Managing a Common Dataset for Multiple Customers "The Master-Customized Concept"

Vic Ortega

S1000D Architect

CDG – A Boeing Company

ATA e-Business Forum - S1000D User Forum, Amsterdam

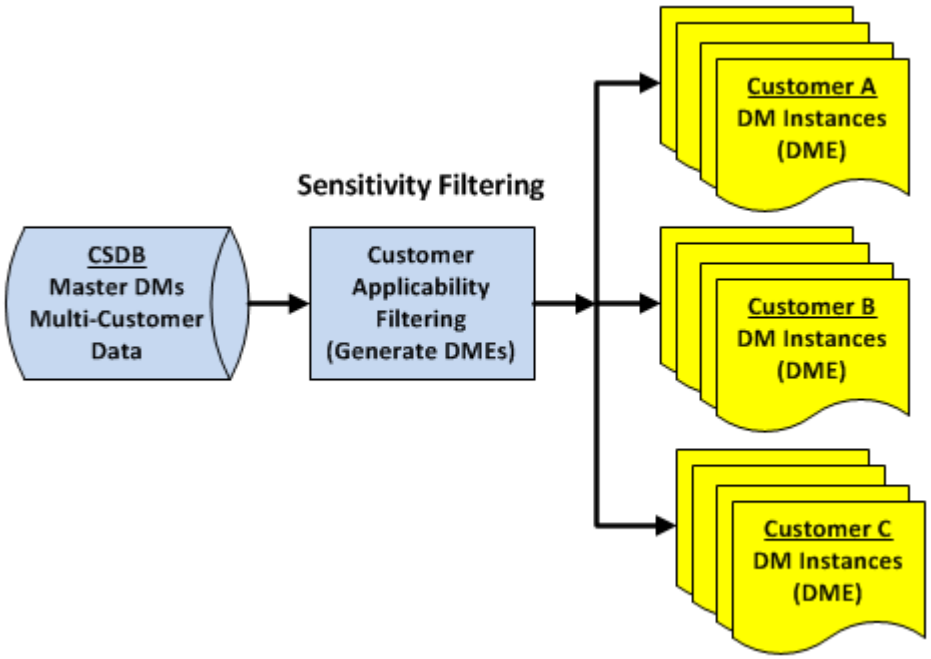
June 12-14, 2017

Topics

- **Rationale for adopting the "Master-Customized Concept"**
- **S1000D "mechanisms" to optimize content management and data reuse**
  - **Container data modules**
  - **Alternate Groups**
  - **Common Information Repositories (CIRs)**
- **Applicability model for multiple customer data**
- **Data module instances (customer variants)**
- **Publishing multiple customer deliverables**

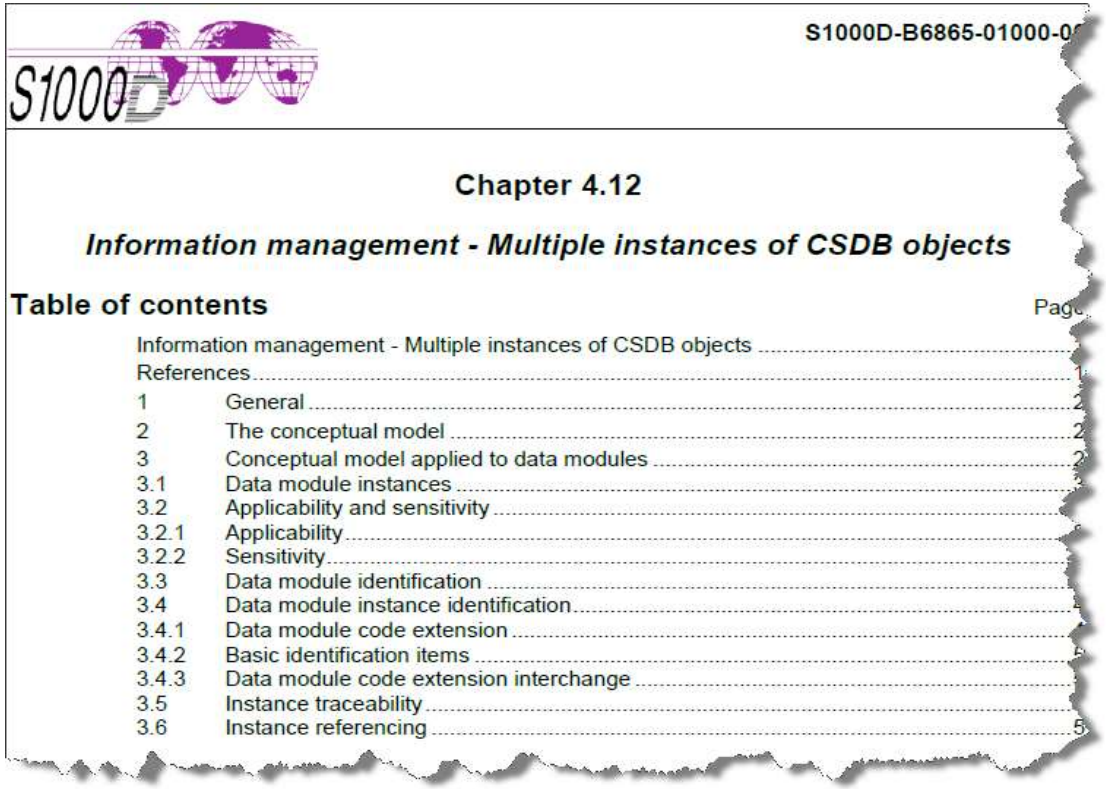
Rationale for adopting the "Master-Customized Concept"

