A easy approach towards the migration and processing of material data in your S1000D workflow

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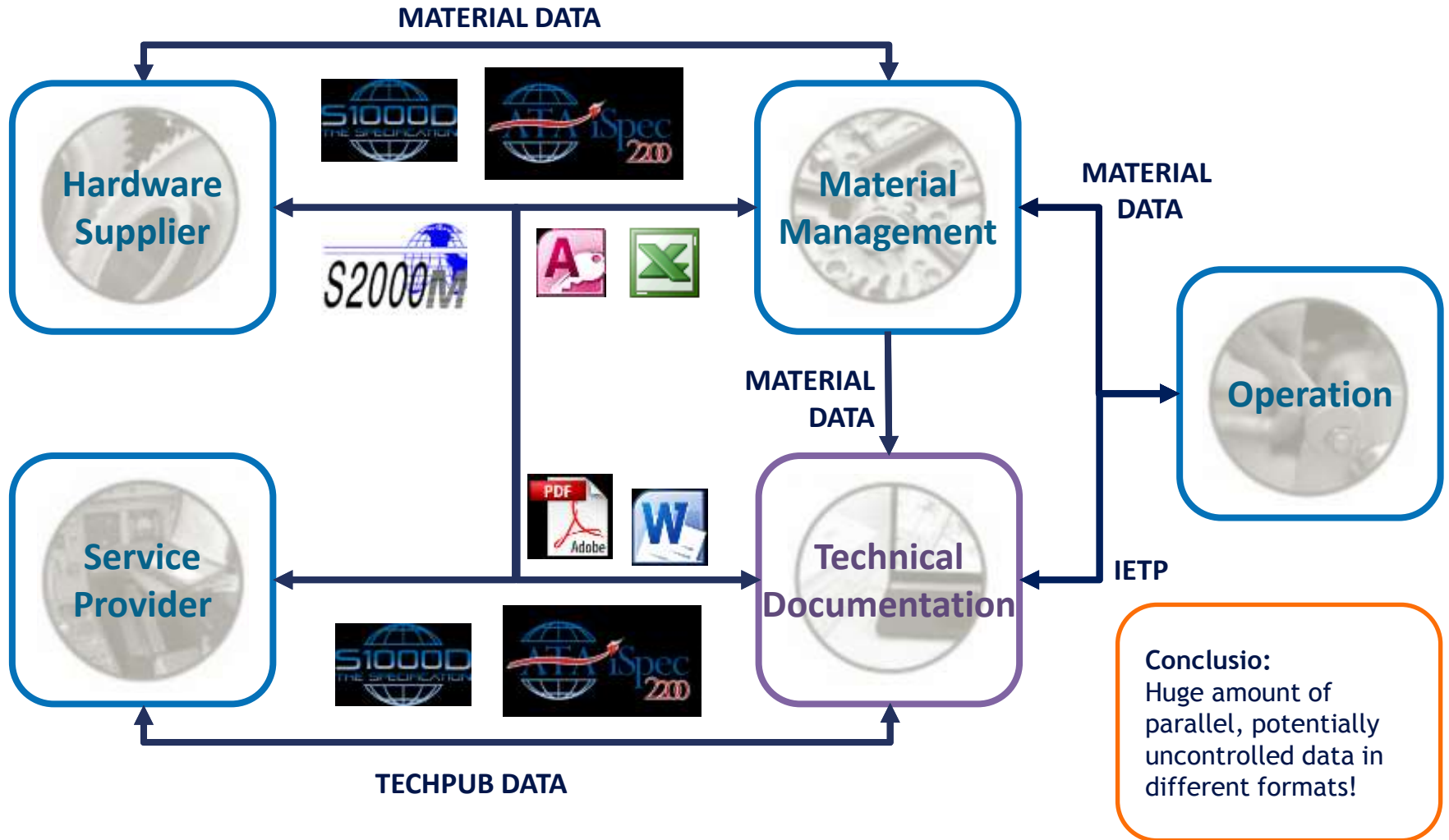Steering Committee: Subject Matter Expert for:

Agenda

- Processes and stakeholders

- Initial Situation for Supply, Support and Provisioning

- Challenges & Problem Description

- Possible solution

- Workflow

- Lessons Learned

Initial Situation for Supply, Support and Provisioning

MATERIAL DATA

Hardware Supplier

Material Management

MATERIAL DATA

MATERIAL DATA

Operation

Service Provider

Technical Documentation

IETP

TECHPUB DATA

Conclusio:
Huge amount of parallel, potentially uncontrolled data in different formats!

