Use Case: Exchange of as-designed and as-planned product structures for manufacturing engineering purpose

Aim

Distribution of engineering and manufacturing information to manufacturing suppliers, for production and/or manufacturing engineering, using AP242 XML files referencing and positioning 3D CAD models as external documents. It is not co-engineering.

Actors

- One OEM
- Supplier partners dealing with production and/or manufacturing engineering.

Preconditions

OEM is able to produce a valid technical data package from different applications of its information system, which is essentially its PDM system. The content of the dataset exported from its PDM system with the as-designed view (EBOM) and the as-planned (MBOM) view of the product structure, and the relationships between those two views.

The supplier is able to consume the technical data package. By validating and importing the information inside its information system, potentially including PDM, ERP and MES systems.

Description

The information is extracted from multiples OEM's repositories (PDM, CAD, standards, specifications, etc.). The information is organized in directories and files, assembled in a zip file. The information is then sent to the suppliers. The manufacturing supplier gets the information, that to unzip, and import into its own repository, using a PDM system.

Scope of exchange:
- Based on AP242 standard
  - Product and Process Structure (EBOM and MBOM)
  - Data Packaging

- 3D Definitions and Associated documents in standard or native formats
- Configuration Effectivity
- Deviations

Out-of-scope of exchange:
- As-built views
- Process Planning and Tooling management data
- 3D Geometry with PMI
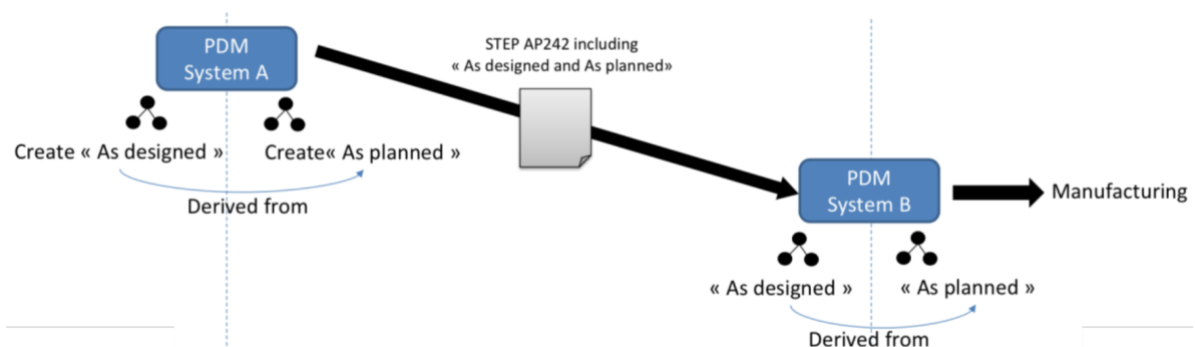- Encrypt and decrypt
- Quality test

Alternatives

n/a

Postconditions

The supplier is able to produce and/or to design the production from the information sent by the OEM.

Diagram

Benefits

Ability to collaborate with its manufacturing suppliers regardless of the system they are using, relying on appropriate collaboration patterns with the associated recommended usage of AP242.
Business needs to keep the traceability between the different views including potential deviations.