The "Master-Customized Concept" is an information management strategy that supports multiple instances of the "same" CSDB object.



Rationale for adopting the "Master-Customized Concept" cont.

Information and guidance on how to manage multiple instances of CSDB objects is found in Chapter 4.12 of the S1000D Specification



S1000D-B6865-01000-0

Chapter 4.12

Information management - Multiple instances of CSDB objects

Table of contents

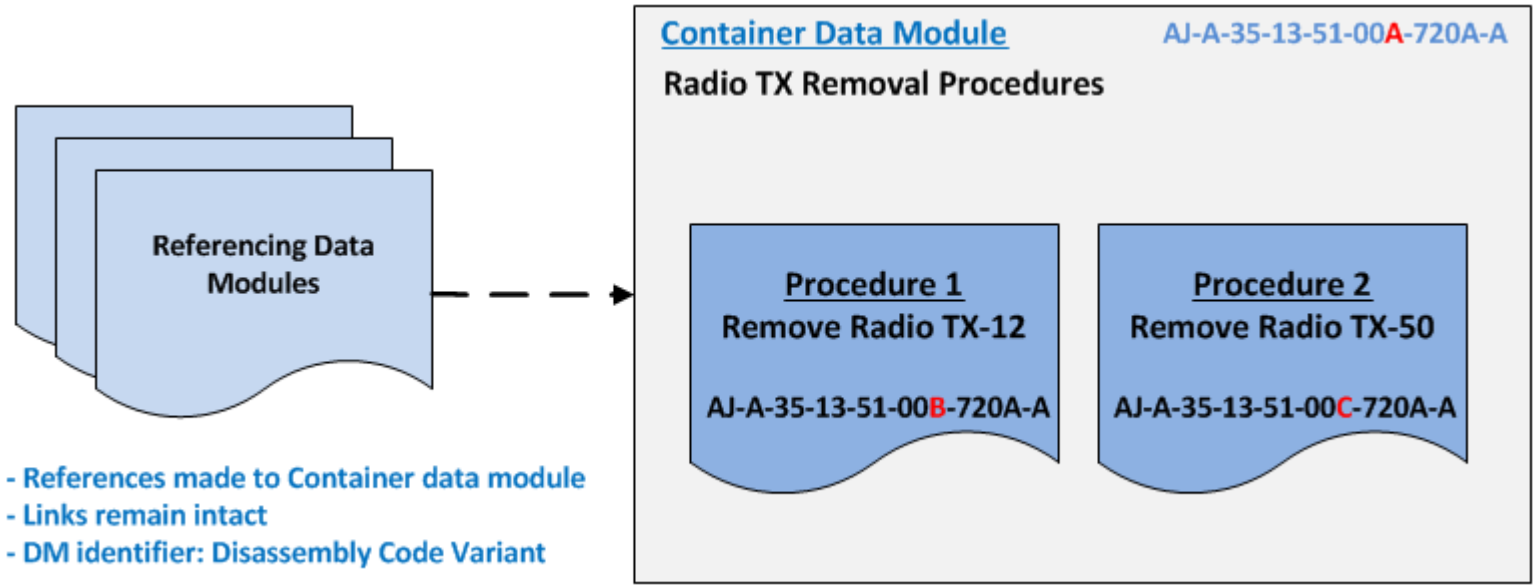
Optimizing Content Management and Data Reuse