– Data inconsistencies due to

  – Different suppliers and formats

  – Potentially inhomogeneous processes

  – Different material information

– Manual effort to correct inconsistencies and data errors

– Potentially high number of rework cycles in context of hardware supplier or service provider

– Challenging change and feedback processes to address all relevant areas

– Keep all the data modules (Proced, IPD, …) up-to-date

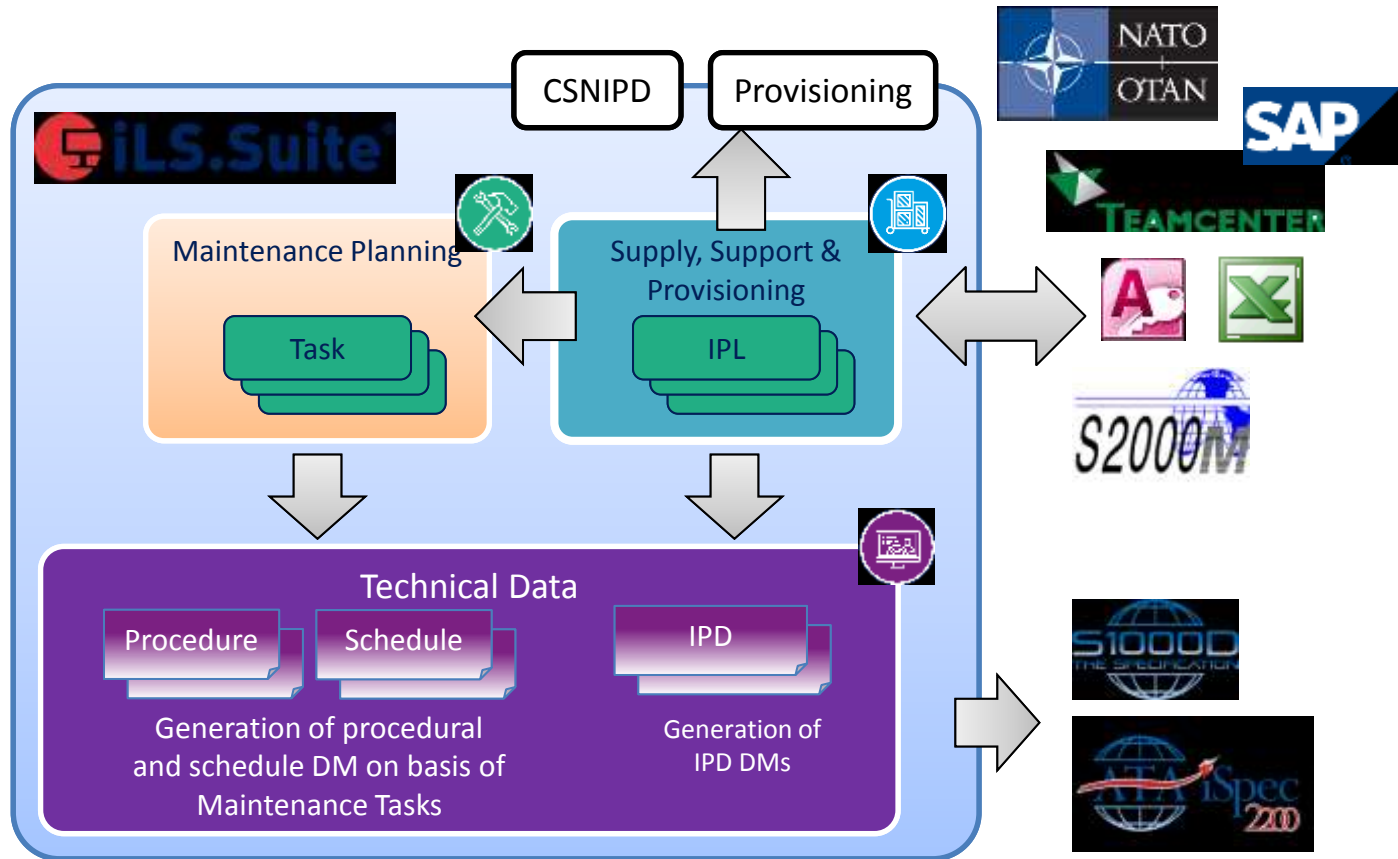In the whole maintenance development process many different types of data, stakeholders, databases and processes are involved
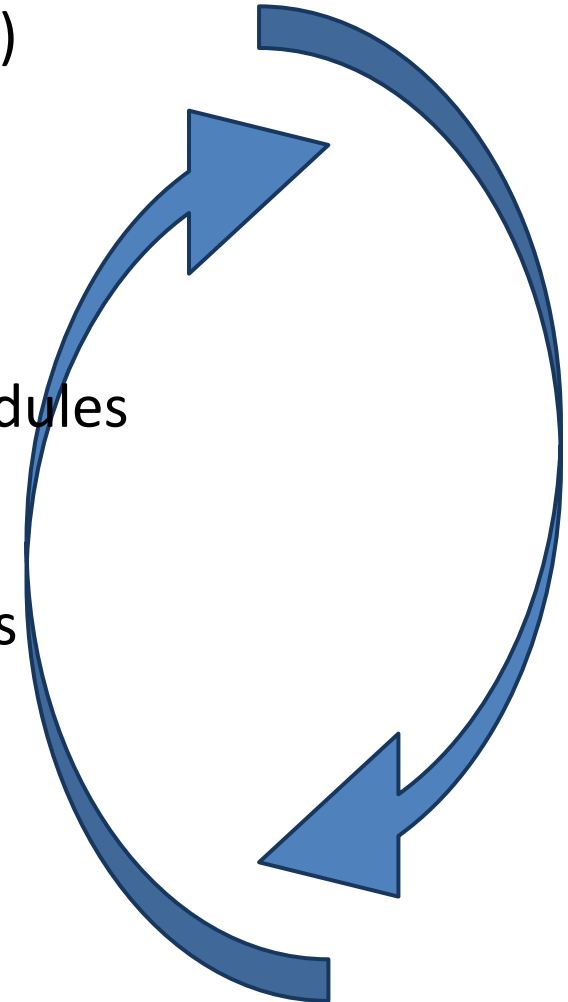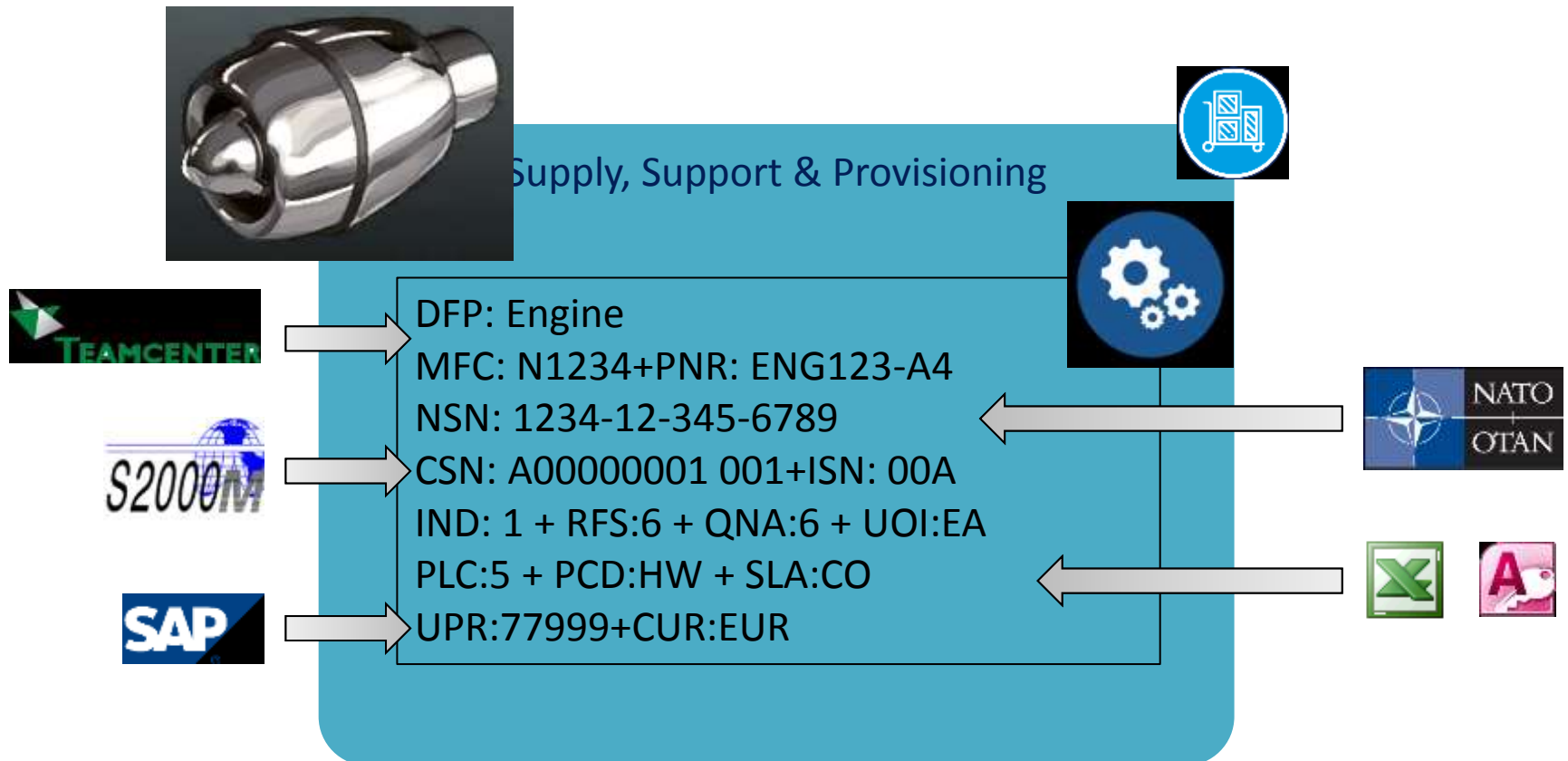
High risk of quality loss

