FAIR PLM

Lifecycle Management for FAIR/GSI

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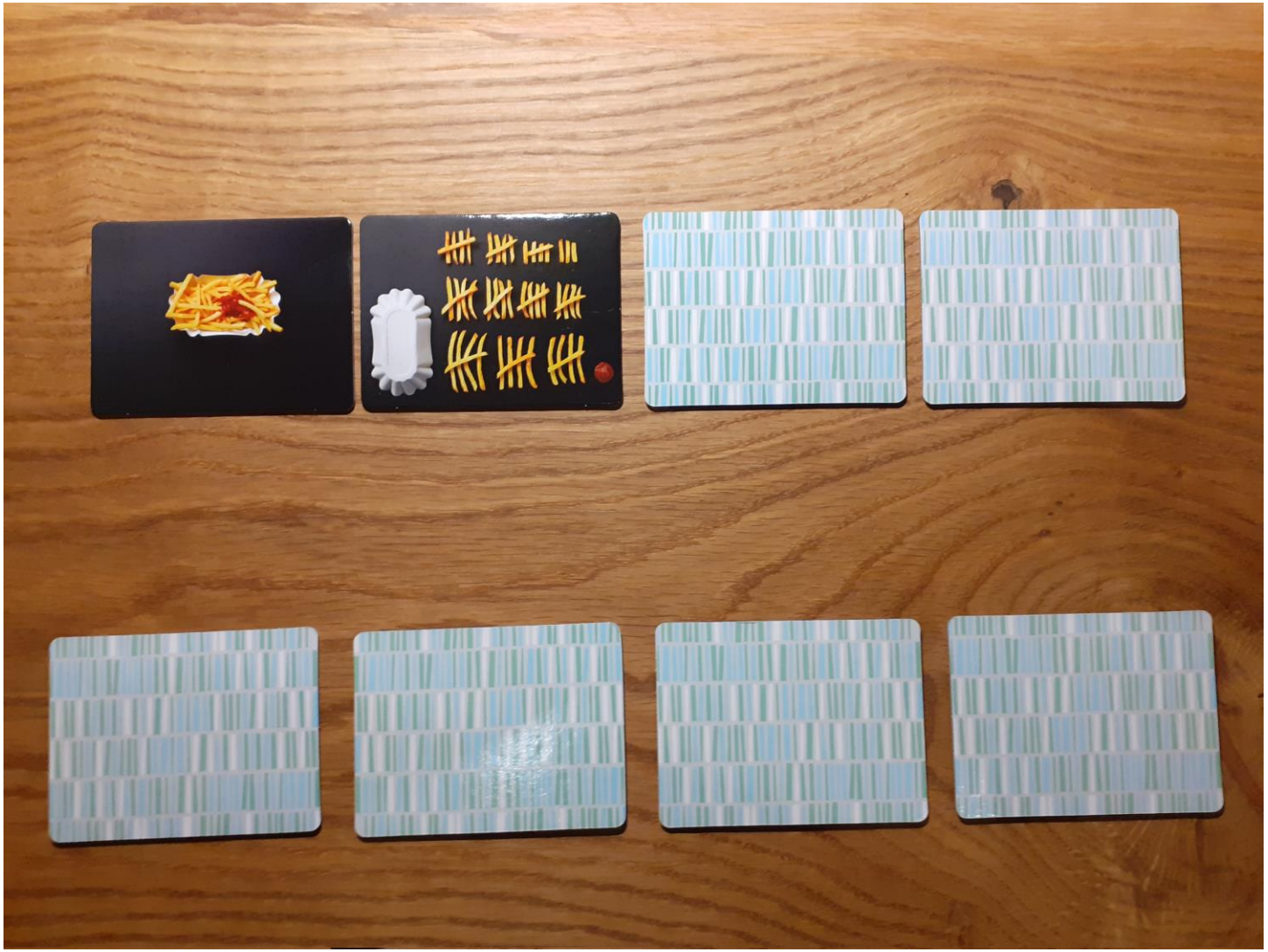
Die
KUNST, AUFRÄUMEN zu
URSUS WEHRLI



Why?