The S1000D Specification supports various “mechanisms” to optimize the content management and reuse of information.

- Container data modules
- Alternates Group
- Common Information Repositories (CIRs)

Container Data Modules

The container data module "mechanism" is used to associate several alternate data modules that represent the same maintenance goal, where alternate data modules may differ by Product configuration, maintenance environment, or other conditions



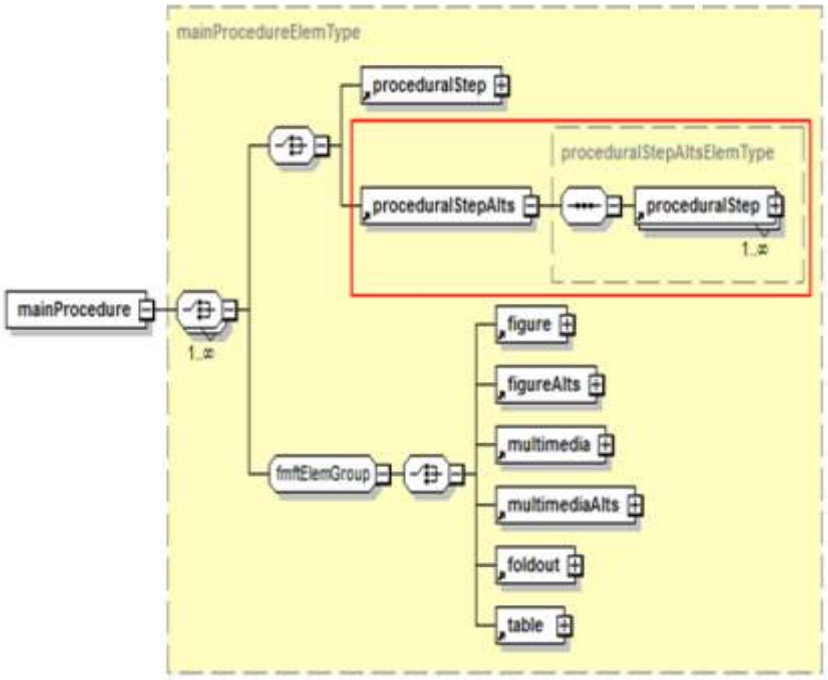
Alternates Group

The alternates group "mechanism" is used in data module content to group elements that represent alternates of the same information but for different applicability

Data Module Type	Alternates Group
Most DMs	<figureAlts>; <multimediaAlts>; <commonInfoDescrParaAlts>
Crew; Descr; Learn; SB	<levelledParaAlts>
Procedural; SB	<proceduralStepAlts>
Fault	<isolatedFaultAlts>; <detectedFaultAlts>; <observedFaultAlts>; <correlatedFaultAlts>; <warningMalfunctionAlts>; <assocWarningMalfunctionAlts>; <bitMessageAlts>; <isolationStepAlts>; <isolationProcedureEndAlts>
Maintenance Planning	<taskDefinitionAlts>
Wiring	<wireAlts>; <harnessAlts>; <electricalEquipAlts>
Process	<dialogAlts>; <dmNodeAlts>; <dmSeqAlts>; <proceduralStepAlts>; <messageAlts>

Alternates Group cont.

Groups one to many alternates (variants) of the same information, where each alternate is valid for different applicability annotations



5 Flush the sprockets, the derailleurs, the chain rings and the chain with water.

Note

If necessary, do the flush procedure again.

