The business case for standards based PLM – and what do we mean?

T Holm, Convener ISO TC184/SC4 Policy & Planning Committee

Is there a Business Case?

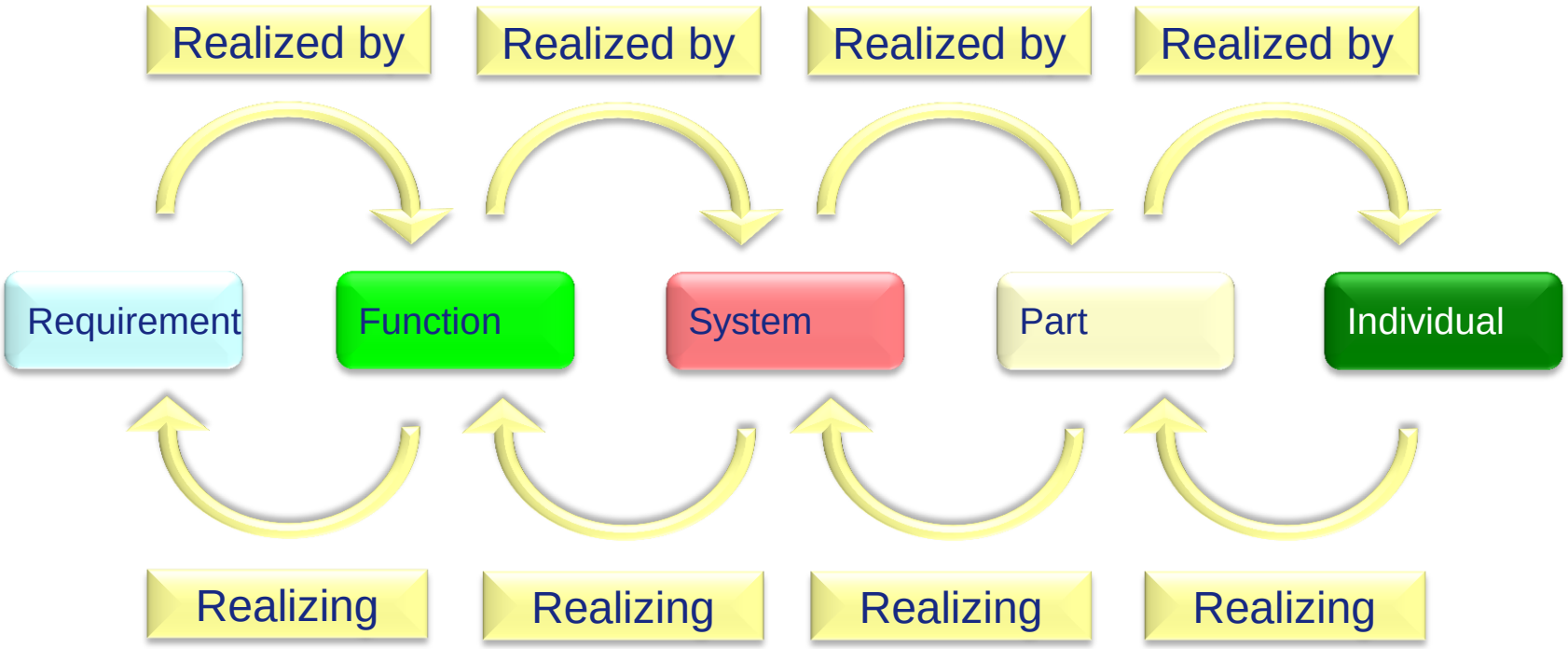
STEP

```
ISO-10303-21;
HEADER;
FILE_DESCRIPTION(
/* description */ ('A minimal AP214 example with a single part'),
/* implementation_level */ '2;1');
FILE_NAME( /* name */ 'demo',
 /* time_stamp */ '2003-12-27T11:57:53',
/* author */ ('Lothar Klein'), /* organization */ ('Eurostep')
/* preprocessor_version */ '
/* originating_system */ 'CA
/* authorization */ );
FILE_SCHEMA (('AUTOMOTIVE_DESIGN { 1 0 10303 214 2 1 1}')); ENDSEC;
DATA;
#10=ORGANIZATION('O0001',E
#11=PRODUCT_DEFINITION_C
#12=APPLICATION_CONTEXT('mechanical design');
#13=APPLICATION_PROTOCOL_DEFINITION('','automotive_design',2003,#12);
#14=PRODUCT_DEFINITION('0',$,#15,#11);
#15=PRODUCT_DEFINITION_FORMATION('1',$,#16);
#16=PRODUCT('A0001','Test Part 1','',(#18));
#17=PRODUCT_RELATED_PRODUCT_CATEGORY('part',$,(#16));
#18=PRODUCT_CONTEXT('',#12,'');
#19=APPLIED_ORGANIZATION_ASSIGNMENT(#10,#20,(#16));
#20=ORGANIZATION_ROLE('id owner');
ENDSEC;
END-ISO-10303-21;
```

