Getting acquainted with S1000D

Tutorial

S1000D User Forum 2013
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Svante Ericsson

Svante Ericsson

- Consultant at Corena since 2009
- Located in Stockholm
- Academic background in mathematics & computer sience
- Has worked for the Swedish defense and defense industries since 1991
- Has worked with standardisation around technical publications for 20 years (CALS, SGML, etc)
- Has been closly involved in S1000D for 10 years
- Was chair/co-chair of S1000D EPWG for some 6 years
- Active member of several S1000D bodies, eg SC

Topics – Agenda

Background and overview

- *S1000D in a few words ...*
- *A brief history*
- *Who are running it?*
- *Who are using it?*
- *S1000D in its context*
- *The book ...*

Topics – Agenda

Essential terms and concepts

- *The data module concept*
- *The idea of a Common Source Data Base*
- *Various types of data modules*
- *Information sets and publications*
- *Applicability*
- *Externalization*
- *The S1000D publication process and supporting objects*

Topics – Agenda

Publishing

- *Chap 6.2 – page oriented output*
- *Chap 6.3 – IETP output*
- *Filtering and customer/user adapted output*
- *The data exchange mechanism*

Topics – Agenda

Implementing S1000D

- *Deciding on an Issue*
- *Tailoring, Business Rules and the BREX data module*
- *The XML Schemas*
- *A few implementation notes ...*
- *www.s1000d.org*

Background and overview

- S1000D in a few words ...
- A brief history
- Who are running it?
- Who are using it?
- S1000D in its context
- A first glance ...

International specification for technical publications

utilizing
a common source database

S1000D ...

- is a technical publication (data) specification for standardized documentation of any civil or military vehicle or equipment
- lays out a process for production, maintenance and presentation of technical publications in a life-cycle perspective
- provides a principle concept for structuring of complex information regarding a “Product”

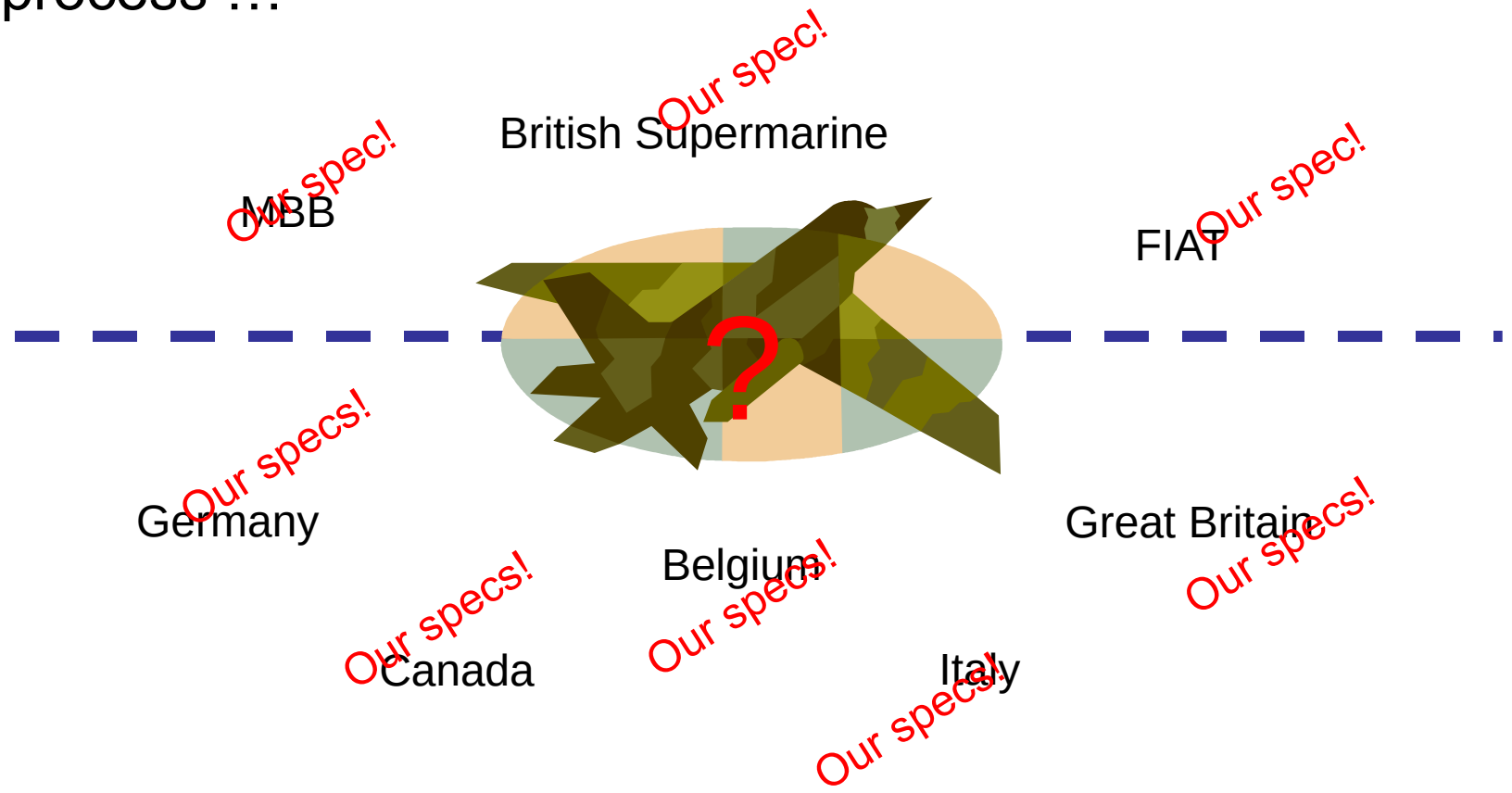
S1000D ...

- is an internationally recognized concept
  – if you are using S1000D there's always someone to ask
- has been developed by the industry side and the customer/user side, in close cooperation, to serve both in the best possible way
  – it is most likely that your needs are covered
- is a proven concept for producing, managing and delivering you technical publications
  – the risk for nasty surprises is very, very limited

A *brief* history

Large international projects such as Eurofighter…

and the questions appeared when starting tech. pub. process …



1984

- Seven ASD countries and MoD customers started the development of an international Specification for Technical Publications to harmonise all their national and international specs into a "Western" specification based on ATA Spec 100.

June 1989

- First release signed

Le Bourget, June 16th, 1989

Air Commodore O.J. TRUELOVE
for Chief Engineer
Royal Air Force

Generalleutnant G. HERTEL
Kommandierender General
Luftwaffenunterstützungskommando

Brigadergeneral A. WAGSTROM
Technical Director
Defence Materiel Administration

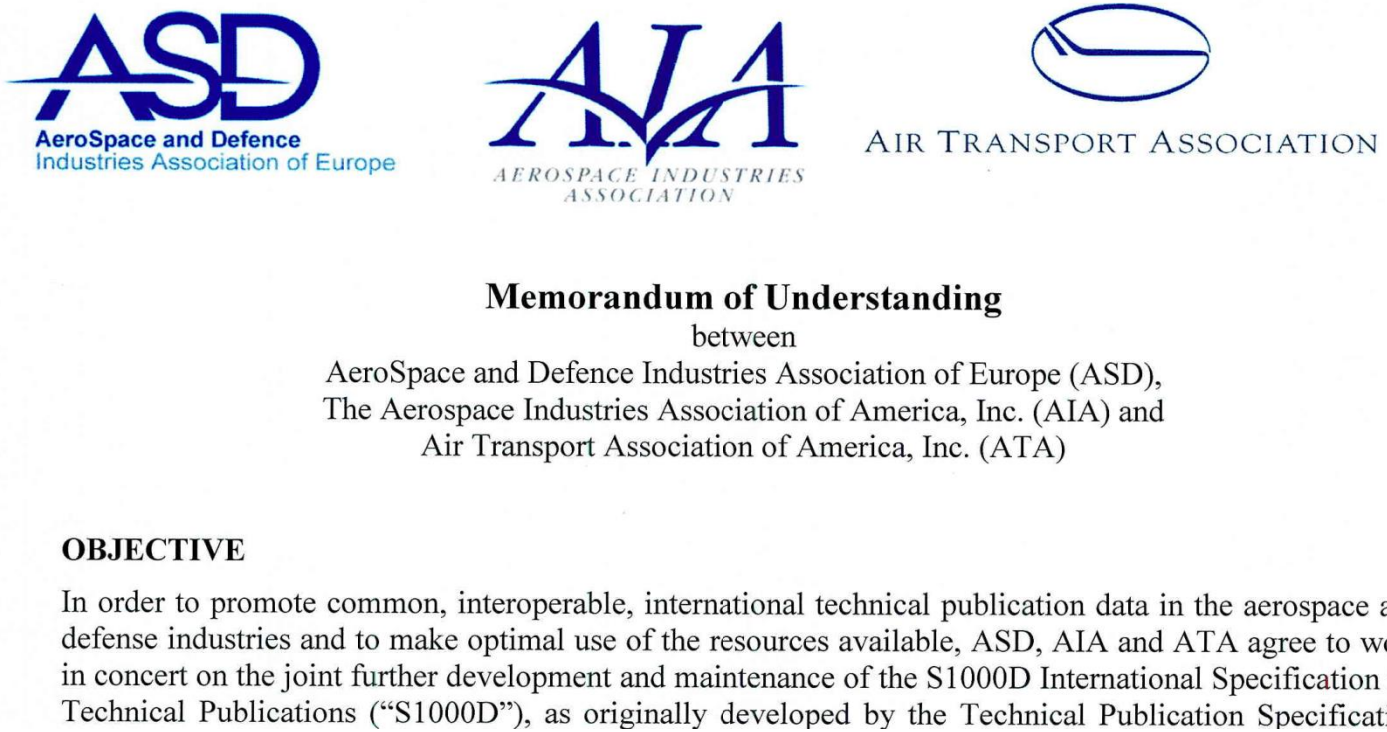
Teniente General D.E. RECUENCO
Jefe del Mando de Material del Ejército del Aire

Mr. H. MARTRE
President Association Européenne des Constructeurs de Matériel Aérospatial

Who are running it?

2008

- MoU between ASD, AIA and A4A signed



Memorandum of Understanding

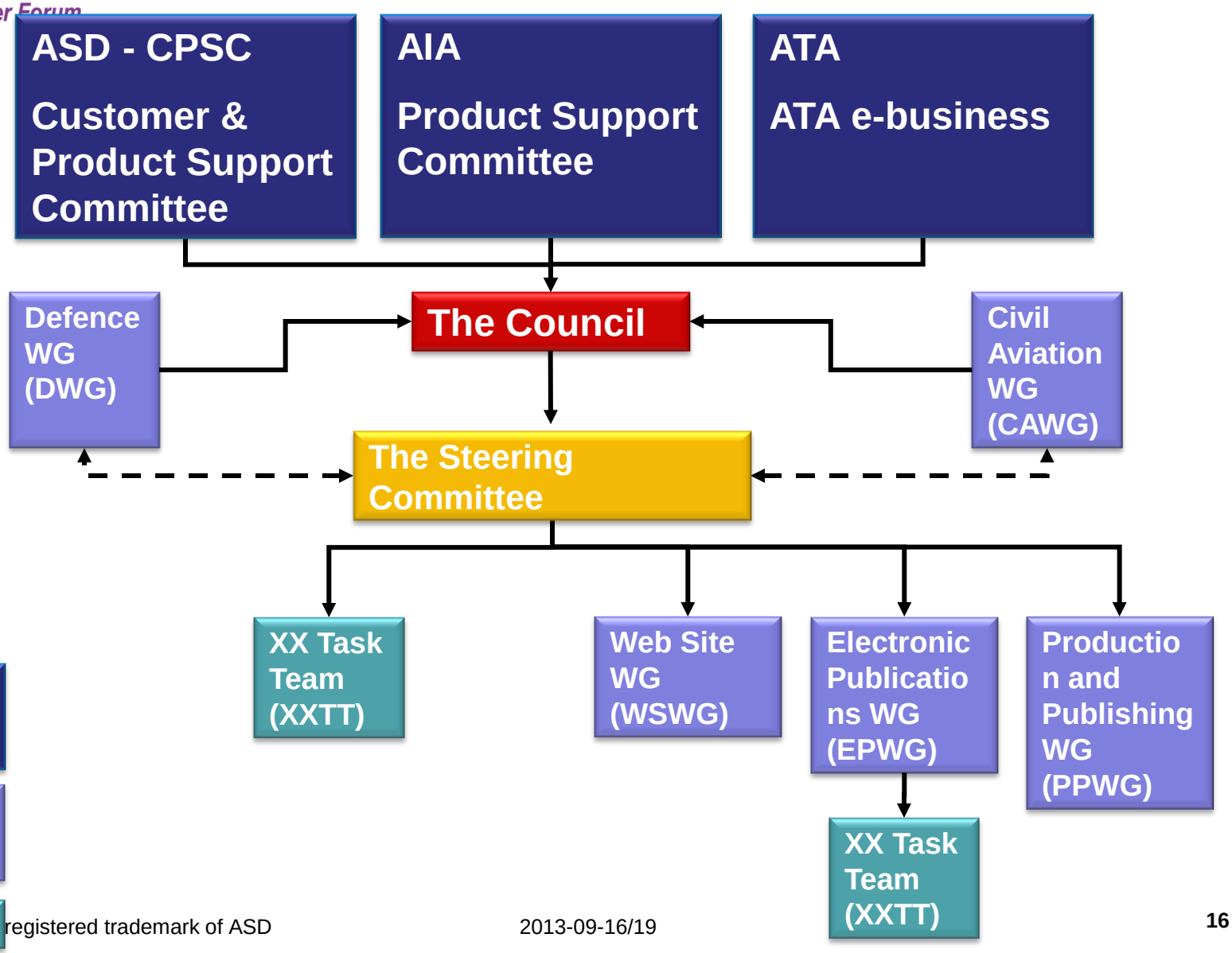
between

AeroSpace and Defence Industries Association of Europe (ASD),
The Aerospace Industries Association of America, Inc. (AIA) and
Air Transport Association of America, Inc. (ATA)

OBJECTIVE

In order to promote common, interoperable, international technical publication data in the aerospace and defense industries and to make optimal use of the resources available, ASD, AIA and ATA agree to work in concert on the joint further development and maintenance of the S1000D International Specification for Technical Publications ("S1000D"), as originally developed by the Technical Publication Specification

Organizational structure



Who are using S1000D?

