

## Presentation to S1000D User Forum

### How to Achieve a Conformant S1000D Light?

**Michel DOMEON & Nicolas DUPUY (by spirit)**

**Representing the French S1000D mirroring  
group involved in this 'S1000D strip down'**

Vienna – 16-19 September 2013



# Agenda

- ▶ **Objectives: our problem, your need**
- ▶ **S1000D simplification**
- ▶ **Simplification concepts**
  - ◆ Building blocks
  - ◆ Modularization matrix
  - ◆ Strip down xml schemas
- ▶ **Modularization vs. BREX concepts**
- ▶ **Samples**
- ▶ **Conclusion**

# Our Problem, Your Need

## ► Our Problem: The future

- ◆ Keep the Spec simple, easy to implement and stable
- ◆ Provide new advanced features required for new projects

## ► Your Need: The present

- ◆ An easy solution to handle S1000D
- ◆ Just use what is needed for the program
- ◆ Conformance to the Spec for authoring and data interchange
- ◆ Deliver project (data & publication)

## ► Objectives

- ◆ Propose a common approach for S1000D Modularization through the Technical concepts of Building Blocks (BB) allowing an automatic filtering of S1000D XML Schemas
- ◆ Some similarities with the Functionality Matrix concept and the CGM Profile specification as both address a standard way of 'simplification'

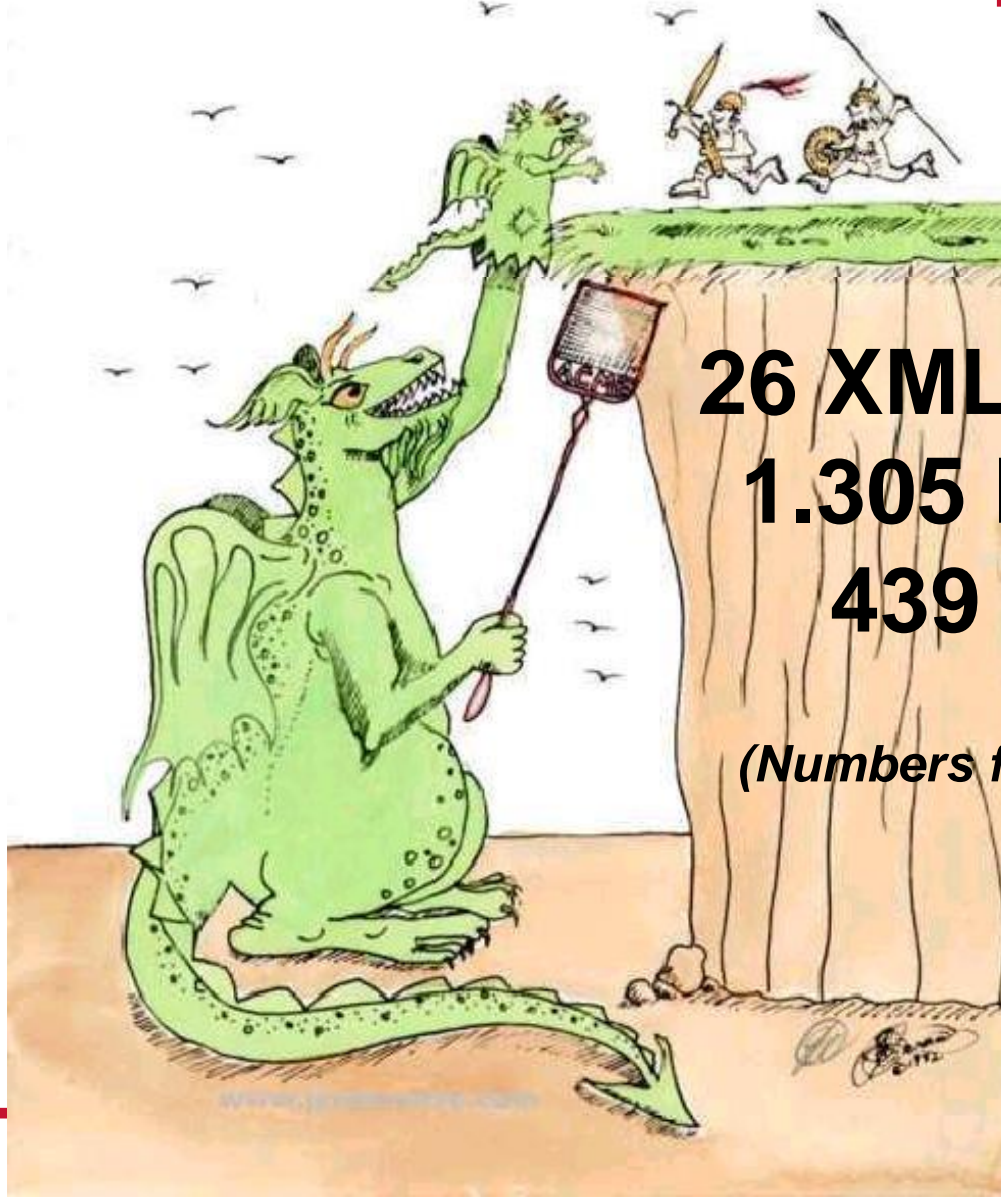
➔ Definition of the Modularization information exchange (DM) and the associated Modularized package generation tool

