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Implementing S1000D – The Hard Way

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Rank/title of presenter: Senior Engineer
Company/organization: FNSS

S1000D User Forum, London *October 14-16, 2019*

Overview

- About FNSS
- FNSS ILS Department
- History of S1000D at FNSS
- Authoring
- Implementing S1000D (Project Omega)
- Implementing S1000D (Project Sigma)
- Overall Summary

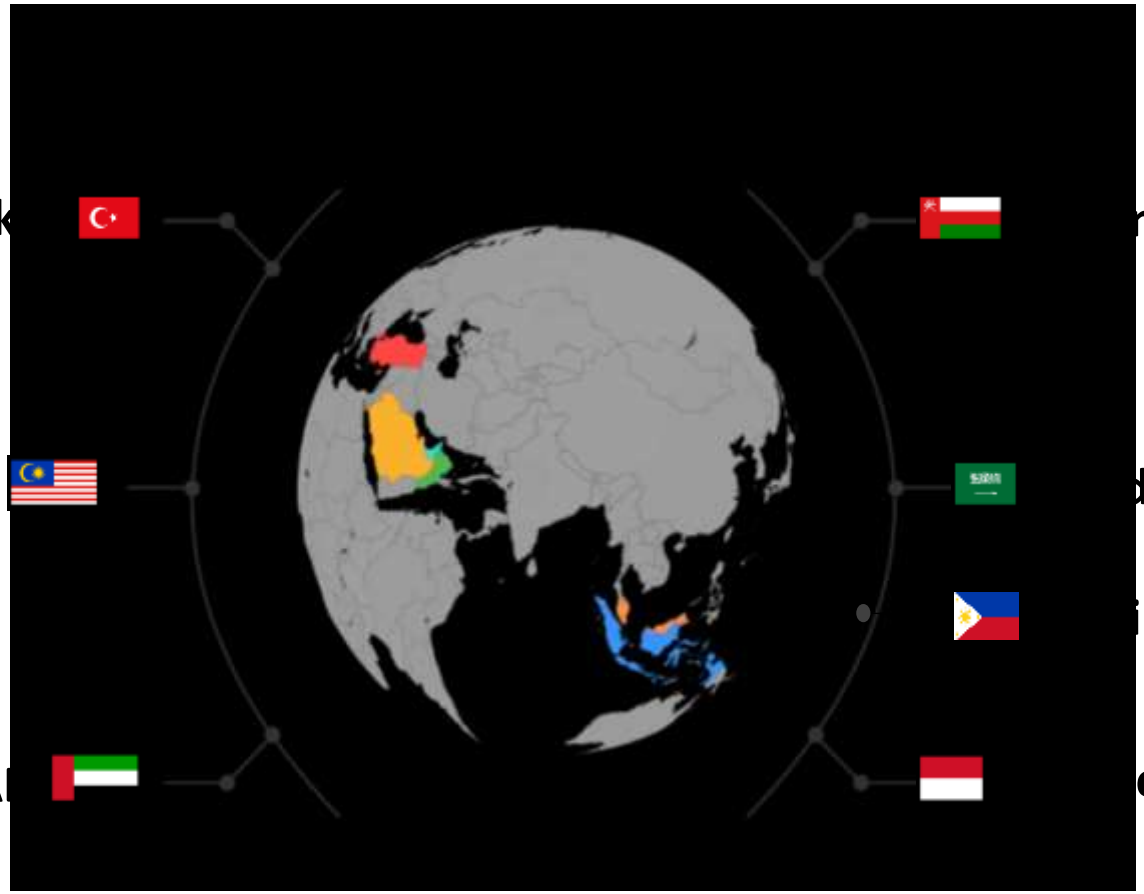
About FNSS

About FNSS

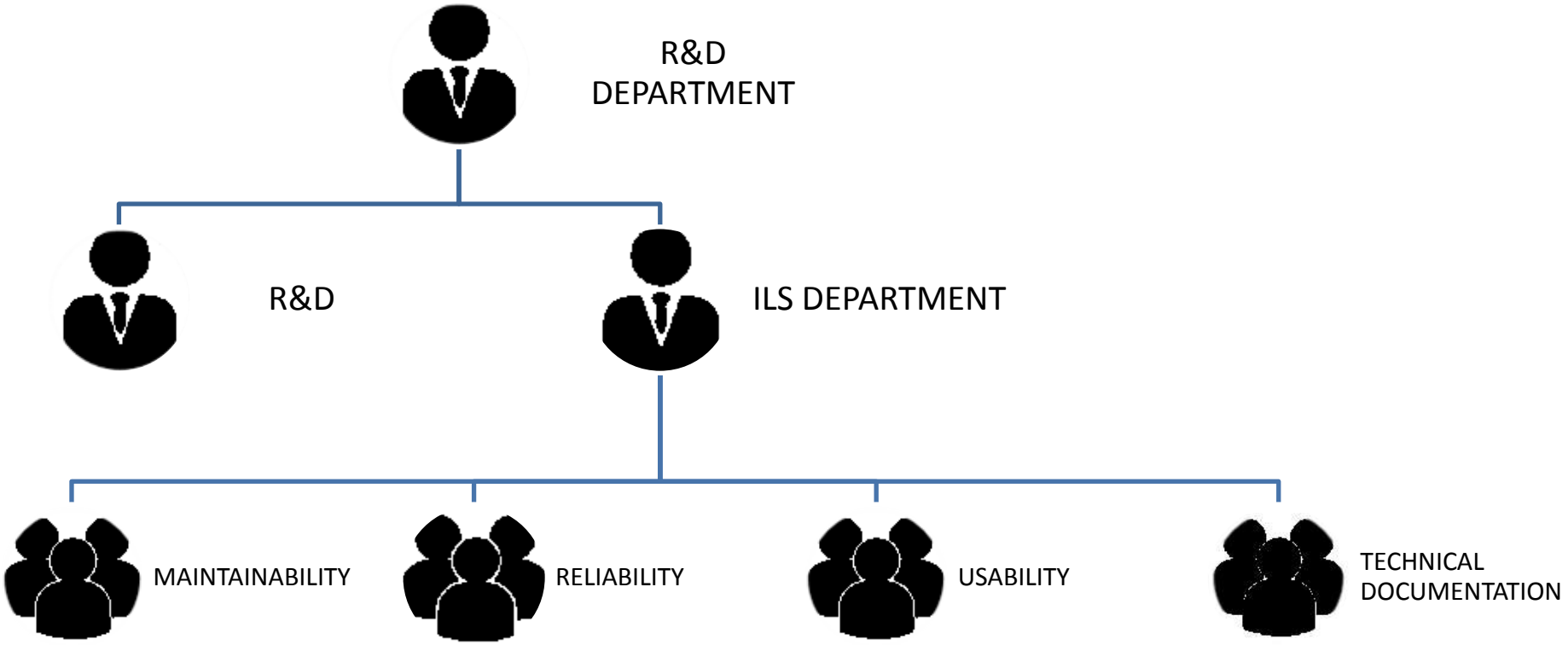

FNSS
TRACKED
WHEELED
COMBAT ENGINEERING
TURRETS
UPGRADES
ACV15
ACV19
MEDIUM WEIGHT TANK
ACV AD
MAV
PARS 4X4
PARS III 6X6
PARS SCOUT 6X6
AV8 8X8
PARS III 8X8
SABER TURRET
TEBER 30MM TWO MAN
30MM RCT
ARCT ATGM TURRET
RWS
M113A4 & ACV