Key requirements for tech data

- No absolute requirement from FMV to use S1000D, however, a preference for a long time
- **All** new projects are using S1000D (since a number of years)
- Key requirements are:
  - PLCS (ISO 10303 / AP239)
  - SCORM

Swedish Forces

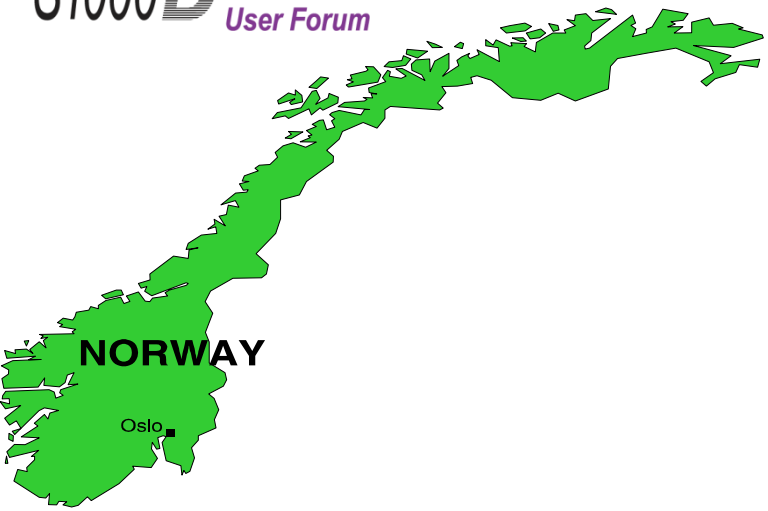
- Combat vehicle 90 Change 8
  - Swedish Defence
  - Finnish Defence
  - Swiss Army
  - The Netherlands Army

- JAS39 Gripen Issue 2.3

Swedish Forces

- RBS 15 Mk3/K130
  Missile Fire Control System
  Change 9

- HKP 14
  “Nordic” helicopter
  NH 90


NORWAY
Oslo

Norwegian Forces

- Coastguard – SVALBARD Class
- Documentation being converted to S1000D Issue 2.1

Norwegian Forces

- M113 – Midlife upgrade
- All documentation planned to be authored in S1000D Issue 2.1


GERMANY

German Air Force

- Eurofighter/Typhoon Change 8

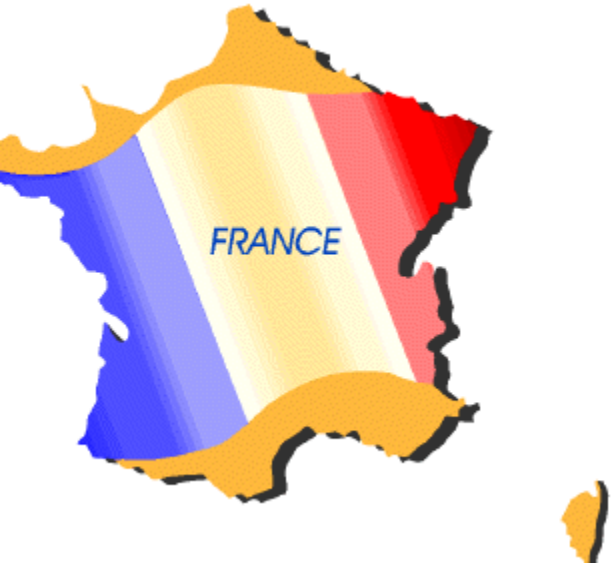
- NH 90 Helicopter Change 8

German Navy/Army

- Submarine 212 A Issue 2.2

- Tank Leopard 2 Change 9

… and another 100+ !!!!


FRANCE

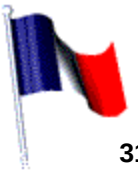
- RAFALE fighter - Dassault-Aviation

- TIGER helicopter - Eurocopter

- Missile projects, such as
  - AA APACHE
  - AB MICA
  - EG SCALP
  - PA ASMPA
  - 70 STORMA SHADOW
  - 77 ASRAAM
  - ME METEOR
  - LM Missile ramp 2066 for Mirage 2000
  - BV BREVEL weapon system (UCAV on land vehicle)
  - many, many more

Land programs

- EFA — Assault **Bridge** Equipment – CEF 7.000 Dms
- SPRAT — System for fast deployment of military bridges - CNIM
- MIDS-Terre — Network MIDS land vehicles and terminals
- MARTA — Battle field area tactical management **vehicles**
- CAESAR — Automatic **test bench** - Giat
- SM — **Meteo station** - Thales



Emerging programs

- A400M Transport aircraft
  - France
  - Germany
  - Spain
  - Belgium
  - UK
  - Turkey

Will be based on Issue 4 (?)

Will be based on CAWG business rules


ITALY

Italy

- Eurofighter/Typhoon

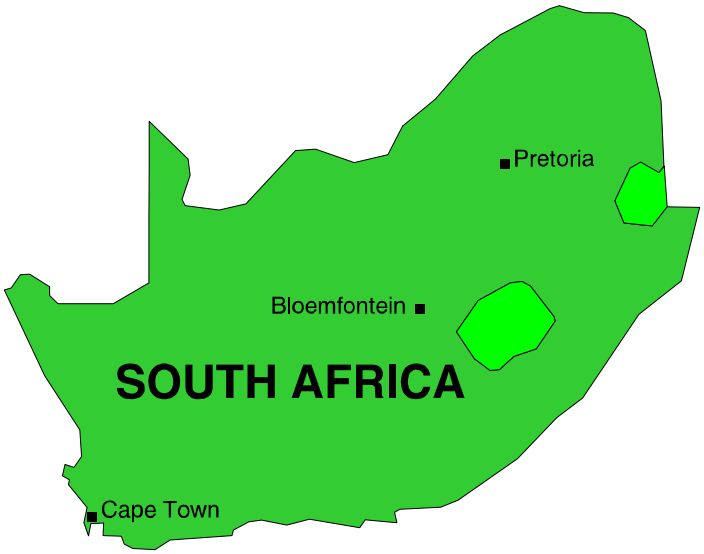
- NH90 Helicopter

Active participation in SC since 2004

Czech Republic

- Gripen Fighter — Issue 2.0
- Sojka III UAV — Issue 2.2.1

- Helicopter programs
- L159A/B Light combat A/C — Planned to go S1000D
- Armoured vehicle — Tender for S1000D


Pretoria
Bloemfontein
SOUTH AFRICA
Cape Town

South Africa - Defence

- Various major defence systems converted to S1000D
  - Oryx – Medium transport helicopter ATA to S1000D
  - Rooivalk - Combat support helicopter S1000D Ch 1.7
  - Agusta 109E S1000D
  - Hawk S1000D
  - Gripen S1000D Issue 2.0

South Africa - Commercial environment

- First major non-defence S1000D implementation for local South African Rail operator **locomotive** upgrade project.
  - S1000D Data module concept implemented for content reusability / maintainability.
  - DMRL/DML compilation and DM Code allocation required major effort.
  - Most equipment could be fitted into S1000D SNS categories.


GREAT
BRITAIN

United Kingdom Armed Forces

• Eurofighter/Typhoon	Change 8
• Nimrod MRA4	Change 8
• RTM322 – Engine	Change 6/8
• Apache	Change 6
• NH90	Change 8
• EH101	Change 6
• Chinook	Change 6
• Gnome - Engine	Change 8
• BR710 – Engine Nimrod	Change 8
• EJ200 – Engine Eurofighter	Change 8
• Merlin – Helicopter	Change 6

United Kingdom Armed Forces

• Bowman radio system	Change 8
• CASSOM – Missile system	Change 7
• Type 45 Frigate	Change 9
• Astute – Submarine	Change 8
• All Terrain Vehicle	Change 8
• Boxer (UK produced)	Change 9
– The Netherlands	
– Germany	


Russia

- Tupolev TU-204/214

- Mil/Civil helicopter MI-17V5

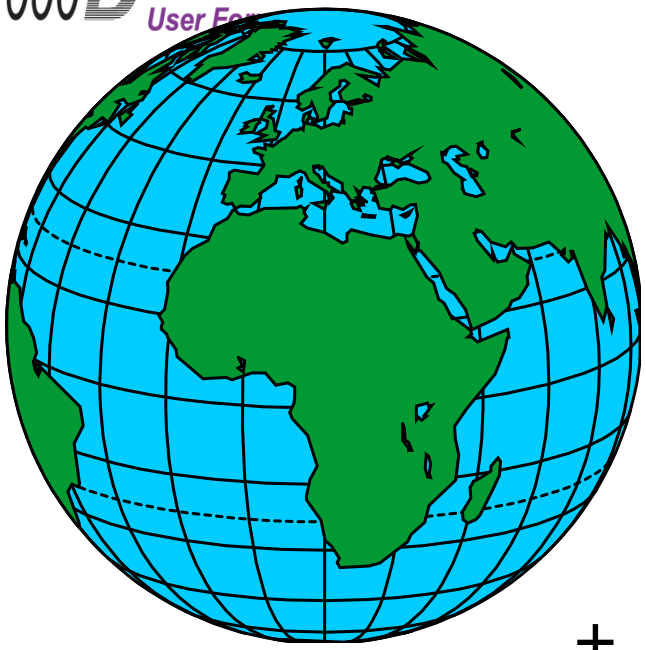
... and many others!

USA

- F117A stealth fighter

- Boeing 787 Dreamliner

- ... many, many more



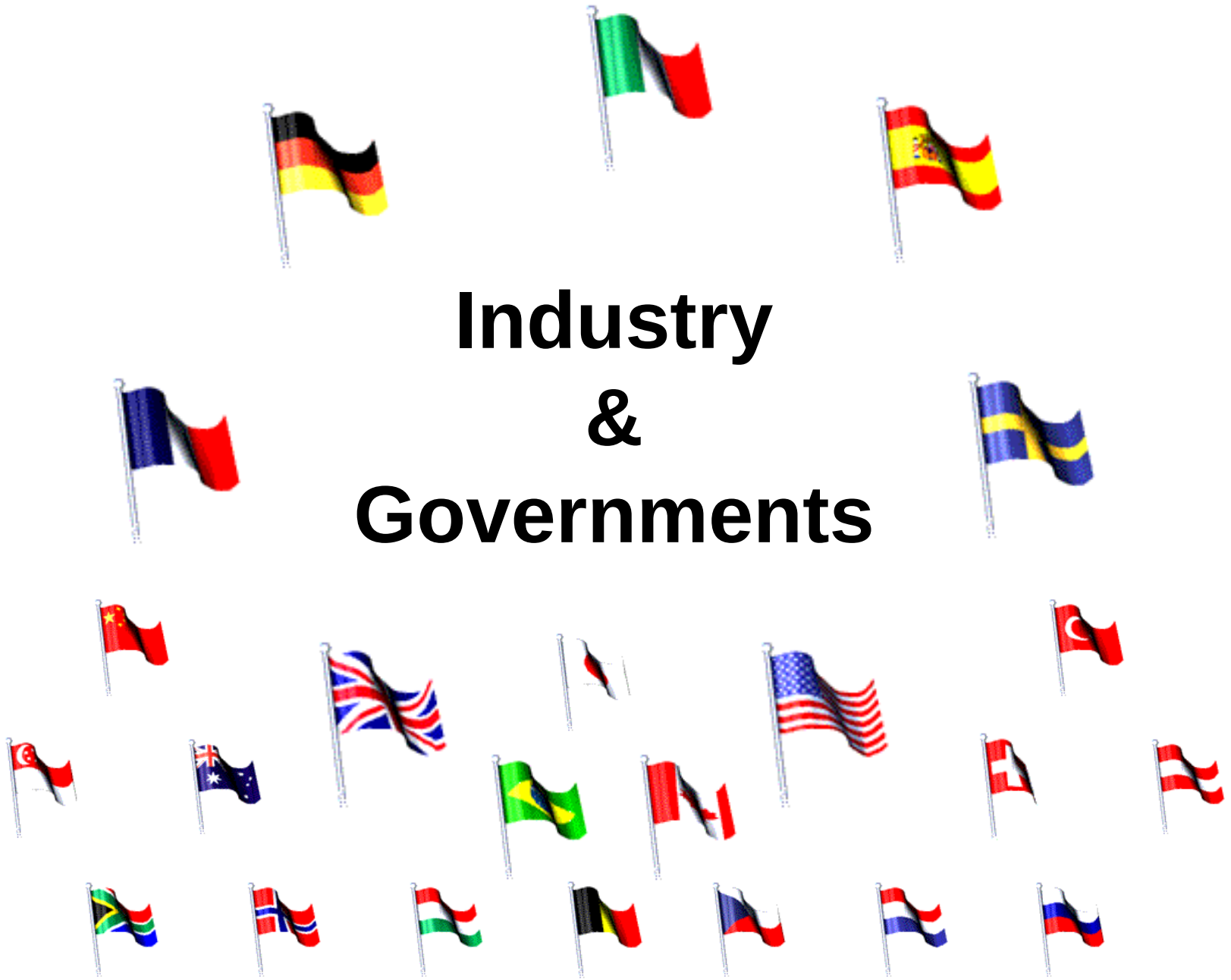
+ Japan, China, Australia
... simply, worldwide!

Shipping industry

- Shipdex foundation
  - 7 companies
- 2007 decision to develop a common standard
  - Problems with varying format/quality of contractor/subcontractor data
- Driven by SpecTec Group
- 2009 the Shipdex specification –
  the shipping industry business rules for applying S1000D in their business area

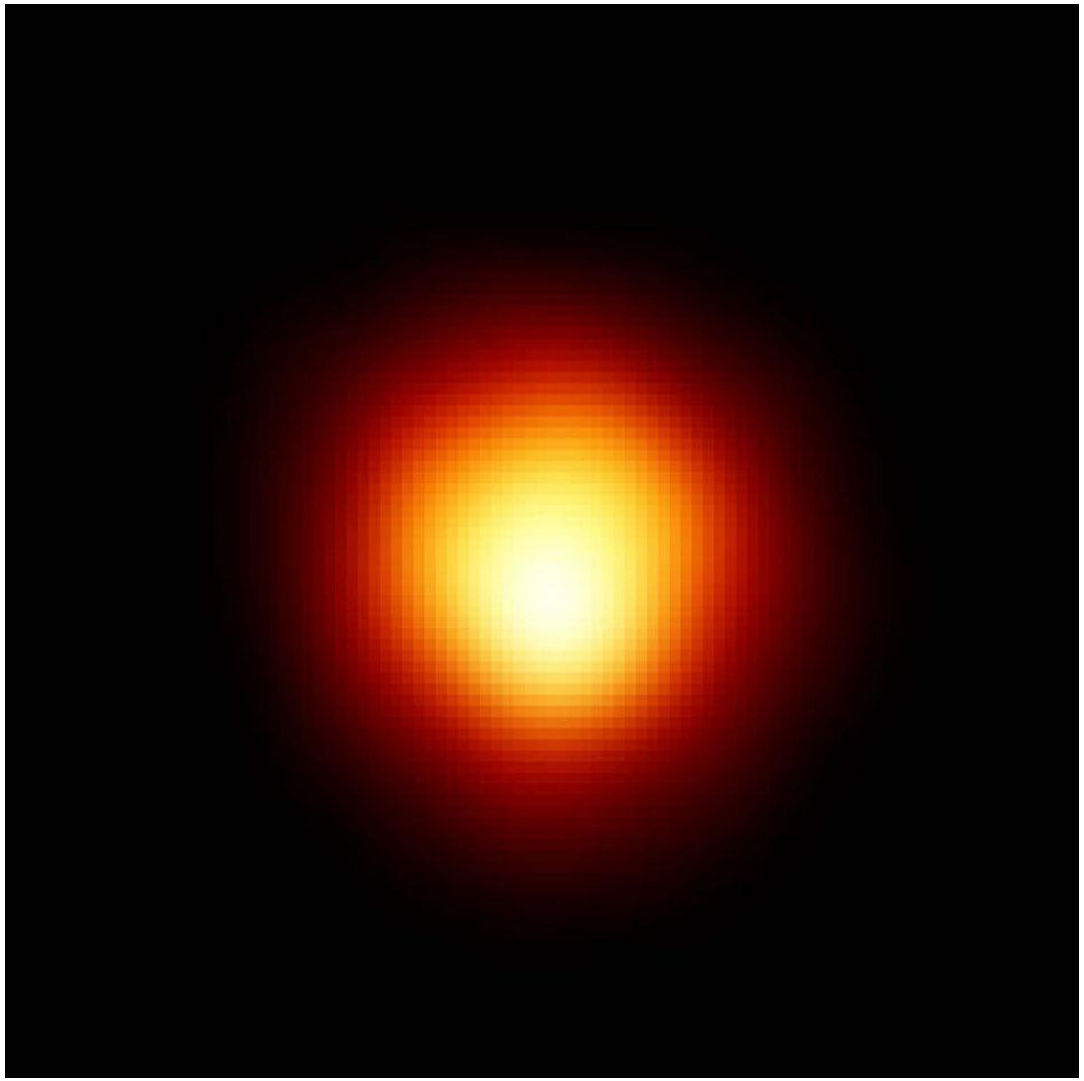
Other industry sectors to come ...

- Rail transport sector (Raildex)
- Energy sector
- Process industry in general ...?