- **Reuse of data**

  – across different IPS disciplines, customers and functions

  – rise the quality and content

  – lower costs

- **Automatic Generation of**

  – **Applicability / Effectivity** via multiple customers variants or configurations

  – **IPD data modules** incl. change marks

  – **S2000M data messages** (like CSNIPD, UPIPCO, UPIPCT, etc.)

  – **Links** between Procedure and IPD data modules

- **Keep everything up-to-date**

- **Import of material data** (S2000M, Excel, etc.)
- **Create Parts list** (IPD data modules)
- **Create Material list** for the authors
  - Petrol, Oil and Lubricate
  - Tools, etc.
- **Insert material** data into Procedure data modules
  - from Parts list
  - from Material lists
- **Update cycles** for Parts lists and Material lists
  - Automatic change marks in IPD & Procedure
- **Automatic check** of material data
  - in Procedure & IPD data modules
  - reports of all changed material data

Supply, Support & Provisioning

DFP: Engine
MFC: N1234+PNR: ENG123-A4
NSN: 1234-12-345-6789
CSN: A00000001 001+ISN: 00A
IND: 1 + RFS:6 + QNA:6 + UOI:EA
PLC:5 + PCD:HW + SLA:CO
UPR:77999+CUR:EUR

Workflow: Create Parts list

MFC: N1234
PNR: ENG123-A4

Illustrated Parts List

- Structure (SNS), Figure + Variant
- Illustrations (2D) or Multimedia Objects (3D)
- Part entries
- References / Links