An alternates group for "Wash the bike"

6 **Applicable to: Mountain bicycle Mountain storm Mk1**
Wash the bike

- 6.1 Soak the Sponge into Detergent A and water.
- 6.2 Clean the bicycle with the soaked sponge.
- 6.3 Flush the bicycle and make sure that all Detergent A is removed.
- 6.4 Move the bicycle up and down on its tires to remove all water.

1st alternate for cleaning the Mountain storm Mk1

7 **Applicable to: Mountain bicycle Brook trekker Mk9**
Wash the bike

- 7.1 Soak the Sponge into Detergent B and water.
- 7.2 Clean the bicycle with the soaked sponge.
- 7.3 Soak the Sponge into Detergent A and water.
- 7.4 Fully clean the bicycle with the soaked sponge.
- 7.5 Flush the bicycle to make sure that all detergents are removed.
- 7.6 Move the bicycle up and down on its tires to remove all water.

2nd alternate for cleaning the Brook trekker Mk9

8 **Applicable to: All**
Lubricate the bicycle. Refer to S1000DBIKE-AAA-DA4-10-00-00AA-241A-A.

Common Information Repositories (CIRs)

The CIR "mechanism" stores lists of common information objects with their associated properties that can be reused in many places in many data modules

Common Information Repository Data Modules (comrep.xsd)						
Functional Items	Circuit Breakers	Parts	Zones	Access Points	Support Equipment	Supplies
Supply Rqmts	Enterprises	Functional and Physical Areas	Controls and Indicators	Applicability Annotations	Warnings	Cautions

Common information objects are authored as a single source and stored in their respective CIR data modules

- Optimizes content management and data reuse by eliminating the need for duplication
- Avoids complicating the data modules with too much information (common information object descriptions and properties)
- Preserves the integrity, quality, and consistency of the data

Common Information Repositories (CIRs) cont.

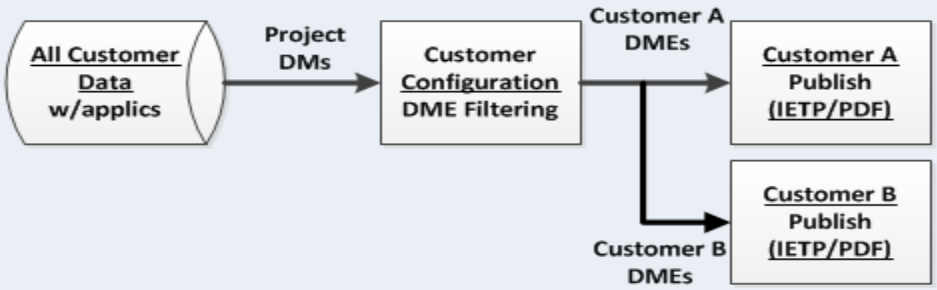
- S1000D supports two methodologies for referencing CIR data modules:
  - Implicit Reference (uses the object identifier only)
    <partRef partNumberValue="M2430-2-288“ manufacturerCodeValue="81349"/>
  - Explicit Reference (uses the object identifier and optional CIR data module identifier)
    <partRef partNumberValue="M2430-2-288" manufacturerCodeValue="81349"/>
    <refs><dmRef><dmRefIdent><dmCode>*XXX-X-XX-XX-XX-XXX-XXXX-X*</dmCode>…
- When publishing page-oriented publications, data modules must be self-standing (normalized), where CIR data module content is included (not linked) in the data modules delivered to the customer.
- When publishing an IETP, CIR-dependent data modules can be used, where CIR data module content does not need to be included (normalized) in the data modules delivered to the customer.