# S1000D Simplification



**Sounds easy isn't it?**

# S1000D Simplification

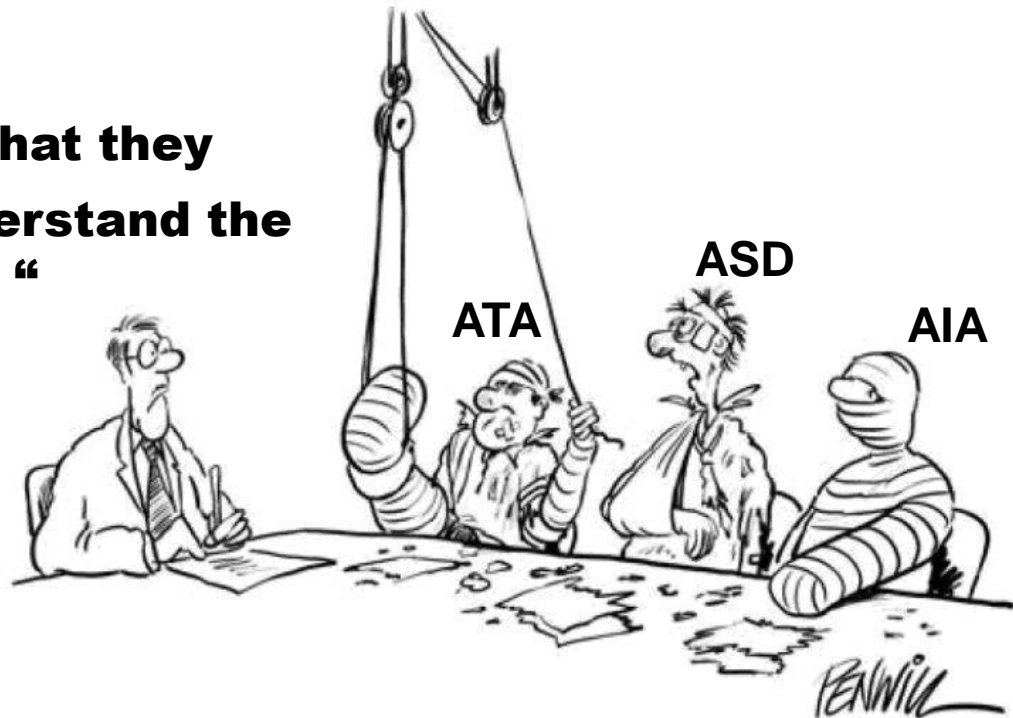


**26 XML Schemas**  
**1.305 Elements**  
**439 Attributes**

*(Numbers from S1000D 4.1)*

## No unique solution!

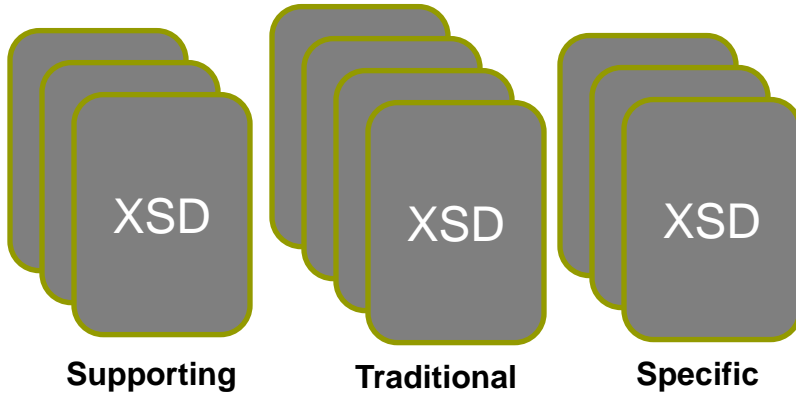
**“ People who know what they are talking about, understand the need of simplification “**



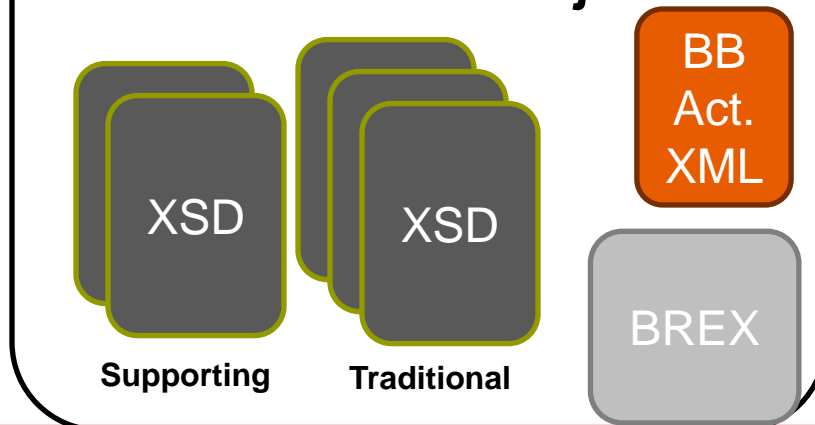
"WE BELIEVE WE NOW HAVE A CONSENSUS"

**But there is NO unique solution(s) !**

## S1000D Standard Package



## S1000D Project



Technical concepts (Building Blocks – BB) to be activated or deactivated

- Restriction of Flat XML Schema
- Upward compatibility always respected

## Modularization Engine

BB  
Act.  
XML

# What is a Building Block?

- ▶ **Some similarities with the CGM Profile concept as the modularization act as a profile on S1000D generic Schemas**
  - ◆ The official S1000D XML Schema could be seen as the CGM model profile from which we will decline limitations
  - ◆ It handle only optional elements and attributes as the aim is to keep the conformance with the official S1000D XML schema
- ▶ **CGM profile act nevertheless as a combination of BREX and Building blocks :**
  - ◆ Modularization (BB) will specify the group of functionality to be activated or not
  - ◆ The BREX will limit the attribute list to handle and will define the default values
- ▶ **This Proposal is based on the official S1000D XML Schemas on which we make restrictions and forbid extensions**
  - ➔ **Result schema is then always a sub set of the initial official S1000D XML Schemas and all XML instances based on this filtered XML Schema stay valid with the official one's.**



# What kind of Building Block?

## ▶ **BB on generic functions**

- ◆ Use of RDF metadata
- ◆ Use of extended DMC
- ◆ Use of external or internal
- ◆ Use of infoname at the DM title
- ◆ Definition of project security element/attribute use
  - caveat , security classification, commercial classification
- ◆ Use of containers (refs)
- ◆ Figure management?
  - Use of legends, use of reasons for amendment
- ◆ Handling of multimedia
- ◆ Handling of foldouts
- ◆ Use of graphics within table

## ▶ **BB on content type (XML Schema) to use**

- ◆ brex, checklist, condcrossreftable, container, crew, descript, fault, ipd, learning, pm, prdcrossreftable, proced, process, schedul, scormcontentpackage, wrngdata, wrngflds,
- ◆ techrep, (and which ie CIR for warning & cautions?)

# What kind of Building Block?

## ▶ **BB proceed specific**

- ◆ Use of Common info
- ◆ Use of productionMaintData (and which sub elements – ie thresholdinterval use or not in proceed DM or in schedule?)
- ◆ Use of reqtechinfo
- ◆ Use of alternatives steps : ProceduralStepAlt
- ◆ Use of caption at proceduralsteps level
- ◆ Use of circuitbreaker description (group a subgroups)
- ◆ Use of refs to functionalItems
- ◆ Use of refs to circuits breakers

## ▶ **BB IPD specific**

- ◆ S2000M IPD or externalisation of data within TIR/CIR
- ◆ Management of NNO (NAtoStockNumber)
- ◆ Use of zoneGroup elements at the global IPC level
- ◆ Use of refs to FIN , Zones internalRef at the CSN level
- ◆ Définition of needed sub elements for ISN (container, islnumber, generic data...)

▶ ...

# Modularization is not BREX

- ▶ BREX provides the rules that govern the production of the data module → **Mandatory by S1000D**
- ▶ Modularization provides the rules that govern the production of XML schemas constructs embodied in the modularized schemas → **Optional and Project decision**

| Modularization Concept (BB)                                               | Modularization impact                                                                          | BREX rule                                                                                        |
|---------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Choice of XML Schema to use (BREX Schema is mandatory anyway by the spec) | Only selected XML Schema are into the project package                                          | N/A                                                                                              |
| Applicability: yes but no externalization                                 | Applicability DM & Inline element present but no ones related to applicability externalization | Definition of attributes values which can be used and which element(s) can hold an applicability |
| Graphic with hotspot for IPD DM only                                      | Hotspot function deleted on each XML Schema excepted for IPD XML Schema                        | Definition of min/max values for HS attributes                                                   |