- FAIR is a
  - Complex project.
  - Many people are involved in the project
  - Involved people are distributed over many countries
  - Very long lifetime of FAIR (> 30 years)
  - Significant fluctuations on involved people (getting retired, new job opportunities, changes due to private situations, ...)
- Documentation is therefore essential
  - to know what is where
  - to have access to relevant data every time
  - to understand who made which decision
  - to keep know-how on site
  - to organize maintenance

* Source: CERN EDMS Team, adapted for FAIR

Identifier for technical Objects

Before the introduction of the PLM data model identifier made for a different purpose have been used to identify technical objects.

Those identifier are

- good for their purpose
- not good for lifecycle management

Requirements for PLM identifier

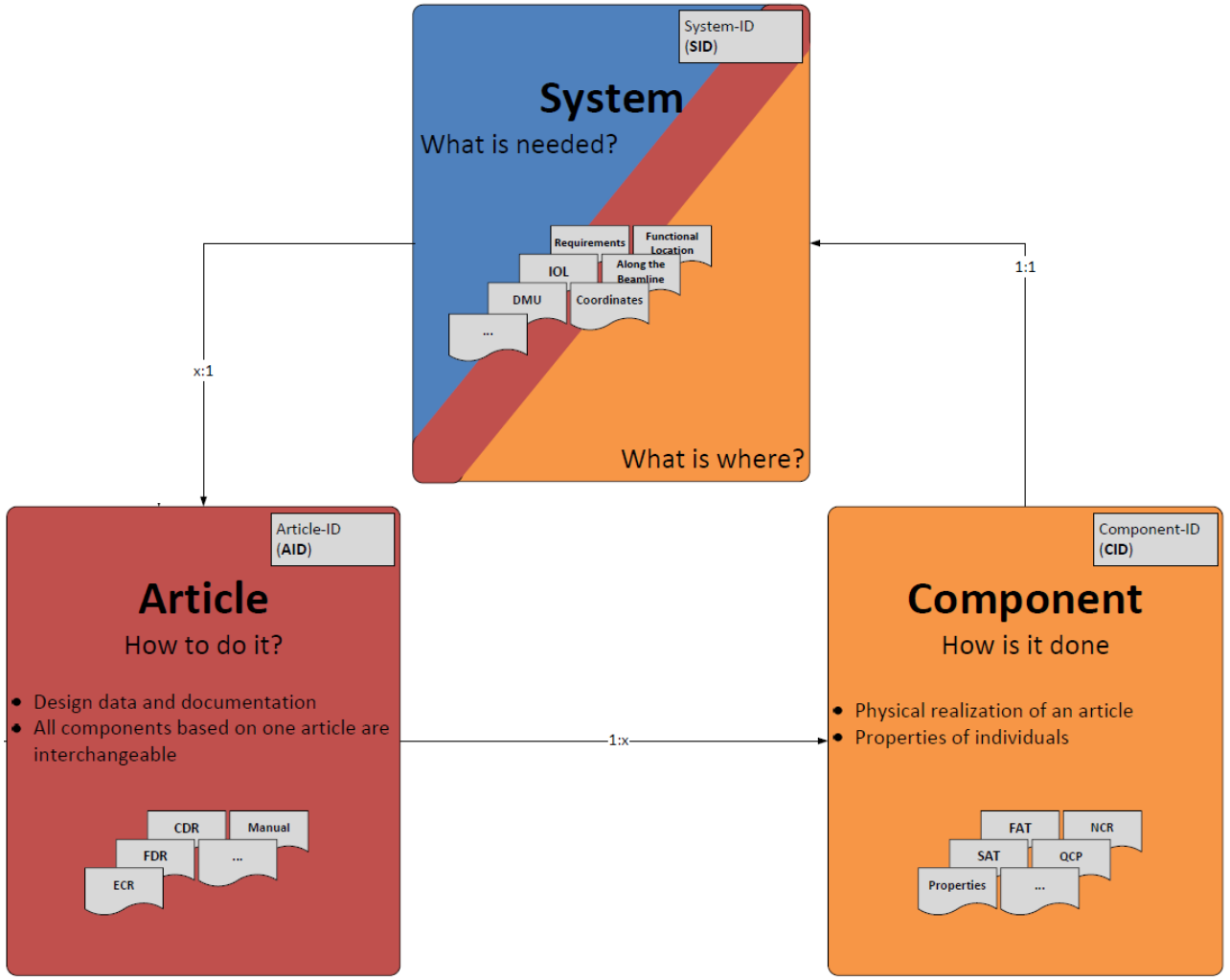
- unique
- 1:1 mapping to technical objects
- large enough number range (#)
- constant over the life cycle (t)
- global rules (§)