Applicability Model for Multi-Customer Data

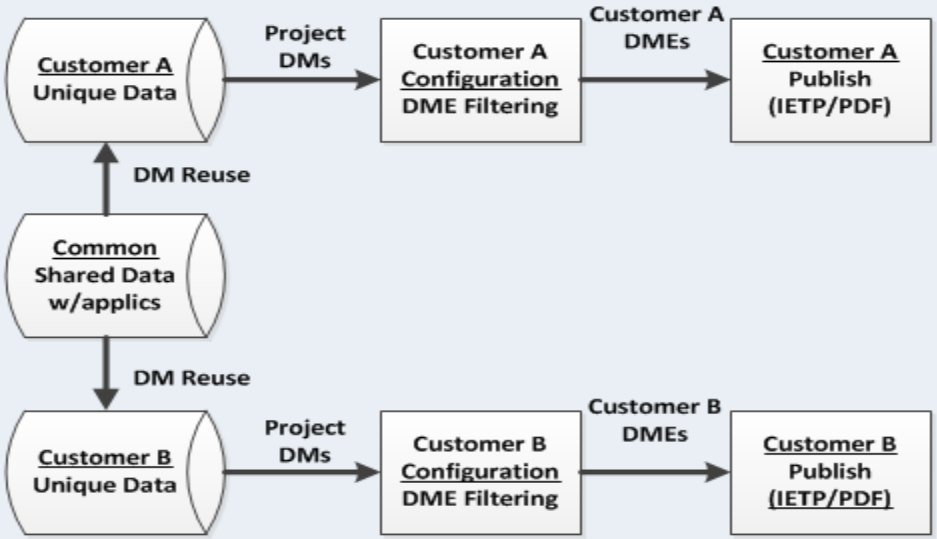
Applicability Cross-Reference Tables

- ACT Master
- CCT Master
- PCT Master

Single Project Methodology

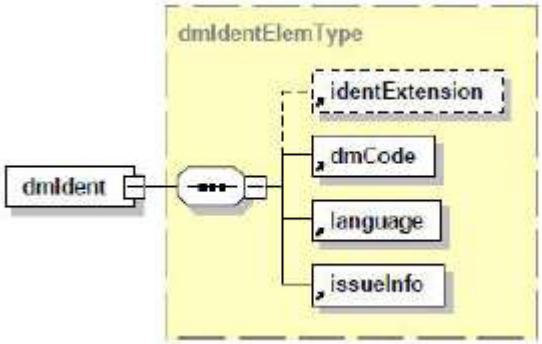


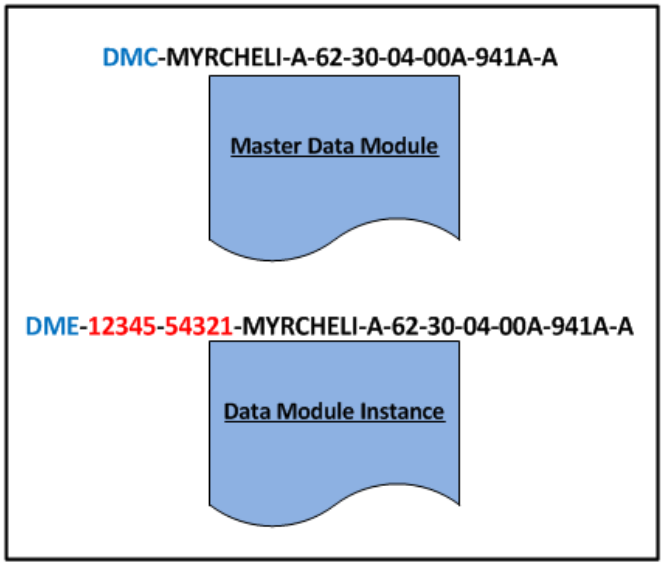
Multiple Project Methodology



Data Module Instances

Data module instances derived from master data modules use an extended identification scheme (<identExtension>).





<identAndStatusSection>

<dmAddress>

<dmIdent><identExtension extensionCode="12345" extensionProducer="54321"/>

<dmCode assyCode="04" disassyCode="00" disassyCodeVariant="A" infoCode="941" infoCodeVariant="A" itemLocationCode="A" modelIdentCode="MYRCHELI" subSubSystemCode="0" subSystemCode="3" systemCode="62" systemDiffCode="A"/>