# From generic to Light S1000D

**S1000D**

## Program A implementation

## BB generic definition

| OCCUR         |                   | SCHEDULE      |                           |                        |                      |                          |                        |                          |                        |                        |                         | F                      |                    |                      |                       |                    |                       |                      |                    |                    |                     | X                     |                      |                    |                    |                     |                       |                      |                    |                    |                     | M              |  |  |  |  |  |  |  |  |  | T |  |  |  |  |  |  |  |  |  | F |  |  |  |  |  |  |  |  |  | S |  |  |  |  |  |  |  |  |  |
|---------------|-------------------|---------------|---------------------------|------------------------|----------------------|--------------------------|------------------------|--------------------------|------------------------|------------------------|-------------------------|------------------------|--------------------|----------------------|-----------------------|--------------------|-----------------------|----------------------|--------------------|--------------------|---------------------|-----------------------|----------------------|--------------------|--------------------|---------------------|-----------------------|----------------------|--------------------|--------------------|---------------------|----------------|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|---|--|--|--|--|--|--|--|--|--|
| Activity Type | Activity Category | Activity Name | Activity Description      | Activity Location      | Activity Status      | Activity Dates           |                        | Activity Times           |                        | Activity Duration      |                         | Activity Frequency     |                    | Activity Priority    |                       | Activity Risk      |                       | Activity Impact      |                    | Activity Benefit   |                     | Activity Cost         |                      | Activity Revenue   |                    | Activity Profit     |                       | Activity Loss        |                    | Activity Gain      |                     | Activity Total |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
|               |                   |               |                           |                        |                      | Start Date               | End Date               | Start Time               | End Time               | Duration               | Frequency               | Priority               | Risk               | Impact               | Benefit               | Cost               | Revenue               | Profit               | Loss               | Gain               | Total               |                       |                      |                    |                    |                     |                       |                      |                    |                    |                     |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 1    | Category 1        | Activity 1.1  | Activity 1.1 Description  | Activity 1.1 Location  | Activity 1.1 Status  | Activity 1.1 Start Date  | Activity 1.1 End Date  | Activity 1.1 Start Time  | Activity 1.1 End Time  | Activity 1.1 Duration  | Activity 1.1 Frequency  | Activity 1.1 Priority  | Activity 1.1 Risk  | Activity 1.1 Impact  | Activity 1.1 Benefit  | Activity 1.1 Cost  | Activity 1.1 Revenue  | Activity 1.1 Profit  | Activity 1.1 Loss  | Activity 1.1 Gain  | Activity 1.1 Total  | Activity 1.1 Revenue  | Activity 1.1 Profit  | Activity 1.1 Loss  | Activity 1.1 Gain  | Activity 1.1 Total  | Activity 1.1 Revenue  | Activity 1.1 Profit  | Activity 1.1 Loss  | Activity 1.1 Gain  | Activity 1.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 2    | Category 2        | Activity 2.1  | Activity 2.1 Description  | Activity 2.1 Location  | Activity 2.1 Status  | Activity 2.1 Start Date  | Activity 2.1 End Date  | Activity 2.1 Start Time  | Activity 2.1 End Time  | Activity 2.1 Duration  | Activity 2.1 Frequency  | Activity 2.1 Priority  | Activity 2.1 Risk  | Activity 2.1 Impact  | Activity 2.1 Benefit  | Activity 2.1 Cost  | Activity 2.1 Revenue  | Activity 2.1 Profit  | Activity 2.1 Loss  | Activity 2.1 Gain  | Activity 2.1 Total  | Activity 2.1 Revenue  | Activity 2.1 Profit  | Activity 2.1 Loss  | Activity 2.1 Gain  | Activity 2.1 Total  | Activity 2.1 Revenue  | Activity 2.1 Profit  | Activity 2.1 Loss  | Activity 2.1 Gain  | Activity 2.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 3    | Category 3        | Activity 3.1  | Activity 3.1 Description  | Activity 3.1 Location  | Activity 3.1 Status  | Activity 3.1 Start Date  | Activity 3.1 End Date  | Activity 3.1 Start Time  | Activity 3.1 End Time  | Activity 3.1 Duration  | Activity 3.1 Frequency  | Activity 3.1 Priority  | Activity 3.1 Risk  | Activity 3.1 Impact  | Activity 3.1 Benefit  | Activity 3.1 Cost  | Activity 3.1 Revenue  | Activity 3.1 Profit  | Activity 3.1 Loss  | Activity 3.1 Gain  | Activity 3.1 Total  | Activity 3.1 Revenue  | Activity 3.1 Profit  | Activity 3.1 Loss  | Activity 3.1 Gain  | Activity 3.1 Total  | Activity 3.1 Revenue  | Activity 3.1 Profit  | Activity 3.1 Loss  | Activity 3.1 Gain  | Activity 3.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 4    | Category 4        | Activity 4.1  | Activity 4.1 Description  | Activity 4.1 Location  | Activity 4.1 Status  | Activity 4.1 Start Date  | Activity 4.1 End Date  | Activity 4.1 Start Time  | Activity 4.1 End Time  | Activity 4.1 Duration  | Activity 4.1 Frequency  | Activity 4.1 Priority  | Activity 4.1 Risk  | Activity 4.1 Impact  | Activity 4.1 Benefit  | Activity 4.1 Cost  | Activity 4.1 Revenue  | Activity 4.1 Profit  | Activity 4.1 Loss  | Activity 4.1 Gain  | Activity 4.1 Total  | Activity 4.1 Revenue  | Activity 4.1 Profit  | Activity 4.1 Loss  | Activity 4.1 Gain  | Activity 4.1 Total  | Activity 4.1 Revenue  | Activity 4.1 Profit  | Activity 4.1 Loss  | Activity 4.1 Gain  | Activity 4.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 5    | Category 5        | Activity 5.1  | Activity 5.1 Description  | Activity 5.1 Location  | Activity 5.1 Status  | Activity 5.1 Start Date  | Activity 5.1 End Date  | Activity 5.1 Start Time  | Activity 5.1 End Time  | Activity 5.1 Duration  | Activity 5.1 Frequency  | Activity 5.1 Priority  | Activity 5.1 Risk  | Activity 5.1 Impact  | Activity 5.1 Benefit  | Activity 5.1 Cost  | Activity 5.1 Revenue  | Activity 5.1 Profit  | Activity 5.1 Loss  | Activity 5.1 Gain  | Activity 5.1 Total  | Activity 5.1 Revenue  | Activity 5.1 Profit  | Activity 5.1 Loss  | Activity 5.1 Gain  | Activity 5.1 Total  | Activity 5.1 Revenue  | Activity 5.1 Profit  | Activity 5.1 Loss  | Activity 5.1 Gain  | Activity 5.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 6    | Category 6        | Activity 6.1  | Activity 6.1 Description  | Activity 6.1 Location  | Activity 6.1 Status  | Activity 6.1 Start Date  | Activity 6.1 End Date  | Activity 6.1 Start Time  | Activity 6.1 End Time  | Activity 6.1 Duration  | Activity 6.1 Frequency  | Activity 6.1 Priority  | Activity 6.1 Risk  | Activity 6.1 Impact  | Activity 6.1 Benefit  | Activity 6.1 Cost  | Activity 6.1 Revenue  | Activity 6.1 Profit  | Activity 6.1 Loss  | Activity 6.1 Gain  | Activity 6.1 Total  | Activity 6.1 Revenue  | Activity 6.1 Profit  | Activity 6.1 Loss  | Activity 6.1 Gain  | Activity 6.1 Total  | Activity 6.1 Revenue  | Activity 6.1 Profit  | Activity 6.1 Loss  | Activity 6.1 Gain  | Activity 6.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 7    | Category 7        | Activity 7.1  | Activity 7.1 Description  | Activity 7.1 Location  | Activity 7.1 Status  | Activity 7.1 Start Date  | Activity 7.1 End Date  | Activity 7.1 Start Time  | Activity 7.1 End Time  | Activity 7.1 Duration  | Activity 7.1 Frequency  | Activity 7.1 Priority  | Activity 7.1 Risk  | Activity 7.1 Impact  | Activity 7.1 Benefit  | Activity 7.1 Cost  | Activity 7.1 Revenue  | Activity 7.1 Profit  | Activity 7.1 Loss  | Activity 7.1 Gain  | Activity 7.1 Total  | Activity 7.1 Revenue  | Activity 7.1 Profit  | Activity 7.1 Loss  | Activity 7.1 Gain  | Activity 7.1 Total  | Activity 7.1 Revenue  | Activity 7.1 Profit  | Activity 7.1 Loss  | Activity 7.1 Gain  | Activity 7.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 8    | Category 8        | Activity 8.1  | Activity 8.1 Description  | Activity 8.1 Location  | Activity 8.1 Status  | Activity 8.1 Start Date  | Activity 8.1 End Date  | Activity 8.1 Start Time  | Activity 8.1 End Time  | Activity 8.1 Duration  | Activity 8.1 Frequency  | Activity 8.1 Priority  | Activity 8.1 Risk  | Activity 8.1 Impact  | Activity 8.1 Benefit  | Activity 8.1 Cost  | Activity 8.1 Revenue  | Activity 8.1 Profit  | Activity 8.1 Loss  | Activity 8.1 Gain  | Activity 8.1 Total  | Activity 8.1 Revenue  | Activity 8.1 Profit  | Activity 8.1 Loss  | Activity 8.1 Gain  | Activity 8.1 Total  | Activity 8.1 Revenue  | Activity 8.1 Profit  | Activity 8.1 Loss  | Activity 8.1 Gain  | Activity 8.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 9    | Category 9        | Activity 9.1  | Activity 9.1 Description  | Activity 9.1 Location  | Activity 9.1 Status  | Activity 9.1 Start Date  | Activity 9.1 End Date  | Activity 9.1 Start Time  | Activity 9.1 End Time  | Activity 9.1 Duration  | Activity 9.1 Frequency  | Activity 9.1 Priority  | Activity 9.1 Risk  | Activity 9.1 Impact  | Activity 9.1 Benefit  | Activity 9.1 Cost  | Activity 9.1 Revenue  | Activity 9.1 Profit  | Activity 9.1 Loss  | Activity 9.1 Gain  | Activity 9.1 Total  | Activity 9.1 Revenue  | Activity 9.1 Profit  | Activity 9.1 Loss  | Activity 9.1 Gain  | Activity 9.1 Total  | Activity 9.1 Revenue  | Activity 9.1 Profit  | Activity 9.1 Loss  | Activity 9.1 Gain  | Activity 9.1 Total  |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |
| Activity 10   | Category 10       | Activity 10.1 | Activity 10.1 Description | Activity 10.1 Location | Activity 10.1 Status | Activity 10.1 Start Date | Activity 10.1 End Date | Activity 10.1 Start Time | Activity 10.1 End Time | Activity 10.1 Duration | Activity 10.1 Frequency | Activity 10.1 Priority | Activity 10.1 Risk | Activity 10.1 Impact | Activity 10.1 Benefit | Activity 10.1 Cost | Activity 10.1 Revenue | Activity 10.1 Profit | Activity 10.1 Loss | Activity 10.1 Gain | Activity 10.1 Total | Activity 10.1 Revenue | Activity 10.1 Profit | Activity 10.1 Loss | Activity 10.1 Gain | Activity 10.1 Total | Activity 10.1 Revenue | Activity 10.1 Profit | Activity 10.1 Loss | Activity 10.1 Gain | Activity 10.1 Total |                |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |

## BB definition

[illegible]

# S1000D XSD

[illegible]

## BB modularization DM

```

1  # Import the necessary libraries
2  import pandas as pd
3  import numpy as np
4  from sklearn.preprocessing import StandardScaler
5  from sklearn.model_selection import train_test_split
6  from sklearn.metrics import accuracy_score, confusion_matrix
7  from sklearn.svm import SVC
8  from sklearn.metrics import classification_report
9
10 # Load the dataset
11 data = pd.read_csv('data.csv')
12
13 # Split the data into training and testing sets
14 X_train, X_test, y_train, y_test = train_test_split(data, data['class'],
15                                                    test_size=0.2,
16                                                    random_state=42)
17
18 # Standardize the features
19 scaler = StandardScaler()
20 X_train = scaler.fit_transform(X_train)
21 X_test = scaler.transform(X_test)
22
23 # Create an SVM model
24 svm = SVC(kernel='rbf')
25
26 # Train the model
27 svm.fit(X_train, y_train)
28
29 # Predict the class for the test set
30 y_pred = svm.predict(X_test)
31
32 # Evaluate the model
33 accuracy = accuracy_score(y_test, y_pred)
34 conf_matrix = confusion_matrix(y_test, y_pred)
35
36 # Print the results
37 print('Accuracy: %.2f' % accuracy)
38 print('Confusion Matrix: \n', conf_matrix)
39
40 # Print the classification report
41 print(classification_report(y_test, y_pred))

```

# S1000D light XSD

[illegible]

## Brex Dm

[illegible]

