

# Teamcenter Engineering in Pro/Engineer environment – A Case Study



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# Mercury Marine CAD/PDM environment – Previous setup

- **Approximately 120 Pro/Engineer CAD users at 7 different Mercury sites (R & D and Manufacturing departments)**
- **Pro/Intralink was used as CAD data vault prior to Teamcenter Engineering**
- **Pro/Intralink server was located at Fond du Lac, WI – connected to remote sites through network**
- **Centralized CAD and PDM support, application and system maintenance (at Fond du Lac)**
- **CAD data management – Pro/Intralink**
- **Drawing sign off – Lotus notes**
- **Engineering Change Notice – Legacy Mainframe**
- **Engineering Change Request – Lotus notes**

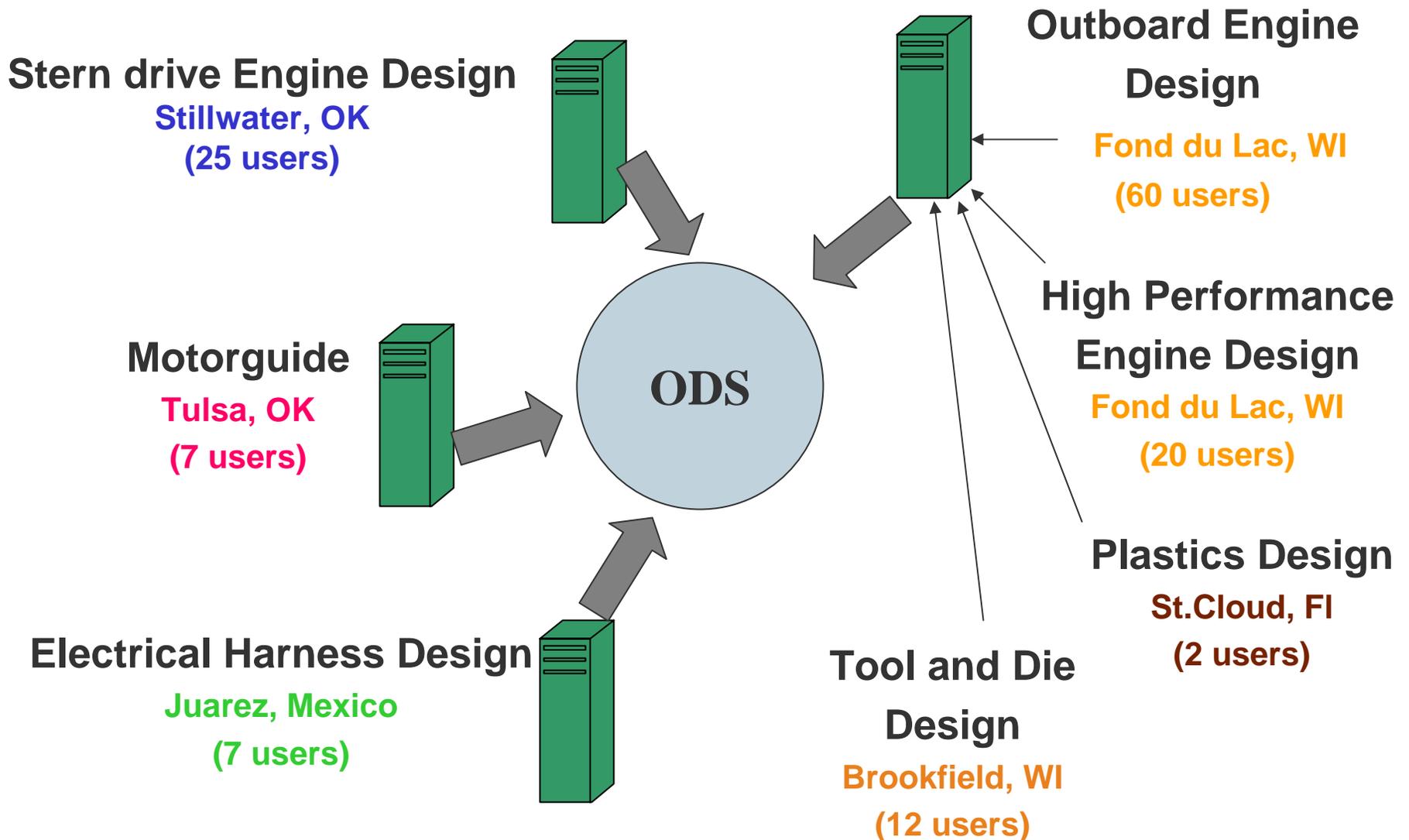
# Teamcenter Engineering IPEM Implementation

