new issues

Reduce implementation costs/time for projects

Enable integration with other standards

- No alternative solutions or similar methods to achieve the same business requirement:
  - Clear definition of what means "same business requirement"
  - Develop list of requirements and related alternative solutions
  - Develop methodology for sharing common reusable resources for Building Blocks
  - Establish criteria for introducing new technologies into the Foundation

Modularization: High Level Requirements

Stabilize and simplify the Foundation

Eliminate duplication

Reduce development effort/time for new issues

Reduce implementation costs/time for projects

Enable integration with other standards

- Timely response to changing requirements, technologies and product needs
  - Define what is a reasonable time
- Have a well defined, efficient, effective and consistently applied specification management change process
  - Define a fast track process for CPFs not linked to Foundation or stable Building Blocks or editorial changes
- Avoid Risk of proprietary add-ons for projects
  - If projects define their own building blocks, these would not be part of S1000D

Modularization: High Level Requirements

Stabilize and simplify the Foundation

Eliminate duplication

Reduce development effort/time for new issues

Reduce implementation costs/time for projects

Enable integration with other standards

- Broadening adoption and facilitating the use of the specification by making it “easy to implement”
  - Retain upward compatibility
  - Avoid overly complex features
  - Isolate changes within a single (or small number) of building blocks
  - Define a standard structure for every Building Blocks
  - Ensure that building blocks can be implemented independently of other building blocks
  - Increase accessibility of information in the specification

Modularization: High Level Requirements

Stabilize and simplify the Foundation

Eliminate duplication

Reduce development effort/time for new issues

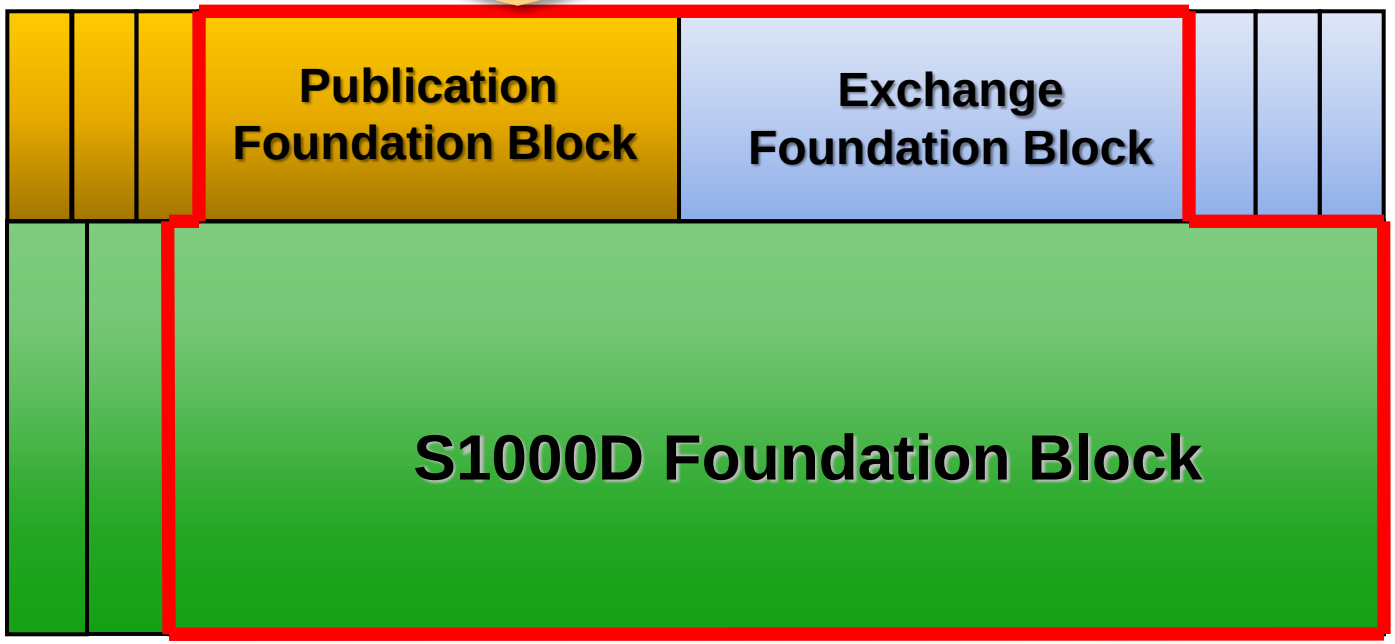
Reduce implementation costs/time for projects

