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# Practical information modeling

The art of taking the piece apart

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*S1000D User Forum 2012*  
*June 18-21, 2012*

# Agenda

1. Why bother about modularization – what is the S1000D idea/purpose?
2. What does S1000D suggest to do?
3. How do I go about?

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# Why modularize?

# Why modularize?

A successful modularization will

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

# If things go wrong ...

- Inconsistent CSDB structure
  - A certain type of item appears in several locations in the db
  - Collaboration becomes difficult
  - Difficulties to compile suitable publications
  - ...

# If things go wrong ...

- Ultimately, you may have to restructure your CSDB!!!
  - Unless you're extremely lucky, this is manual work
  - Since it is manual work, it is correspondingly costly

# The data module

- Constitues the smallest managable unit in the CSDB
- For a complex system, the CSDB may eventually contain tens of thousands of data modules

A mistake may become a hugh problem!!

# The data module

- Information of a certain type about a certain object.
- S1000D has pre-defined some 800-900 information codes, each representing a certain type of information
- Identified using the Data Module Code (DMC)



# SNS

- Standard numbering system (SNS),  
the part of the DMC related to the product
- Offers a 4-level hierarchy

# The goal

A breakdown of the information about the  
*product*

NOT a breakdown of *the product itself*

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# What does S1000D suggest?

# The options

S1000D mentions three options

- 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

# 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

# Example SNS

- Examples of what certain projects have done
- Fit for a specific purpose/target situation
- "Looks like something I'm used to, meaning I won't have to change"
- Not maintained by the S1000D organisation!

# Project specific SNS

Hopefully,

- Especially fitted for the purpose!
- Unambiguous
- Consistent
- Practical

But you are left on your own!!



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# How do I go about?

# It is a long term engagement ...

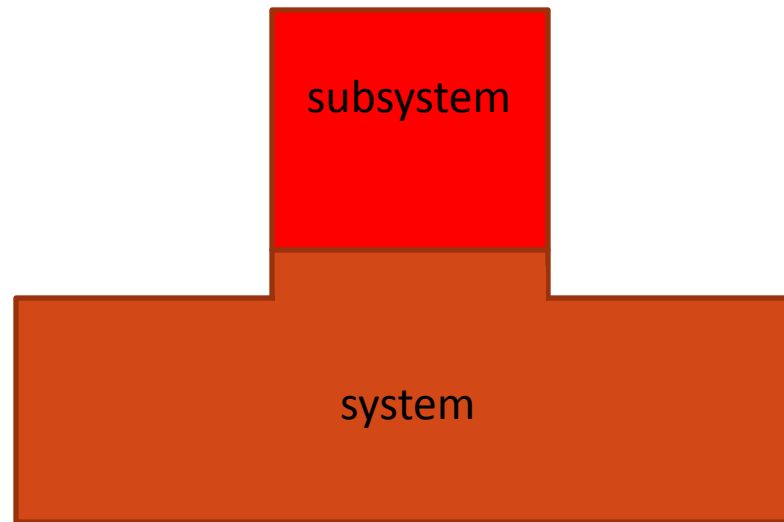
- As a product producer you will live with your CSDB for several decades. Therefore, the CSDB must lend itself to all kinds of changes, eg use profile and environment