- Internal Teamcenter Engineering – Integrated Pro/Engineer Manager (IPEM) testing
- Pro/Intralink to Teamcenter Engineering Data migration
- Software and Hardware configuration and deployment (incl. multisite)
- Training all Mercury sites
- Phased rollout (Vs. Big Bang deployment)
- Data Synchronization between Pro/Intralink and Teamcenter Engineering for the transition period

# Teamcenter Engineering IPEM Testing

- Teamcenter Engineering / IPEM testing criteria
  - Business needs
    - Ex: Part Numbering Scheme
  - Basic PDM functionalities
    - Check in, Check out, Fetch out, Search, Promote, Demote, Dependencies and relationships , Update files, fetch out family table instances,
  - Use case scenarios
    - Interchange Assemblies, Assemblies with Pro/Programs
  - Performance
    - Time involved for checkout, search, etc

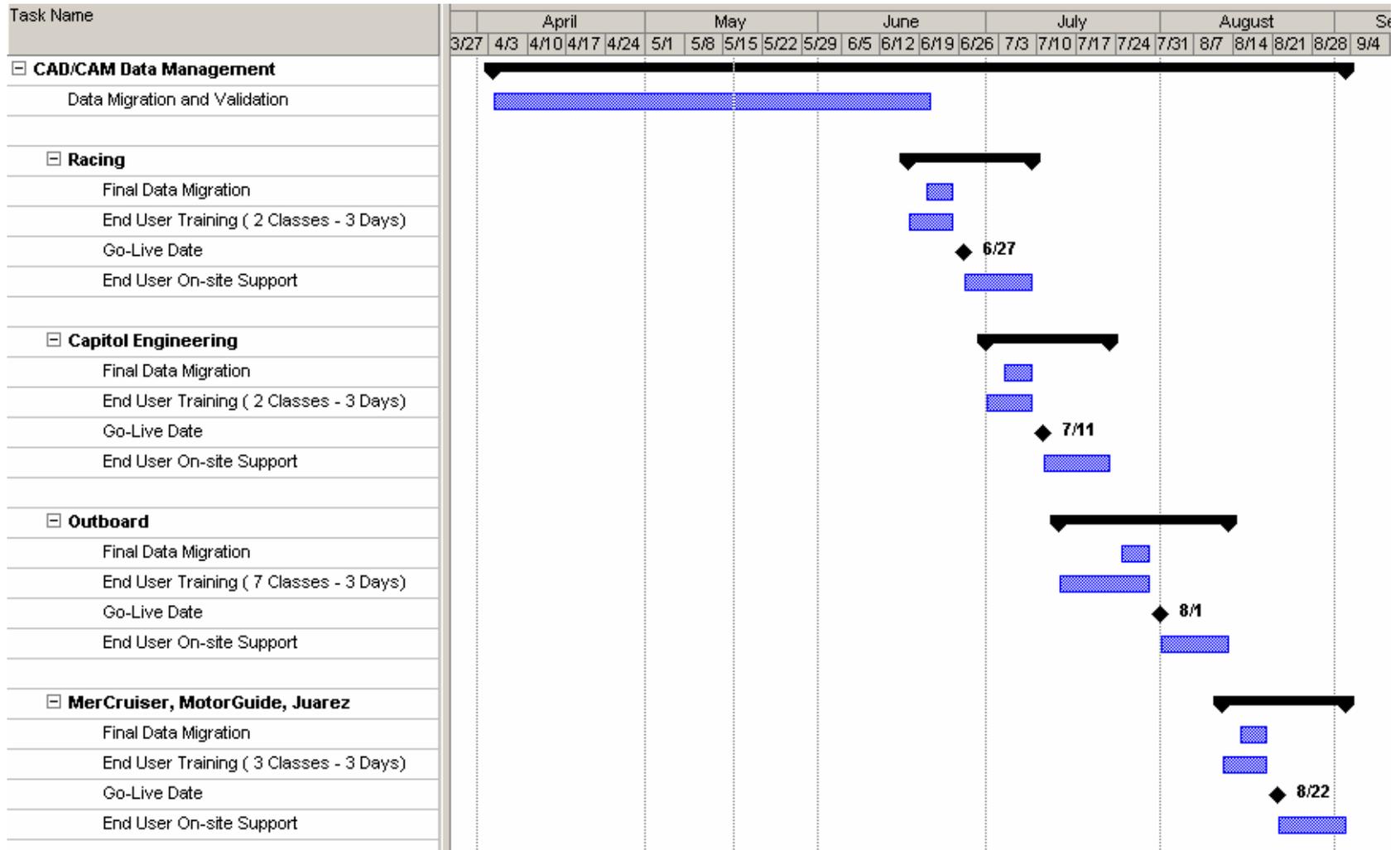
# Mercury Marine Teamcenter Engineering setup