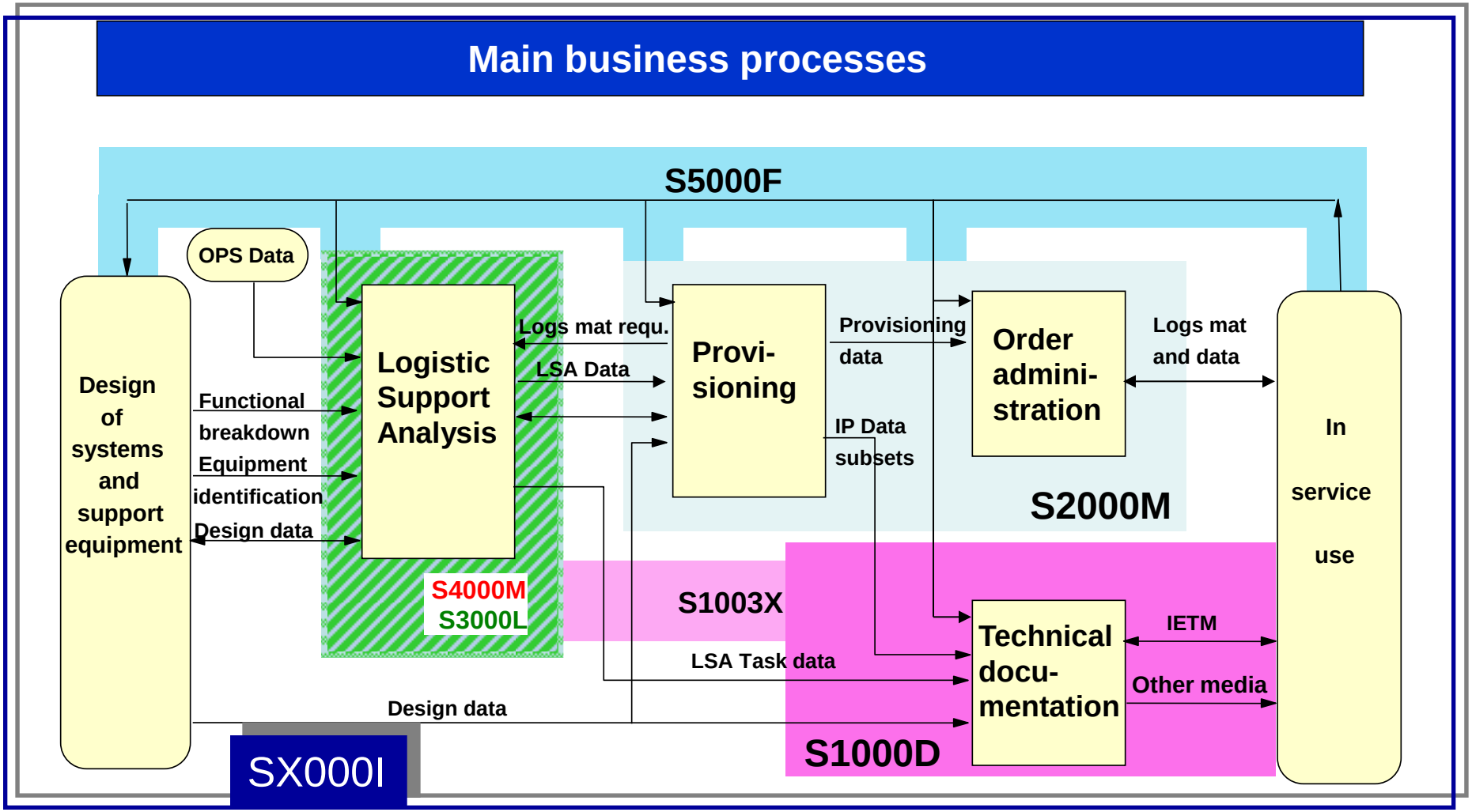


Industry & Governments

... and why not ...?



S1000D in its context



The book …

The specification contains 9 chapters and many subchaps

- Chap 1 Introduction to the specification
- Chap 2 Documentation process
- Chap 3 Information generation
- Chap 4 Information management
- Chap 5 Information sets and publications
- Chap 6 Information presentation/use
- Chap 7 Information processing
- Chap 8 Standard numbering systems, information codes and learn codes
- Chap 9 Terms and data dictionary

The book chapters …

Chapters have similar structures

- General
  – scope and limitations
- Chapter matter
  – describes the matter the chapter concerns
- ~~Business rules decisions~~
  – ~~summarizes the decisions required~~
- Markup examples
  – provides examples of markup in connection to the chapter matter

In 4.1 this info is found in Chap 2.5.3

S1000D is based on international standards

- ISO – codes, info formats, etc
- W3C – web related standards (xml, xsl, …)
- ATA – graphics

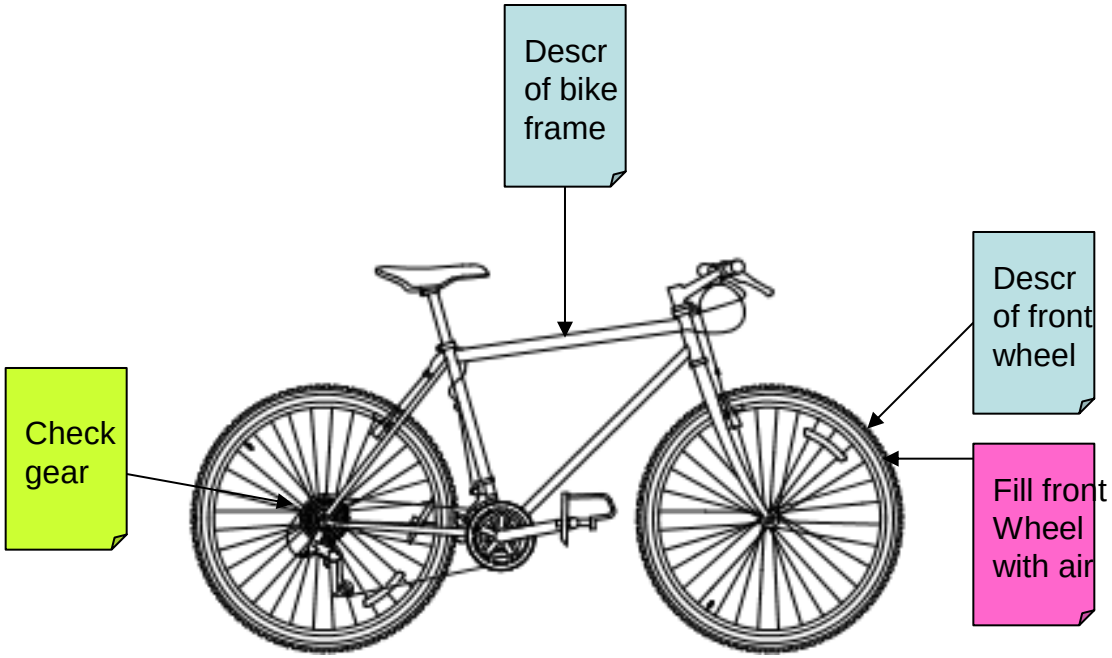
Essential terms/concepts

Essential terms/concepts

- The data module concept
- The idea of a Common Source Data Base
- Various types of data modules
- Publications and information sets
- Applicability
- Externalization
- The S1000D publication process and supporting objects

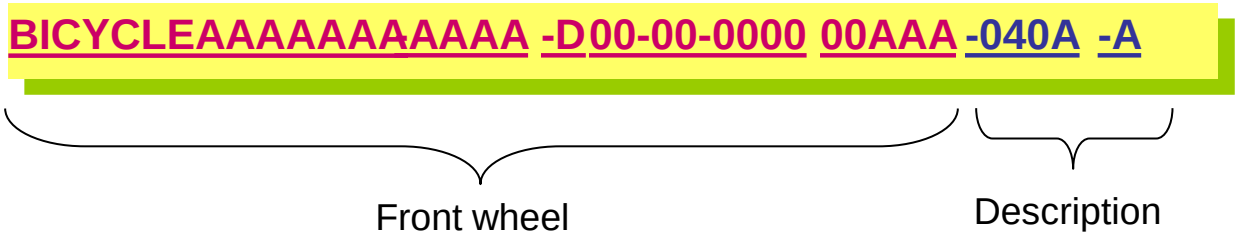
The data module concept

- Data module - DM
  - A stand alone information unit conveying a particular type of information about some specific part of Product



The data module concept

- Data module - DM
  - Identification based on the ***Data Module Code*** - DMC
    - A code to identify data modules and to facilitate storing and retrieving them from a CSDB



  - Produced in XML according to specific Schemas, and in such a form that it could be stored in and retrieved from a Common Source DataBase by the data module code as the identifier

The Data Module Code helps us keep track of the modules:

…	Product	Object in product	Type of info	…

Eg
- Gripen
- X2000

Eg
- Wing
- Water tank

Eg
- Clean
- Inspect

The core of the Data Module Code is a 17- thru 41-character code to identify a data module and to facilitate storing and retrieving them from a CSDB. **The code is part of, <u>but not all</u>, the DM identification!**

The Data Module Code helps us keep track of the modules:

…	Product	Object in product	Type of info	…

Model identifier code (MI) – must be registered with NSPA.
Essential to ensure globally unique identities!

The Data Module Code helps us keep track of the modules:

…	Product	Object in product	Type of info	…

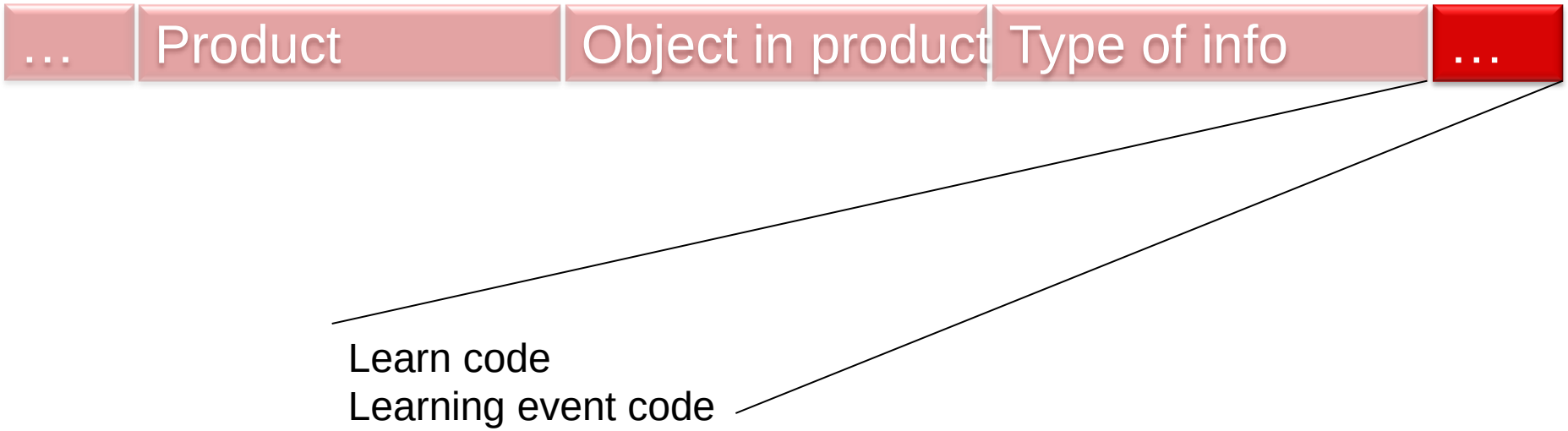
System difference code (SDC) – major configurations
Standard numbering system (SNS) – hierarchical breakdown
A disassembly code

The Data Module Code helps us keep track of the modules:

…	Product	Object in product	Type of info	…

Information code(IC) – what type of information is this?
Item location code (ILC) – the ”situation” in focus

The Data Module Code helps us keep track of the modules:



The entire data module identification is comprised of

- Data module code, optionally including
  - the initial extension
  - and/or learn coding at the end
- Issue numbering
  - Issue number (published issue)
  - Inwork number
- Language designation
  - Language code
  - Country code

Information codes

The *information codes* are organized in primary groups

- 000 Function, data for plans and description
- 100 Operation
- 200 Servicing
- 300 Examinations, tests and checks
- 400 Fault report and isolation procedures
- 500 Disconnect, remove and disassemble procedures
- 600 Repairs and locally make procedures and data
- 700 Assemble, install and connect procedures
- 800 Storage procedures and data
- 900 Miscellaneous

Why modularize?

A successful modularization will

- Support collaborative authoring
- Provide maintainable information
- Enable flexible publishing

The SNS options

S1000D mentions three options regarding SNS

- Maintained SNS
- Example SNS
- Specify your own specialized SNS

Maintained SNS

- Generic
- Support and training equipment
- Ordnance
- General communications
- Air vehicle, engines and equipment
- Tactical missiles
- General surface vehicles
- General sea vehicles

Example from ”General sea vehicles”

- A0 Propulsion, General
- B0 Structure, General
- C0 Armaments, General
- D0 Electrical power, General
- E0 Communications, General
- F0 Navigation, General
- G0 Surveillance, General
- H0 Steering, General
- J0 Ventilation and air conditioning, General
- K0 Hydraulics and pneumatics, General
- L0 Electronic systems, General
- M0 Auxiliary, General

Refer to Chap 8.2.8 for details!

Maintained SNS

Much used!

- Proven consistency
- Proven usability within the product domain
- Certain levels are already set
- Must be filled out with the product details

It is a long term engagement ...

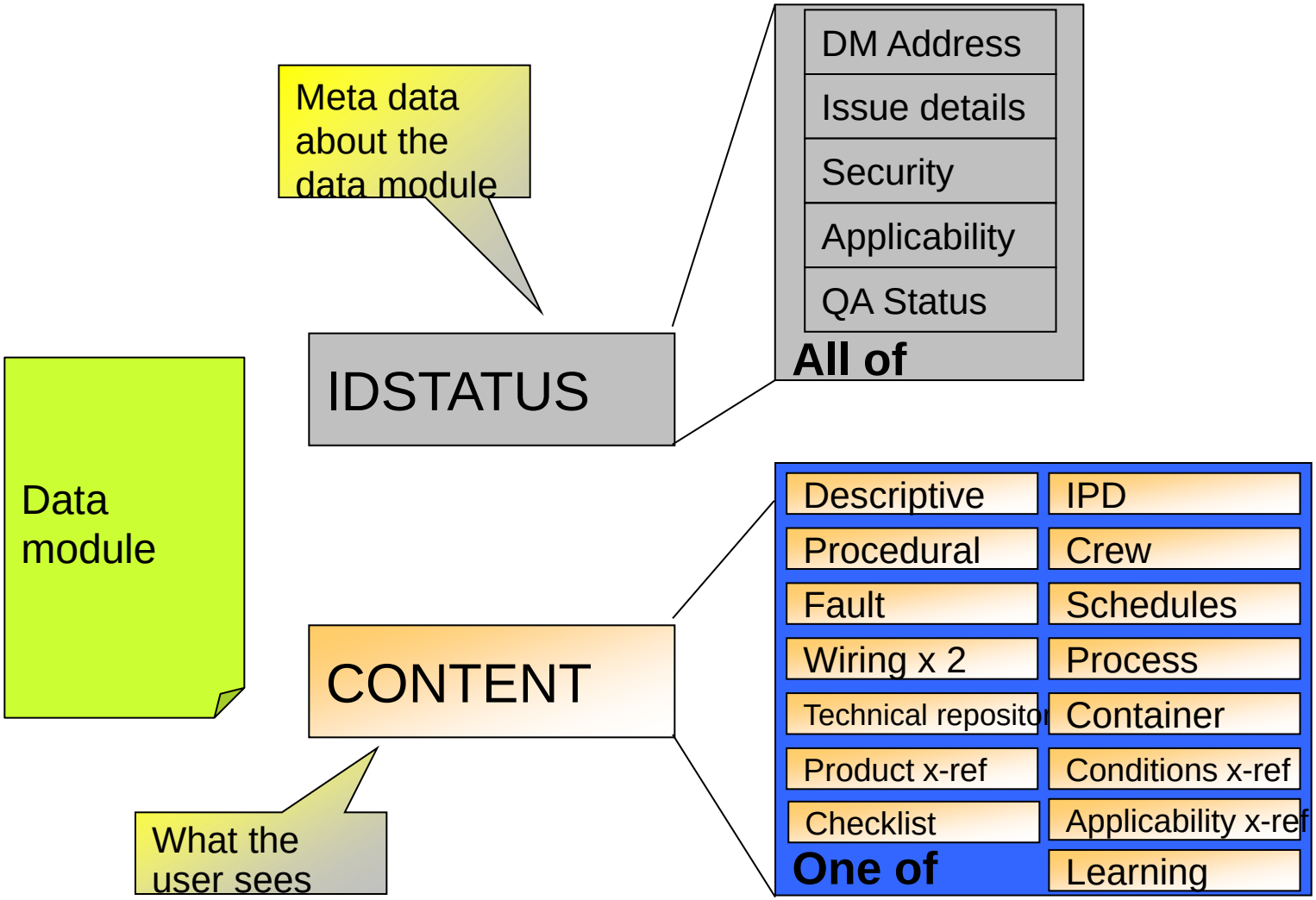
- As a product producer you will live with your CSDB for several decades. Therefore, the CSDB must lend itself to all kinds of changes,
  eg use profile and environment