About FNSS

- FNSS Facilities & Country Offices



FNSS ILS Department



Technical Documentation Unit

ILS DEPARTMENT MANAGER

TD UNIT MANAGER

TECHNICAL AUTHORS

- XML authoring
- Generating illustrations
- Updating DM's

TECHNICAL ILLUSTRATORS

- Generating illustrations
- IPC content management

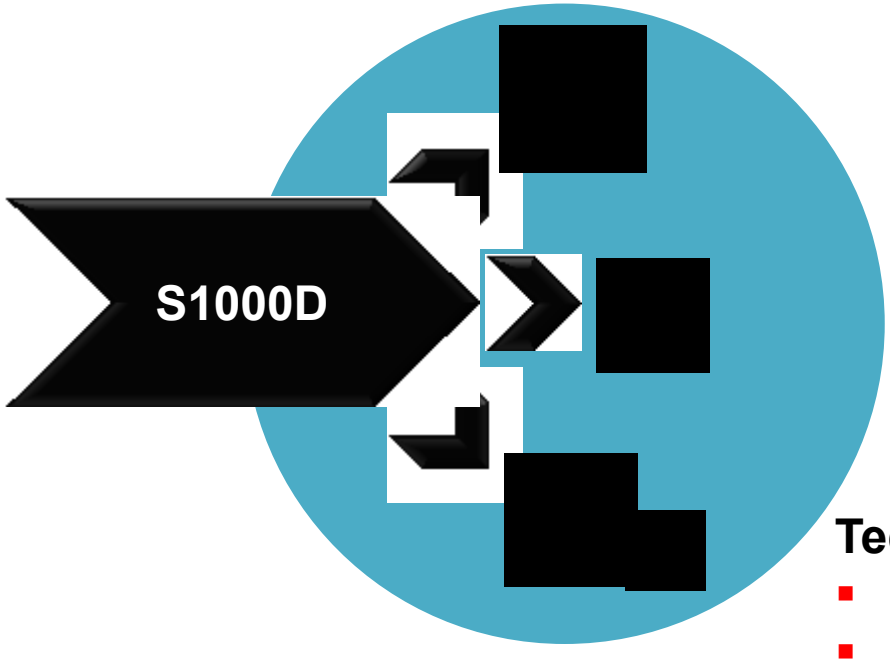
ILS ENGINEER

- Publication management
- CSDB management
- Content assessment
- DM management

History of S1000D at FNSS

Traditional Authoring

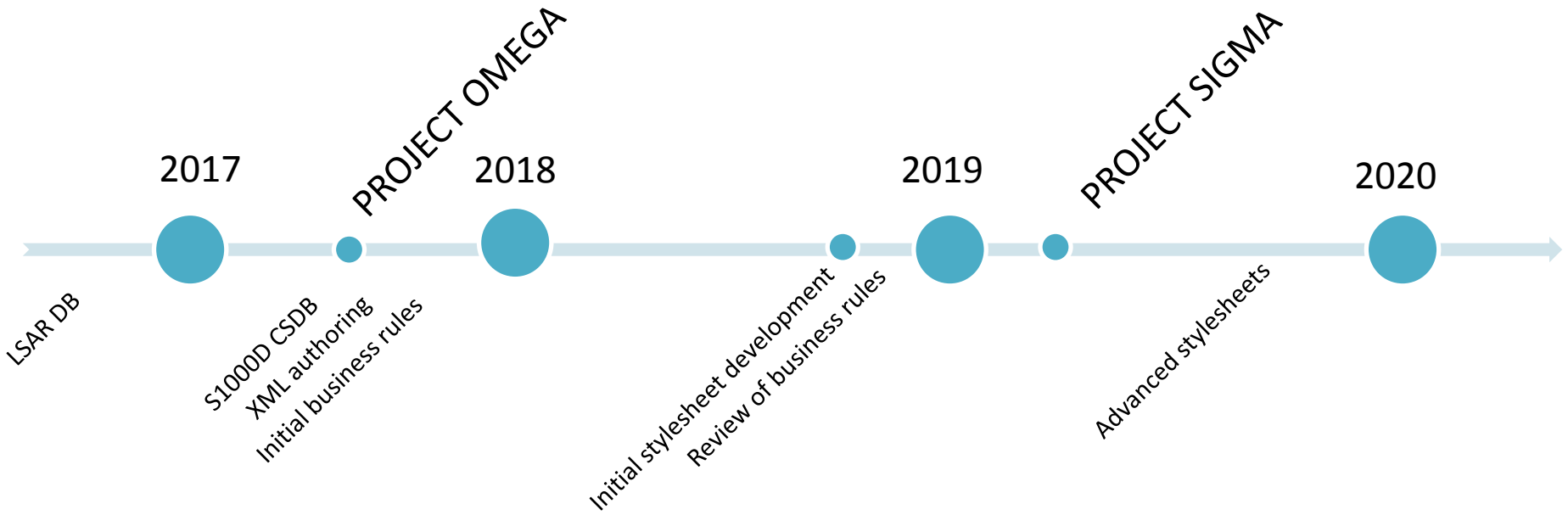
- Media dependent
- Limited control
- Low efficiency
- Duplicate data



Technical Data

- Media independent
- Reuseable
- Controlled (CSDB)
- Consistent output

History of S1000D at FNSS



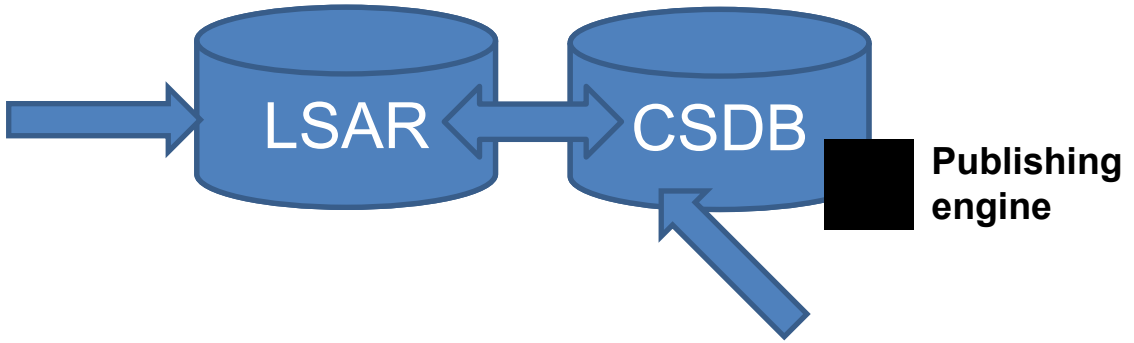
Authoring – Available Resources

- Logistic support analysis records (LSAR) database
- Common source database (CSDB)
- XML authoring environment
- Engineering data
- Technical content from other ILS units
- 3D models
- Vendor/OEM manuals

Authoring – Content Flow

Maintainability

- Maintenance tasks
  - Required conditions
  - Required persons
  - Support equipments
  - Consumables and spares
  - Safety conditions

