

S1000D Users Forum 2010

“Application of S1000D within a state-of-the-art Integrated Logistic Support environment”

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Modularization and Restructuring of S1000D

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Agenda

- 1 Specification Growth
- 2 Current Limitations
- 3 The Council Goals
- 4 Solution
- 5 Next Steps

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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

.....

Issue 4.1

Issue 4.0

Issue 3.0

Issue 2.3

Issue 2.2

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

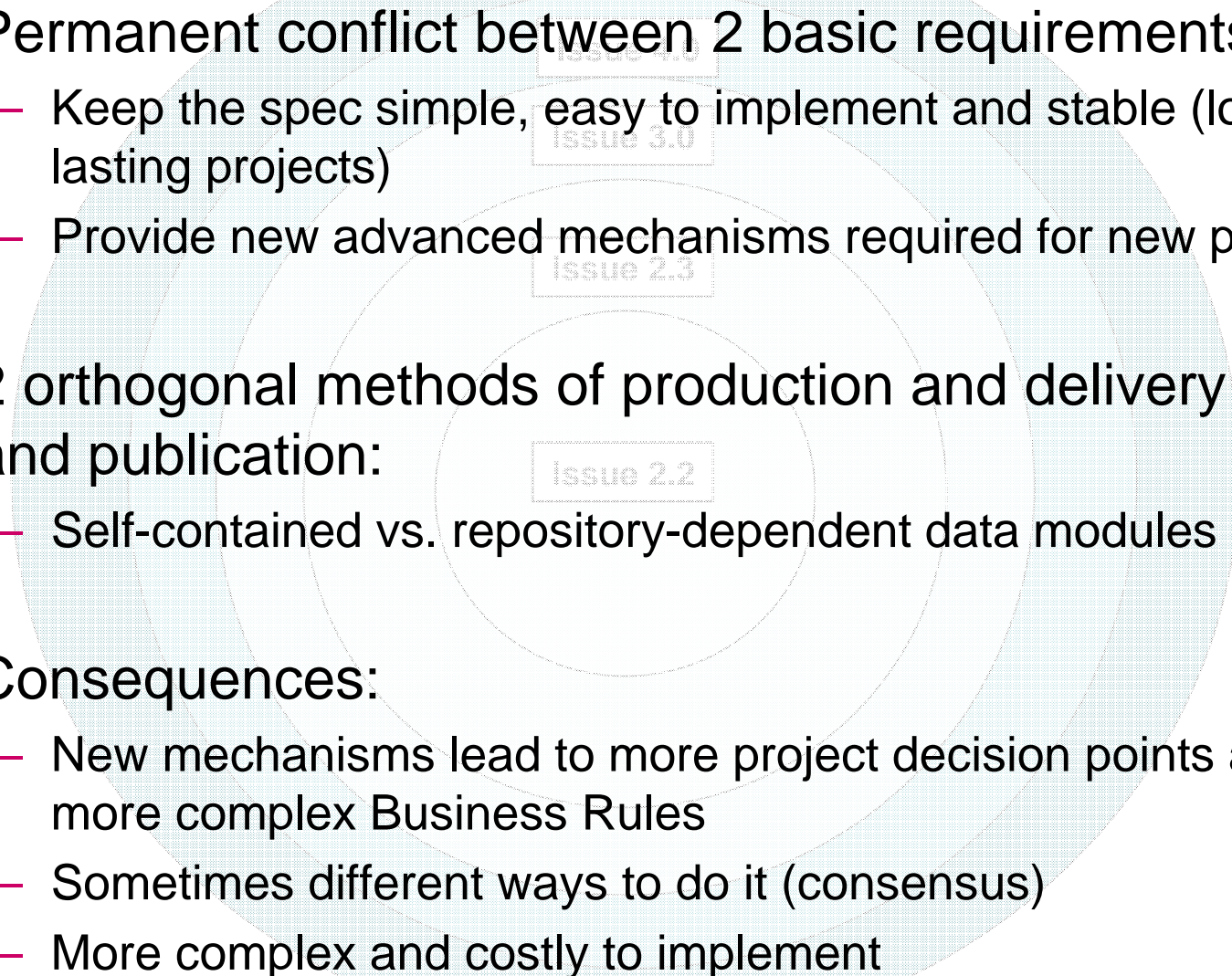
Controlled Content added

Wiring changes

New ACT DM

CCT and PCT changes

Specification Growth

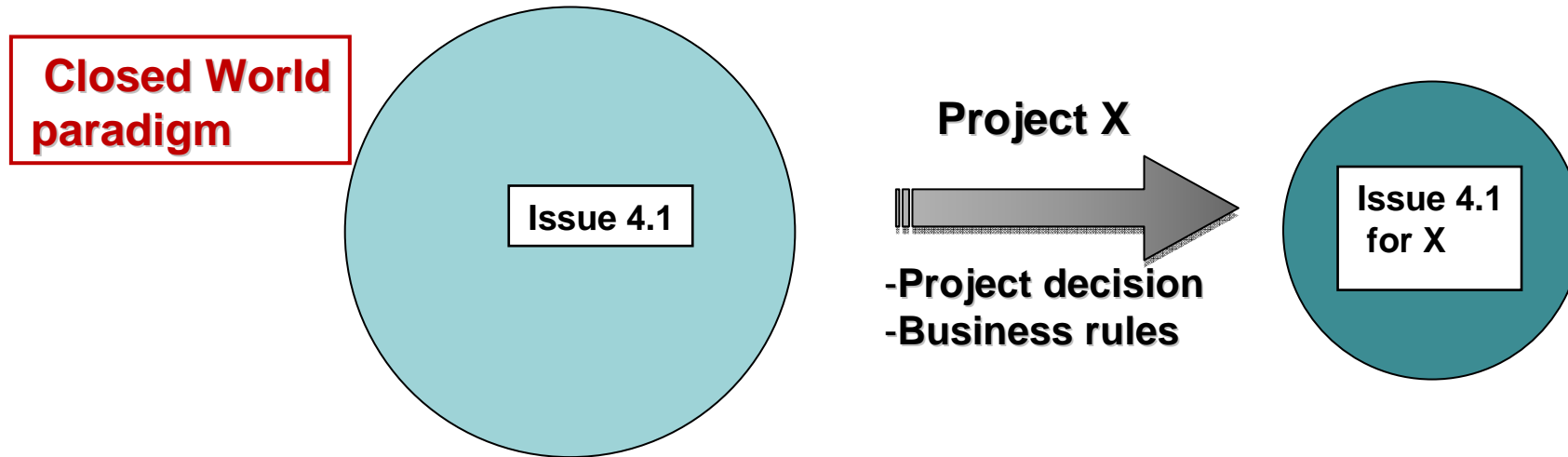
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- Permanent conflict between 2 basic requirements:
 - Keep the spec simple, easy to implement and stable (long lasting projects)
 - Provide new advanced mechanisms required for new projects
 - 2 orthogonal methods of production and delivery of DMs and publication:
 - Self-contained vs. repository-dependent data modules
 - Consequences:
 - 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

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Current Limitations

“Everything is in the spec...but optional by project decision”



- Evolutions often imply more complexity
 - ➔ Only one way to control growth and complexity => limit evolutions
- This means:
 - Limitation and slow evolution for new needs
 - A lot of (*unnecessary*) struggle and loss of energy