# Phased Rollout Vs Big Bang Rollout

- **Pros for Phased Rollout:**
  - Training and Support at all sites
  - Phased Data Migration (from Pro/Intralink)
  - Pending Rename issue
  - Increased confidence at later sites
- **Cons for Phased Rollout:**
  - Administrative nightmare
  - Easy deployment
  - Support and Training at same time – Resource issues

# Rollout plan



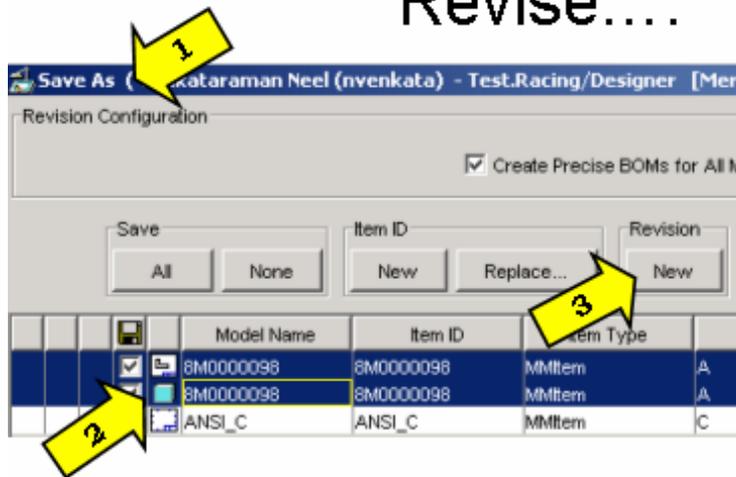
# Training

- Pre-Training communication
  - General discussions and awareness sessions
  - Discuss project timelines, current issues, resolutions, demonstrate IPEM/TCE
  - Very effective to ease the tension, esp. long time Pro/Intralink users
  - Surveys to follow-up proper communication and solicit feedback
- Teamcenter Engineering Super User Training
  - Key personnel from all Mercury sites were involved
  - Change agents to help other users at their sites
- Teamcenter Engineering IPEM training
  - Software training – use of IPEM and TCE by UGS
  - Mercury Process training – how Mercury chose to use the software – by Mercury personnel
  - Follow up trainings, communication conducted at regular interval after ‘Go Live’

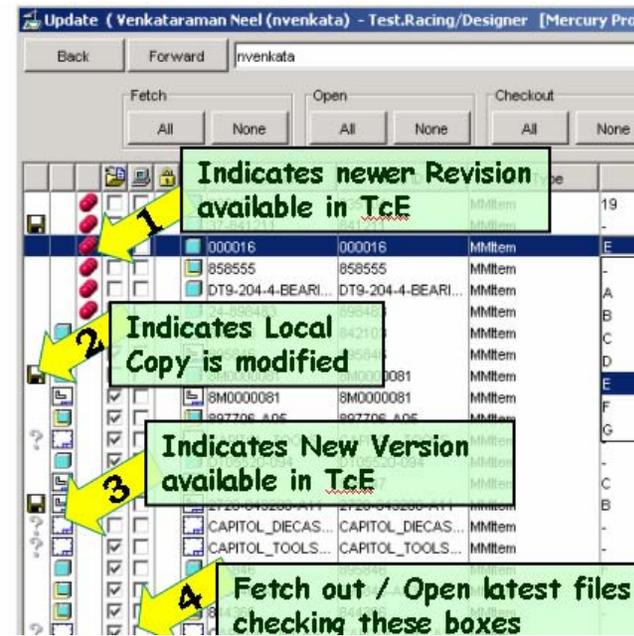
# Training and documentation

- Customized Training
  - Cheat Sheets
  - “Menu Mappers” - Pro/Intralink Vs Teamcenter Engineering