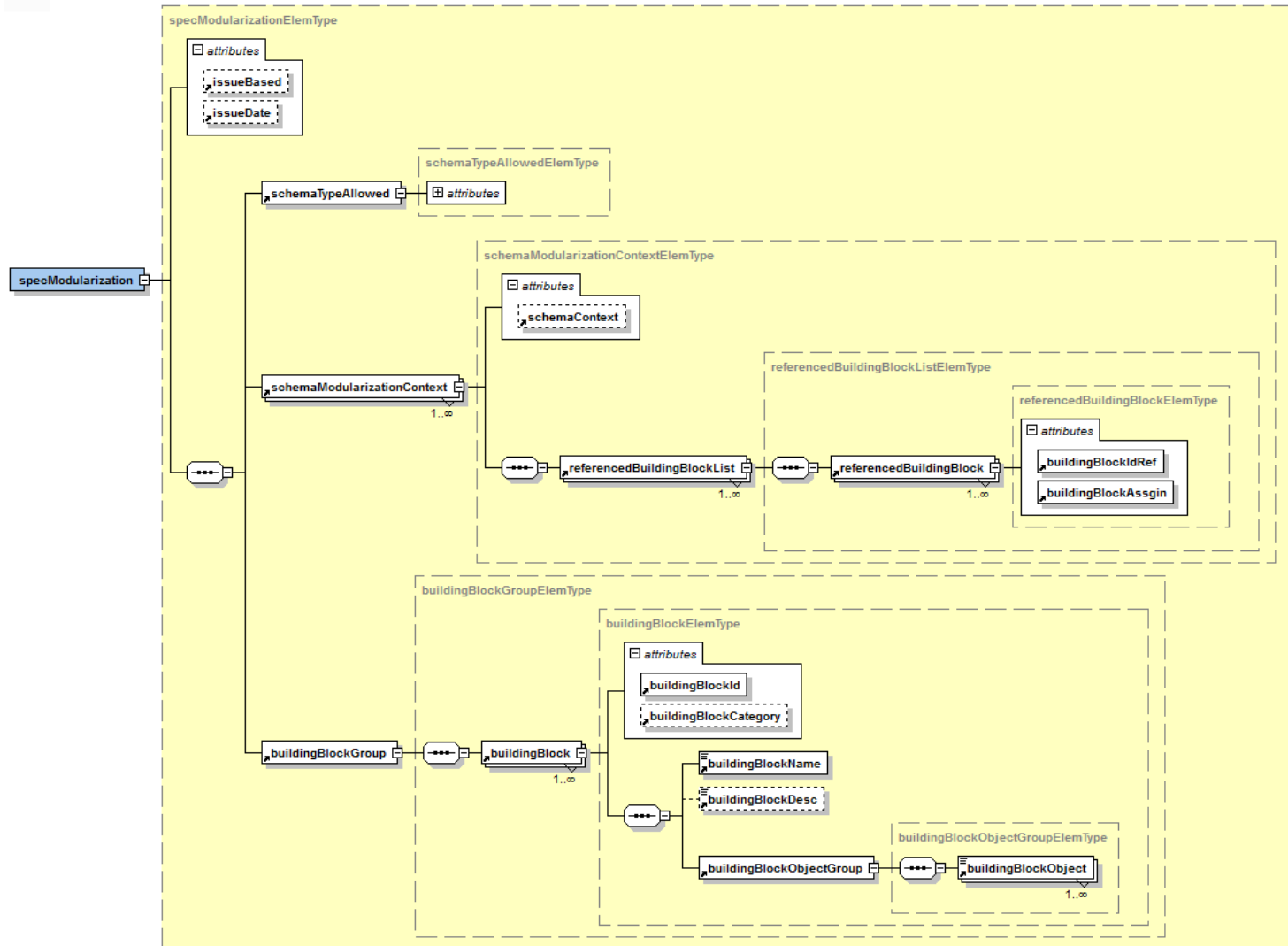
## Dm instances

[illegible]

# Modularization Matrix

|                 |                                   |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|-----------------|-----------------------------------|--------------------|--------------------|-----------|---------|--------|------------------|-----------|------|-----|----------|-----|-------|-------------|-----|----------|----|-----------------|--------|---------|----|---------|------------|---------------------|--------|----------|-----------|-----|---------|--|
|                 | 29/08/2013                        |                    | Based on Issue 4.1 |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| Building Blocks | Functionality                     | appliccrossrefable | brex               | checklist | comment | comrep | condcrossrefable | container | crew | ddn | descript | dml | fault | frontmatter | lpd | learning | pm | prdcrossrefable | proced | process | sb | schedul | scocontent | scormcontentpackage | update | wrngdata | wrngflids | xcf | Comment |  |
|                 |                                   |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 |                                   |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 | XML Schema Core                   |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 | XML Schema                        |                    | 1                  |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 |                                   |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 | Building Blocks                   |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 | Authoring                         |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB01-01         | Change tracking                   |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB01-02         | Use of paragraph significant data |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 | Applicability                     |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB02-01         | Data Module applicability         |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB02-02         | In line applicability             |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB02-03         | Externalization of applicability  | *BB05-12           |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB02-04         | Use of textual applicability      |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
|                 | Alternate                         |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-01         | CommonInfoDescParaAlts            |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-02         | figureAlts                        |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-03         | multimediaAlts                    |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-04         | proceduralStepAlts                |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-05         | levelledParaAlts                  |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-06         | functionalItemAlts                |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-07         | circuitBreakerAlts                |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-08         | zoneAlts                          |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-09         | accessPointsAlts                  |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-10         | toolAlts                          |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-11         | supplyRqmtAlts                    |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-12         | isolatedFaultAlts                 |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-13         | detectedFaultAlts                 |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-14         | observedFaultAlts                 |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-15         | correlatedFaultAlts               |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |
| BB03-16         | assocWarningMalfunctionAlts       |                    |                    |           |         |        |                  |           |      |     |          |     |       |             |     |          |    |                 |        |         |    |         |            |                     |        |          |           |     |         |  |

# BB Schema



# BB DM definition example

```
<?xml version="1.0" encoding="UTF-8"?>
- <specModularization issueDate="2012-12-31" issueBased="S1000D_4-1">
  <schemaTypeAllowed xcf="0" wrngflds="0" wrngdata="0" update="0"
    scormcontentpackage="0" scocontent="0" schedul="0" sb="0" process="0"
    proced="0" prdcrossreftable="0" pm="0" learning="0" ipd="0" frontmatter="0"
    fault="0" dml="0" descript="1" ddn="0" crew="0" container="0"
    condcrossreftable="0" comrep="0" comment="0" checklist="0" brex="1"
    appliccrossreftable="0"/>
  - <schemaModularizationContext schemaContext="descript.xsd">
    - <referencedBuildingBlockList>
      <referencedBuildingBlock buildingBlockAssgin="NO" buildingBlockId="BB-1"/>
    </referencedBuildingBlockList>
  </schemaModularizationContext>
  - <schemaModularizationContext>
    - <referencedBuildingBlockList>
      <referencedBuildingBlock buildingBlockAssgin="NO" buildingBlockId="BB-2"/>
      <referencedBuildingBlock buildingBlockAssgin="NO" buildingBlockId="BB-3"/>
    </referencedBuildingBlockList>
  </schemaModularizationContext>
  - <buildingBlockGroup>
    - <buildingBlock category="" id="BB-1">
      <buildingBlockName>XLink</buildingBlockName>
      <buildingBlockDesc>XLink management</buildingBlockDesc>
      - <buildingBlockObjectGroup>
        <buildingBlockObject>//xs:import[@schemaLocation="xlink.xsd"]
        </buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT"]
        </buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT0"]
        </buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT1"]
        </buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT2"]
        </buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT3"]
        </buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT4"]
        </buildingBlockObject>
      </buildingBlockObjectGroup>
    </buildingBlock>
    - <buildingBlock category="" id="BB-2">
      <buildingBlockName>RDF-DC</buildingBlockName>
      <buildingBlockDesc>Resource Description File Dublin
        Core</buildingBlockDesc>
      - <buildingBlockObjectGroup>
        <buildingBlockObject>//xs:import[@schemaLocation="rdf.xsd"]
        </buildingBlockObject>
      </buildingBlockObjectGroup>
    </buildingBlock>
  </buildingBlockGroup>
</specModularization>
```

No usage of:

- RDF (BB-2)
- XLinks (BB-1)