Identifier	Purpose	Mapping	#	t	§
PSP code	Shares/budget	m:n	✓	✗	✓
Specification no.	Document (contract)	m:n	✓	✓	✓
Drawing no.	Drawing/model	1:1	✓	✗	✗
Device type	Multiple articles	1:n	✓	✓	✓
Acc nomen	Controls address	1:1	✗	✗	✓
CDB Component*	= Device type + Acc nomen	1:n	✗	✗	✓
Component (CID)*	Physical device	1:1	✓	✓	✓
Name	Org. unit internal solution	1:1	✓	✗	✗

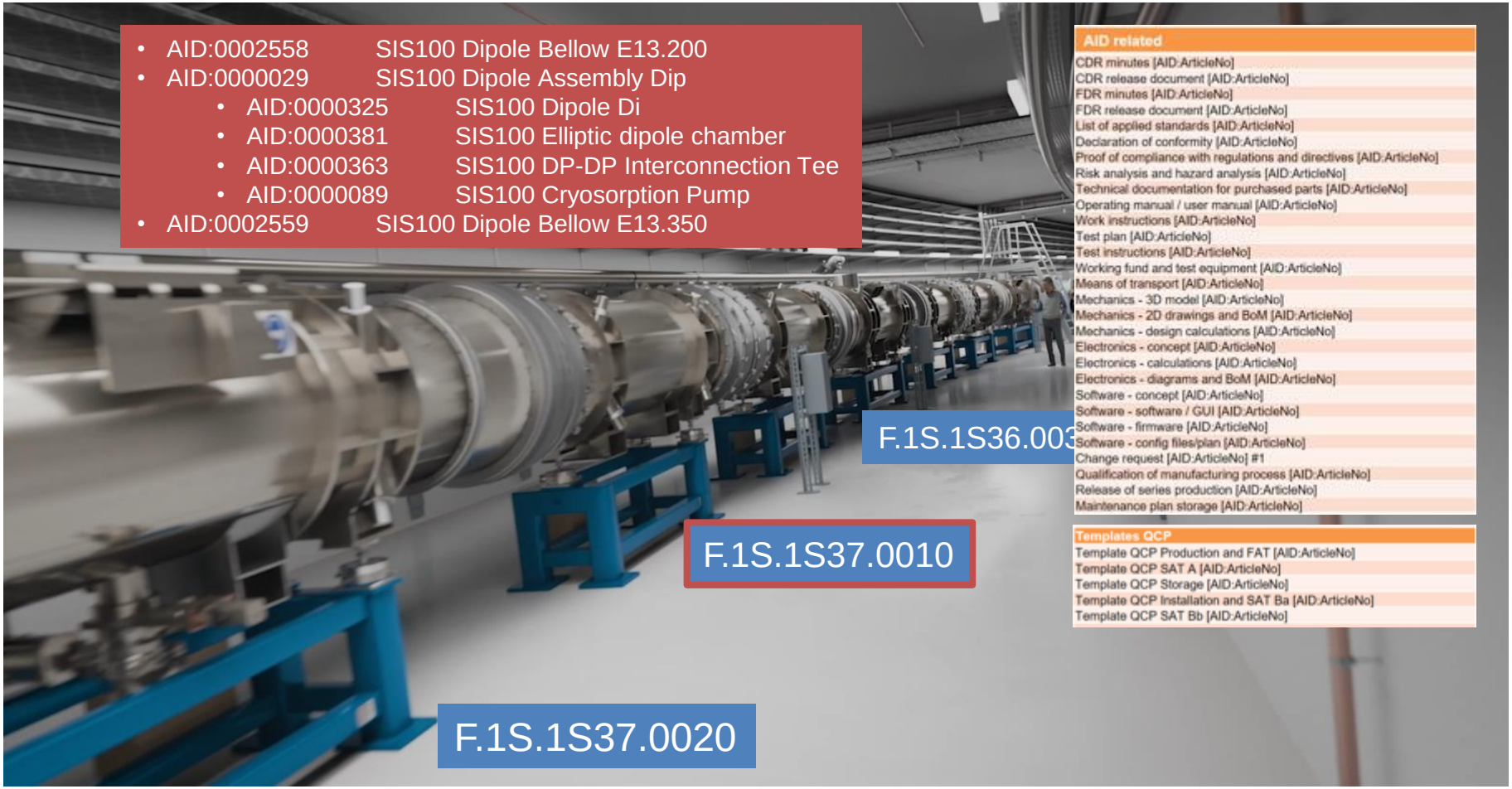
* A component (CID) is called asset in the CDB