To identify the breakdown objects

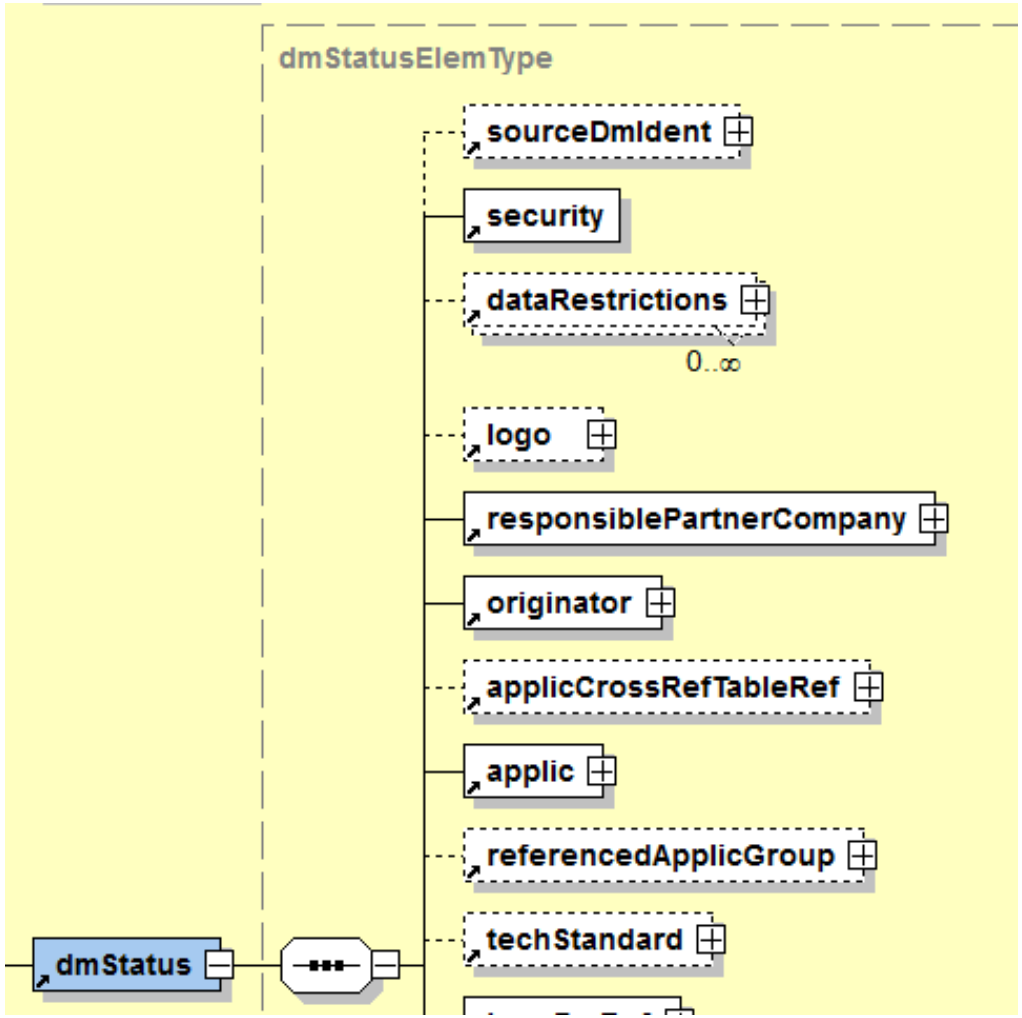
Multi-dimensional space:

- Physical structure
- Functional structure
- Maintenance needs
- Maintenance concept
- Operational conditions
- .... !!!

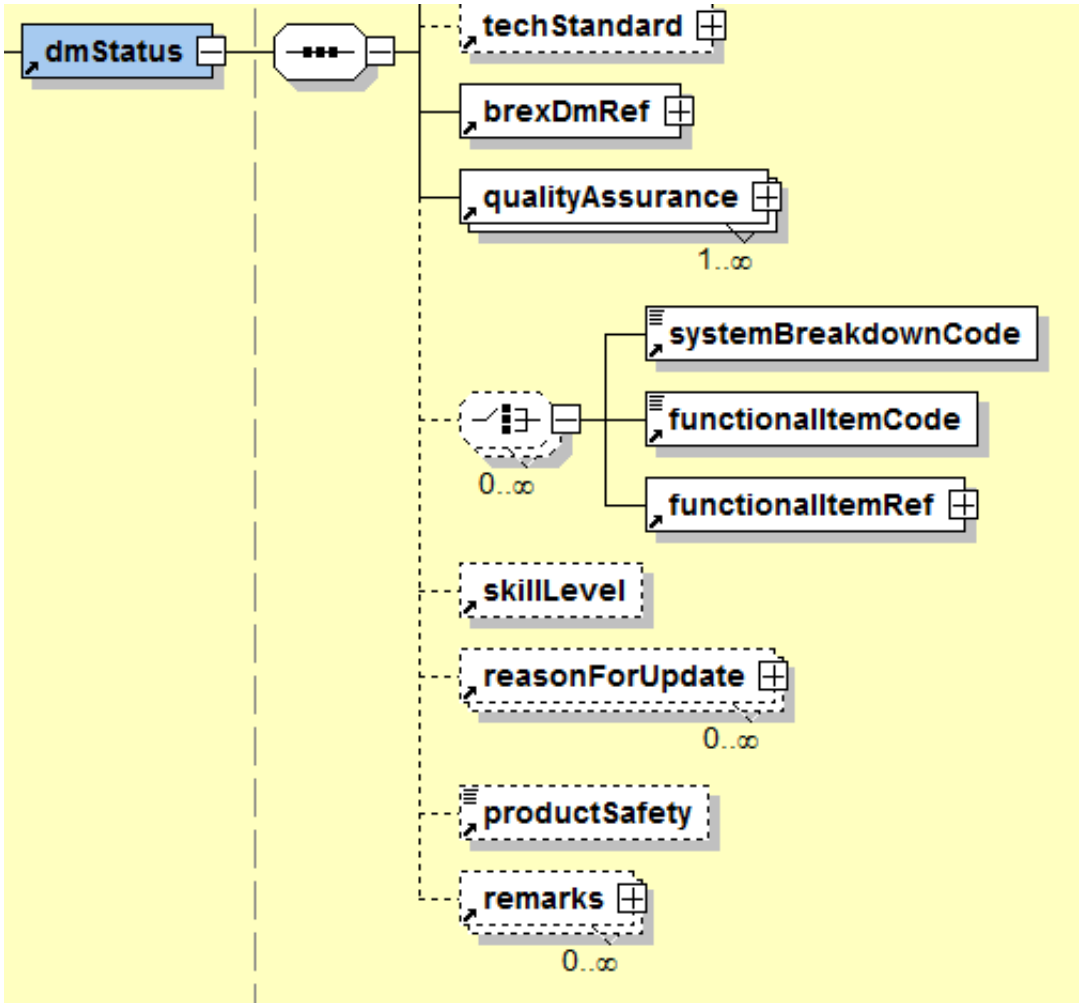
The data module



The data module metadata



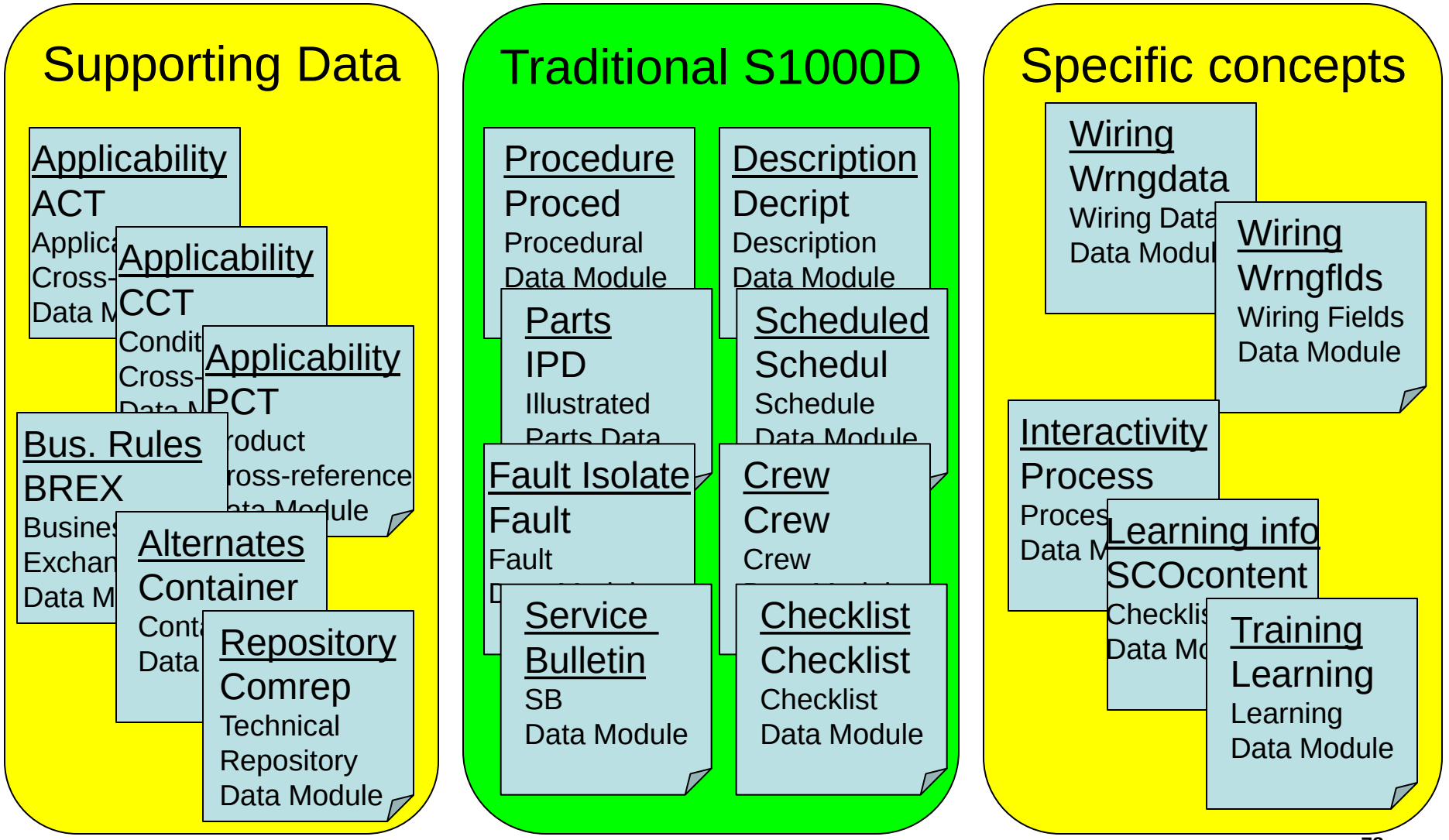
- The data module status part provides information about the status of the data module
- The status section is contained within the element `<dmStatus>`, described in chapter 3.9.5.1 of the specification



- The data module status part provides information about the status of the data module
- The status section is contained within the element `<dmStatus>`, described in chapter 3.9.5.1 of the specification

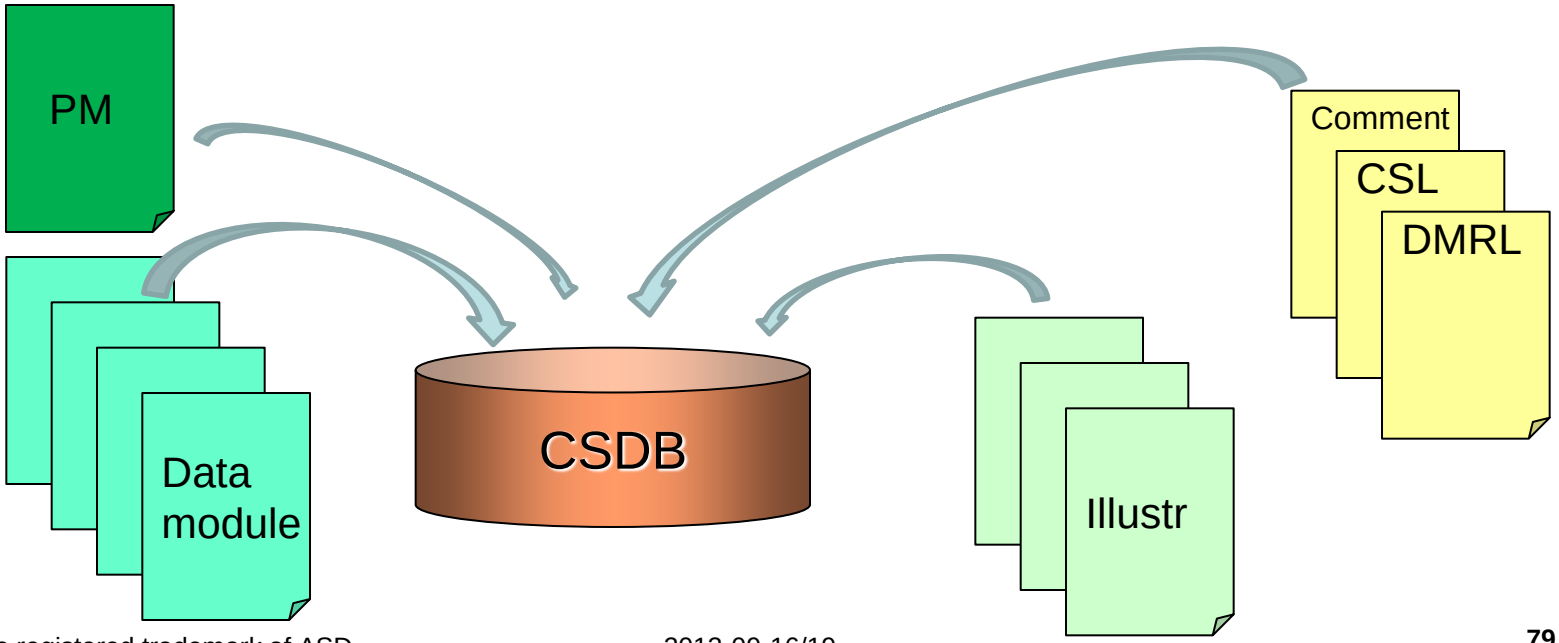
- Illustrations and multimedia objects
  - Data modules can include illustrations in CGM, TIFF, PDF, etc
    (aligned with ATA GREXCHANGE)
  - Multimedia objects in numerous formats
  - Identified by an Information Control Number - ICN
    - A code to identify a graphic or multimedia object and to facilitate storing and retrieving them from a CSDB
    - Two different formats