## Revise....

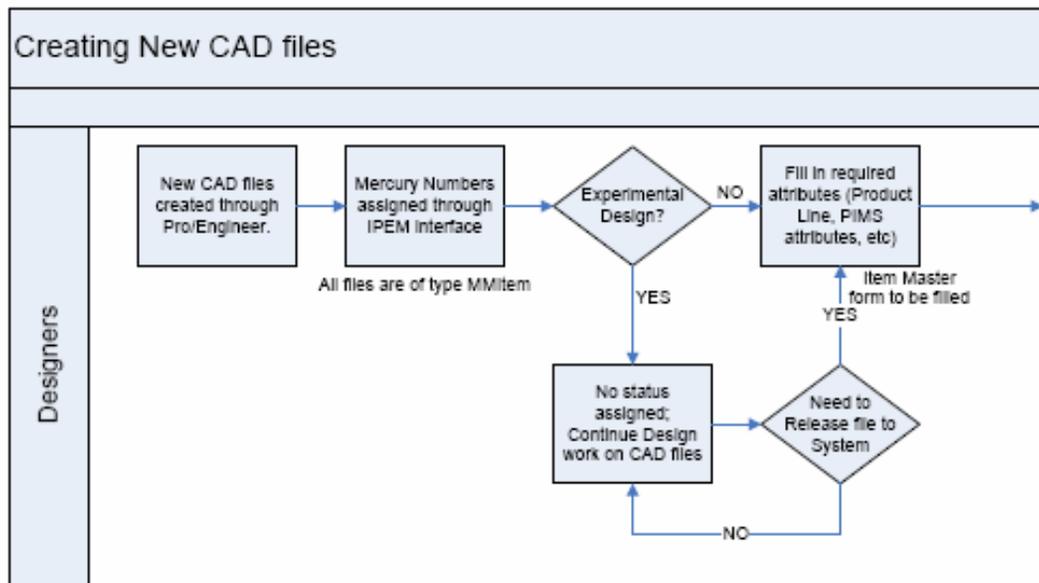


1. With Drawing and Model in Pro/Engineer session, select **File**
2. Highlight the Models and Drawings that need to be revised.
3. Click on “**Revision New**” button. See that the revision has b character.



# Training and Documentation

- Process based training
  - Creation of item using Pro/Engineer or TCE
  - Revision of item using Pro/Engineer or TCE
  - Managing Supplier CAD data using TCE



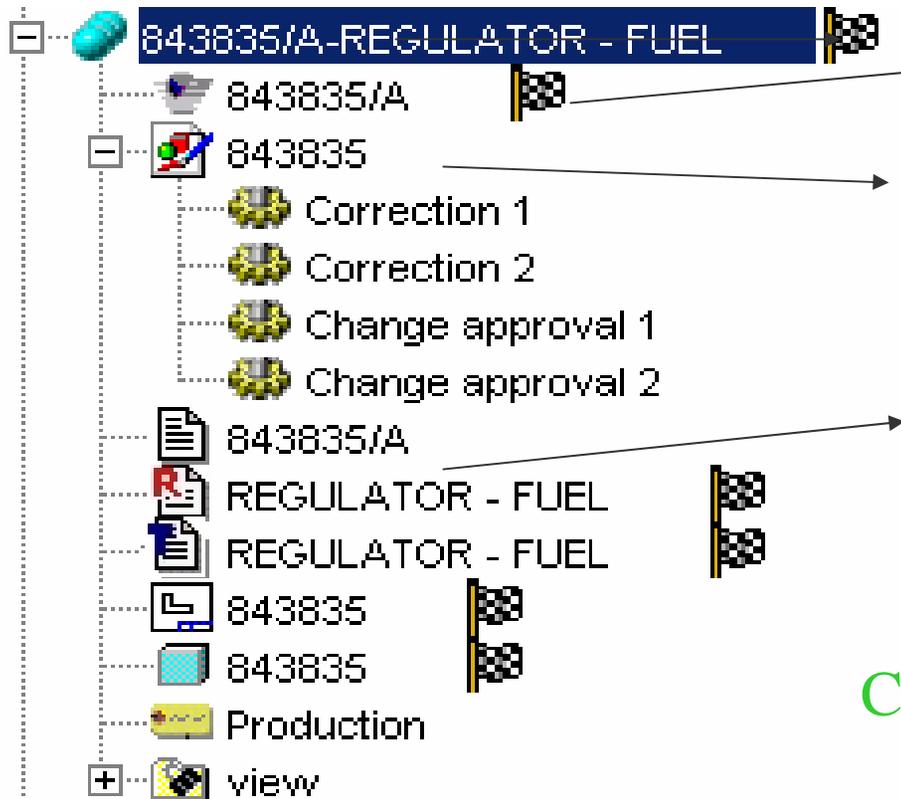
# Lessons Learned

- Teamcenter Engineering – Client server intensive (Chatty)  
– keeps Network busy
- IPEM performance has improved a lot since rollout , but a long way to go
- Testing, Documentation and constant Communication helps get through changes
- Process centric testing is more important than testing software functionalities
  - Ex: Large Assemblies management, Supplier CAD data management, Engineering Change process, etc
- Follow up user training with post training sessions.
- Constant touch with UGS for software bug fixes and improvements are must
- Do not overlook Multisite synchronization issues