# To identify the breakdown objects

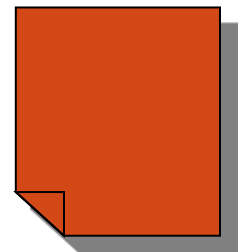
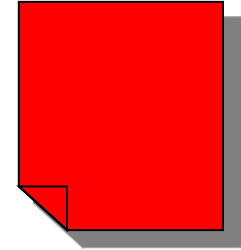
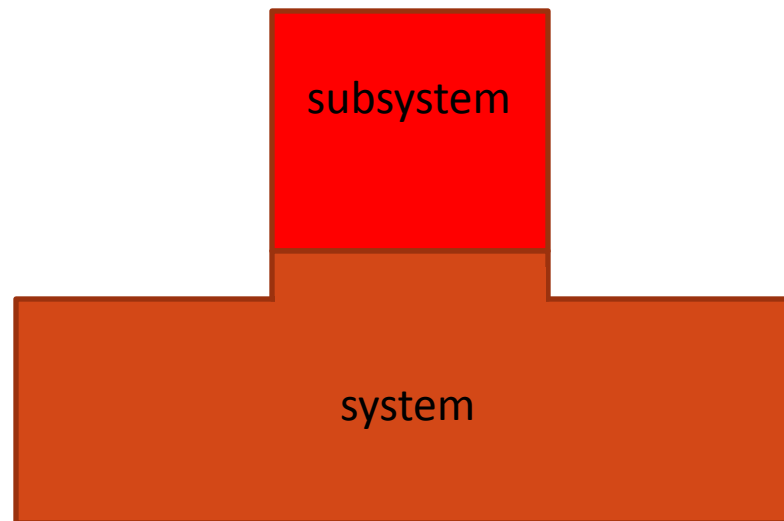
Multi-dimensional space:

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

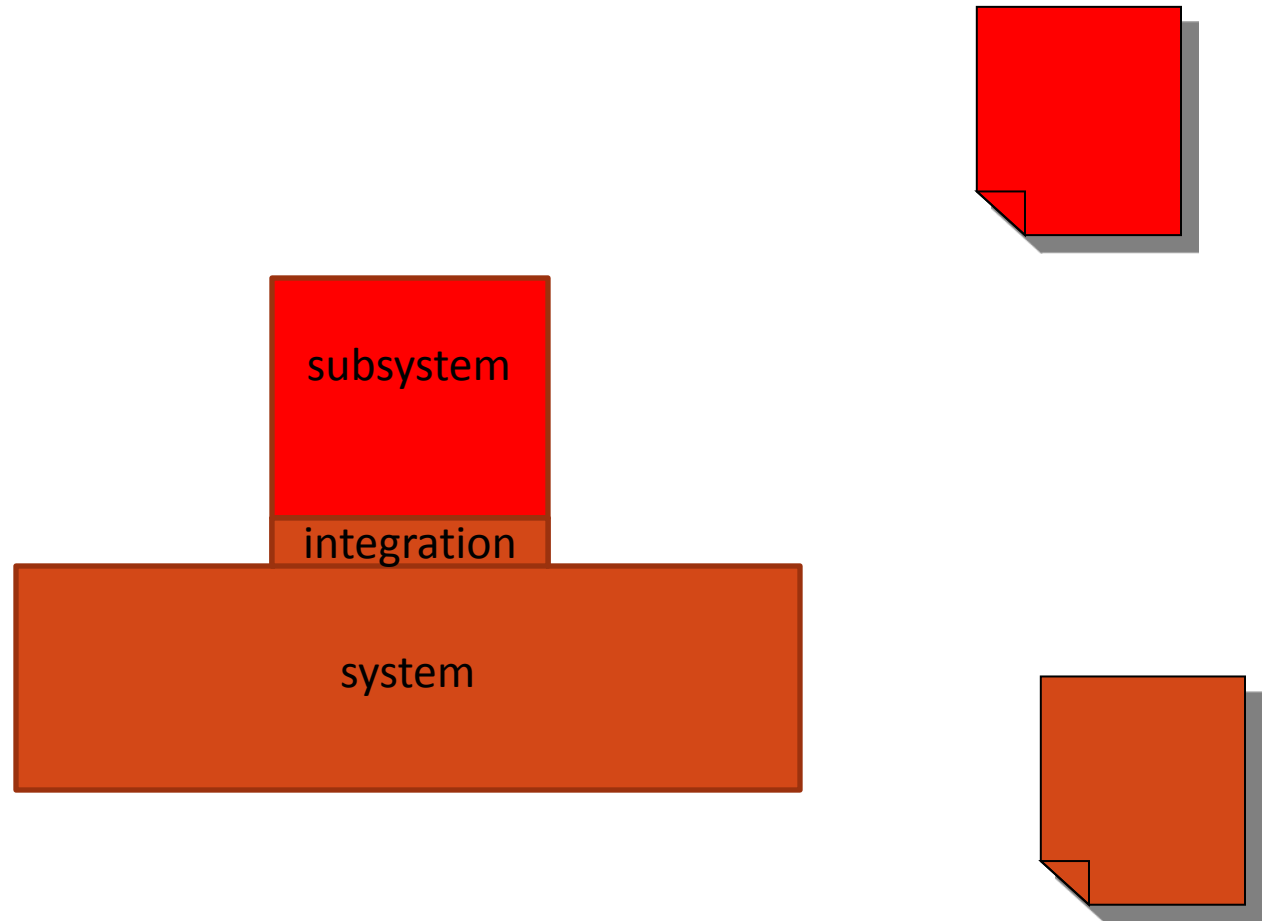
# To identify the objects



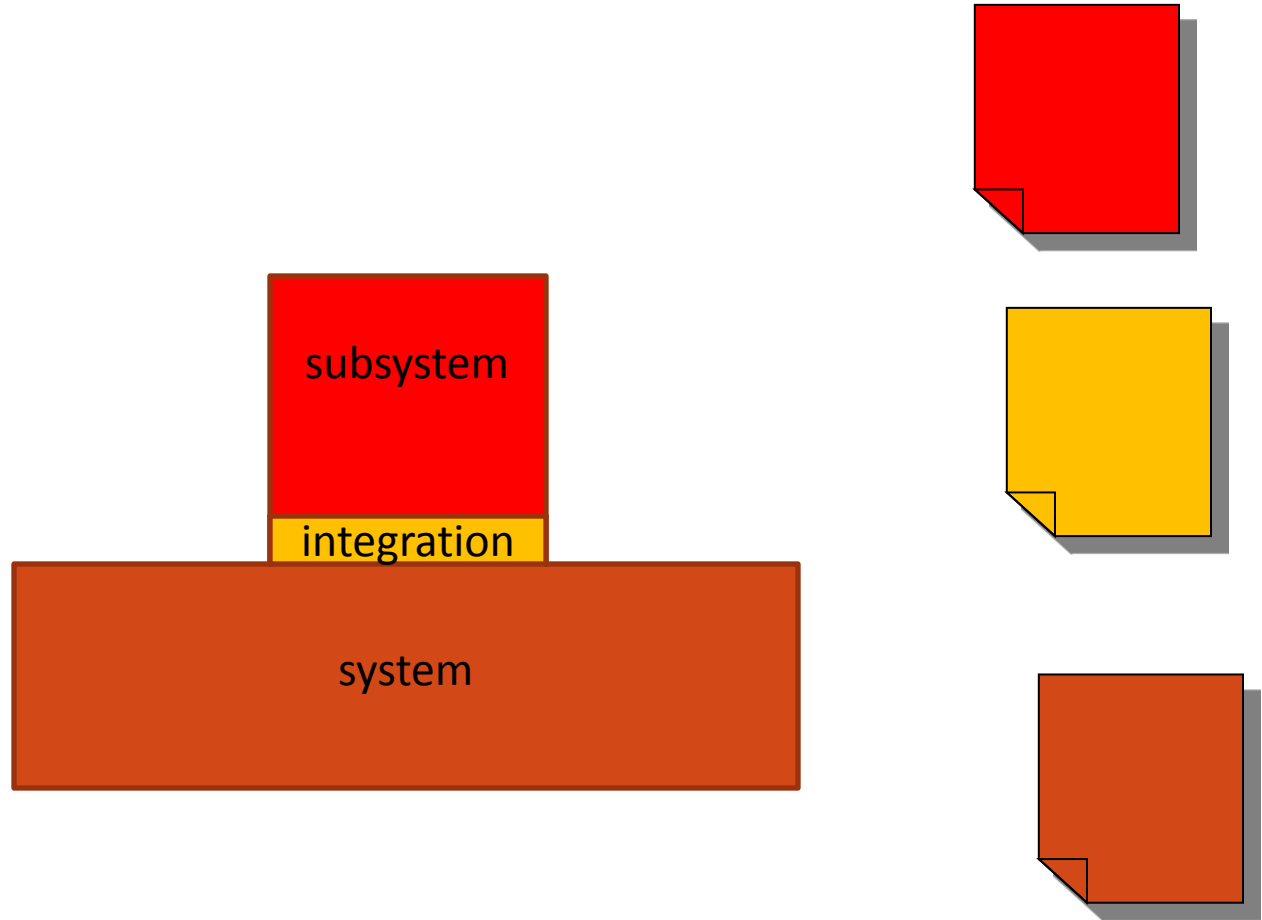
# To identify the objects



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# To identify the objects

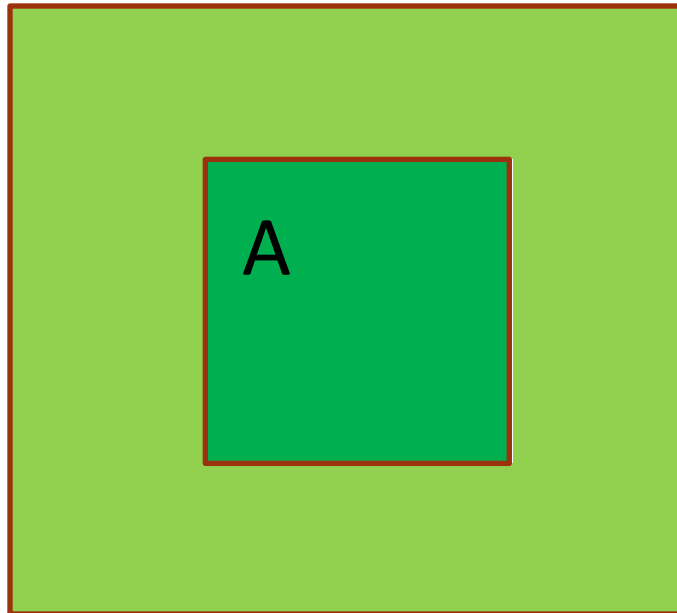


# To identify the objects

Maint level X

Procedure to fix A:

1. Remove A
2. Repair A
  1. Do this
  2. Do that
  3. ...
3. Reinstall A



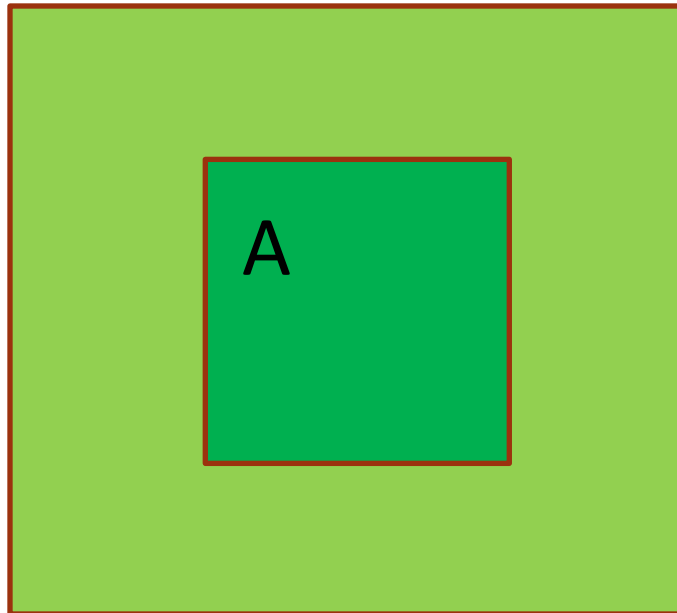


# To identify the objects

Maint level X

Procedure to replace A:

1. Change A



Maint level Y

Procedure to repair A:

1. Do this
2. Do that
3. ...

# Check questions

What happens to the CSDB if

- A new configuration is added?
- An old model is terminated?
- The product is introduced in new a environment?
- The logistics organisation is changed?
- The product gets a new/revised role?
- There is a new customer?

# Check questions

In any case, changes should *only affect data modules directly concerned!*

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# Conclusions

# Svante's advices

- If not impossible, start from a Maintained SNS
- Remember that all product aspects must be reflected
- Out of the box, try to anticipate future changes in usage, customer base, configurations etc and prepare for the implications

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Everything should be as simple as possible,  
but no simpler!

*Albert Einstein*

  
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Thanks for your attention!

Questions?