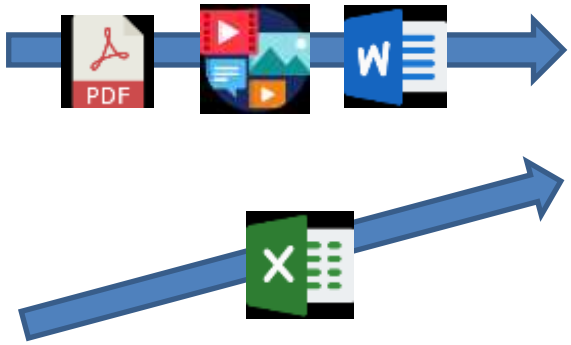


Usability

- Operator/Crew related data
  - Operation procedures
  - Controls/Indicators

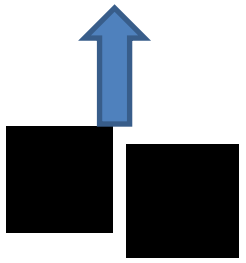
Reliability

- Fault Information
  - Fault reports
  - Isolation procedures



Technical Documentation

- CSDB management
- Authoring
- Publication management



Project Omega

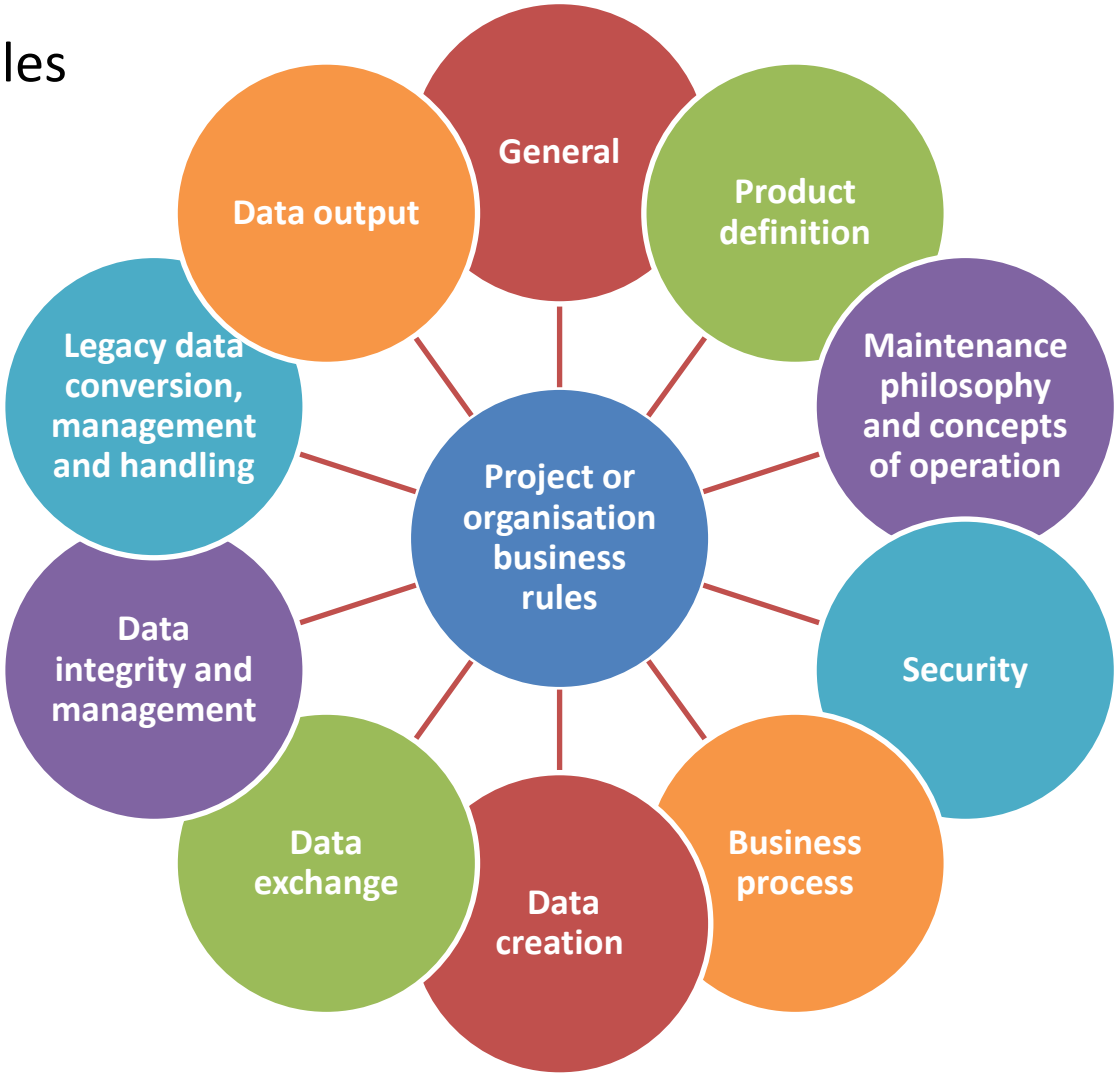
- Contracted project
- Wheeled armoured vehicles
  - 6x6
  - 8x8
- Product range
  - 13+ variants
  - 172 vehicles