Enable integration with other standards

- Leveraging other standards by supporting the agreed collaboration of ASD, AIA and ATA
  - Compatibility with ISO standards
  - Harmonization with other international and industry standards as appropriate
- Leveraging other standards by supporting the agreed collaboration of ASD and AIA
  - Integration with the ASD Suite of ILS specifications

The Foundation - Guidelines

- Minimum set of features that any project could use to implement S1000D.
- The Foundation must be usable without additional Building Blocks.
- Objective is not to have BRDPs in the Foundation
- The Foundation will have a specific change process/criteria
- New building blocks should not affect the Foundation.



What's Next?

- SMTT Statement of Work:

> *To deliver a white paper that describes the S1000D modularization project, based on the concepts devised by the Council (Vision/Mission/Goal)*
>
> – *requirements for restructuring*
> – *definition of terms and concepts*
> – *solution option(s) and recommendation(s)*

- Next Step: Complete requirements and define the Foundation
  ➔ use results of S1000D User Survey

S1000D User Survey

- Beginning of 2013 the S1000D Modularization Task Team (SMTT) performed an user survey
- The team developed a questionnaire with 80 topics
- The questionnaire was distributed to the S1000D user community via the members of the Steering Committee

Goals of the S1000D User Survey

Better know the S1000D user community

Understand the use cases of the specification

Learn about the needs in different industry segments

Support the preparation of the S1000D modularization activities

What are we now doing with the results?

- Perform an analysis and study on the questionnaire, the results and provide recommendations
- The study is done by Maximilian Brunner as part of his thesis on the University of Applied Management in Erding (Germany)
- He uses the SurveyMonkey® for the analysis and for the preparation of the reports SurveyMonkey® is a registered trademark of SurveyMonkey Inc.