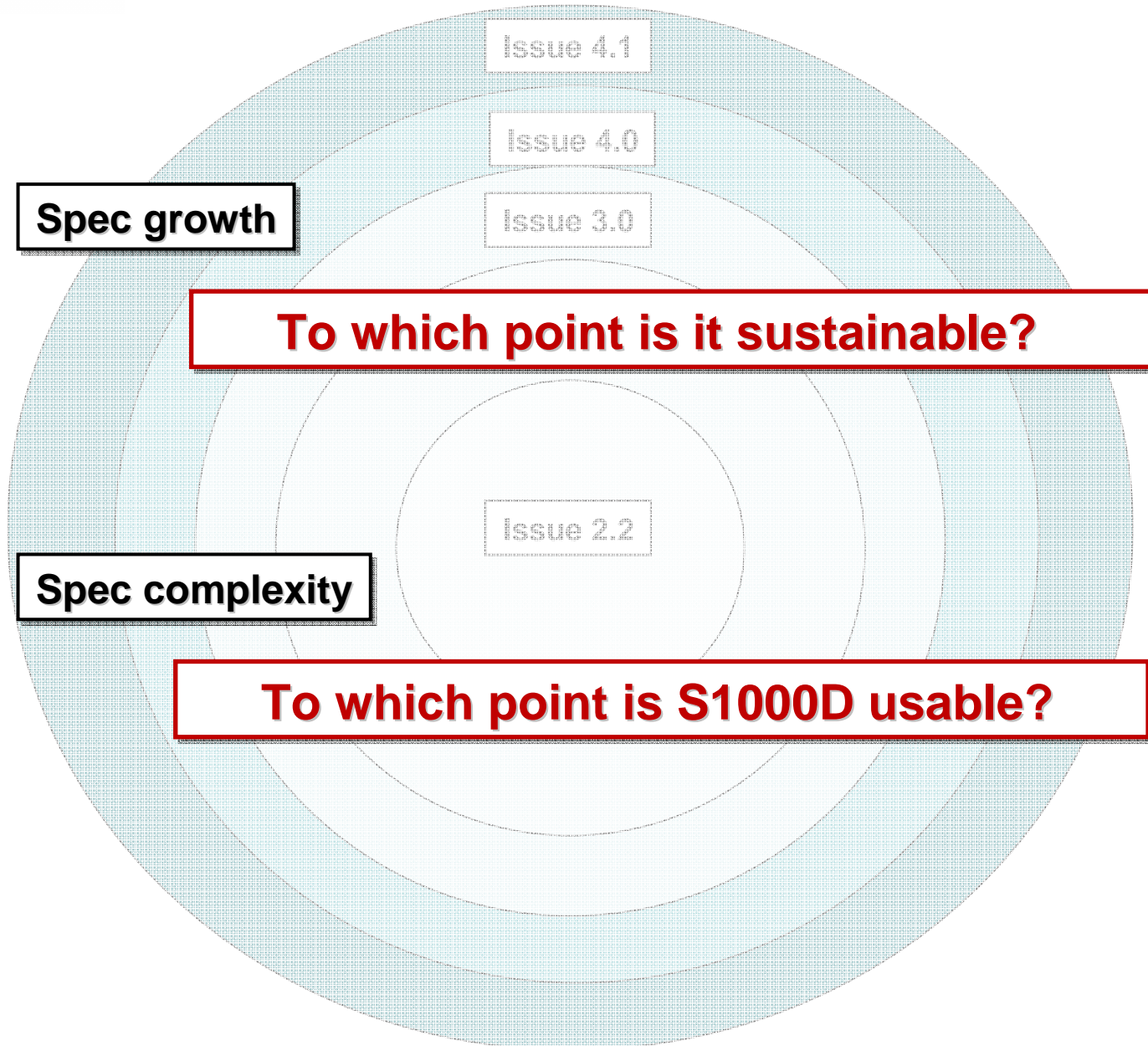


Current Limitations

- S1000D is complex to implement (many choices)
 - For project – what to take or not, and how to do it
 - For vendor – inconsistent customer requirements
 - For software vendor – possibly only partial coverage
- Difficult to evolve (limit evolutions)
 - How to integrate new needs?
 - How to integrate other standards from ASD, PLCS, SCORM, etc.?
 - How to manage the competition in the standardization world?
- Risk: proprietary add-ons for projects
 - The spec does not integrate on time what is needed for project