Project Omega – Initial Challenges

- Business rules
- CSDB software capabilities
- Information generation and management
  - Standard Numbering System (SNS) structure
  - Information Sets/Info codes
  - DM schemas
  - Information sets-Schema matching
  - From legacy data to S1000D compliant data
  - Quality Assurance
- Dealing with resistance to change
- Create awareness of S1000D within ILS units and other R&D departments

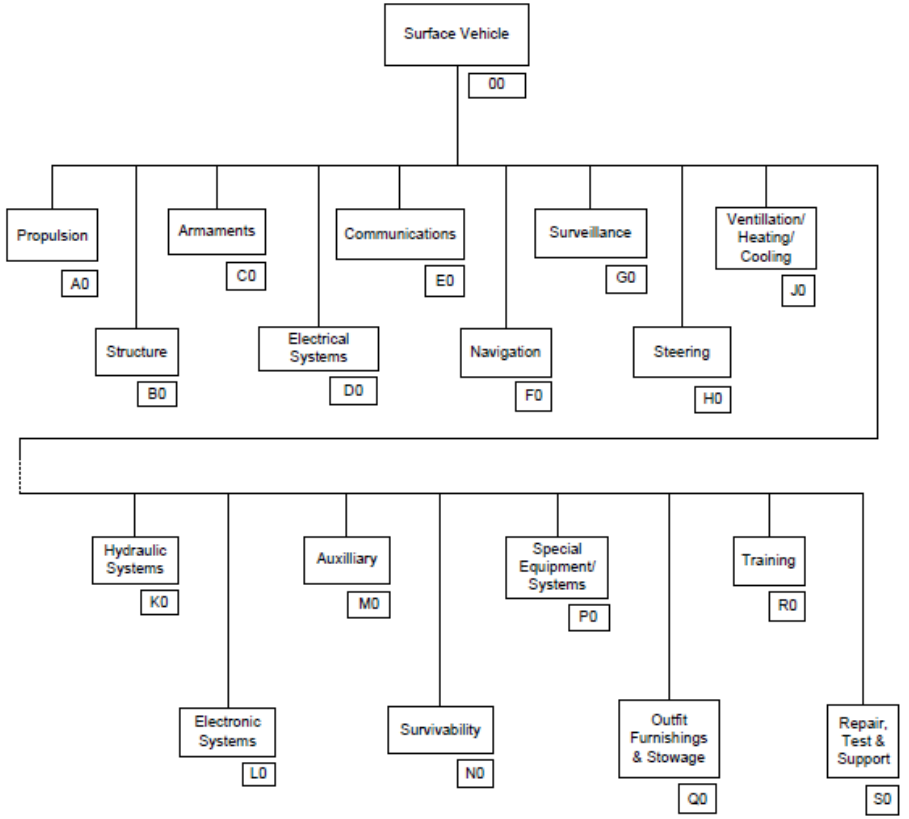
Project Omega – Progress

- Business rules



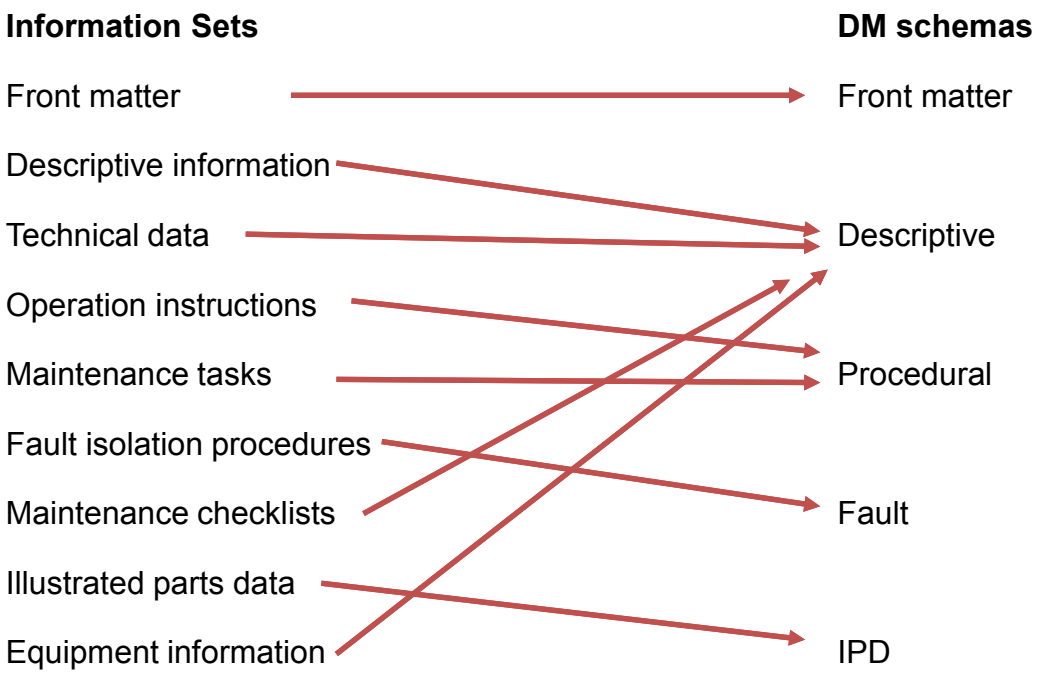
Project Omega – Progress

- Information generation and management
  - SNS creation
    - Maintained or custom
    - Variant management