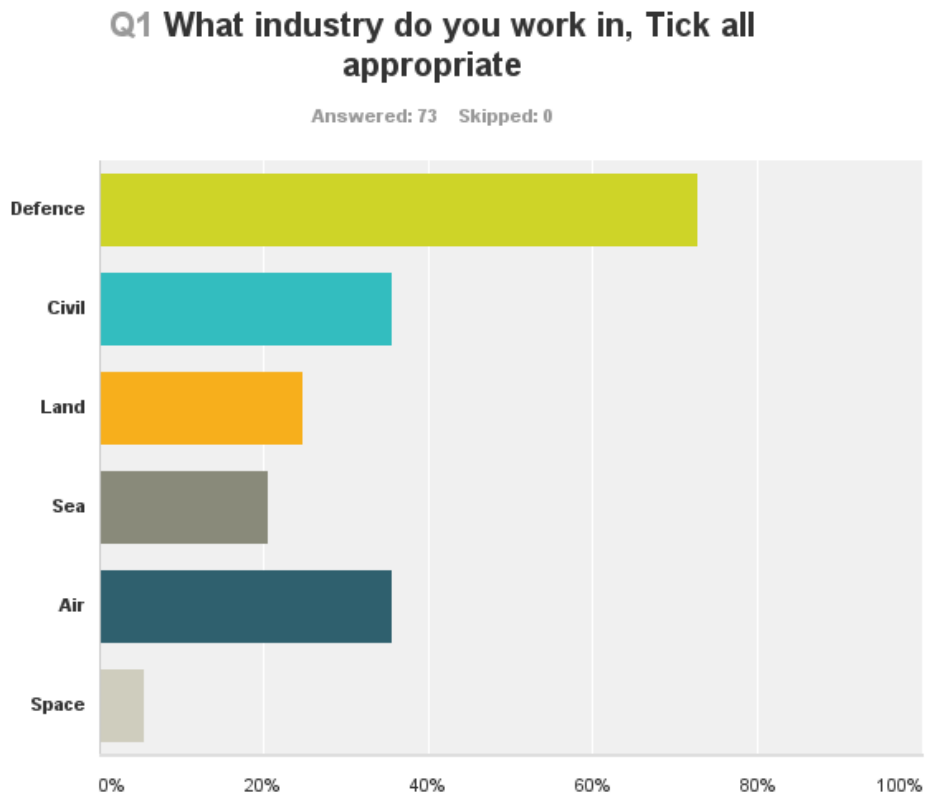
Responses

- The SMTT received 73 answers
- Included are 7 answers from software provider

The S1000D Modularization Task Team and the S1000D Steering Committee like to thank all who contributed in the User Survey

Results

- **Q1**


Q1 What industry do you work in, Tick all appropriate
Answered: 73 Skipped: 0
Defence
Civil
Land
Sea
Air
Space
0%
20%
40%
60%
80%
100%

Results

- **Q4**: Are you likely to use S1000D in the future?
  - YES: 67
  - NO: 5

- **Q12**: Do you use S1000D only when customer requirements call for it?
  - YES: 34
  - NO: 33

Results

- **Q15**: Do you want the Spec to be more or less flexible?
  For example: Do you not use specific parts or sections of the specification (if possible give the reference to the section/chapter)
  - More: 28
  - Less: 24
- **Why? – some answers**:
  - Issues impacting data exchange and reuse should be more restrictive; issues associated with presentation less restrictive
  - Too much possibilities to do the same thing, guidance is always required
  - To support the diverse requirements of OEM data suppliers
  - The specification provides a good balance of constraint and flexibility
  - UK doesn't use US English

Results

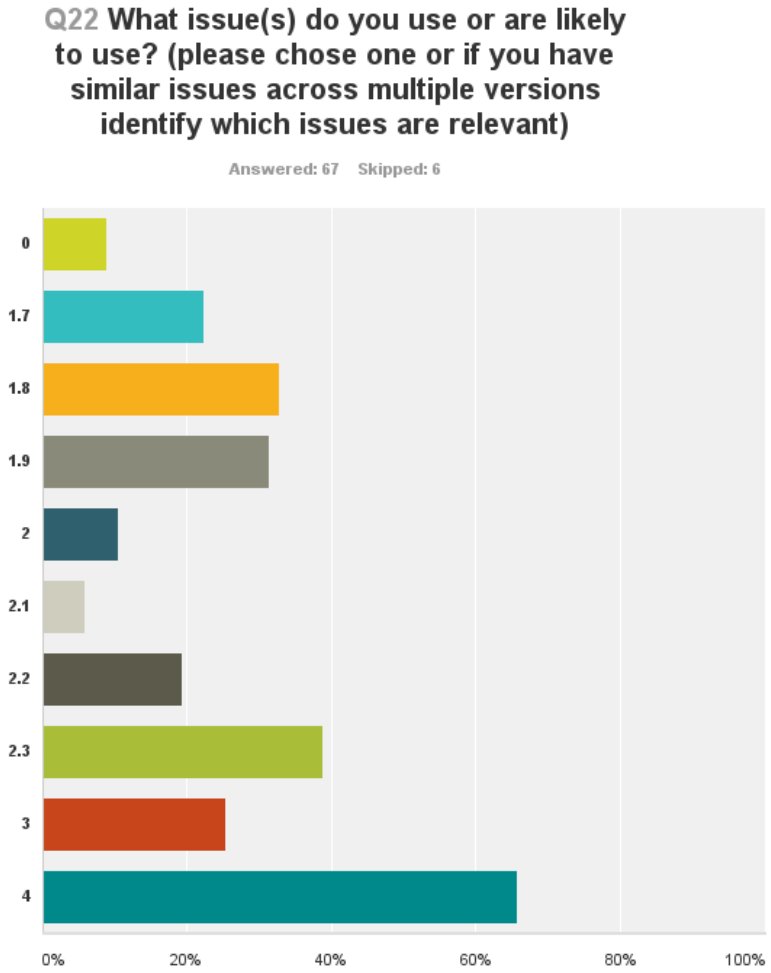
- **Q17**: What 3 aspects about S1000D are positive?
  - International Standard
  - XML
  - Modularity

