JT OPEN

JT Validation

Panel Discussion

Jeffrey A. Stevens (General Motors)

SEPTEMBER 12 -14

2010 International Conference

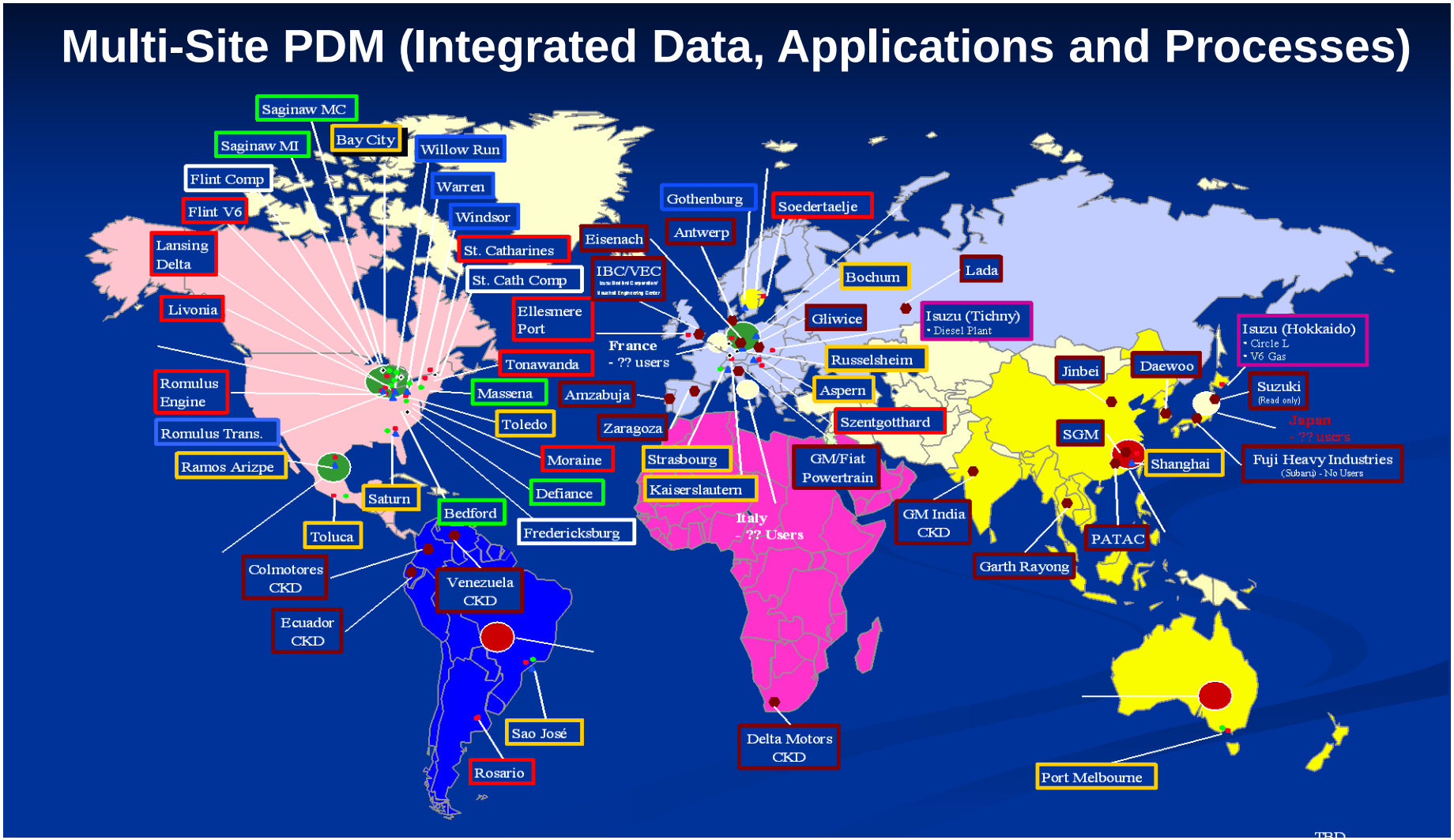
VISUALIZING THE FUTURE

Hosted by SIEMENS

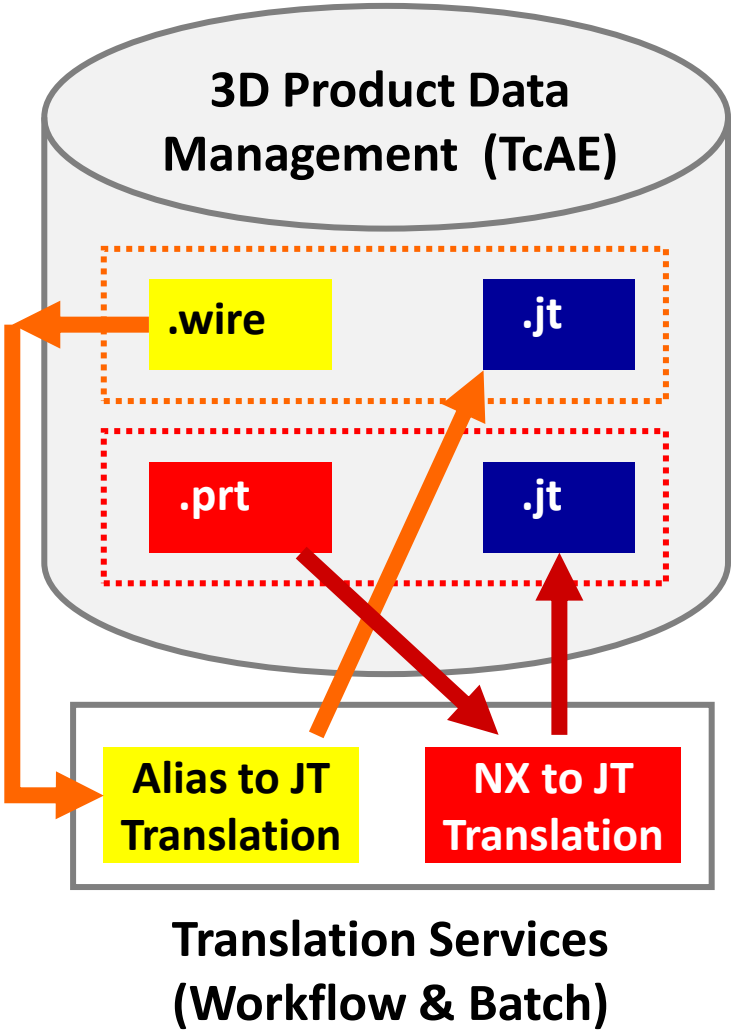
GM Global Design & Engineering Centers