Long term questions



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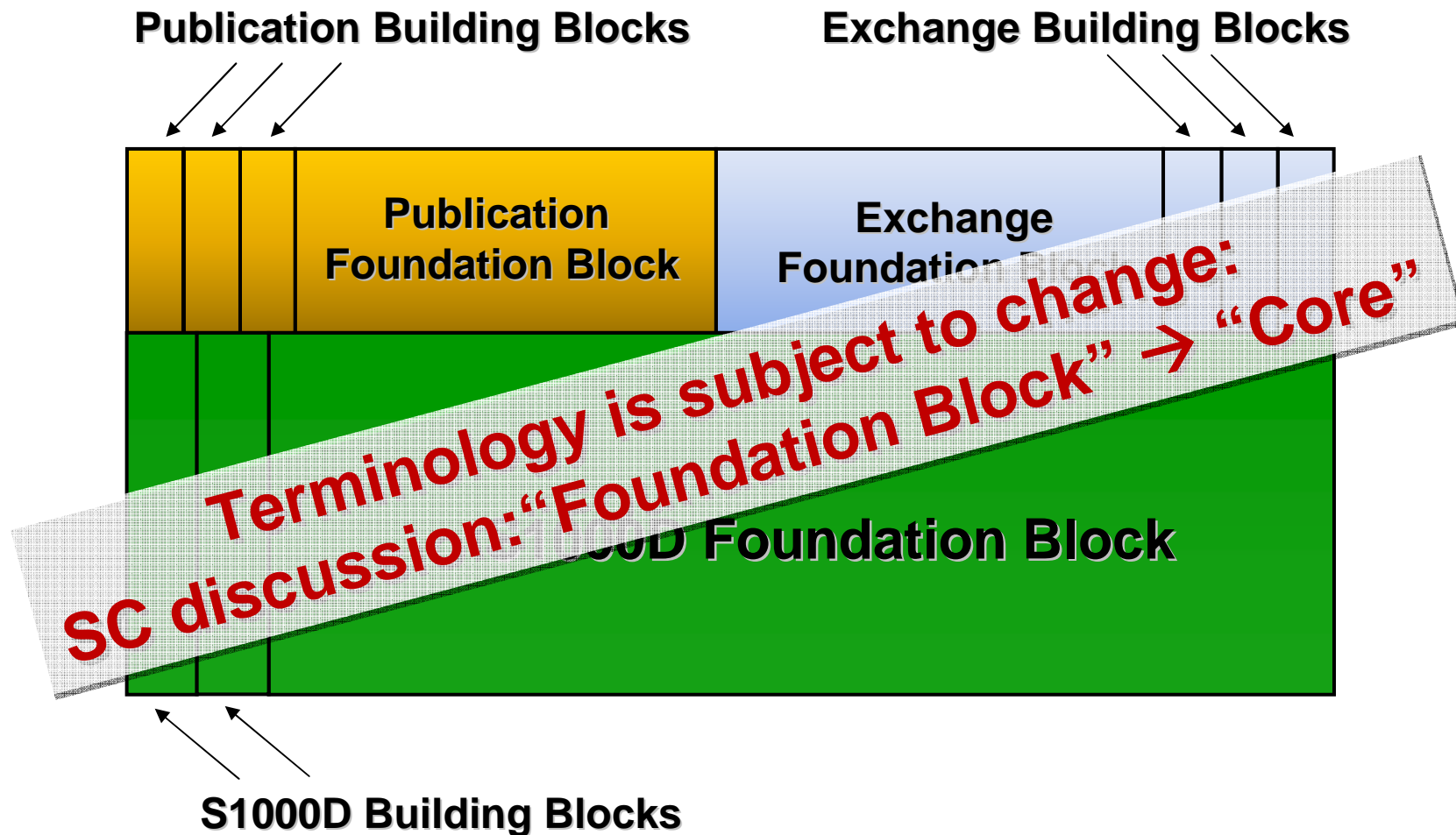
The Council Goals

The specification must:

- be agile
- be efficient
- be interoperable
- be data module centric
- be platform neutral
- have consistent data structures
- leverage other standards
- meet applicable regulatory requirements
- enable optimum reuse
- be based on a modular approach

The Council Goals

**A modular based specification
Foundations and optional building blocks**





The Council Goals

“To be based on a modular approach”

- The specification is comprised of foundations and optional building blocks.
- There must be no alternative solutions for the same business requirement
- There must not be similar methods for achieving the same business requirement
- Each of the optional building blocks can be added to the foundations singularly or in combination (extendable by modules)