PLM Concept
Data Model

Planning | Design | Production | Installation | Operation | Dismantling



PLM Concept
Planning, Design

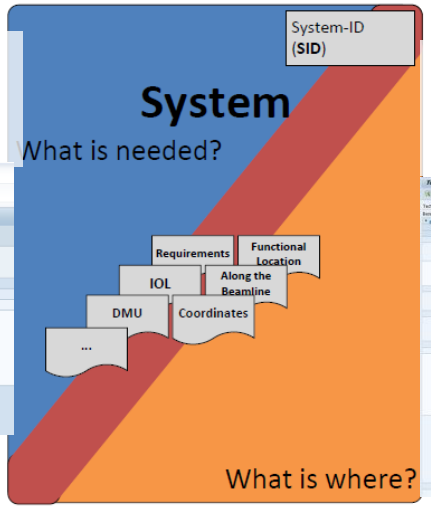


PLM Concept
Production, Installation, …

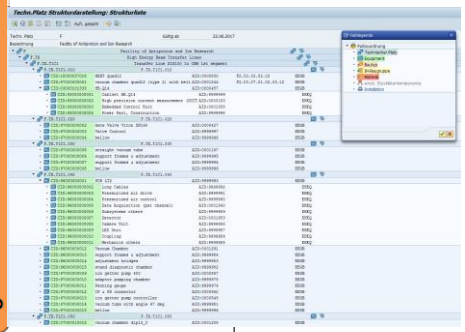
PLM Realization
Translation to SAP

Planning | Design | Production | Installation | Operation | Dismantling

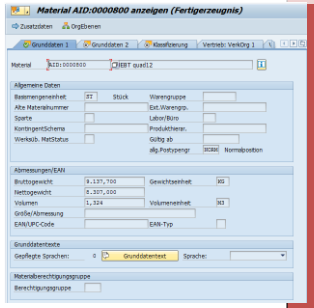
Planning:
- **Functional Location**
- **BoM Functional Location**