STEP CAD – YES!!

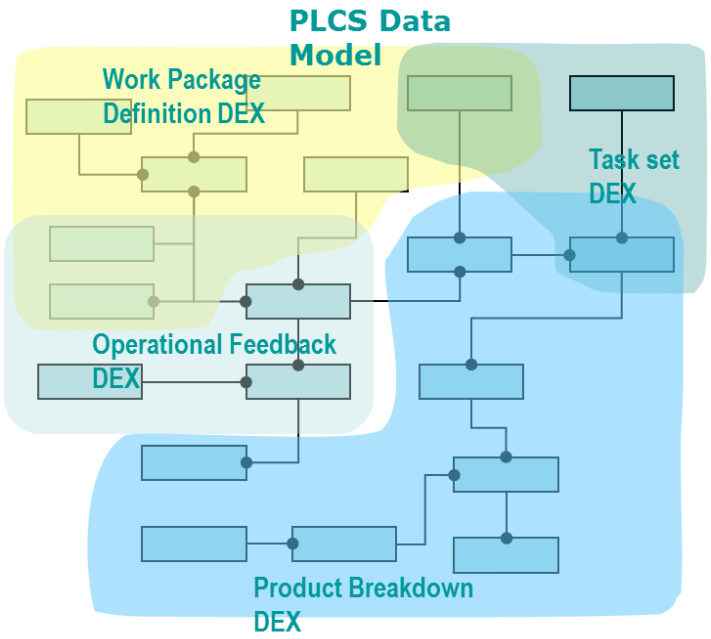
Is there a Business Case?

PLM -> PLCS



Is there a Business Case?

PLCS –
Data Exchange Specifications (DEXs)