Content Generator

	S1000D 2.3	S1000D 4.1	ATA iSpec 2200
SNS:	<csn/@csn>	<catalogSeqNumber/@system>	<figure/@chapnbr, …
Title:	<title>	<title>	<title>
Illustrations:	<graphic>	<graphic>	<graphic>
Entries:	<csn/@item>	<catalogSeqNumber/@item>	<prtlist>
	<isn>	<itemSeqNumber>	<itemdata>
Part Number:	<mfc>, <pnr>	<partRef>	<pnr>, <iplnom> …
Quantity:	<qna>	<quantityPerNextHigherAssy>	<upa>

DMC-PRJ1-A-25-11-70-00A-941A-Z   **DMC-PRJ2-ABB-A25-11-70-00AA-941A-Z**   **25-11-70-870-950-A01**
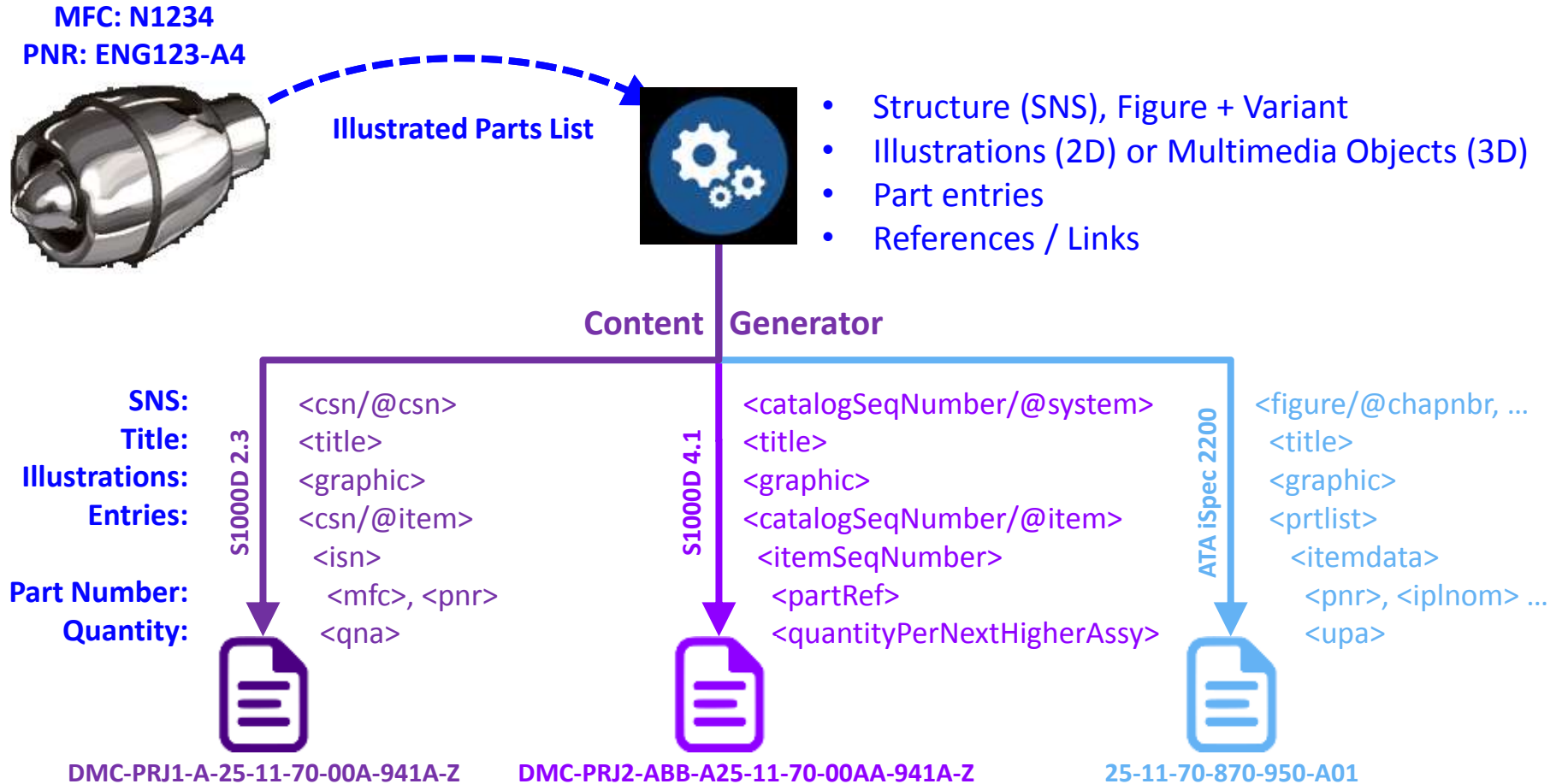
Workflow: Create material list