# Example of automatic light descript XSD generation

## Initial S1000D XSD (full options)

```
<?xml version="1.0" encoding="UTF-8"?>
- <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  elementFormDefault="qualified" attributeFormDefault="qualified">
  <xs:import schemaLocation="xlink.xsd" namespace="http://www.w3.org/1999/xlink"/>
  <xs:import schemaLocation="rdf.xsd" namespace="http://www.w3.org/1999/02/22-rdf-syntax-ns"/>
  + <xs:annotation>
  <xs:element type="dmoduleElemType" name="dmodule"/>
  - <xs:complexType name="dmoduleElemType">
    - <xs:sequence>
      <xs:element ref="rdf:Description" minOccurs="0"/>
      <xs:element ref="identAndStatusSection"/>
      <xs:element ref="content"/>
    </xs:sequence>
    <xs:attribute ref="id"/>
  </xs:complexType>
  <xs:element type="identAndStatusSectionElemType" name="identAndStatusSection"/>
  - <xs:complexType name="identAndStatusSectionElemType">
    - <xs:sequence>
      <xs:element ref="dmAddress"/>
      <xs:element ref="dmStatus"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element type="dmAddressElemType" name="dmAddress"/>
  - <xs:complexType name="dmAddressElemType">
    - <xs:sequence>
      <xs:element ref="dmIdent"/>
      <xs:element ref="dmAddressItems"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element type="dmIdentElemType" name="dmIdent"/>
  - <xs:complexType name="dmIdentElemType">
    - <xs:sequence>
      <xs:element ref="identExtension" minOccurs="0"/>
      <xs:element ref="dmCode"/>
      <xs:element ref="language"/>
      <xs:element ref="issueInfo"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element type="identExtensionElemType" name="identExtension"/>
```

file:///H:/user%20forum/modularization/ok/plus/descript.xsd#

## Light S1000D XSD (filtered on needs)

```
<?xml version="1.0" encoding="UTF-8"?>
- <xs:schema attributeFormDefault="qualified" elementFormDefault="qualified"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  + <xs:annotation>
  <xs:element type="dmoduleElemType" name="dmodule"/>
  - <xs:complexType name="dmoduleElemType">
    - <xs:sequence>
      <xs:element ref="identAndStatusSection"/>
      <xs:element ref="content"/>
    </xs:sequence>
    <xs:attribute ref="id"/>
  </xs:complexType>
  <xs:element type="identAndStatusSectionElemType" name="identAndStatusSection"/>
  - <xs:complexType name="identAndStatusSectionElemType">
    - <xs:sequence>
      <xs:element ref="dmAddress"/>
      <xs:element ref="dmStatus"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element type="dmAddressElemType" name="dmAddress"/>
  - <xs:complexType name="dmAddressElemType">
    - <xs:sequence>
      <xs:element ref="dmIdent"/>
      <xs:element ref="dmAddressItems"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element type="dmIdentElemType" name="dmIdent"/>
  - <xs:complexType name="dmIdentElemType">
    - <xs:sequence>
      <xs:element ref="identExtension" minOccurs="0"/>
      <xs:element ref="dmCode"/>
      <xs:element ref="language"/>
      <xs:element ref="issueInfo"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element type="identExtensionElemType" name="identExtension"/>
  - <xs:complexType name="identExtensionElemType">
    <xs:attribute ref="extensionProducer" use="required"/>
    <xs:attribute ref="extensionCode" use="required"/>
  </xs:complexType>
  <xs:attribute type="xs:string" name="extensionProducer"/>
  <xs:attribute type="xs:string" name="extensionCode"/>
```

### No usage of:

- RDF
- XLinks



# Authoring Example

Arbortext Editor - DMC-S1000DBIKE-AAA-D00-00-00AA-041A-A\_007-00\_EN-US.xml

File Edit Find View Insert Entities Object Table Tools Styler Format Window Help

para internalRef B Z U

dmRefident  
dmCode S1000DBIKE-AA  
dmRefident  
dmRef  
brexDmRef  
qualityAssurance  
firstVerification  
qualityAssurance  
systemBreakdownCode BY  
skillLevel  
reasonForUpdate  
simplePara totally revised  
simplePara Schema cleanup element  
reasonForUpdate  
dmStatus  
identAnd Status Section  
content

authorityExceptions authorityExceptions authorityExceptions  
authorityNotes authorityNotes authorityNotes  
techStandard  
brexDmRef S1000DBIKE-AAA-D00-00-00AA-022A-D  
issueInfo inWork="00" issueNumber="007"  
brexDmRef  
qualityAssurance  
firstVerification verificationType="tabtop"  
qualityAssurance  
systemBreakdownCode BY systemBreakdownCode  
skillLevel skillLevelCode="sk01"  
reasonForUpdate  
simplePara totally revised simplePara  
simplePara Schema cleanup element attribute renaming simplePara  
reasonForUpdate  
dmStatus

**No usage of:  
- XLinks (BB-1)**

**1 Physical description of a bicycle**

A bicycle (refer to  
internalRef internalRefId="fig-0001" internalRefTargetType="figure" internalRef internalRef  
) is a frame and a number of movable components with mechanical parts that are complete  
access to the mechanical parts. Thus, you can disassemble the different components of  
internalRef internalRefId="fig-0001-gra-0001-hot-0000" internalRefTargetType="hotspot" internalRef  
) to do:

- an inspection
- a maintenance task
- a repair task

Command:

Modify Attributes

applicRefId:  
authorityDocument:  
authorityName:  
internalRefId: fig-0001  
internalRefTargetType: figure

OK  
Cancel  
Help  
Validate  
Reset  
Reset All  
Delete  
Delete All

Modify Attributes

applicRefId:  
authorityDocument:  
authorityName:  
internalRefId: fig-0001  
internalRefTargetType: figure  
referredFragment:  
targetTitle:

Element: internalRef

OK  
Cancel  
Help  
Validate  
Reset  
Reset All  
Delete  
Delete All

# BB DM definition Example

```
<?xml version="1.0" encoding="UTF-8"?>
- <specModularization issueDate="2012-12-31" issueBased="S1000D_4-1">
  <schemaTypeAllowed xcf="0" wrngflds="0" wrngdata="0" update="0" scormcontentpackage="0" scocontent="0" schedul="0" sb="0"
    process="0" proced="0" prdcrossreftable="0" pm="0" learning="0" ipd="0" frontmatter="0" fault="0" dml="0" descript="1" ddn="0"
    crew="0" container="0" condcrossreftable="0" comrep="0" comment="0" checklist="0" brex="1" appliccrossreftable="0"/>
  - <schemaModularizationContext schemaContext="descript.xsd">
    - <referencedBuildingBlockList>
      <referencedBuildingBlock buildingBlockAssgin="NO" buildingBlockId="BB-1"/>
    </referencedBuildingBlockList>
  </schemaModularizationContext>
  - <schemaModularizationContext>
    - <referencedBuildingBlockList>
      <referencedBuildingBlock buildingBlockAssgin="NO" buildingBlockId="BB-2"/>
      <referencedBuildingBlock buildingBlockAssgin="NO" buildingBlockId="BB-3"/>
    </referencedBuildingBlockList>
  </schemaModularizationContext>
  - <buildingBlockGroup>
    - <buildingBlock category="" id="BB-1">
      <buildingBlockName>XLink</buildingBlockName>
      <buildingBlockDesc>XLink management</buildingBlockDesc>
      - <buildingBlockObjectGroup>
        <buildingBlockObject> //xs:import[@schemaLocation="xlink.xsd"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="xlink:XLINKATT"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="xlink:XLINKATT0"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="xlink:XLINKATT1"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="xlink:XLINKATT2"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="xlink:XLINKATT3"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="xlink:XLINKATT4"]</buildingBlockObject>
      </buildingBlockObjectGroup>
    </buildingBlock>
    - <buildingBlock category="" id="BB-2">
      <buildingBlockName>RDF-DC</buildingBlockName>
      <buildingBlockDesc>Ressource Description File Dublin Core</buildingBlockDesc>
      - <buildingBlockObjectGroup>
        <buildingBlockObject> //xs:import[@schemaLocation="rdf.xsd"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="rdf:Description"]</buildingBlockObject>
      </buildingBlockObjectGroup>
    </buildingBlock>
    - <buildingBlock category="Figure" id="BB-3">
      <buildingBlockName>Figure ICN</buildingBlockName>
      <buildingBlockDesc>Definition of figure ICN</buildingBlockDesc>
      - <buildingBlockObjectGroup>
        <buildingBlockObject> //xs:element[@name="figure"]</buildingBlockObject>
        <buildingBlockObject> //xs:complexType[@name="figureElemType"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="figure"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="figureAlts"]</buildingBlockObject>
        <buildingBlockObject> //xs:group[@name="figureElemGroup"]</buildingBlockObject>
        <buildingBlockObject> //xs:attributeGroup[@ref="figureElemGroup"]</buildingBlockObject>
      </buildingBlockObjectGroup>
    </buildingBlock>
  </buildingBlockGroup>
</specModularization>
```