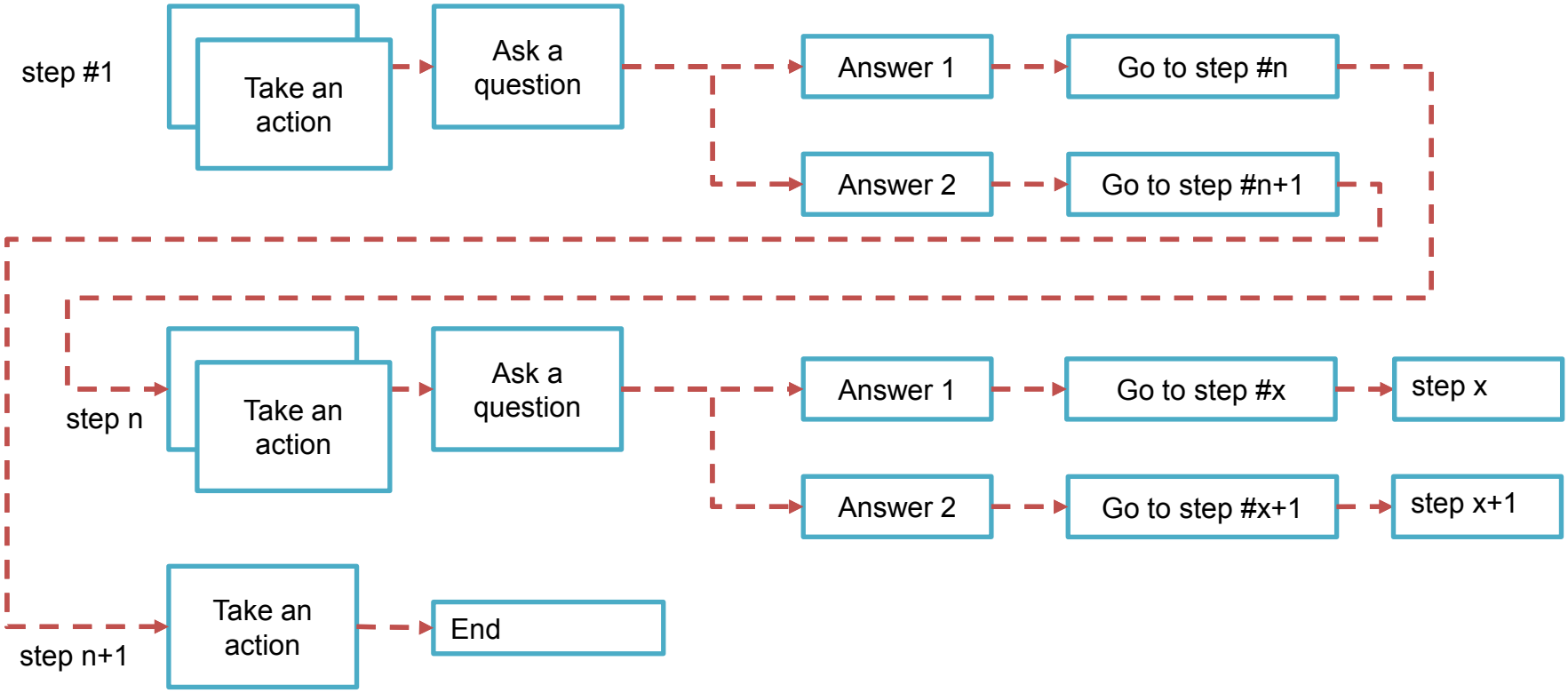
Project Omega – Progress

- Information generation and management



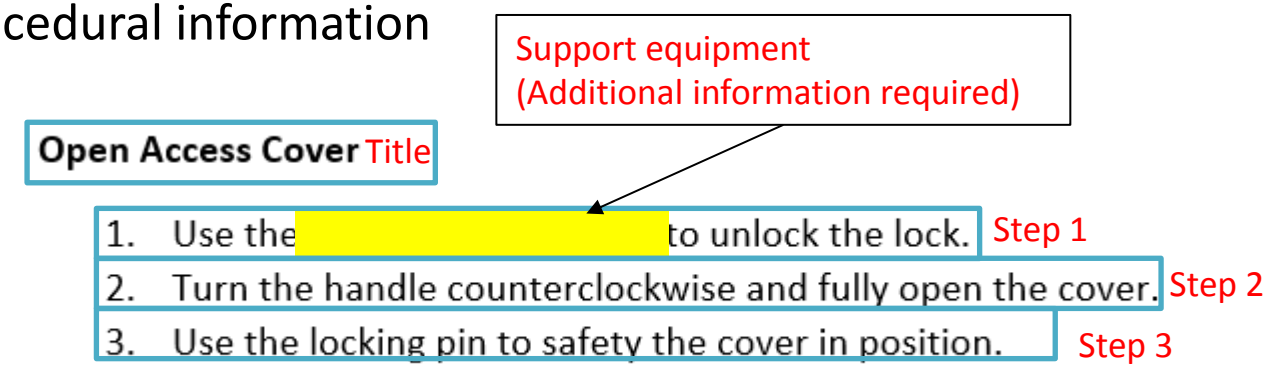
Project Omega – Progress

- Information generation and management
  - From legacy data to S1000D compliant data
    - Example #1 - Fault isolation procedures



Project Omega – Progress

- From legacy data to S1000D compliant data
  - Example #2 – Procedural information

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</supportEquipDescr>
```

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internalRefId="supp-0001"></internalRef> to unlock the lock.</para></proceduralStep>
<proceduralStep><para>Turn the handle counterclockwise and fully open the cover.
</para></proceduralStep>
<proceduralStep><para>Use the locking pin to safety the cover in position.
</para></proceduralStep>
</proceduralStep>
</mainProcedure>
```
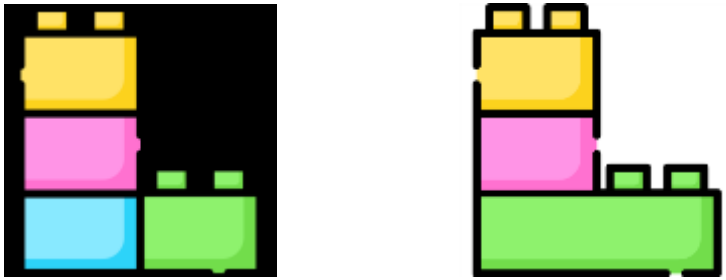

Project Omega – Progress

- Dealing with resistance to change



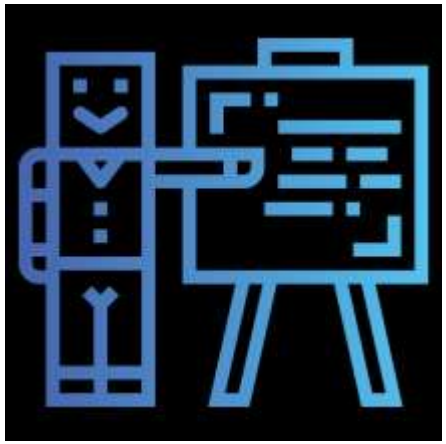
Modularity?

Project Omega – Outcomes

- Delivered both paper based publications and an IETM package
- Confidence working in an XML authoring environment
- Opportunity to assess the capabilities of the software used

Project Omega – Lessons learned