Results

- **Q18**: What 3 aspects about S1000D are negative?
  - Complexity, huge Spec
  - To many Business Rules
  - Update frequency is too high

Results

- **Q22**


Q22 What issue(s) do you use or are likely to use? (please chose one or if you have similar issues across multiple versions identify which issues are relevant)
Answered: 67 Skipped: 6
0
1.7
1.8
1.9
2
2.1
2.2
2.3
3
4
0%
20%
40%
60%
80%
100%

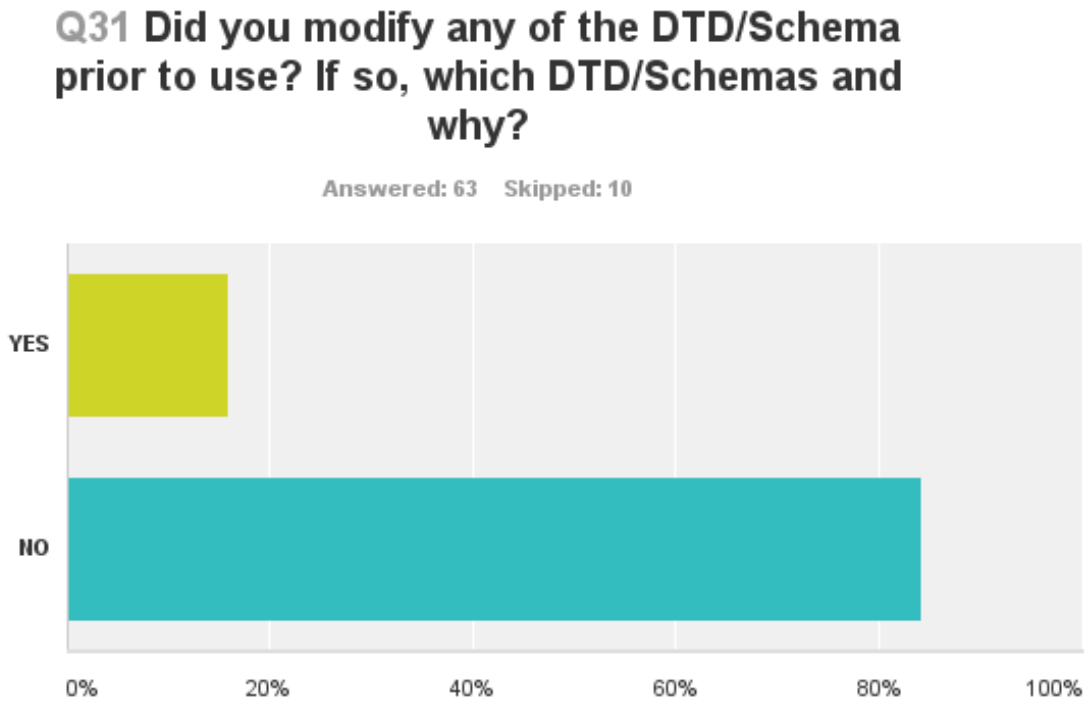
Results

- **Q24**: Do you use a mixture of issues e.g. 1.6 and 1.9, within a single project?
  - YES: 17
  - NO: 51