**No usage of:**

- Multimedia
- Foldout
- Hotspot

# Example of automatic light descript XSD generation

## Initial S1000D XSD (full options)

```

</xs:complexType>
- <xs:group name="fmftElemGroup">
  - <xs:choice>
    <xs:element ref="figure"/>
    <xs:element ref="figureAlts"/>
    <xs:element ref="multimedia"/>
    <xs:element ref="multimediaAlts"/>
    <xs:element ref="foldout"/>
    <xs:element ref="table"/>
  </xs:choice>
</xs:group>
<xs:element type="figureElemType" name="figure"/>
- <xs:complexType name="figureElemType">
  - <xs:sequence>
    <xs:element ref="title"/>
    <xs:element ref="graphic" maxOccurs="unbounded"/>
    <xs:element ref="legend" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute ref="applicRefId"/>
  <xs:attribute ref="id"/>
  <xs:attributeGroup ref="changeAttGroup"/>
  <xs:attributeGroup ref="authorityAttGroup"/>
  <xs:attributeGroup ref="securityAttGroup"/>
</xs:complexType>
<xs:element type="graphicElemType" name="graphic"/>
- <xs:complexType name="graphicElemType">
  - <xs:sequence>
    <xs:element ref="hotspot" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element ref="reasonForAmendment" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute ref="applicRefId"/>
  <xs:attribute ref="infoEntityIdent" use="required"/>
  <xs:attribute ref="reproductionWidth"/>
  <xs:attribute ref="reproductionHeight"/>
  <xs:attribute ref="reproductionScale"/>
  <xs:attribute ref="id"/>
  <xs:attributeGroup ref="changeAttGroup"/>
  <xs:attributeGroup ref="authorityAttGroup"/>
  <xs:attributeGroup ref="securityAttGroup"/>
  <xs:attributeGroup ref="xlink:XLINKATT0"/>
</xs:complexType>
<xs:element type="hotspotElemType" name="hotspot"/>
- <xs:complexType name="hotspotElemType">
  - <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element ref="hotspot"/>
  </xs:choice>

```

### No usage of:

- Multimedia
- Foldout
- Hotspot
- External applicability

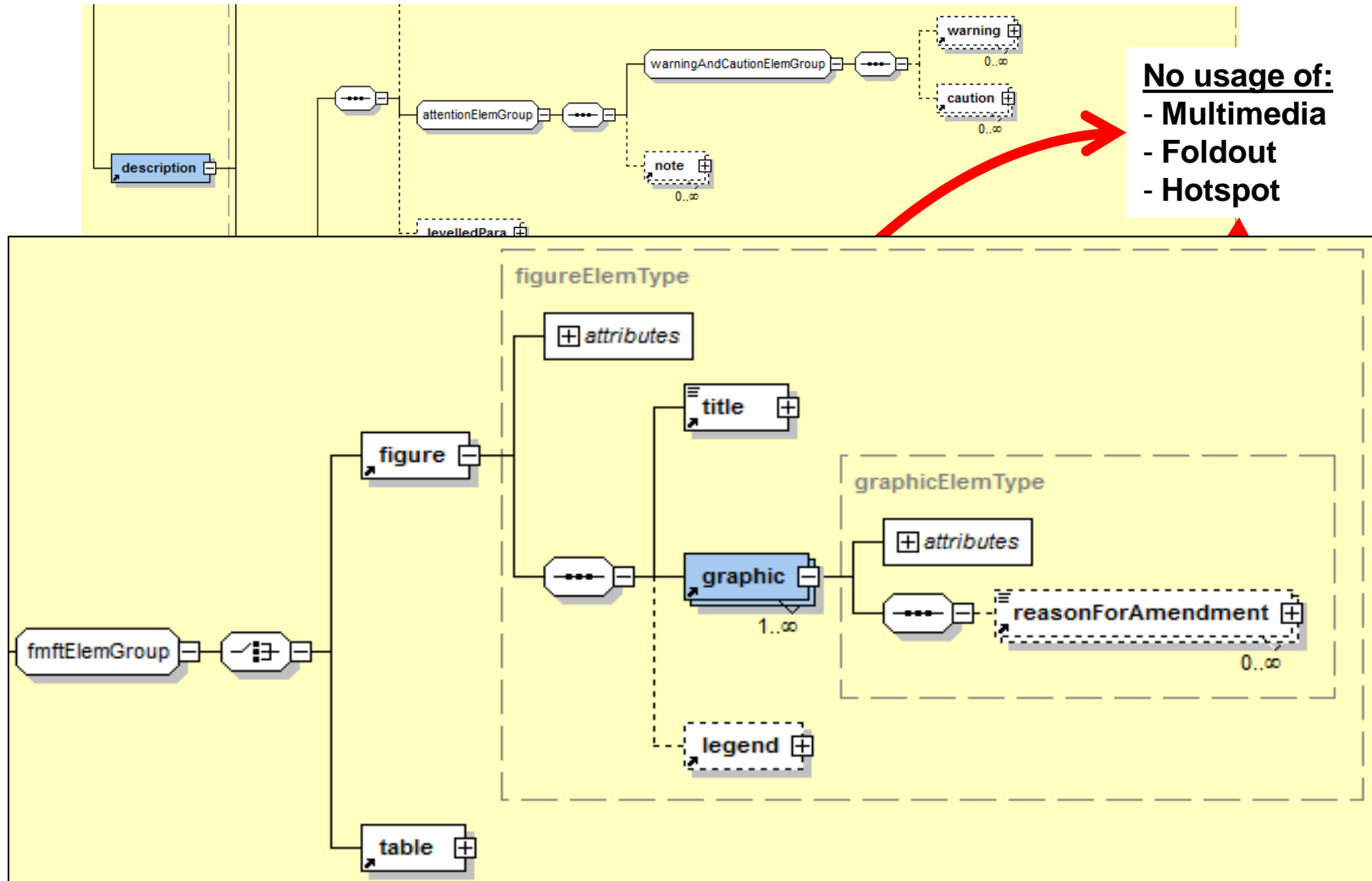
## Light S1000D XSD (filtered on needs)

```

- <xs:group name="fmftElemGroup">
  - <xs:choice>
    <xs:element ref="figure"/>
    <xs:element ref="figureAlts"/>
    <xs:element ref="table"/>
  </xs:choice>
</xs:group>
<xs:element type="figureElemType" name="figure"/>
- <xs:complexType name="figureElemType">
  - <xs:sequence>
    <xs:element ref="title"/>
    <xs:element ref="graphic" maxOccurs="unbounded"/>
    <xs:element ref="legend" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute ref="applicRefId"/>
  <xs:attribute ref="id"/>
  <xs:attributeGroup ref="changeAttGroup"/>
  <xs:attributeGroup ref="authorityAttGroup"/>
  <xs:attributeGroup ref="securityAttGroup"/>
</xs:complexType>
<xs:element type="graphicElemType" name="graphic"/>
- <xs:complexType name="graphicElemType">
  - <xs:sequence>
    <xs:element ref="reasonForAmendment" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
  <xs:attribute ref="applicRefId"/>
  <xs:attribute ref="infoEntityIdent" use="required"/>
  <xs:attribute ref="reproductionWidth"/>
  <xs:attribute ref="reproductionHeight"/>
  <xs:attribute ref="reproductionScale"/>
  <xs:attribute ref="id"/>
  <xs:attributeGroup ref="changeAttGroup"/>
  <xs:attributeGroup ref="authorityAttGroup"/>
  <xs:attributeGroup ref="securityAttGroup"/>
</xs:complexType>
<xs:element type="catalogSeqNumberRefElemType" name="catalogSeqNumberRef"/>
- <xs:complexType name="catalogSeqNumberRefElemType">
  - <xs:sequence>
    <xs:element ref="refs" minOccurs="0"/>
  </xs:sequence>
  <xs:attribute ref="modelIdentCode"/>
  <xs:attribute ref="systemDiffCode"/>
  <xs:attribute ref="systemCode"/>
  <xs:attribute ref="subSystemCode"/>