# Pro/Intralink functionalities- Lose anything?

- Some functionalities that are lost by switching to Teamcenter Engineering
  - File Replace command from within Pro/Engineer session
  - External Simplified Representation
  - Ease of use of dependency and relationships  
(like Family Tables reports, relationship reports)
  - Lack of Workspace for real time status
  - Duplication/ Renaming of CAD files/assemblies that are not in Pro/Engineer session

# Item structure



JT file

Image dataset - automatically saved while “Teamcenter Save as” action and associated markups

Forms for

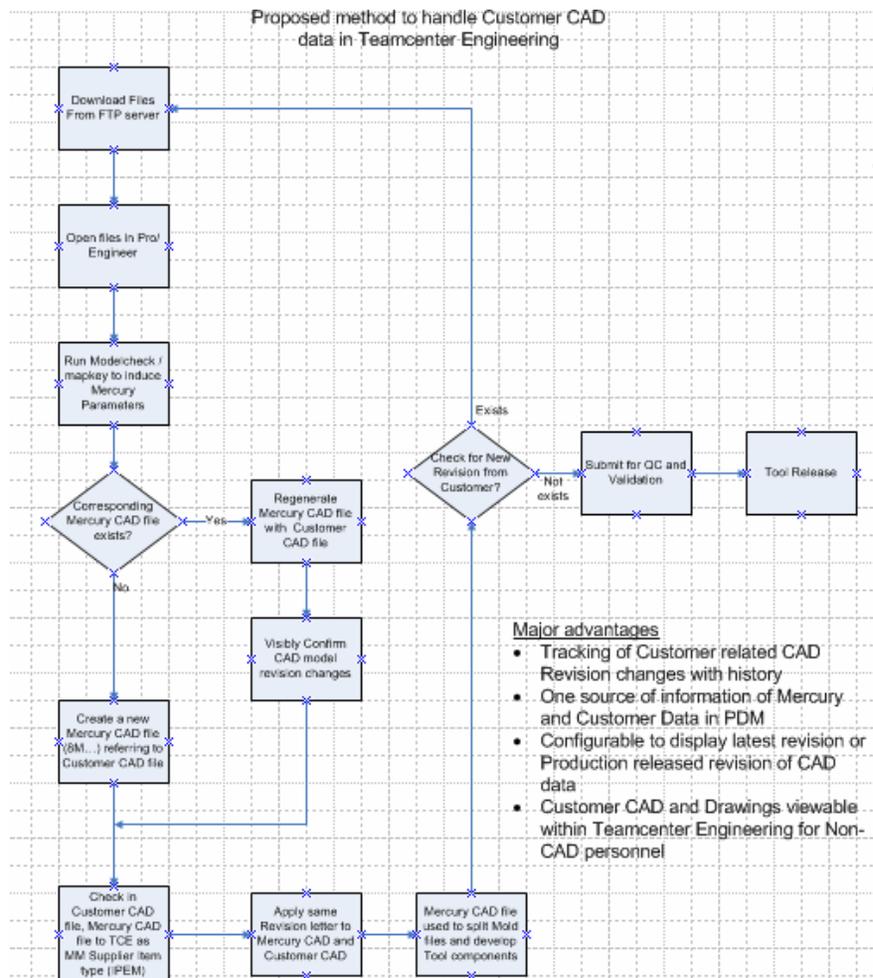
Research and Development attributes

Tooling attributes

CAD datasets



# Supplier CAD Data – Different Item Types



## Using different Item types for Mercury and Supplier CAD data

Tracking of Customer related CAD

Revision changes with history

One source of information of Mercury and Customer Data in PDM

Configurable to display latest revision or Production released revision of CAD data

Customer CAD and Drawings viewable within Teamcenter

*Demo AVI*

# From PDM to PLM

Creation and management of Items and attributes

Change Management - Engineering Change Process

Teamcenter Visualization

Engineering Bill of Materials

Drawing Quality and Approval Process

Document Management and Approval Process (Product Development Process)

# Item Master and Engineering Changes

- Teamcenter Engineering is the master of all Drawing related Items
- Global attributes for items have been defined and maintained in Teamcenter Engineering
- All items in Teamcenter Engineering go through Change control/ Revision control using Change process.
- Legacy Mainframe system is being replaced by Teamcenter Engineering for Change Control Process
- Single Source of information for Product Development Process needs in Teamcenter Engineering eliminating islands of information

# Questions and Comments

**Questions and Comments.....**