- **Q25**: Do use parts of different issues e.g. info codes from issue 3.0 within 2.2 project?
  - YES: 13
  - NO: 52

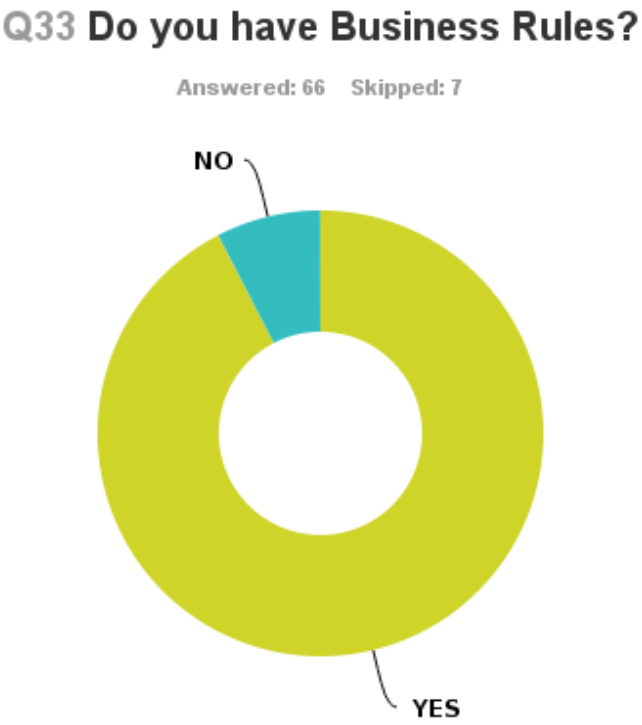
Results

- **Q31**


Q31 Did you modify any of the DTD/Schema prior to use? If so, which DTD/Schemas and why?
Answered: 63 Skipped: 10
YES
NO
0%
20%
40%
60%
80%
100%