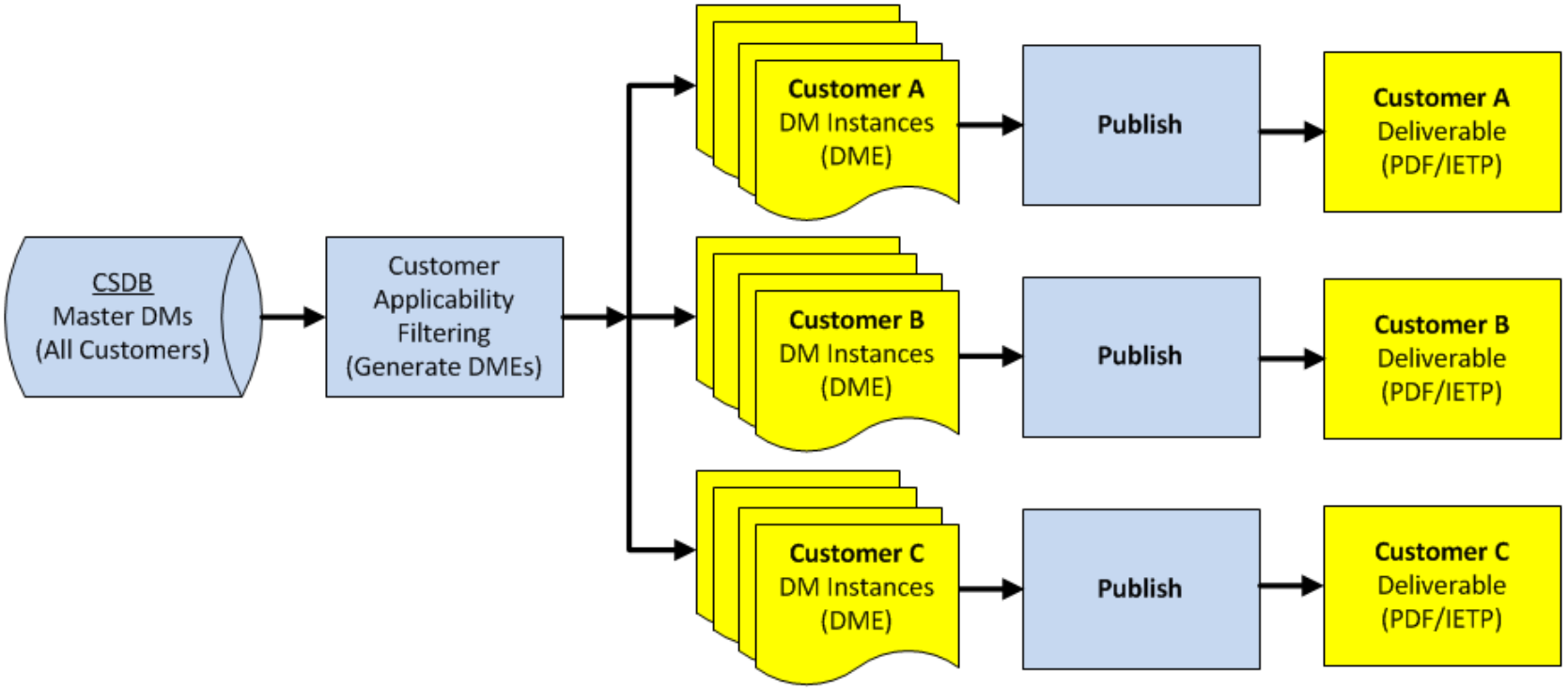
<language countryIsoCode="US" languageIsoCode="en"/>

<issueInfo inWork="01" issueNumber="001"/></dmIdent>

...

Publishing Multiple Customer Deliverables

Filtered data module instances (generated DME data modules) are used in the publication process to generate customer-specific deliverables.



Summary

OEMs and Suppliers delivering technical data to multiple customers can significantly reduce authoring and production life-cycle costs using the "Master-Customized Concept"

- **Manage a common dataset (master) containing all customer applicabilities**
- **Filter on customer applicability to generate customer-specific data module instances (DME)**
- **Publish customer-specific data module instances to produce publications tailored to each customers' product configurations**
- **Utilize S1000D "mechanisms" to optimize the content management and reuse of information (Containers | Alternate Groups | CIRs).**

Having a clear data control strategy in place is critical and will ensure your customers are receiving the data they expect

For More Information

For more information:

Visit the CDG booth in the Exhibit Hall

Email – marketing@cdgnow.com

Call – Americas: +1 562 608 2000

Europe: +44 1707 367700

Website – www.cdgnow.com

ATA e-Business Program

S1000D User Forum

Thank you

for your attention!

Questions?