Various types of data modules



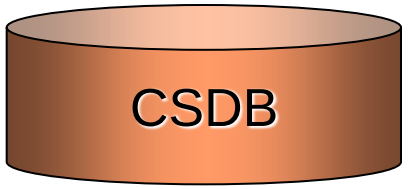
The Common Source DataBase

- CSDB
  - A virtual store for the objects produced by a project
    - data modules, graphics and multimedia objects
    - aggregation modules
    - administrative objects, eg Data Module Lists - DML



Objects in the CSDB:

- Represented using xml
- *Globally uniquely identified*
- May have different origins



Information sets and Publications

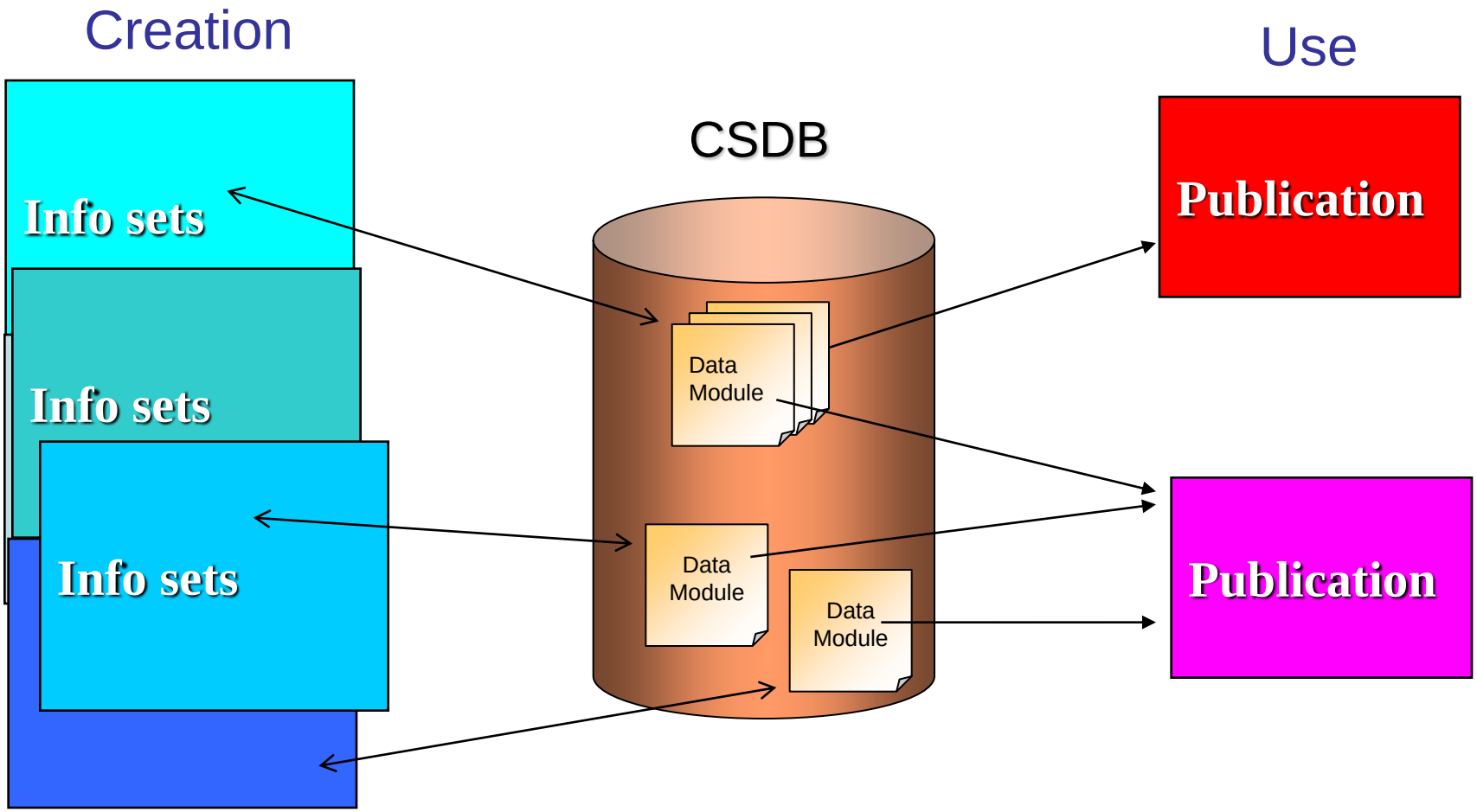
Information set

- The required information in a *defined scope and depth*
  […] in form of data modules managed in the CSDB.
  (A project data module requirements list lists all required data modules for that project)
- 20+ different info sets described in Chapter 5 (Iss 4.0.1).
  Examples
  - Crew/Operator information
  - Description and operation
  - Maintenance information
  - IPD
  - Service bulletins

Publication

- A compilation of data modules, which have been arranged to make a publication, checklist, guide, catalog etc on a particular subject, irrespective of the media of presentation (eg, paper or screen).
- A publication can be a subset of or equal to an information set, but it can also be a superset of several information sets or parts of them.
- A few defined publications are described by the specification. Examples
  - IPD
  - Component Maintenance
  - Aircrew
  - Land/sea publications
- By nature, something specified in accordance with project needs

Information set vs Publication



- Publication module - PM
  - Defines the content and structure of a publication by referencing/aggregating
    - Data modules
      (incl front matter and access illustrations data modules)
    - Publication modules
    - Legacy technical publications
  - Produced in XML according to the PM Schema
  - Identification by a *Publication Module Code* - PMC
    - A 14- thru 26-character code to identify a publication module and to facilitate storing and retrieving them from a CSDB

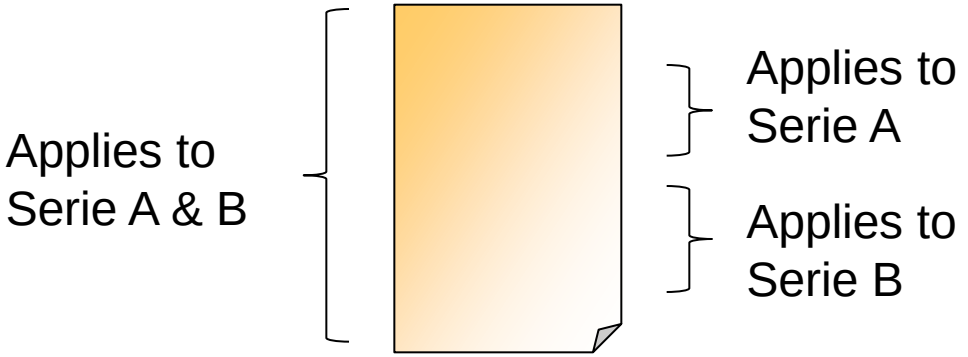
Similar to the PM ...

- SCORM content package module
  - Organizing information in a CSDB developed and/or selected for a learning product
  - By referencing
    - Data modules (incl entire modules or extracts)
    - Publication modules
    - Legacy technical publications
  - Produced in XML according to the SCPM Schema
  - Identification SCPM code based on PMC
    - A 14- thru 26-character code to identify a publication module and to facilitate storing and retrieving them from a CSDB

Applicability

Applicability

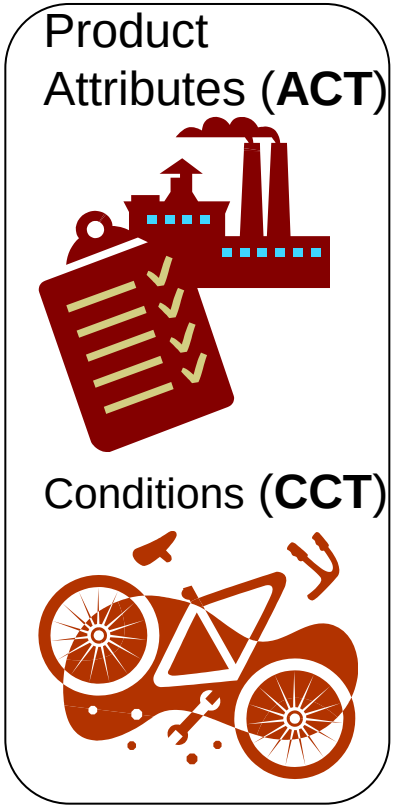
- Defines to which configuration(s) of the product/materiel, or to which other condition(s), the information is written
- Every data module must define its applicability
- Portions of a data module may have limited applicability as compared to the entire module



Applicability – the “new” approach

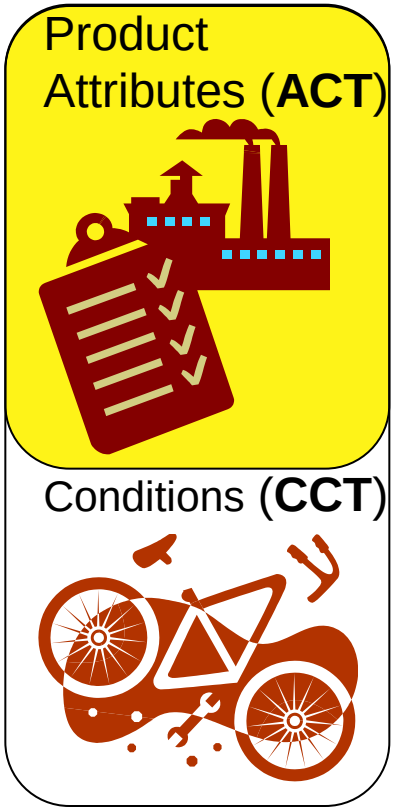
- Prior to Issue 3.0:
  - Specific fixed structure was used to specify values to a small set of product properties (model, version, etc)
  - Not so suitable for IETPs (no rules for computer interpretation)

- Issue 3.0 came with a completely new concept
  - Flexible framework where the project can choose the product properties and operational conditions to use for applicability
  - Computing rules are associated with the statement structure
  - A system where both the human and the computer can understand and act upon the applicability statement
  - Allows for filtering at publishing for delivery/distribution
  - Allows for IETP viewers to filter information to the end user dynamically at view time



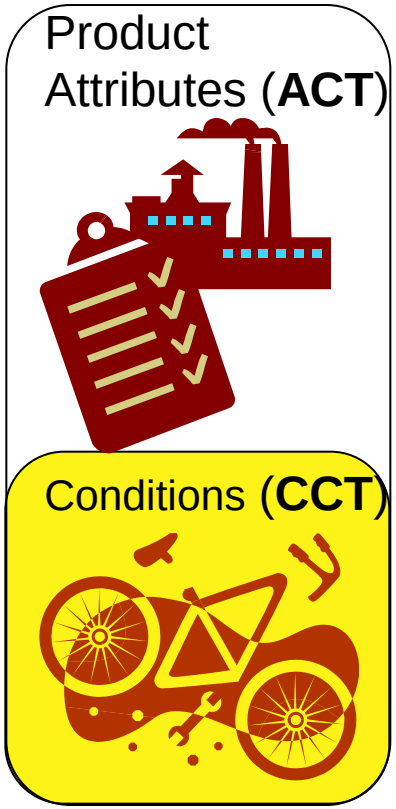
Define the terminology to identify

- configurations of interest - Applicability Cross-reference Table
- conditions of interest – Conditions Cross-reference Table



Examples

- Serial number
- Part number
- Wheel configuration
- Engine type
- ....



Examples

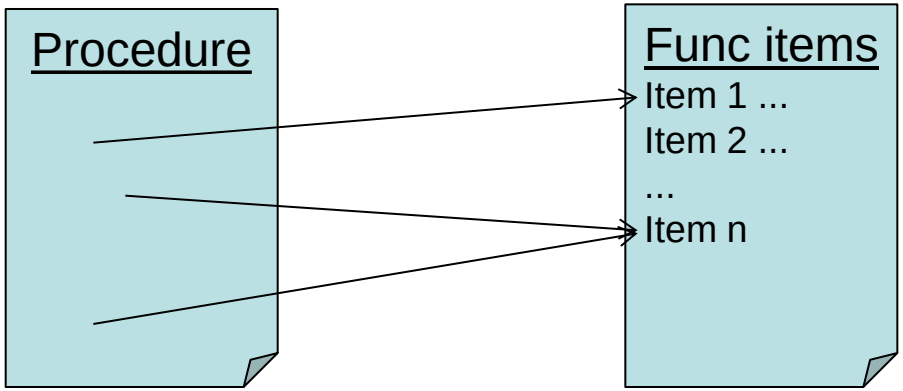
- Service Bulletin implem. status
- Temperature
- Humidity
- ....

Define the actual configuration of product builds

- Logical expressions of ACT/CCT parameters define various product individuals -
  Product Cross-reference Table

Externalization

- Certain items in a data module can be extracted from the data module and stored/handled externally in a separate data module, a *Common Information Repository DM*
- Items of a certain type are stored together in an CIR DM
- The items are referred to from the data module context where the item fits in/applies, which supports reuse

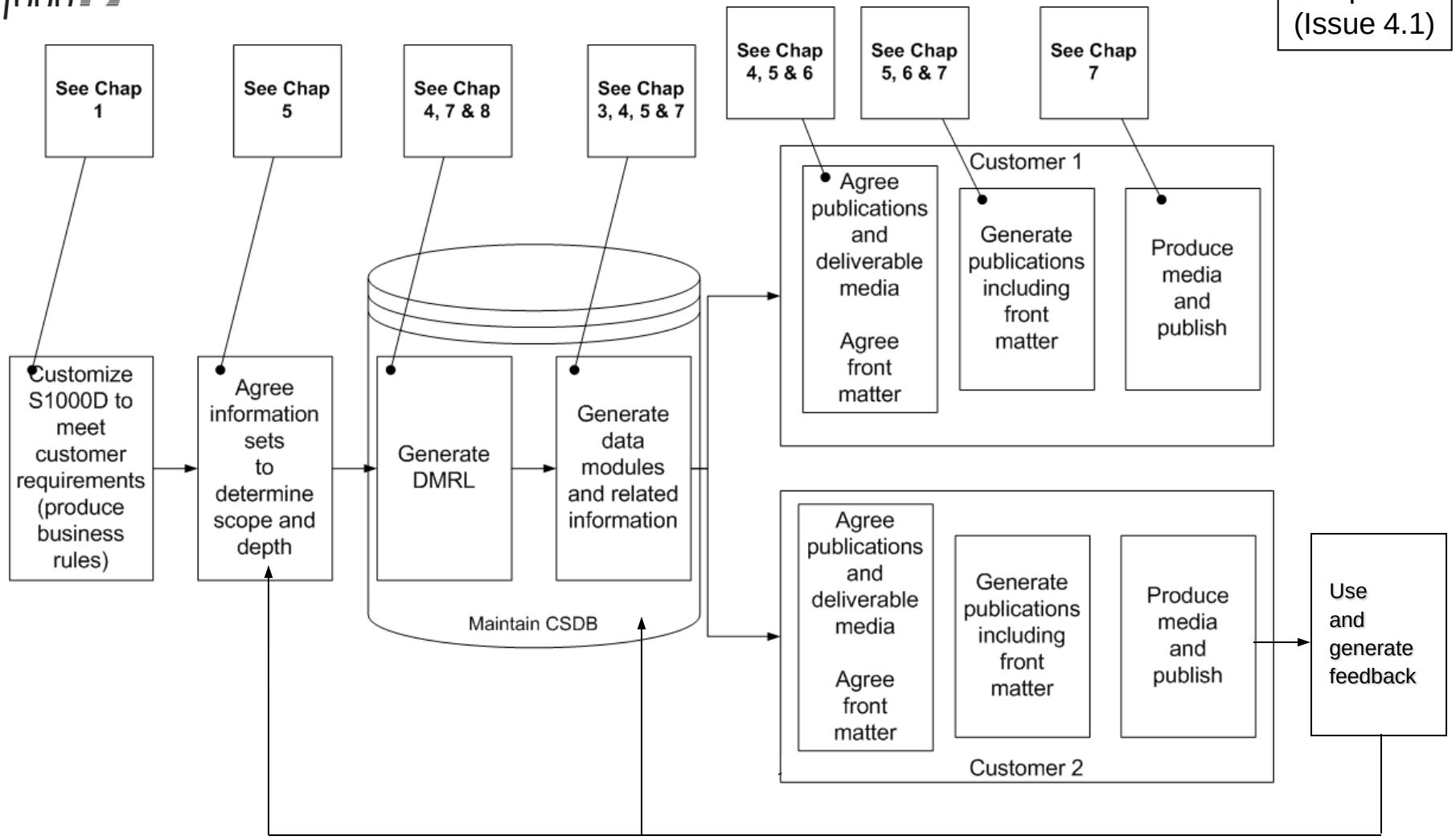


Externalization

- Common Information Repository – CIR
  (Technical Information Repository – TIR)
  - Specialized data modules, structure dependant on type of items
  - Basically data base like information, lists of ”things”
  - Equipment, tools, spares, and many others
  - A means to deliver data to a customer/user who needs to maintain the data himself