Results

- **Q33**

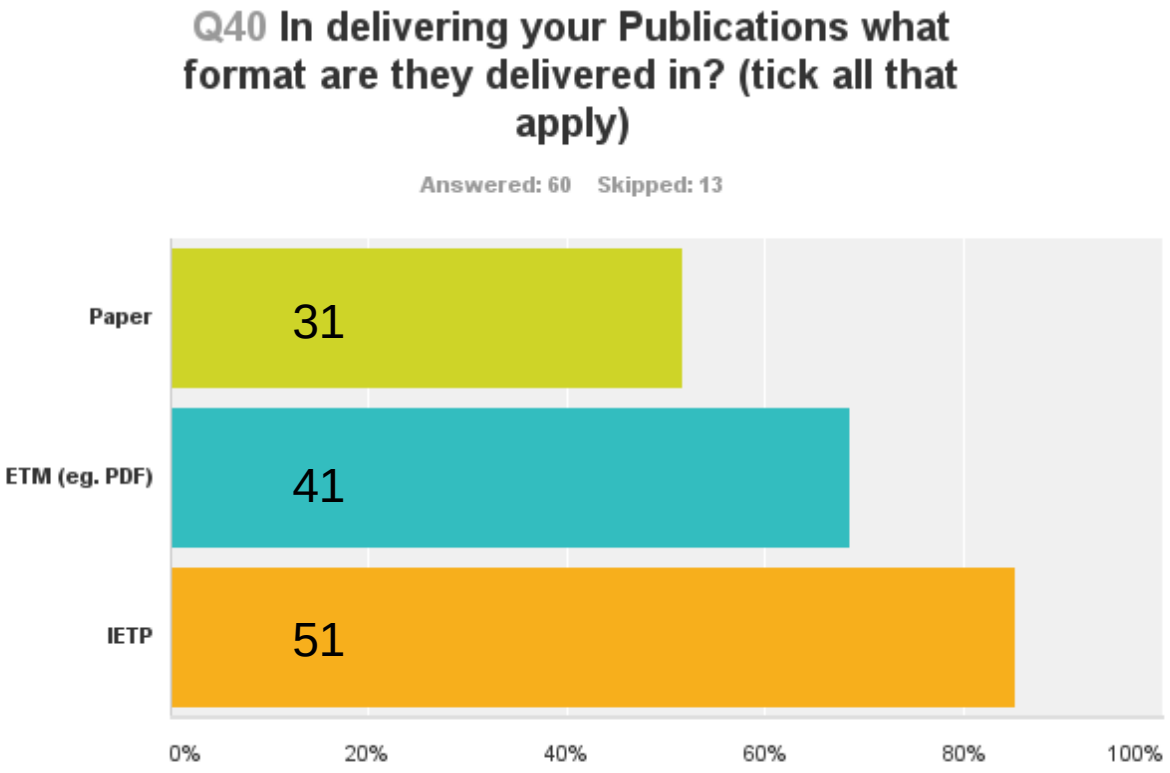


Results

- **Q39**: Are there other data formats you would like to be included in S1000D e.g. SVG?
  - 11 referred to SVG
  - 5 referred to 3D

Results

- **Q40**


Q40 In delivering your Publications what format are they delivered in? (tick all that apply)
Answered: 60 Skipped: 13
Paper
31
ETM (eg. PDF)
41
IETP
51
0%
20%
40%
60%
80%
100%

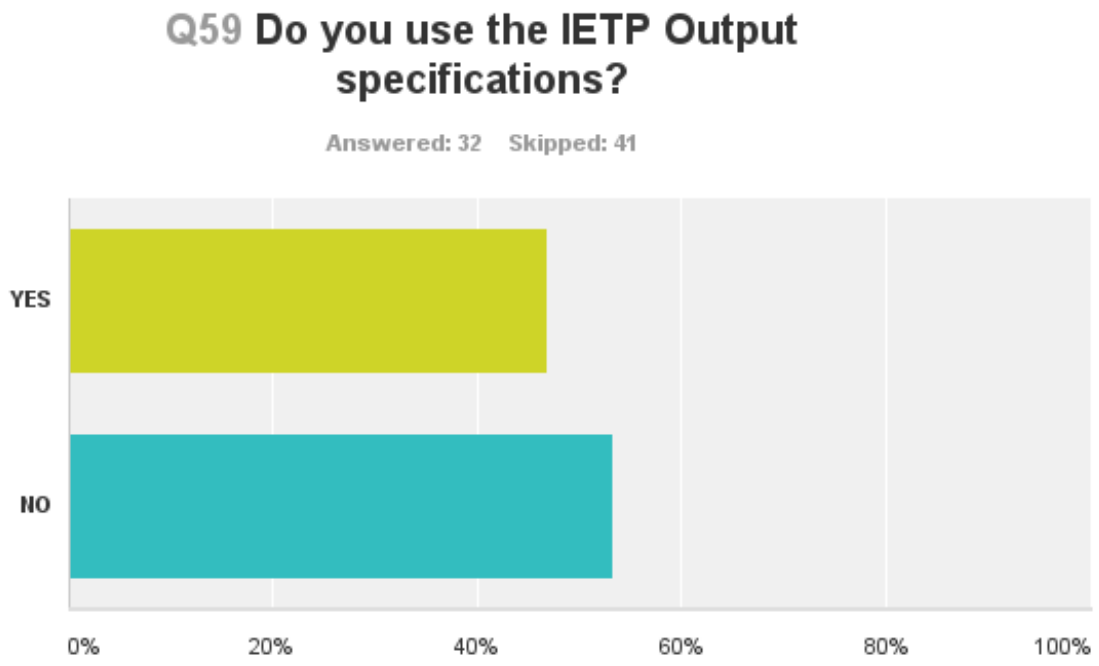
Results

- **Q49**: Are there information sets missing, e.g. software documentation, please list any type of information that you think is applicable?
  - Most referred: Software documentation

  further:
  - IT Hardware
  - Transportability Manual
  - Aircraft Rescue and Firefighting
  - Maintenance Facility Planning