- The importance of business rules
- Strategy for technical content analysis
- Strategy to build up the SNS structure
- Develop alternative solutions for software based limitations



Project Sigma

- Contracted project
- Wheeled/tracked armoured weapon carriers
  - 184 Tracked
  - 76 Wheeled

Project Sigma - Initial Plan

- Rules for authoring
- Review of business rules
- Information generation and management
  - Define information sets and information codes
  - Define which DM schemas to use
  - Create an initial DMRL
  - Quality assurance process
- A solution for custom stylesheet development

Project Sigma - New Challenges

- No Turkish language support (CSDB)
- Find reasonable solutions for software limitations
- Structure of the publications
  - Traditional vs modular
- Methodology to analyse technical content

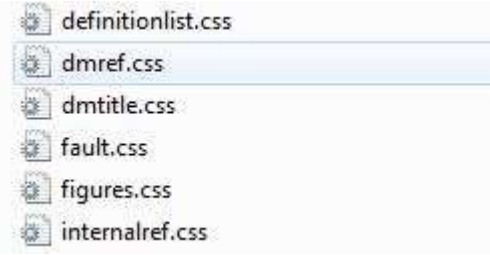
Project Sigma - Progress

- Information generation and management
  - Established a flexible custom SNS structure
  - Initial DMRL
  - Decided on information sets/codes and DM schemas
  - Updated the information codes as needed
  - Introduced new schemas for use
    - Checklist
    - Common information repository
    - Crew
  - Defined methods to reduce content analysing process