The publication process

Figure 1 from Chap 2.1 (Issue 4.1)



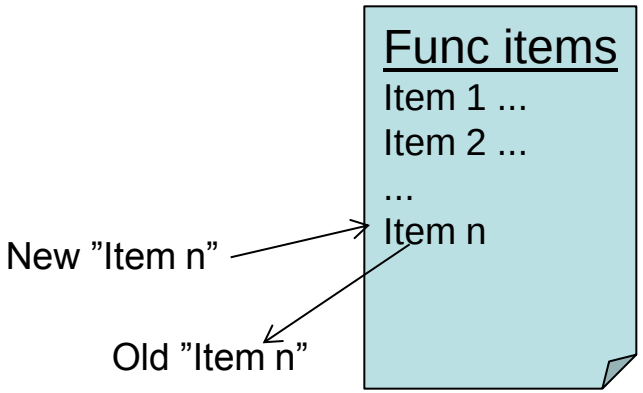
Process supporting objects

- Data Module Requirement List - DMRL
  - Defines the scope of data modules to be created
  - Consitutes the ”intended content” of the CSDB
  - Usually a contractual document

- CSDB Status List - CSL
  - A snapshot of the CSDB status – What’s there?
  - Exchanged between producer and customer
  - Communicated as necessary

Process supporting objects

- Update file
  - Update mechanism to allow item-wise changes, eg
    - replace one part (out of 50000 parts)
    - add a new tool
  - *Only applies to CIRs*
  - Helps eliminate ”bandwidth” bottle necks



Process supporting objects

Comment

- S1000D mechanism to return comments from a receiver to a sender of information (ie an file based transfer packages)

DDN - Data Dispatch Note

- Defines sender, receiver and content of a file based transfer package

Publishing S1000D data

- Chap 6.2 – page oriented output
- Chap 6.3 – IETP output
- Filtering and customer/user adapted output

- The data interchange mechanism

Page oriented output

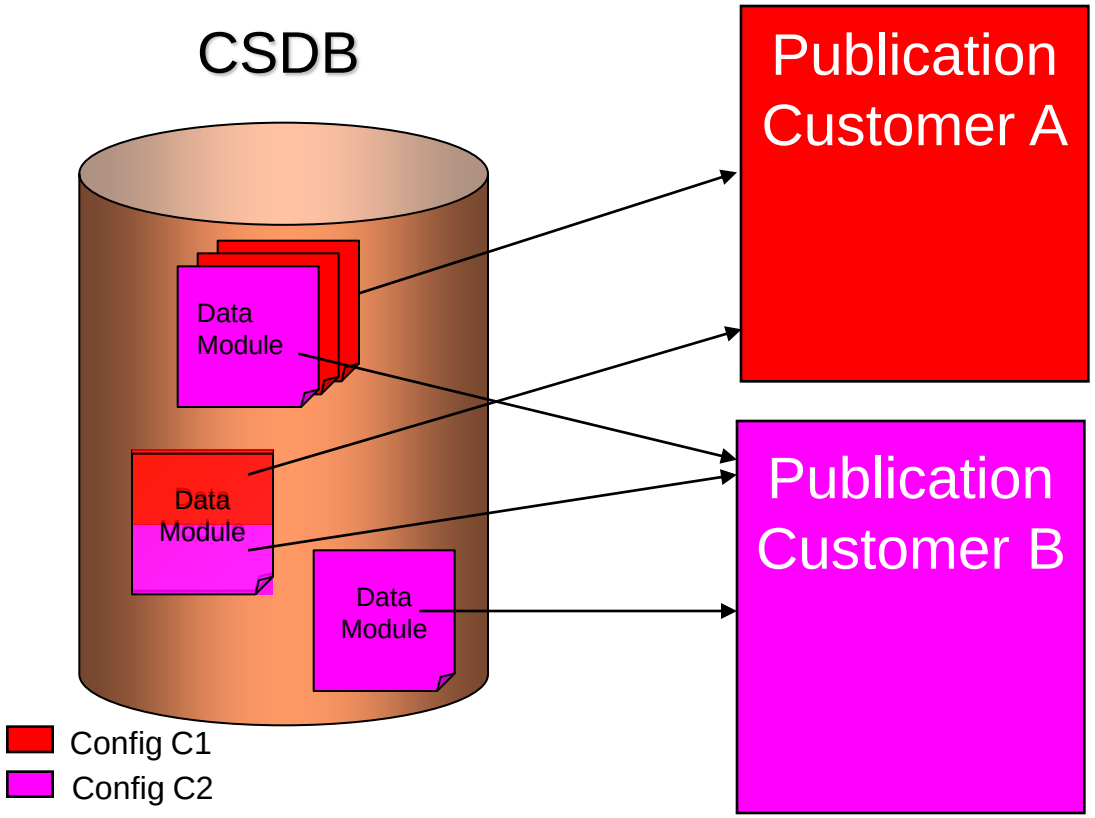
- In Chap 6.2 there is an extensive description of the S1000D page output layout
- The whole chapter *can* be ruled out by a BR decision
- Content
  - Chap 6.2.1 Page-oriented publications - Page layout, paper publications, headers and footers
  - Chap 6.2.2 Page-oriented publications - Typography and layout elements
  - Chap 6.2.3 Page-oriented publications - Layout

IETP oriented output

- In Chap 6.3 there are many good advices on how to specify a good IETP layout/functionality
  - Screen disposition
  - Menues
  - Buttons
  - Navigation
  - Links
  - Styles and layout
  - Etc

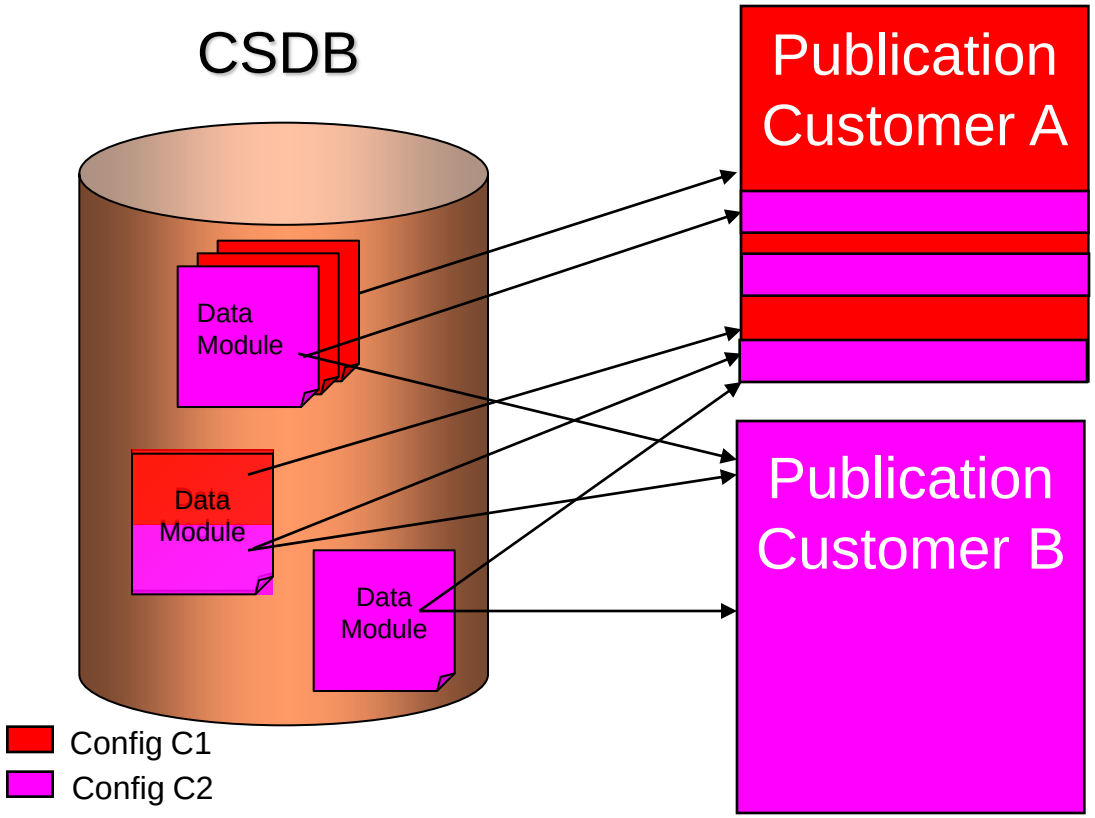
Filtered customer output

- S1000Ds applicability functionality allows all sorts of filtering, eg at publication time



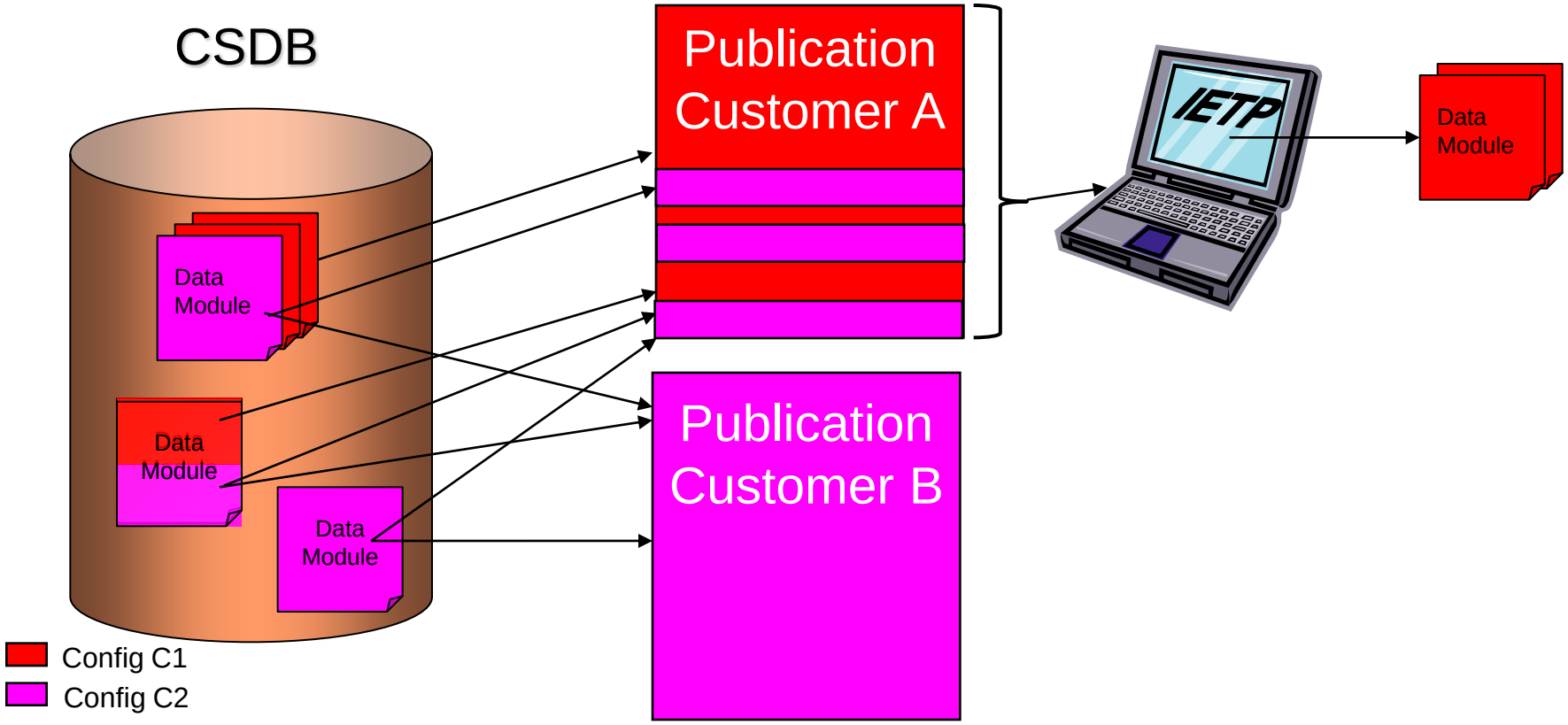
Filtered customer output

- S1000Ds applicability functionality allows all sorts of filtering, eg at publication time

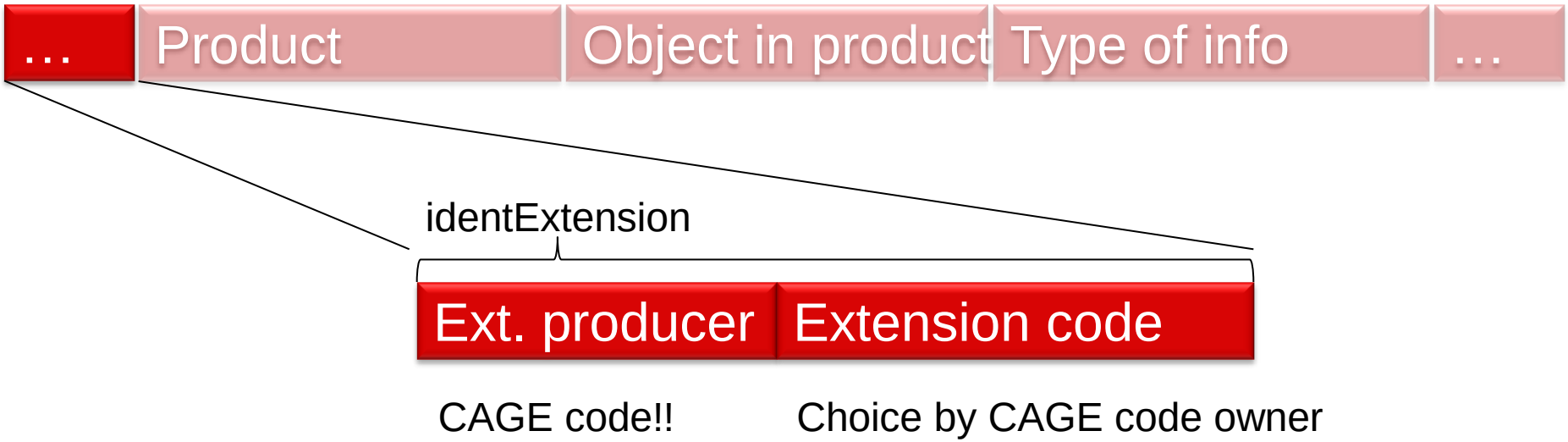


Filtered user presentation

- S1000Ds applicability functionality allows all sorts of filtering, eg at publication time