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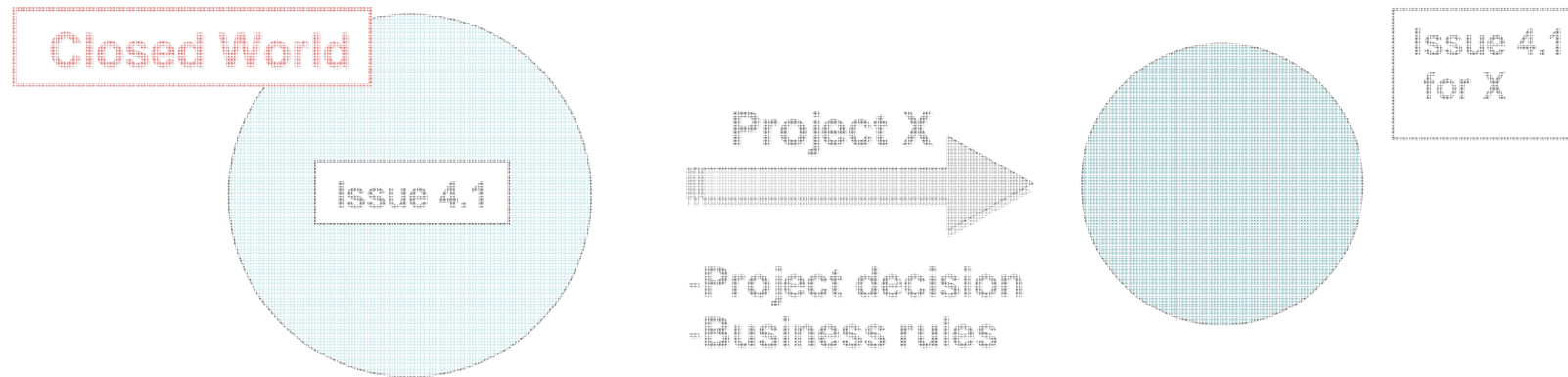
Solution

- Simple and powerful could be compatible:
Recognize that both requirements (keep it simple and spec growth) are valid and not orthogonal
- Change the way of handling spec evolutions
→ From a “Closed World” to an “Open World” paradigm
- Implement “Extensibility”
“In software engineering, extensibility is a system design principle where the implementation takes into consideration future growth. ...”
(Wikipedia definition)

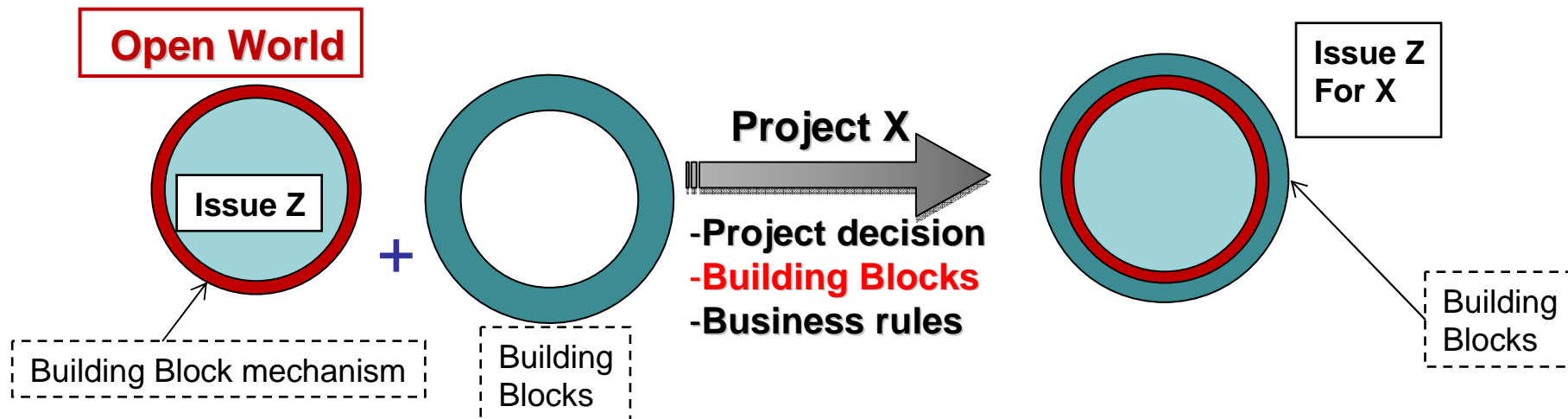


From a “Closed” to an “Open World”