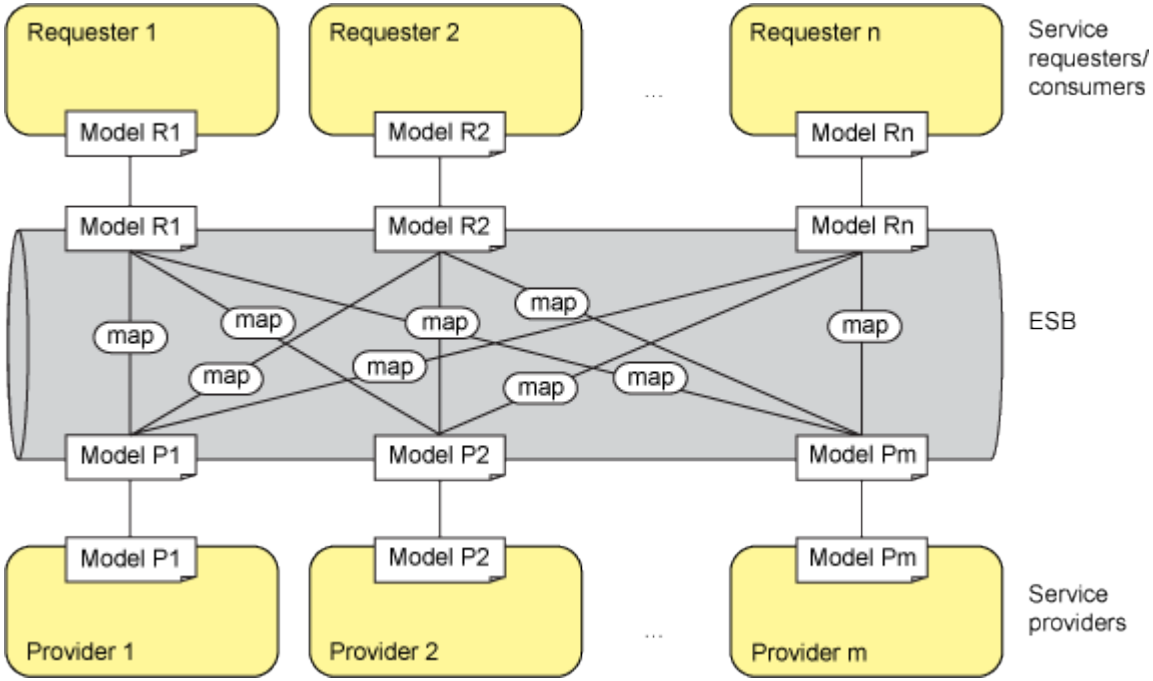


Different Context

- Projects
- Business
- International

Is there a Business Case?

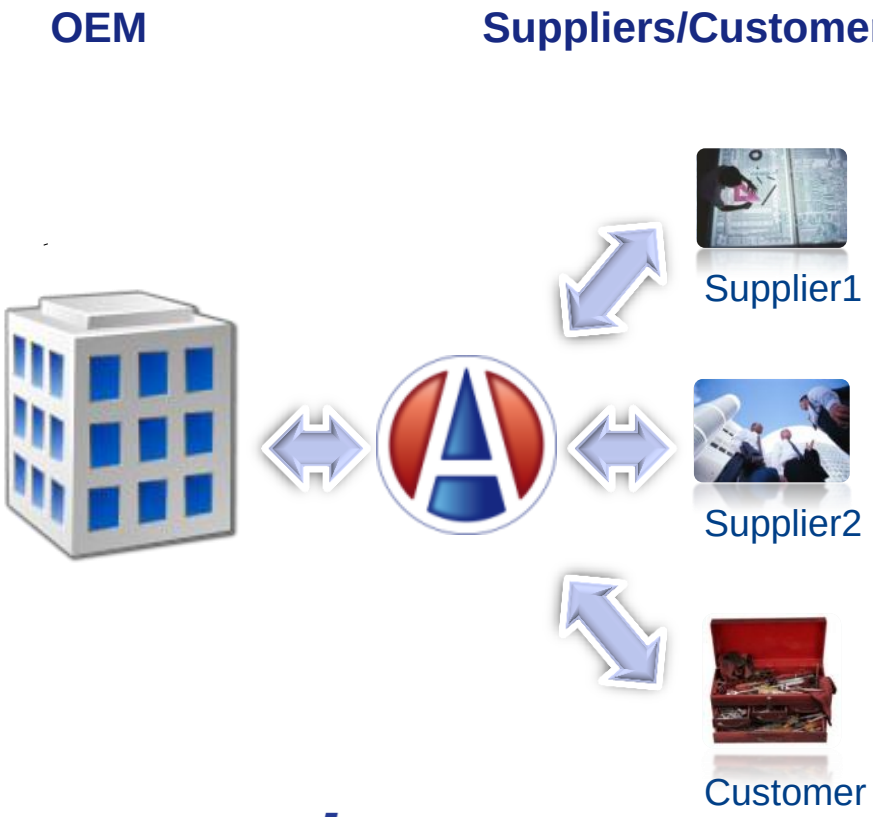
PLCS –
As a Canonical Model



- ESB have the same problem –
- And apply the principal solution
- Common Model – PLCS as a Canonical model

Is there a Business Case?