```

# Example of automatic light descript XSD generation





## Conclusion

- ▶ **This studies has been achieved by a dream team including S1000D tech pubs and techies**
- ▶ **Starting from a theoretical approach allowing the BB definition a PoC has been achieved by Nicolas allowing:**
  - ◆ **To easily manage what can be addressed as BB**
  - ◆ **To easily define the program BB declination**
  - ◆ **A BB data module structure has also been issued allowing to store this definition**
  - ◆ **An automatic strip down generation of official S1000D XSD has also been done , based on this BB DM**
- ➔ **this allow to easily manage a filtering of the huge inital schema bringing a better efficiency in authoring, validation and understanding of the spec for dedicated program suppliers**
- ▶ **It works, and could from our perspective could help the SMTT to achieve the goal of modularization**



# Q&A

Thank you for your attention



# BB xsd relationships

|    | A  | B                       | C | D                     | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U |
|----|----|-------------------------|---|-----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1  |    | 10/12/2012              |   | Based on Issue 4.1PR6 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2  |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3  |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4  |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 5  |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 6  |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7  |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 8  | ok | appliccrossreftable.xsd |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 9  |    | brex.xsd                |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 10 | ok | checklist.xsd           |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 11 |    | comment.xsd             |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 12 | ok | condorcrossreftable.xsd |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 13 |    | container.xsd           |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 14 |    | crew.xsd                |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 15 | ok | ddn.xsd                 |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 16 |    | descript.xsd            |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 17 | ok | dml.xsd                 |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 18 |    | fault.xsd               |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 19 | ok | frontmatter.xsd         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 20 |    | ipd.xsd                 |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 21 |    | learning.xsd            |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 22 |    | pm.xsd                  |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 23 | ok | prdcrossreftable.xsd    |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 24 |    | proced.xsd              |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 25 |    | process.xsd             |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 26 |    | sb.xsd                  |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 27 |    | schedul.xsd             |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 28 |    | soocontent.xsd          |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 29 |    | soormcontentpackage.xsd |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 30 |    | update.xsd              |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 31 |    | wmgdata.xsd             |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 32 |    | wmgflds.xsd             |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 33 |    | wof.xsd                 |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 34 |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 35 |    |                         |   |                       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |



EMF Offshore DMS – 12/07/2013 - p. 25

# Building Block DM

```
<?xml version="1.0" encoding="UTF-8"?>
<specModularization issueBased="S1000D_4-1" issueDate="2012-12-31">
  <schematypeAllowed appliccrossreftable="1" brex="0" checklist="0" comment="0" comrep="0" condcrossreftable="0"
  container="0" crew="0" ddn="0" descript="0" dml="0" fault="0" frontmatter="0" ipd="0" learning="0" pm="0" prdcrossreftable="
  0" proced="0" process="0" sb="0" schedul="0" scocontent="0" scormcontentpackage="0" update="0" wrngdata="0" wrngflds="0"
  xcf="0"/>
  <schemaModularizationContext schemaContext="descript.xsd">
    <referencedBuildingBlockList>
      <referencedBuildingBlock buildingBlockId="BB-1" buildingBlockAssgin="NO"/>
    </referencedBuildingBlockList>
  </schemaModularizationContext>
  <schemaModularizationContext>
    <referencedBuildingBlockList>
      <referencedBuildingBlock buildingBlockId="BB-2" buildingBlockAssgin="NO"/>
      <referencedBuildingBlock buildingBlockId="BB-3" buildingBlockAssgin="NO"/>
      <referencedBuildingBlock buildingBlockId="BB-6" buildingBlockAssgin="NO"/>
    </referencedBuildingBlockList>
  </schemaModularizationContext>

  <buildingBlockGroup>
    <buildingBlock id="BB-1" category="">
      <buildingBlockName>XLink</buildingBlockName>
      <buildingBlockDesc>XLink management</buildingBlockDesc>
      <buildingBlockObjectGroup>
        <buildingBlockObject>//xs:import[@schemaLocation="xlink.xsd"]</buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT"]</buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT0"]</buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT1"]</buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT2"]</buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT3"]</buildingBlockObject>
        <buildingBlockObject>//xs:attributeGroup[@ref="xlink:XLINKATT4"]</buildingBlockObject>
      </buildingBlockObjectGroup>
    </buildingBlock>
    <buildingBlock id="BB-2" category="">
      <buildingBlockName>RDF-DC</buildingBlockName>
      <buildingBlockDesc>Ressource Description File Dublin Core</buildingBlockDesc>
      <buildingBlockObjectGroup>
        <buildingBlockObject>//xs:import[@schemaLocation="rdf.xsd"]</buildingBlockObject>
        <buildingBlockObject>//*[[@ref="rdf:Description"]</buildingBlockObject>
      </buildingBlockObjectGroup>
    </buildingBlock>
    <buildingBlock id="BB-3" category="Figure">
      <buildingBlockName>Figure ICN</buildingBlockName>
      <buildingBlockDesc>Definition of figure ICN</buildingBlockDesc>
    </buildingBlock>
  </buildingBlockGroup>

```