Current paradigm: *Everything is core...but optional*



New paradigm: *If your need is not core, use a Building Block*





The “Open world” paradigm

- Software development works this way
 - Core standard tool with extension mechanism (plug-in)
- Standardisation
 - W3C identifies the “open world” Vs “closed world” issue in 1997
 - Principles and guidelines established in WebArch
 - For current XML technologies: Partial implementation in XSD 1.1 Schema
 - For next generation protocol (Semantic Web)
 - Enforced by some specifications
 - XMPP eXtensible Messaging and Presence Protocol
 - PLCS reference data mechanism



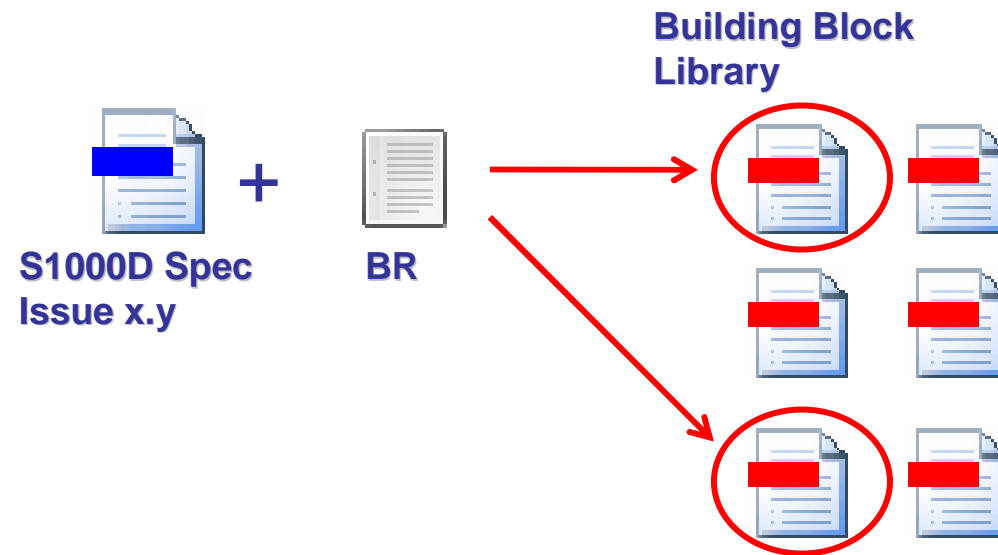
Benefits

- Foundation of the spec is more stable and simple
 - Minimize & simplify business rules decision points
 - Software implementation could be more standard compliant
- Agile Building Block mechanism to implement new needs in S1000D



What does it mean for a project?

- A project
 - Chooses an S1000D issue
 - Defines a collection of Building Blocks to use (as part of their business rules)
 - Specifies the remaining business rules





Can a project do whatever it wants?

- No,
 - The spec should provide a standard Building Block mechanism
 - Compatibility of Building Blocks with Foundation Blocks has to be defined
- CPF process needs to be adapted
 - How to decide if a CPF concerns Foundation Blocks or not
 - Specific simplified process to develop and validate Building Blocks
- Questions:
 - Could mature Building Blocks move to Foundation Blocks?
 - Differentiate between Building Blocks defined in S1000D and proprietary Building Blocks (using the standard Building Block mechanism)?

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Possible Implementation Steps

1. Limit spec growth (with next S1000D issue)
 - Agree on definitions of Foundation Block and Building Block
 - Establish new process and Building Block mechanism
 - Handle all new CPFs in accordance with the new process

2. Reorganize S1000D into Foundation Blocks and Building Blocks
 - Establish a roadmap
 - Continuous process → several spec issues?
 - Identify what is: Done with alternate solutions / Used by single projects only / Not used at all ...
 - Evaluate what should stay as Foundation Block or if it should lead to a Building Block



Next Steps: SMTT

- S1000D Modularization Task Team (SMTT) established at SC09.00 in Stockholm (chair: Ryan Augsburger)
- Statement of Work:
To deliver a white paper that defines how the specification needs to be modularized that is based on the concepts devised by the Council
(Vision/Mission/Goal)
- The work of the SMTT will not be allowed to affect the delivery schedule of Issue 4.1