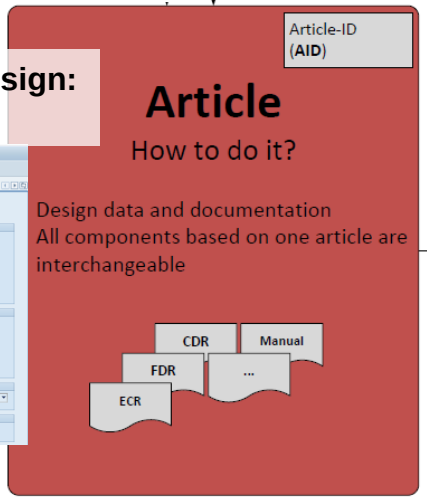


Installation, Operation, Maintenance
- **Functional Location**
- **Equipment**

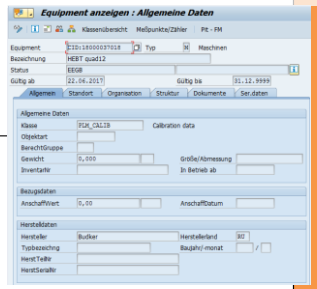


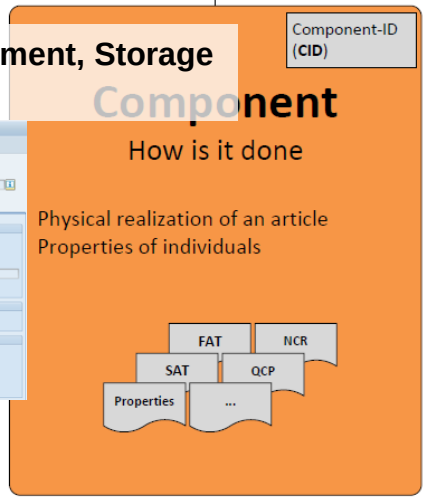
Procurement, Design:
- **Material**



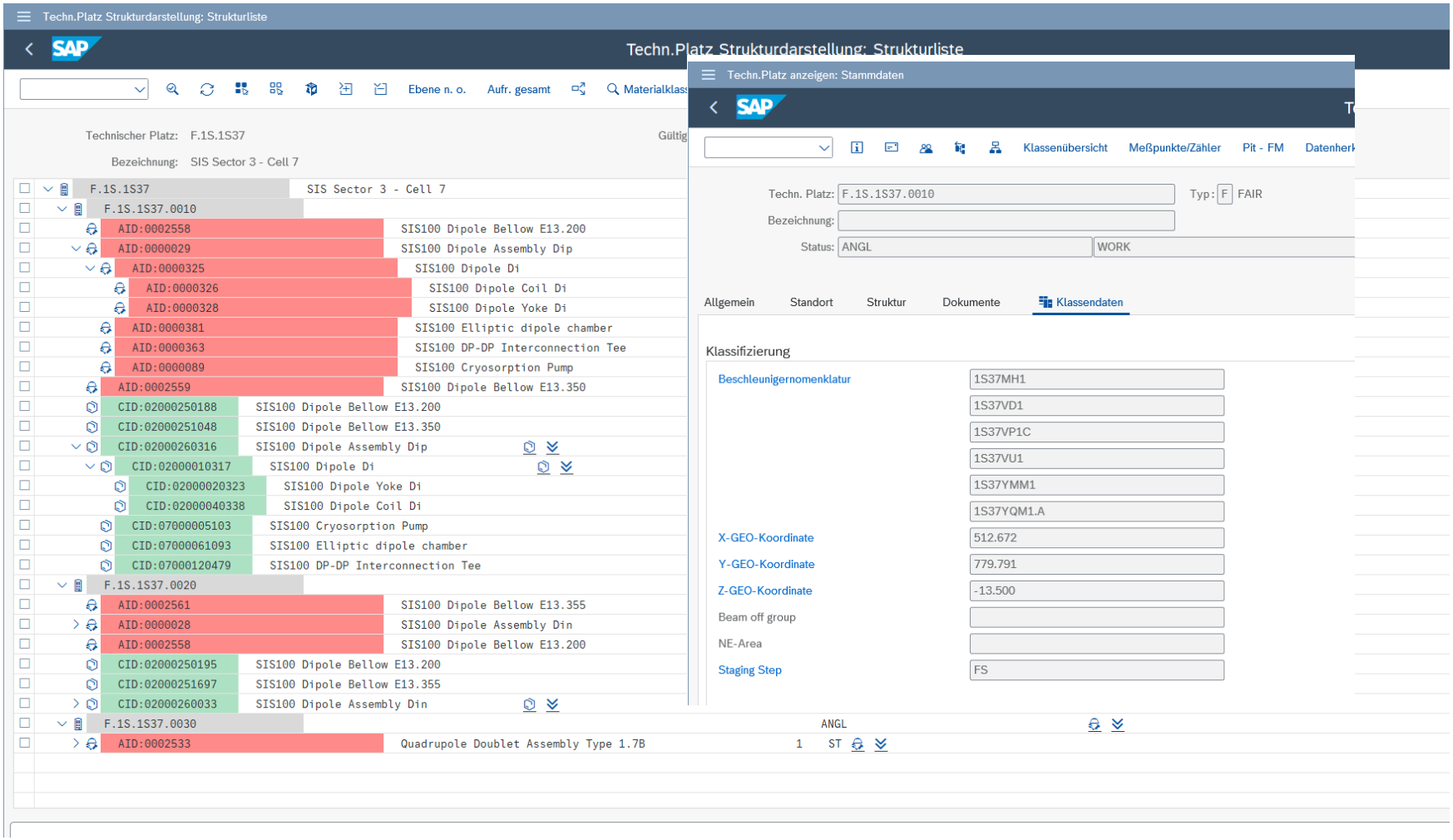


Production, Shipment, Storage
- **Equipment**

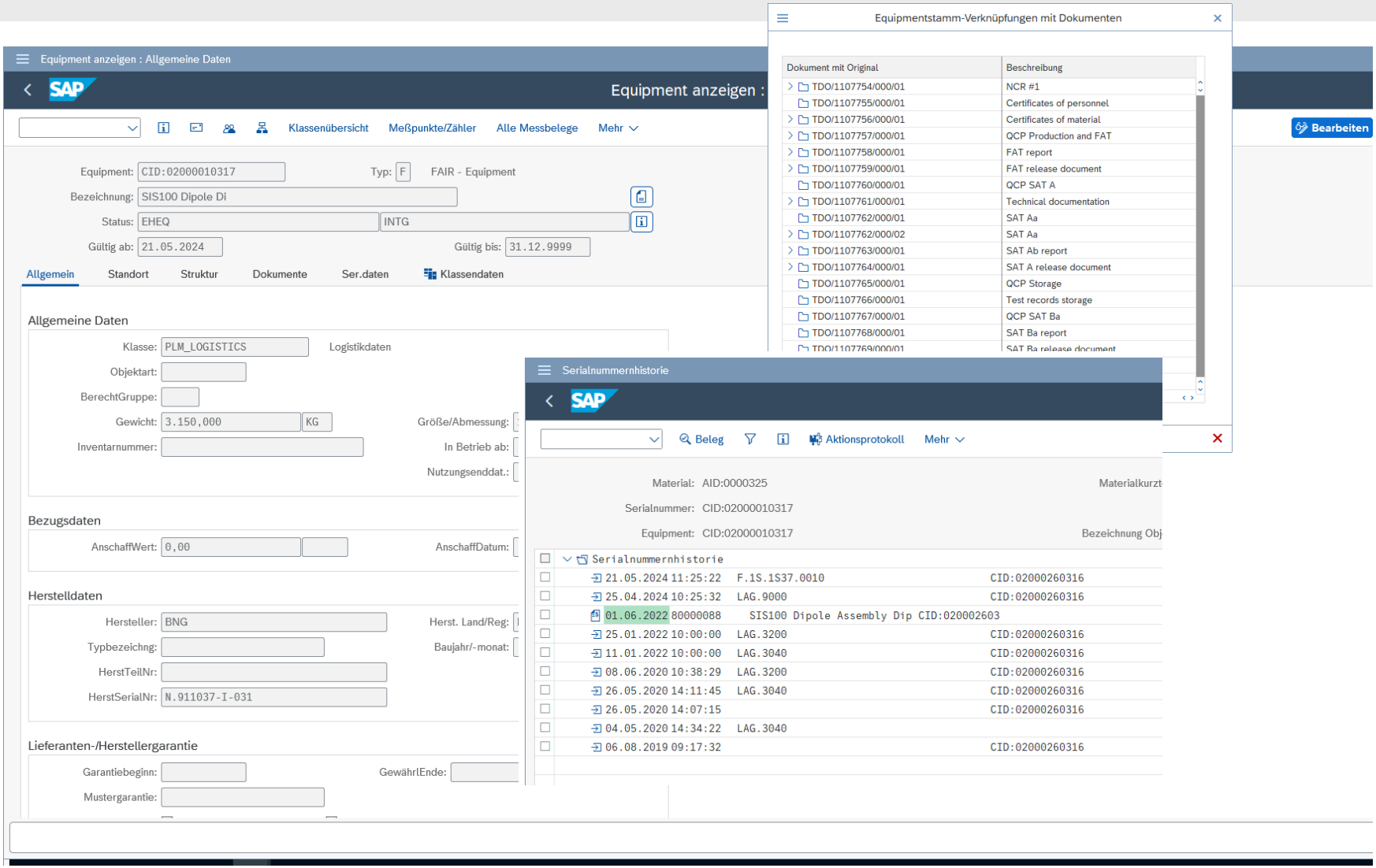




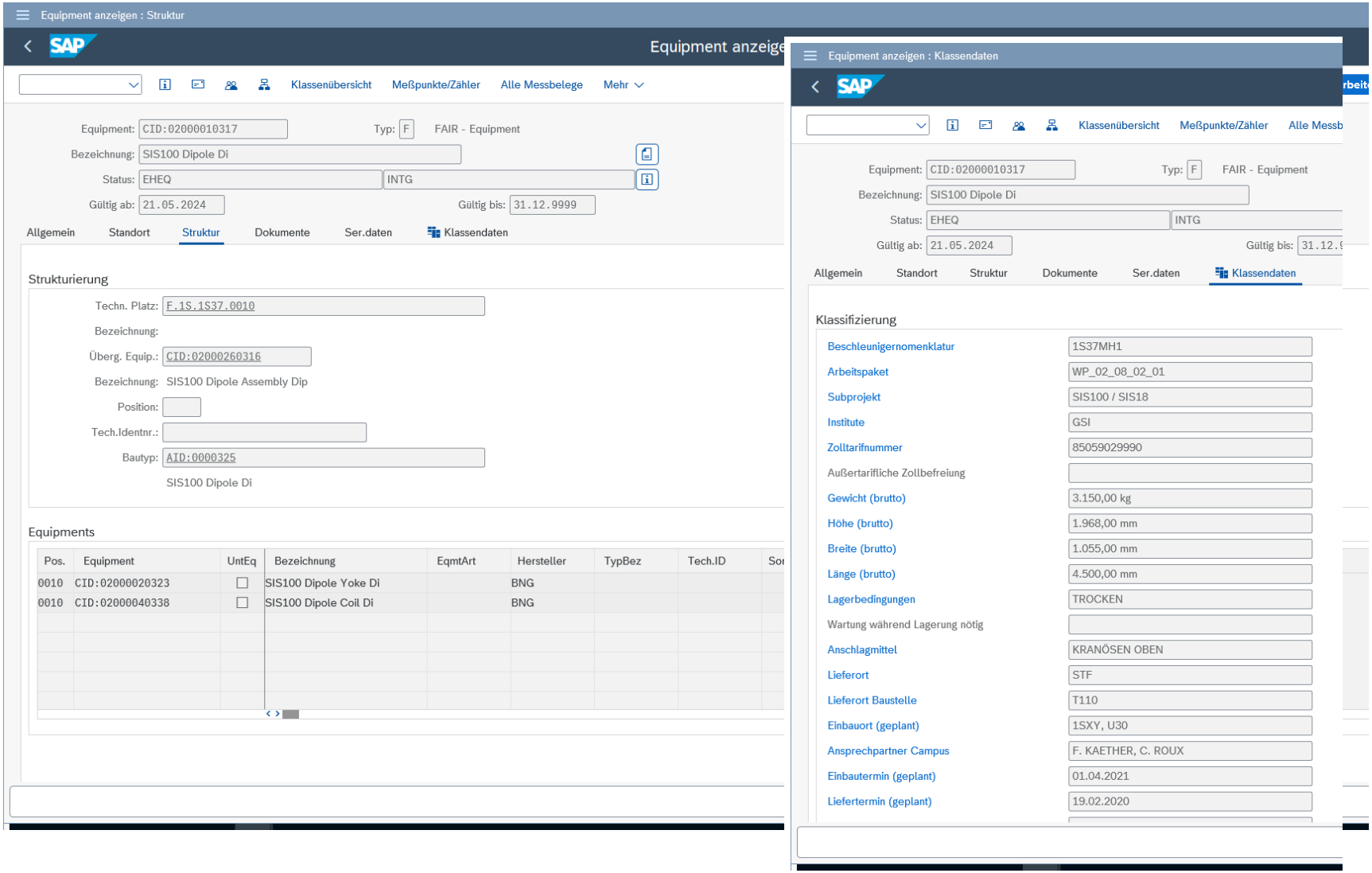
PLM Realization
Fuctional Locations w/ AID & CID



PLM Realization
Components - Documents & History



PLM Realization
Components - Structure & Attributes



Summary

- Documentation is essential for efficient and successful operation/maintenance of the facility.
  The long lifecycle time of > 30y amplifies this argument!
- The PLM concept follows the approaches in other accelerator facilities, industries, and text books.
- Main objects are System (Functional Location), Article (Material), Component (Equipment).
- FAIR/GSI wide standards are set/used.
- At FAIR/GSI SAP in standard configuration is used.
- The PLM concept is successfully established for all phases up to installation.
  Roll-out for following phases in due time.

Thank you for your attention

and have a peaceful

Advent and Christmas season!