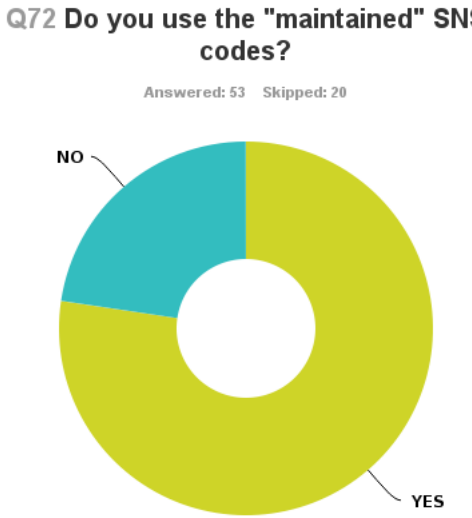
Results

- **Q59**

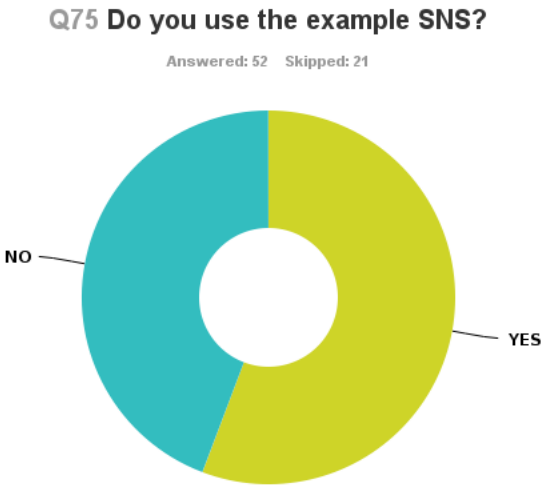

Q59 Do you use the IETP Output specifications?
Answered: 32 Skipped: 41
YES
NO
0%
20%
40%
60%
80%
100%

Results

- **Q72**

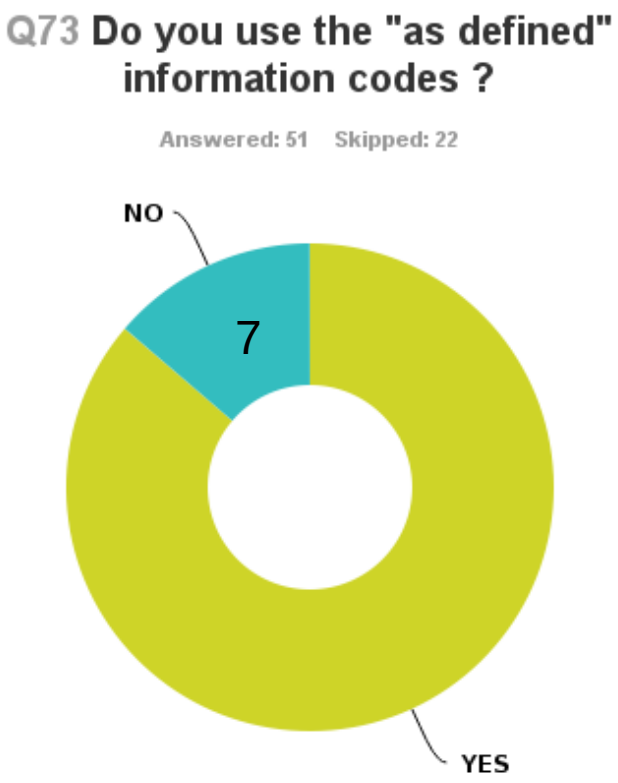


- **Q75**



Results

- **Q73**


Q73 Do you use the "as defined" information codes ?
Answered: 51 Skipped: 22
NO
7
YES

Next Steps

- Discuss the results of the study in the S1000D Modularization Task Team
- Decide what needs to be reflected in the modularization work
- Analyze where we need additional information