Northrop Grumman Corporation

American global aerospace and defense Technology company.

Project: PLM, ERP & MES Integration (MBM)

The Business Challenges

- Northrop uses a homegrown shop floor management system with ERP(SAP) and PLM (Tc) to manage Engineering and Manufacturing data.
- Manufacturing BOM and BOP data is authored in Tc and then transferred to SAP and MES where many details are added to the data
  - Material Master Data synchronization between PLM & ERP (two way)
    - Parts created in PLM are transferred to ERP – triggered by release workflow
    - Additional attributes populated in ERP are brought back in PLM for reference
  - MBOM transfer from PLM to ERP
    - Complex data extraction & transformation needed to create Change Masters (Effectivity) and MBOM data in SAP
    - Revisions of BOM in PLM are calculated to translate into add/modify/delete in SAP
  - BOP transfer from PLM to ERP
    - Includes SWI (Supplier Work Instructions)
    - Operations, TWIs, Workcenters, Tools and Effectivity data
  - BOP transfer from PLM to MES
    - Includes TWIs, Workcenters, Tools along with Effectivity data, attached documents/artefacts

Benefits of eQube DaaS platform

- Seamless integration with Teamcenter workflows leverages the existing processes in place
- Features such as Wait-Publish Auto Retry used to ensure data integrity & minimum human intervention
- Code-less last-mile connectivity to systems using COTS eQube connectors

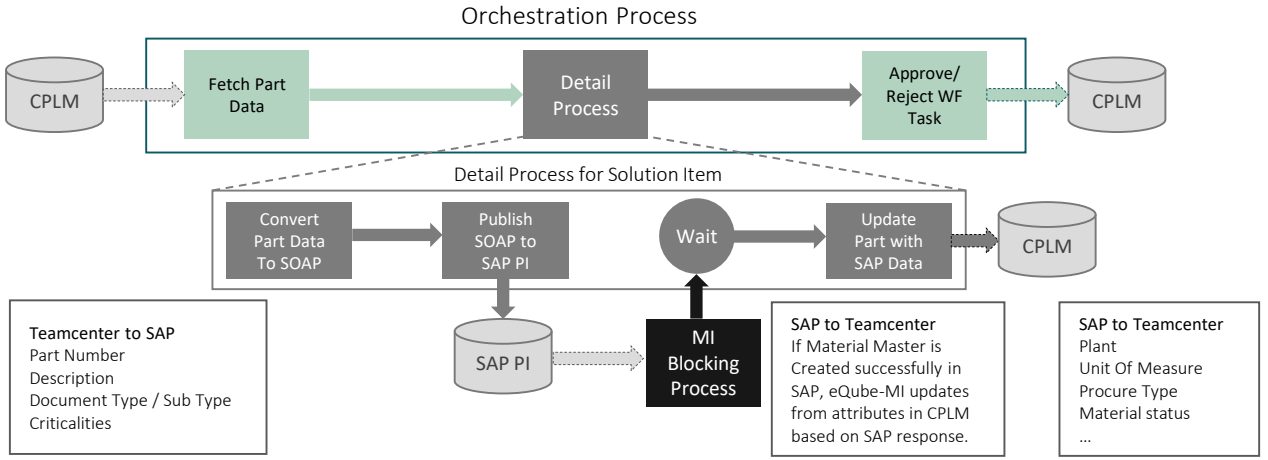
Features

- Failure messages returned from destination system are made available in PLM audit logs to end users
- Modular design allows reuse of sub-processes reducing development and maintenance efforts
- Validations included as part of transformation logic which ensures data quality

eQ Process

- Product used: eQube-MI
- eQube Connectors used: Teamcenter, Databases
- Publish to Webservice – to communicate with SAP/PI
- Common eQube-MI processes used across interfaces for error handling, workflow sign-offs etc.

Material Master Data Flow



MBOM Data Flow