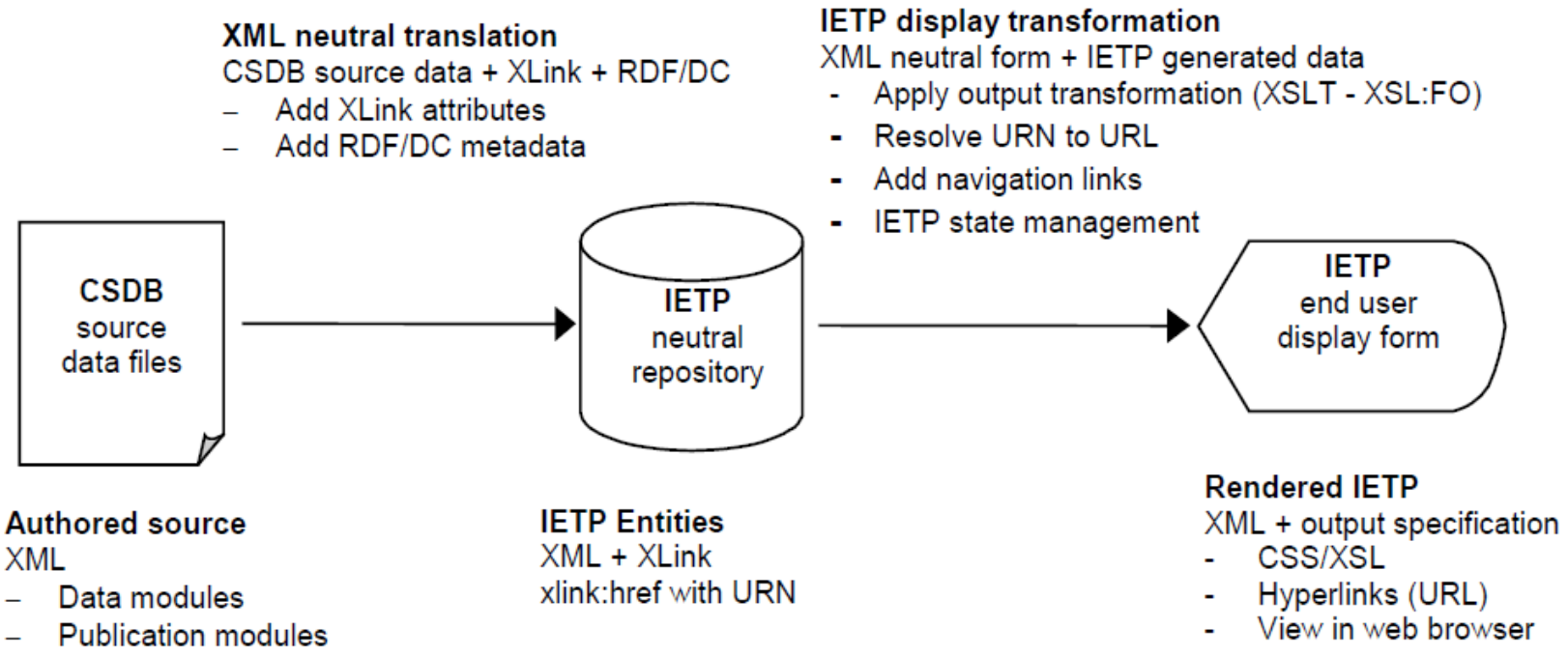


- Filtering introduces multiple instances of the filtered objects (DM/PM/etc)
- Instances are not identical, thus identifiers must differ!!
- Extended identities



IETP Neutral repository format

Chap 7.4.1 IETP - Generation process:



Interchange – File based transfer

- The DDN provides metadata describing a file based transfer of Data Modules from one organization to another
- It is a useful tool for managing the interchange of data between data producers, their suppliers and customers

Interchange package structure

- An S1000D CSDB interchange (transfer) package consists of one Data Dispatch Note (DDN) and at least one object of the following data categories:
  - One or more Data Modules (DM) and associated illustrations, multimedia or other data
  - One or more Data Module List (DMRL/CSL)
  - One or more comment forms with attachments (COM)
  - One or more Publication or SCORM content package modules (PM/SCPM)
  - One or more Update files (UPD)

Interchange package structure

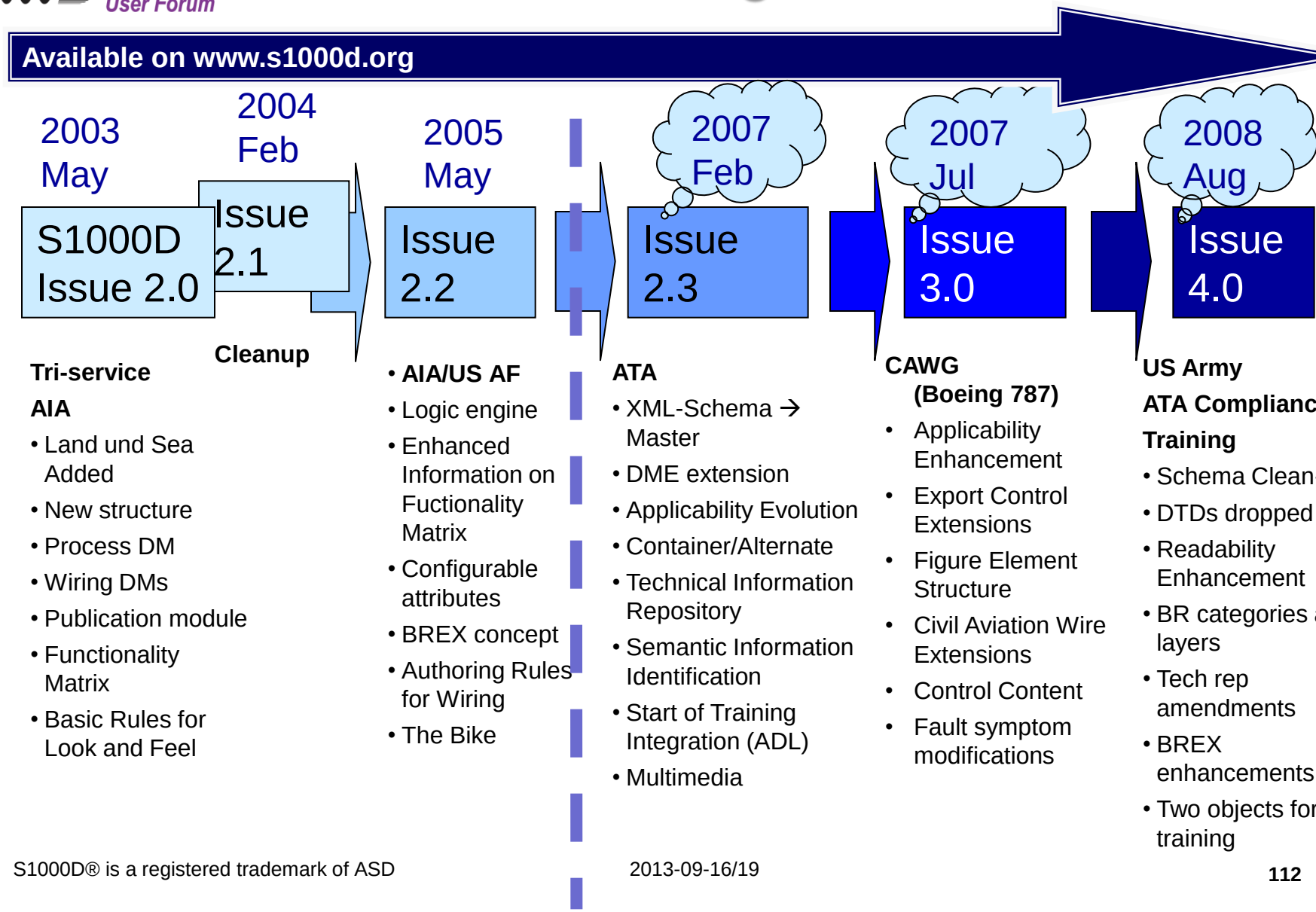
- The files may be transferred in any order, but it is recommended that the DDN shall be the first data file in the sequence
- Appropriate data compression techniques (eg ZIP, GZIP, TAR or X/Open (UNIX) compress) may be applied to the data file set as a whole before transfer, as mutually agreed upon between sender and receiver for each individual project
- File naming conventions are described in Chapter 7.5.1, Para 2.3

Implementing S1000D

Implementing S1000D

- Choosing an Issue
- Tailoring, Business Rules and the BREX data module
- The XML Schemas
- A few implementation notes ...
- www.s1000d.org

Choosing an Issue



Issue 4.1 highlights

1. Conformance and compliance
2. Business rule decision point index
3. BREX enhancements
4. Subject index
5. From TIR to CIR
6. Externalization principle
7. Incremental update of CIR
8. Applicability cross-reference table catalog
9. Alternates concept inside a DM
10. Service bulletin DM
11. Revised learning information support
12. Front matter DM
13. Component maintenance publications
14. Generalized IPD

Tailoring S1000D

The S1000D versatility costs ...

- Has to support many kinds of ...
  - target products/systems
  - business processes
  - infra structures
  - integrations with related tools and platforms

- Consequently, has to leave many ends open!

Tailoring and Business Rules

- Description:
  An S1000D Business Rule is a decision to apply S1000D in a certain way in a certain respect

- For example:
  All procedural data modules produced must be verified by the customer/user. Verification must be performed on a relevant configuration of the system concerned.

Tailoring and Business Rules

- S1000D contains many Business Rules decision points!
- The *Business Rules for a project or organization* is the entire set of business rules that have been decide for the project/organization with regard to the S1000D implementation.
- S1000D Business Rules should always specify how the information contained in the CSDB is managed in relation to all other related information stores.

This could be helpful:

- Chap 2.5.1 gives both definition of each category (including short summary) and offers examples for each BR category for a better understanding
  - The BR categories list in Chap 2.5.1 can serve as an over all checklist for BR-production
- Chap 2.5.3 contains a Business Rule Decision Points Index, all listed in one place

Note: you can use Chapter 2.5.1 of Issue 4.1 as an orientation/checklist for your project/organization BR independent on which Issue of S1000D you implement!!!

S1000D Business Rules (BR)

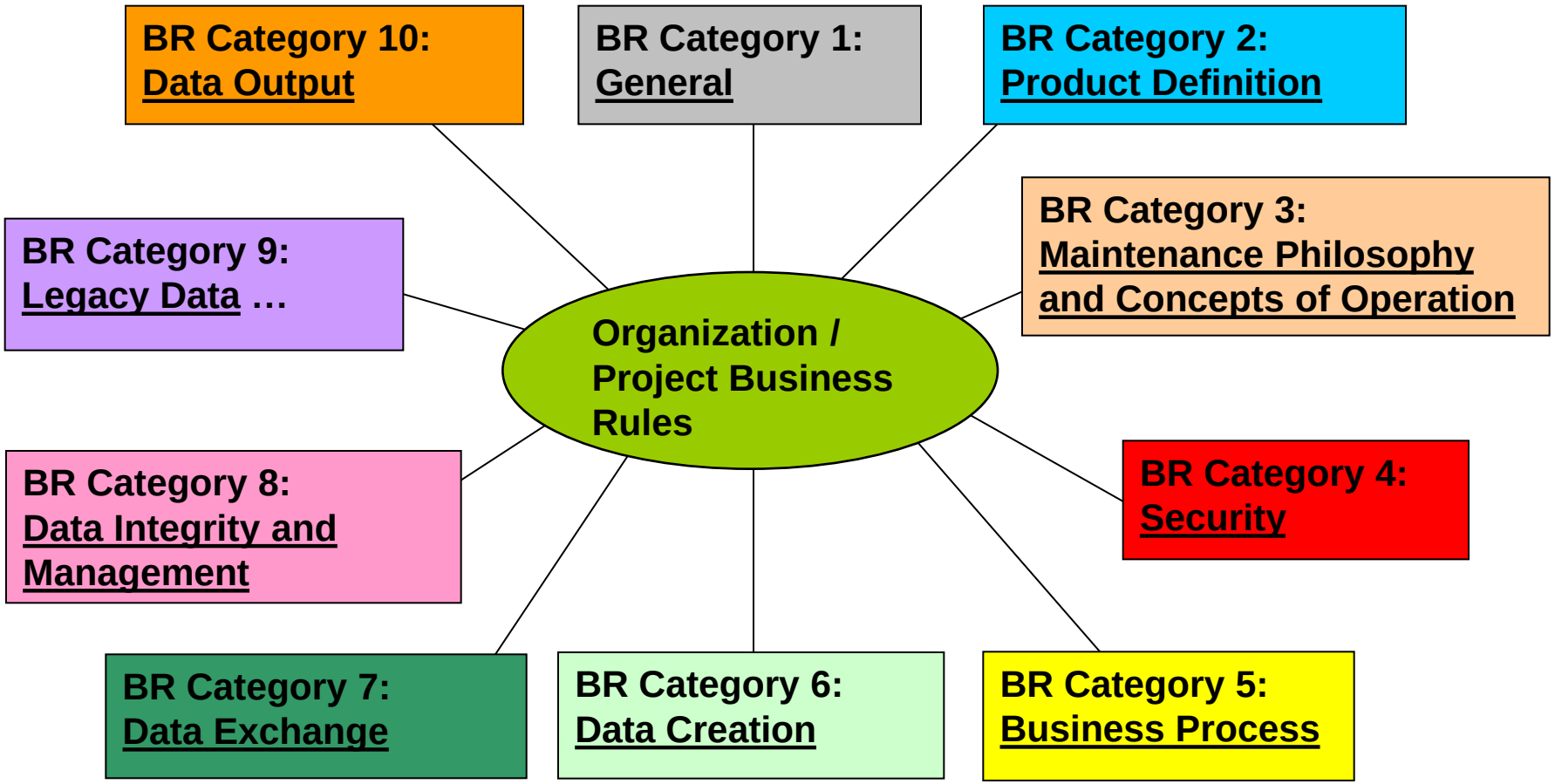
Definition in S1000D, Issue 4.0, Chap 2.5:

Business rules are decisions that are made by a project or an organization on how to implement
S1000D.

Business rules cover all aspects of S1000D and are not limited to authoring or illustrating.

They can also address issues that are not defined in S1000D such as rules related to how S1000D interfaces with other standards, specifications and business processes that are related to its implementation.

Business Rules Categories

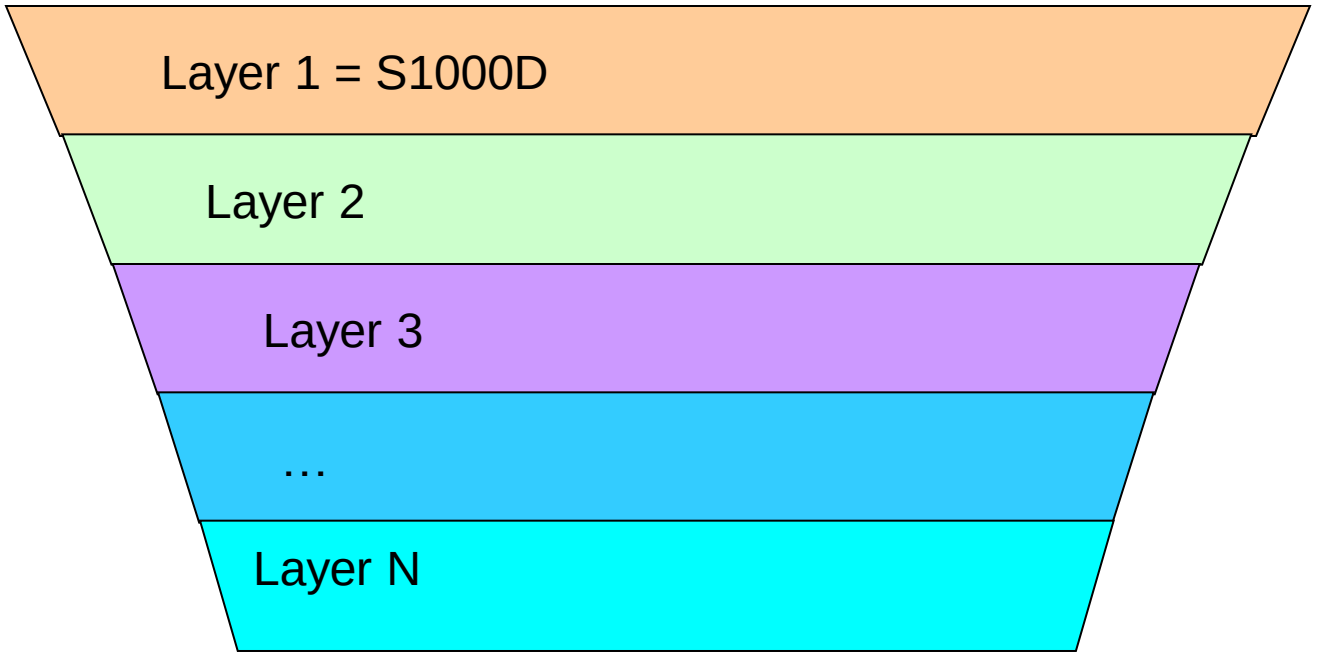


Chap 2.5.1 Issue 4.1

Business Rules Layers

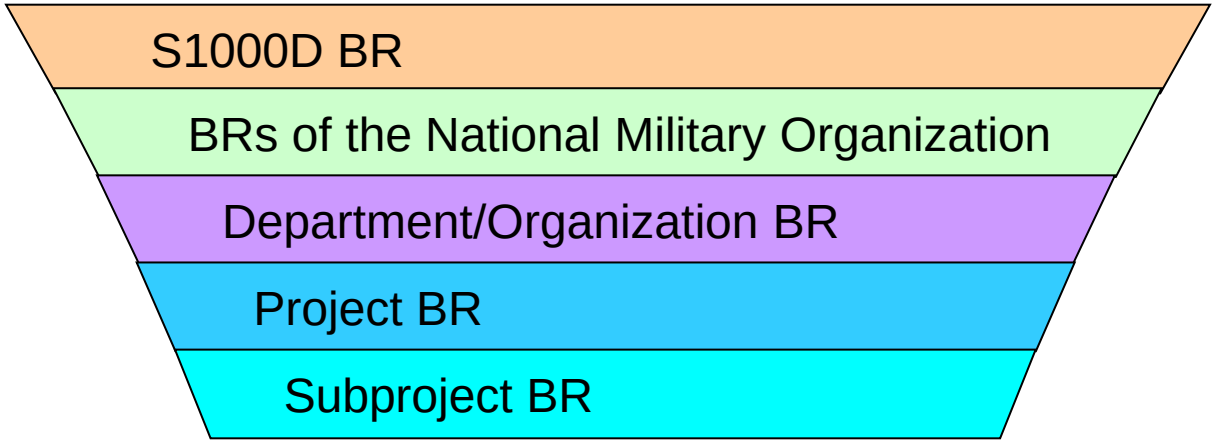
Definition: A business rules layer indicates the level of stakeholders within the hierarchy to which the business rules apply.