Global Product Data Management

Multi-Site PDM (Integrated Data, Applications and Processes)



Product Data Management and JT



JT File

Attributes:

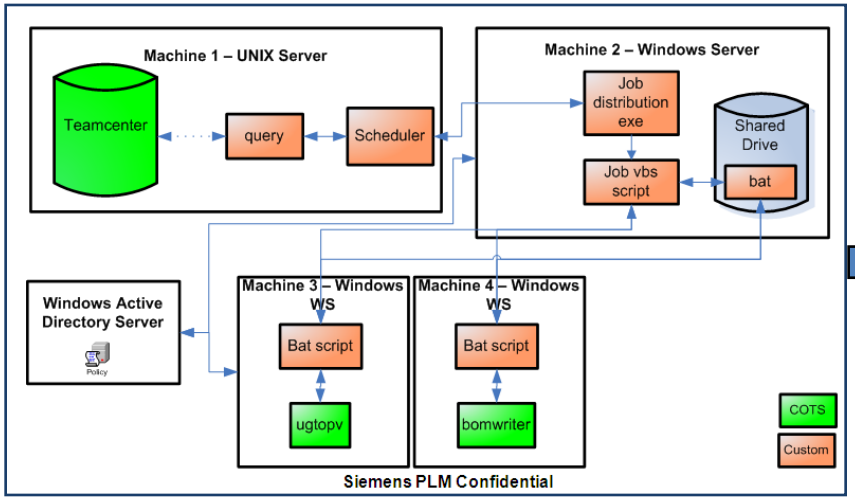
Levels of Detail:
3 or 4 Named LODs
(Dependent on Workflow)