PLCS –
In a Shared PLM Information HUB



- Minimal impact on existing in-house processes and systems
- Clear ownership and responsibility of data
- Security and IPR protection
- Consolidation
- Engineering BI on integrated data set
- Less political and technical discussions with a standards based hub

Where

Where

- Even complex electronics with short life cycle
- Systems Engineering Aspect

Where

- **Aerospace & Defense**
- **Several important applications**
- **Live in Afghanistan**

Where

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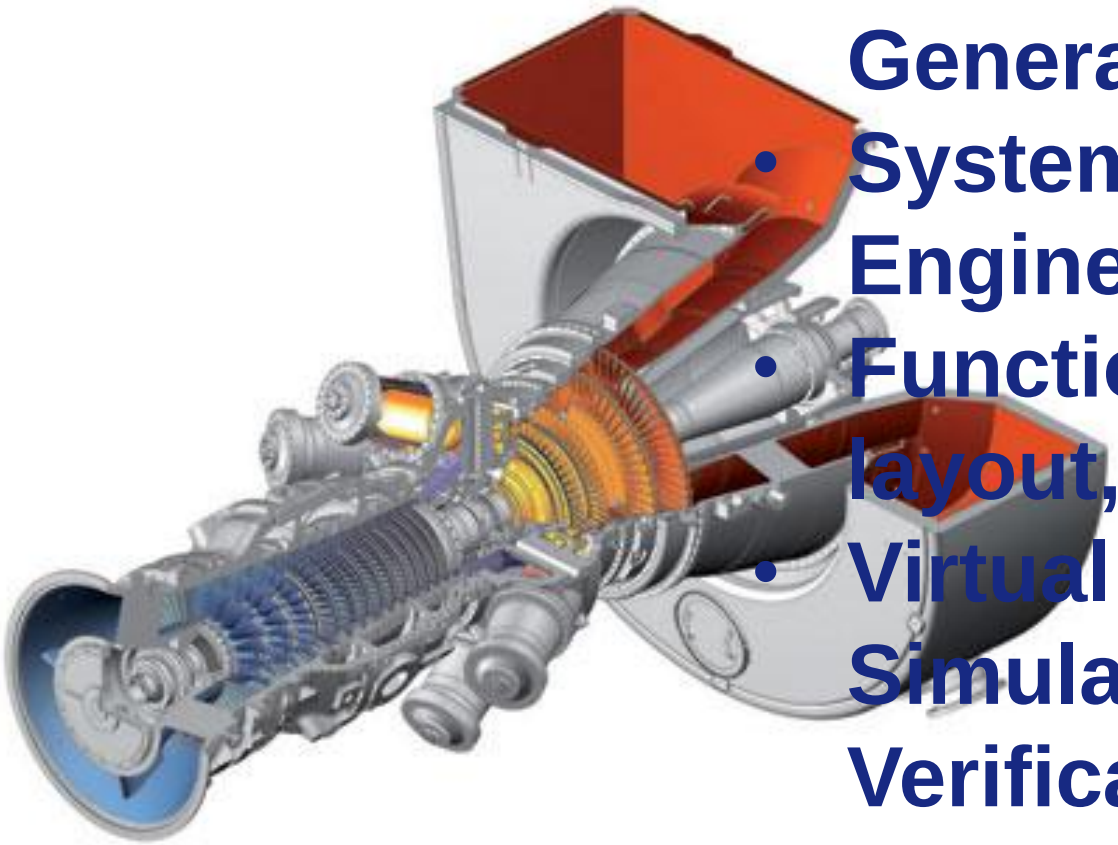
- **Commercial Aerospace**
- **Systems Engineering Aspect –**
- **Virtual Aircraft, Verification and Validation**

Where

- Automotive Industry
- Supply Chain Integration
- Different kinds of supplier engagement

Where



- Power Generation
- Systems Engineering
- Functional layout,
- Virtual Product, Simulation, Verification and Validation

Where

- **Extended BIM**
- **Requirement management**
- **Version Management**
- **Change Management**