MFC: N1234
PNR: ENG123-A4

Material list

List of Tools:
- Speed Handle
- Torque Wrench
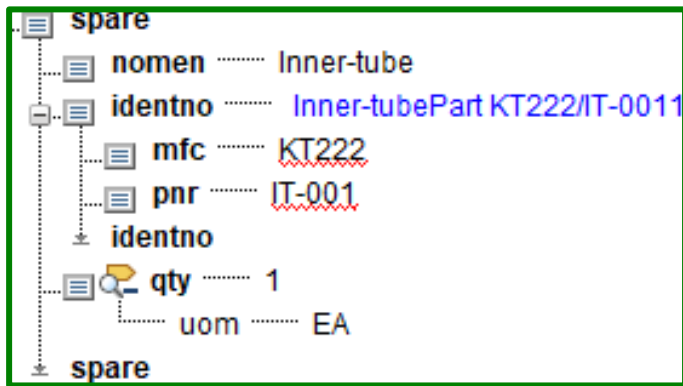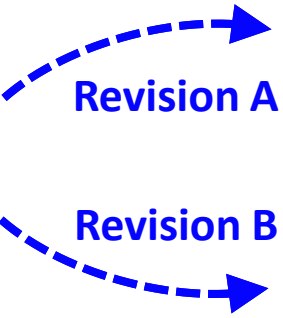- Safety Wire Pliers
- Metal Working Tools Set A1

List of Petrol, Oil and Lubricate:
- Mobil Aviation Gasoline
- Mobil HyJet V Hydraulic fluids
- Aviation Grease SHC™ 100
- Mobilgrease™ 28

Workflow: Insert material

Procedure data module

```
spare
    nomen ········ Inner-tube
    identno ········ Inner-tubePart KT222/IT-0011
        mfc ······· KT222
        pnr ······· IT-001
    identno
    qty ········· 1
        uom ········ EA
spare
```

Parts list:
. ENG123-A4
.. Fan
.. Compressor
.. Shaft
… Inner-tube

List of Tools:
- Speed Handle
- Torque Wrench
- Safety Wire Pliers
- Metal Working Tools Set A1