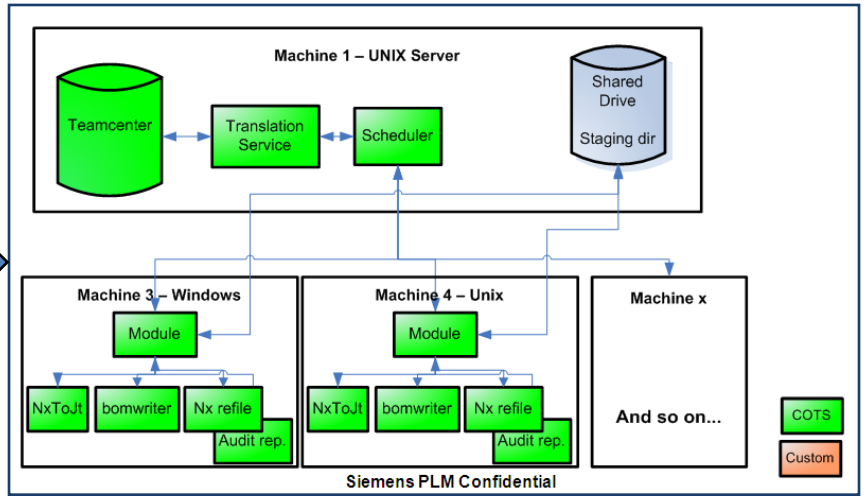
Boundary Rep:
XT Brep – GM Standard
JT Brep - No longer used
ULP – Not yet utilized

PMI:
GD&T - Beginning to use

Standardized Creation of JT Files (PDM based)

GM Custom Auto-Tessellator Siemens Translation Services





General Motors has shifted most of our translation for JT from a custom internal auto-tessellator to the COTS Siemens Translation Services. Expected to complete all key processes in 2010.

Validation of JT Files

Validation Checks

Completeness: JT contains all required/expected content

Correctness: JT file is semantically correct (“well formed”)

Fidelity: JT file is accurate to the CAD Model (geometry, etc.)

Usability: JT file can be utilized by consuming application

Conformance: JT file contains the “right content” for the usage (purpose)

Validation of JT Files (JT Partitions)

Enterprise JT Partitions (Approved JT)

Attributes: Based on Configuration File (Conformance)

Levels of Detail: (3 or 4 Named LODs) - Visual (Usability)

- **Styling (Highest LOD – Most Polygons) – No gaps or sparkles**
- **DMU Fine**
- **DMU**
- **Factory (Lowest LOD – Fewest Polygons)**

XT Brep: Consistency between JT and NX .prt files (Fidelity)

PMI: NX & TcVis compatibility for GD&T (Fidelity & Correctness)

ULP: Not yet tested (Usability)