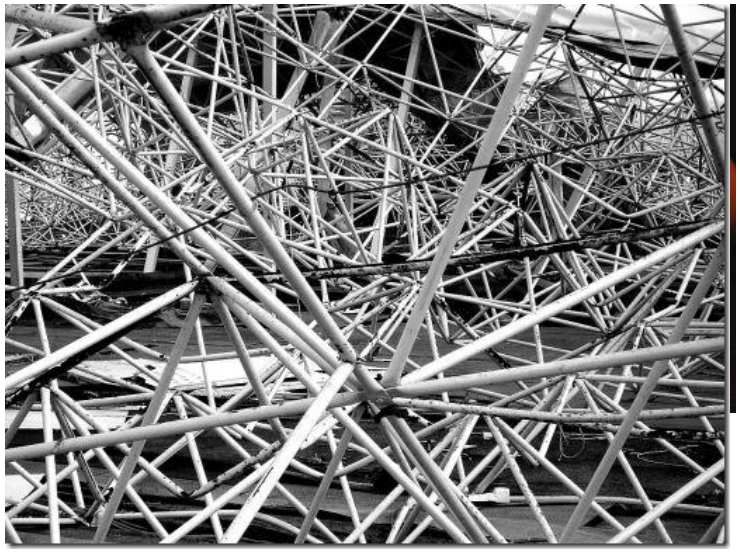
Based on IFC + PLCS

Why?

- Collaboration demand is increasing
  - Between enginieering domains
  - Between enterprises throughout the Product Life cycle
  - Over Time – Knowledge management

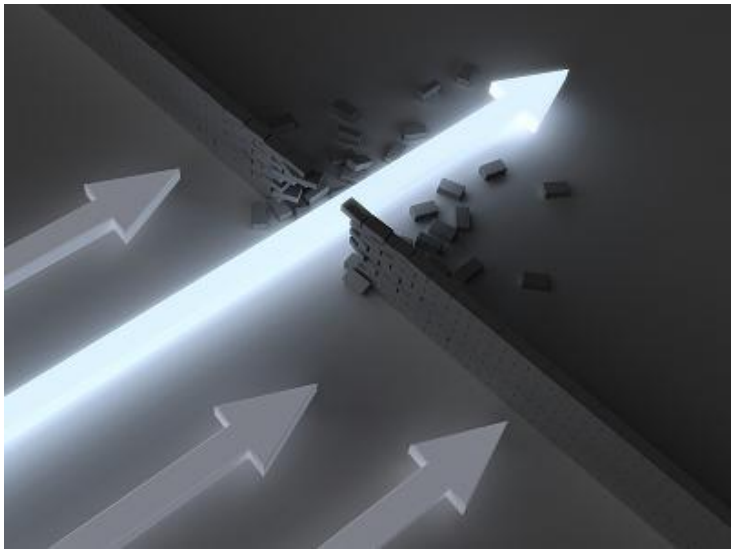
- For the Product Life Cycle – no Competing standard

Why?



- Supply chains is growing in **complexity**, suppliers now
  - innovating,
  - designing,
  - manufacturing
  - supporting
- Complex supply networks
  - needs to be easy to establish and terminate
  - no hard wiring allowed.
- Today PLM vendors mostly doing CAD and PDM.
  - Next waves are version 2 of
    - product support
    - systems engineering
  - integrated in the product life cycle

Breakthrough



- Breakthrough when
  - Industries agree
    - Defense is getting there, US DoD, UK MoD, French MoD, FMV, NDLO etc.
  - Industrial organization recommend
    - Aerospace
    - Aerospace Industries Association (AIA)
  - Legal requirements demands
    - Long Term Archiving
  - Businesses consolidate through mergers and acquisitions
  - New products like external Fleet Management and Contractor Logistic Support are developed

Why final success?

- STEP and PLCS will make it:
  - People are now used to collaborate and share
    - Social media
    - Document base exchange with documents failing when complexity grows
  - The alternative is to wait for the ERP or PLM vendor to have all in one SW
    - In the end not feasible.
  - Integration with ESBs and other ways have proven to
    - Be cumbersome
    - Low performance with technology of today

You have the last piece of the puzzle!

- Important that end users buy and try. Learn and go ask for it.
- Important that standards based SW is available and easy to use.
- Some key PLCS DEXs should be standardized.
- Will the big PLM vendors resist or embrace?