Project Sigma - Progress

- Developed stylesheets for paper based publications
  - CSS+JS vs XSLT

```
var tbl = document.createElement("table");                    //create <table> element
var tblBody = document.createElement("tbody");                //create <tbody> element
var tblCaption = document.createElement("caption");               //create <caption> el
var tblHead = document.createElement("thead");                //create <thead> element
var tHeadRow=document.createElement("tr");                    //create <tr> element for
var reqTitle = document.createElement("th");                  //Create <th> node for th
var refsNo = document.createElement("th");                  //Create <th> node for the Ti
```

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tfoot{ display: table-footer-group }
tbody{ display: table-row-group;}
row{ display: table-row;
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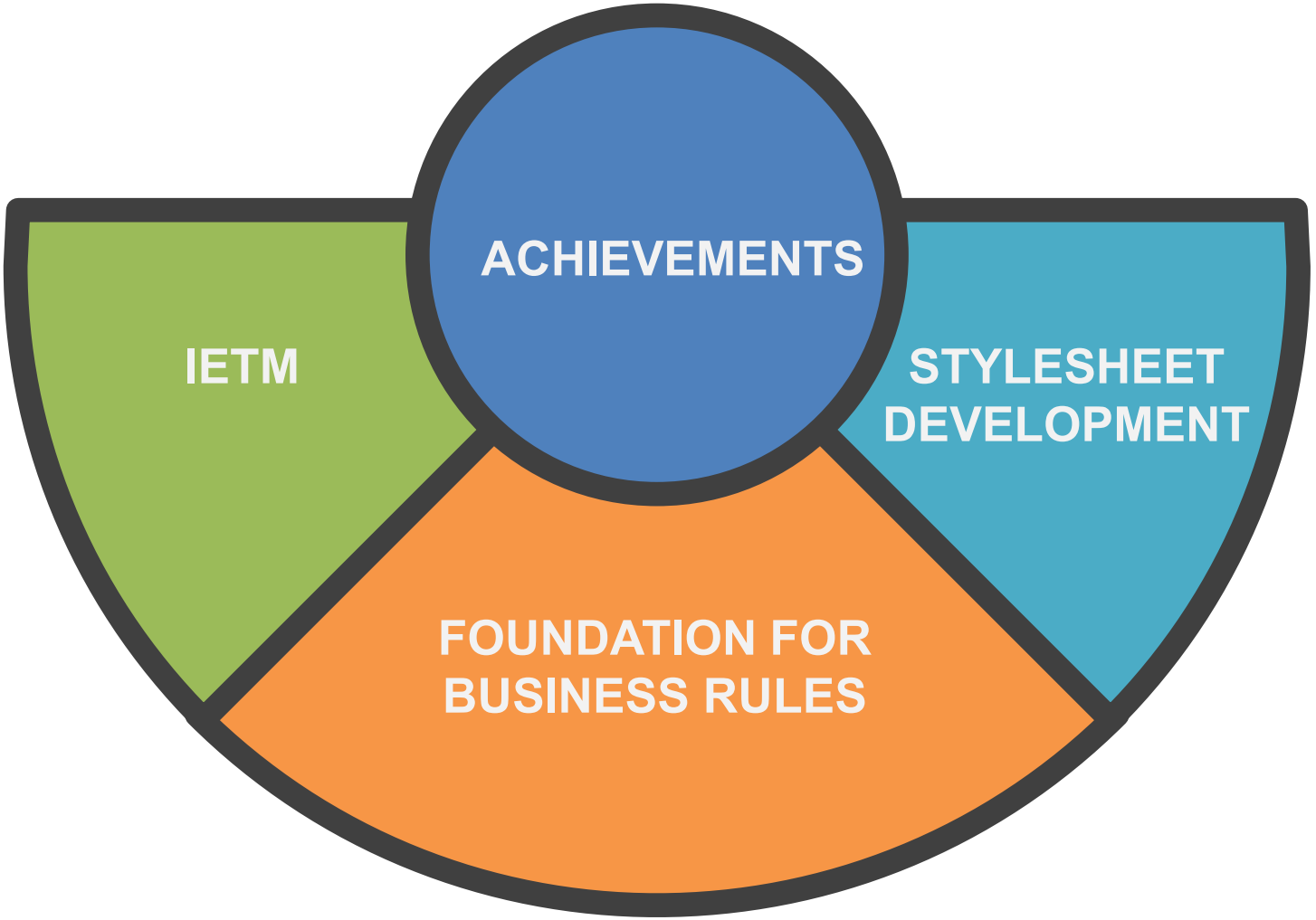
Achievements



Overall Summary

- Define business rules
- Think before you start
- Think again
- Plan, plan, plan
- Know your software
- Be aware of your limitations and capabilities
- Train your team
- Quality assurance!
- Be flexible enough to adapt

Thank you

for your attention!

Questions?

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