CAD file (NX or Alias) is validated prior to JT Translation

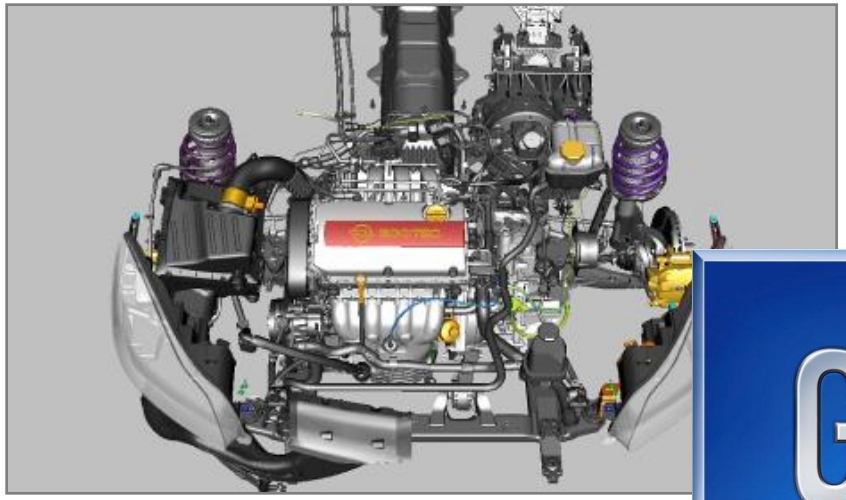
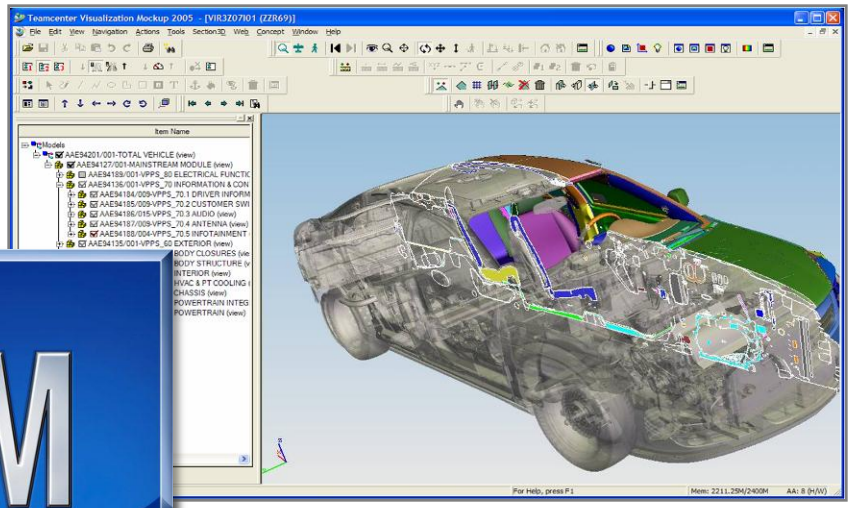
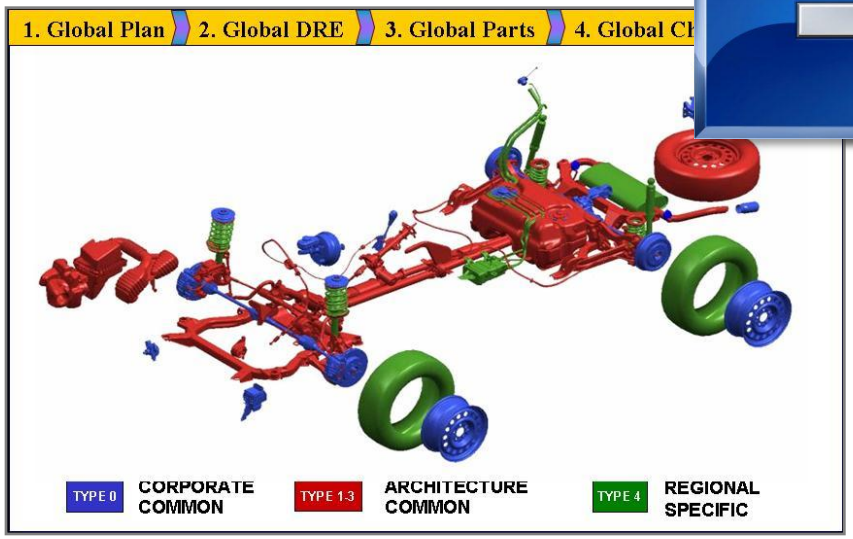
Validation of JT Files (Fit for Purpose)

Examples: (Current Workflows & Processes)

- Design Reviews: Work-in-Process JT
- Virtual Builds & Audits: Enterprise JT - Released or Baselined (Status)
- Reference Data for CAD (NX or Alias): Enterprise JT (Re-Use)
- High End Visualization & Virtual Reality: WIP JT & Enterprise JT
- Purchasing (Sourcing): Enterprise JT (Re-Purposed)
- Marketing Virtual Garage: Enterprise JT (Re-Purposed)
- Legal (eDiscovery): Enterprise JT (Re-Purposed)

Validation of JT Files (Future Requirements???)

Examples: (Future Workflows & Processes???)

- Part Finding & Shape Search: Validate Search from JT Attributes & Indexing (Usability)
- Purchasing (Sourcing): Validate ULP & JT2GO (Fidelity)
- Marketing Virtual Garage: JT for VVP (Usability - DCC Application support of JT)
- Aesthetic Validation: TBD (Fidelity – Adv. Material support in JT)
- In-Line Process/Workflow Validation: TBD
- Supplier Data Exchange: TBD (Fidelity & Conformance - May require custom workflows with NX and Checkmate)
- Long Term Data Archival: TBD (Fidelity & Conformance)

JT Validation