Generic view

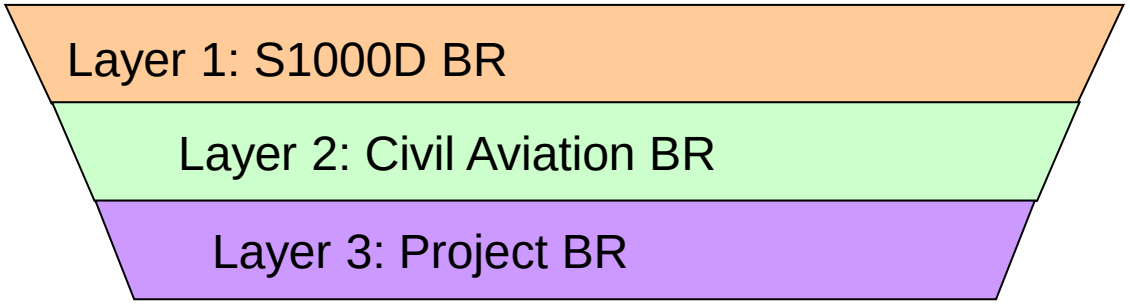


Layer 1 is represented by S1000D

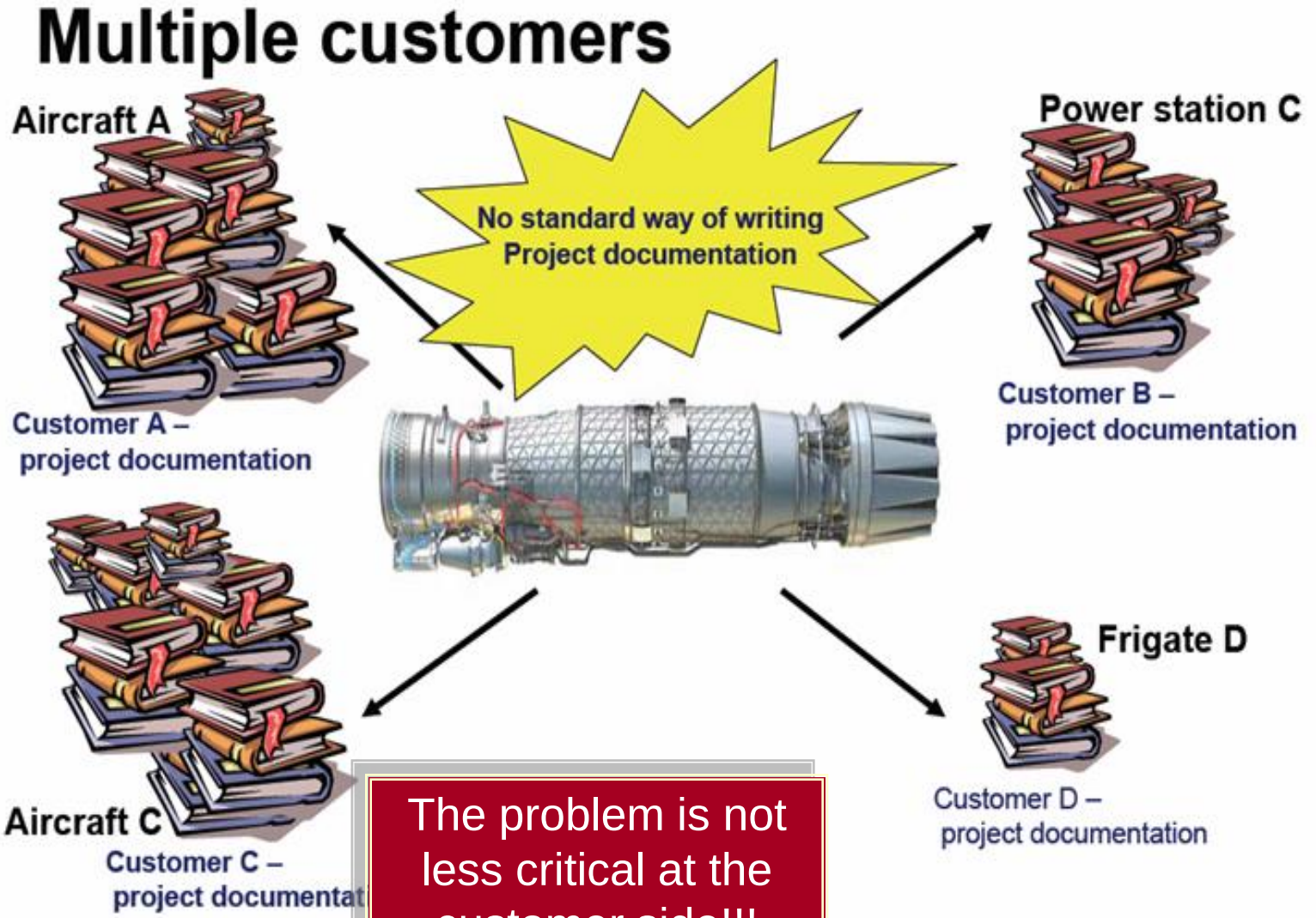
Example of a 5-layered Rules Model



3-layered Rules Model



The dilemma



Mike Day, Rolls-Royce, Tutorial „Business Rules“at the User Forum in Clearwater, 2006

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The BREX data module

- The BREX (**B**usiness **R**ules **EX**change) is an S1000D *data module*, like any other data module (almost)
- It contains *rules* to which the *objects* in a CSDB must adhere
- It can contain *rules* to control the *management* of a CSDB
- It constitutes a *formalized* way to document and exchange S1000D *Business Rules* (rules for an S1000D implementation)
- In principle, the BREX is *needed to understand* all other objects in the CSDB
- Each new S1000D issue comes with a *Default BREX*

How can the BREX be used?

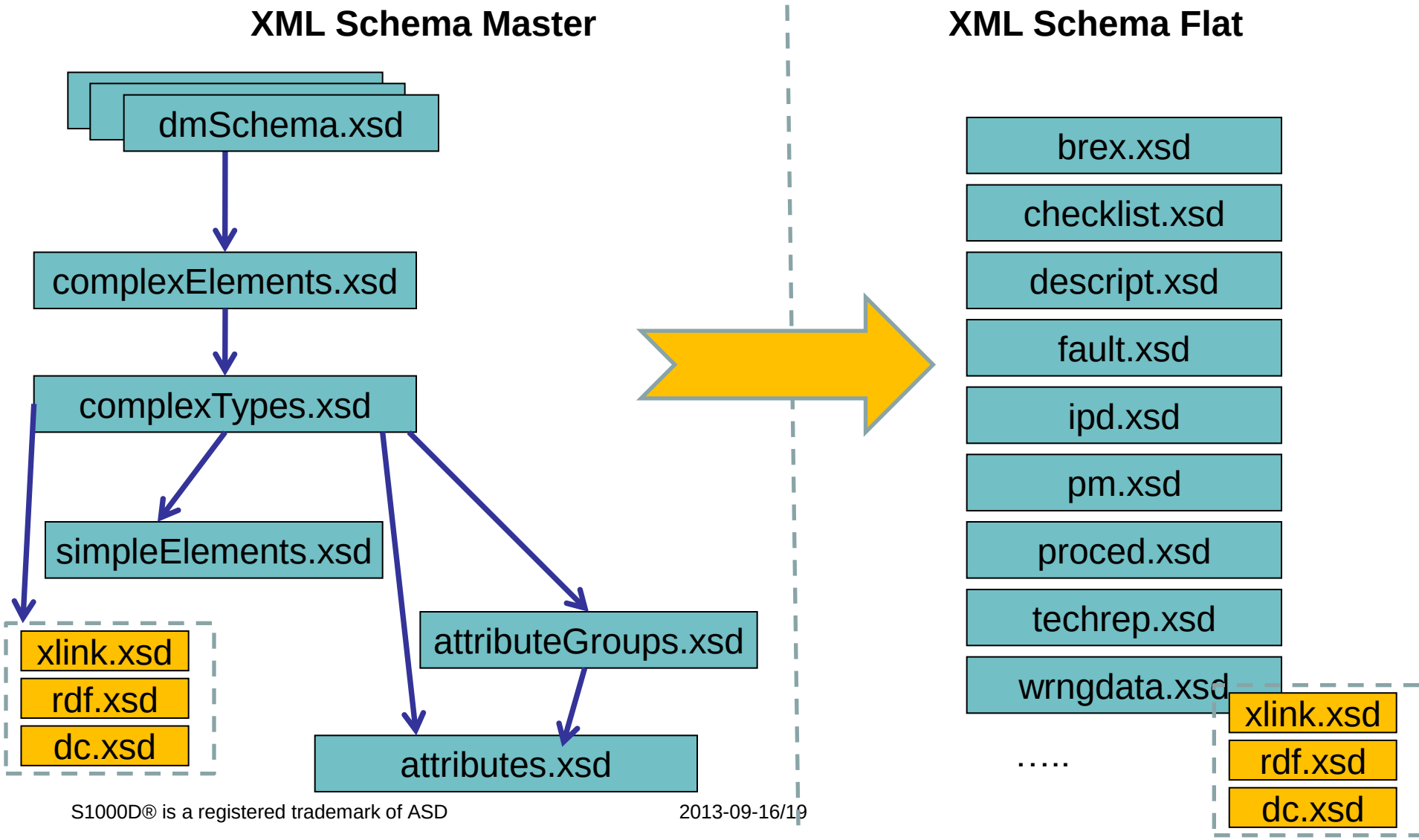
- The BREX data module can be used for several purposes:
  1. In developing S1000D Business Rules fo i.e., for project or an organization
  2. To inform about your application of S1000D
  3. To configure a system to the rules of an S1000D BREX module
  4. To reflect a system configuration (export to a BREX)
  5. To verify S1000D data modules in production
  6. To verify a delivered batch of S1000D data modules
  7. To interpret codes for presentation purposes
  8. ...

The S1000D XML Schema Package

S1000D_4-1

default_brex	Default BREX
ent	ISO Entities
lom_schema	Learning Object Model Schemas
notations	XML doc, notations in Chap 7.3.2
samples	Bike package (S1000D implementation samples)
xml_schema_cat	XML Catalogue
xml_schema_doc	XML Schema Documentation
xml_schema_flat	XML Schemas

XML Schema Master vs. Flat



A few implementation notes

Pitfalls:

- Insufficient ”instructions” to contractors
  - E.g. no business rules agreed
- Unclear agreements between suppliers/customers
  - E.g. no business rules agreed
- Insufficient implementation support
  - Sometimes it takes an expert to explain how simple a thing is
- Unawareness of related information and applications (S1000D is only part of the ”ILS” concept!)
  - Duplication of data and resulting inconsistencies

Pitfalls:

- Insufficiently defined logistics structures
  - Which objects are subject of operation?
  - Which objects are subjects of maintenance?
  - Is SNS appropriately specified?
- Poorly defined ”applicability” – how to best use it?
- Unclear review process
  - Eg who will review what and does that connect to S1000D first/second verfication?

Some success characteristics

- An ”S1000D *mindset*”
- Well founded *business rules*
- *Stable* processes
- Efficient *processes*
- *Suiteable* software support

www.s1000d.org

- The S1000D site is a useful source of information

S1000D

ATA e-Business Program

AIA

ASD AeroSpace and Defence Industries Association of Europe

Home | Getting Started | Change Proposals | Downloads | Links | Members Only

S1000D

- Benefits
- Organizational
- Structure
- S1000D User Forum
- Contact Us

Welcome To S1000D

Welcome to S1000D, *"International specification for technical publications using a common source database"*. Since its inception over 20 years ago, S1000D has grown to where it is now used widely around the world. Currently, its uses include:

- Defense systems – including land, sea, and air products
- Civil aviation products
- Construction industry products
- Ship industry products

Download Issue 4.1

Register Now!

2013 S1000D User Forum

September 16-19, 2013
Vienna, Austria

The specification is publicly available and is free to download from this web site. Downloads include the specification, schemas, and sample files.

The S1000D web site

This web site is provided by the S1000D Council and Steering Committee as a means to provide useful information to help you in your implementation of S1000D. Key information available on these pages includes:

- The history of S1000D
- The benefits of adoption
- How to deal with legacy data
- Information on various methods presented in the specification
- Free downloads of the S1000D specification and XML schemas

We hope this web site helps you adopt and implement the specification to suit your business requirements. We also invite you to provide feedback to help us focus on related issues that concern you. All ideas are welcome. Please visit our Contact Us page to provide your comments.

Overview

S1000D is an international specification for the production of technical publications. Although the title emphasizes its use for *technical* publications, application of the specification to non-technical publications is also possible and can be very beneficial to businesses requiring processes and controls.

Latest Announcements (show all)

Description
There are no items to show in this view of the "Announcements" list. To create a new item, click "New item" above.

Events (show all)

Description	Dates
2013 S1000D User Forum	September 16-19, 2013

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- The S1000D™ specification is downloadable from the web. (pdf file)
  - Current Issue (Issue 4.1)
  - Past Issues (back to Issue 1.7)
- A default BREX data module
- Functionality matrix
- Unit of Measure
- Package
- Example SNS's
- The mapping tool (for issue 4.0)
- User Forum presentations

XML Schemas *(Sgml / Xml DTD)*
Bike data module set
Data dictionary (Schema documentation)
ISO entities
XCF – Xml Companion File

Download page www.s1000d.org

- Information about pending change requests - CPFs
  - A formal process exists to get things added, changed or deleted. The request is called a Change Proposal Form (CPF)
    - White papers
    - Schema Proposal Form SPF
    - Bike samples
    - Business rules

- Anyone in the community can submit a CPF for consideration.

Why not join in?

- Anyone who is a user of the specification can contribute to the standard via the CPF process.

- If you have a particular area of interest and are willing to do some work you can be a part of the standards body!!

Questions?

I will be around for the rest of the week …

Thank you and good luck!