List of Petrol, Oil and Lubricate:
- Mobil Aviation Gasoline
- Mobil HyJet V Hydraulic fluids
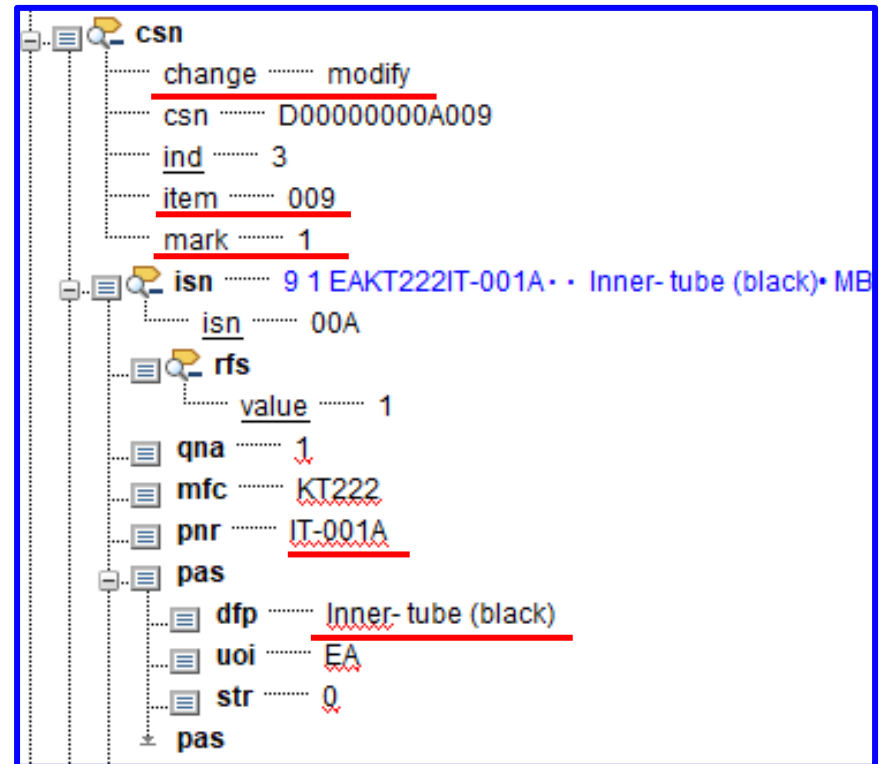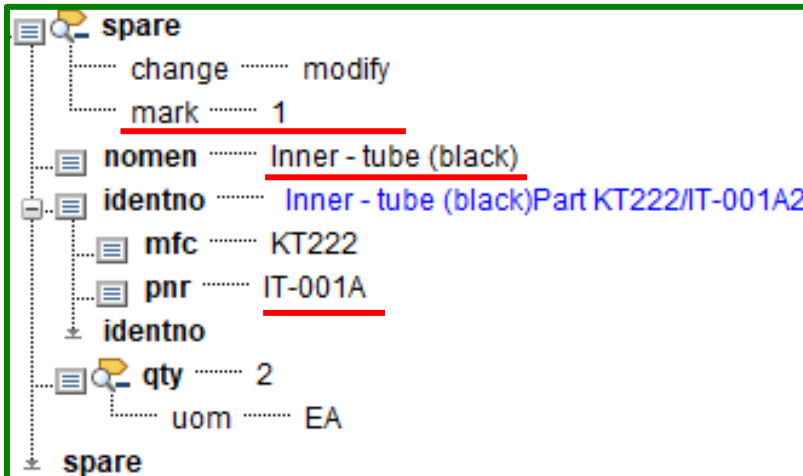- Aviation Grease SHC™ 100
- Mobilgrease™ 28

- **Validation** against **material rules**

Notice	Article 'Bremse vorn - H1T06 / MTB-BRS800-801' (Issued) (Core) is invalid according to the Material-Project.
Warning	* 'QTBF' is mandatory if 'TBF' is not empty. QTBF must be filled when TBF is used. (Core)
Notice	Article 'Front Wheel - 09WWM / MTB-WH10AV' (Edit) (Core) is invalid according to the Material-Project.
Warning	* 'AUL' is mandatory. AUL is mandatory. (Core)
Warning	* 'NSN' '123455' must match the regex '^[0-9]{13}$|^[0-9]{4}$'. The NSN must be 4 or 13 diggits. (Core)

- **Show changes** during Import

Info	Processing Article: 'D0854 / HDK6' 'NUT, SELF-LOCKING, EXTENDED WASHER'
Info	* Article attribute 'PNR' changed from 'HDK6' to 'HDK699'
Info	* Article attribute 'NSN' changed from '4820121640300' to '4820121640301'
Info	* Article attribute 'Article.Name[en]' changed from 'NUT, SELF-LOCKING, EXTENDED WASHER' to 'NUT,

- **Validate** against **Schema, BREX, Hotspots**, etc.

Info	**Validate hotspots**
Info	Processing Parts List 'S1000DBIKE - BICYCLE: D00-00-00-00-AA - Fahrrad'
Warning	* No hotspot exists for entry '006' in illustrations for variant 'sx-US'.
Warning	* No hotspot exists for entry '006' in illustrations for variant 'de-DE'.
Warning	* No hotspot exists for entry '006' in illustrations for variant 'hu-HU'.

- **Reused data requires**
  - Part data rules
  - Applicability rules
  - Change Management rules

- **Authoring process**
  - Update material data in various data modules
  - Scraping unused content from existing data modules

- **IPD Generation**
  - Creating general scripts to populate material data
  - Automatically generate Line Item Effectivity & Change marks

- **Reports**
  - Changes must be reported to the right persons

Thank you

for your attention!

Questions?

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