Tackling CAD to CAD Migrations: Trials, Tips, and Tools

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2024

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Presenters

Annalise Suzuki, Elysium

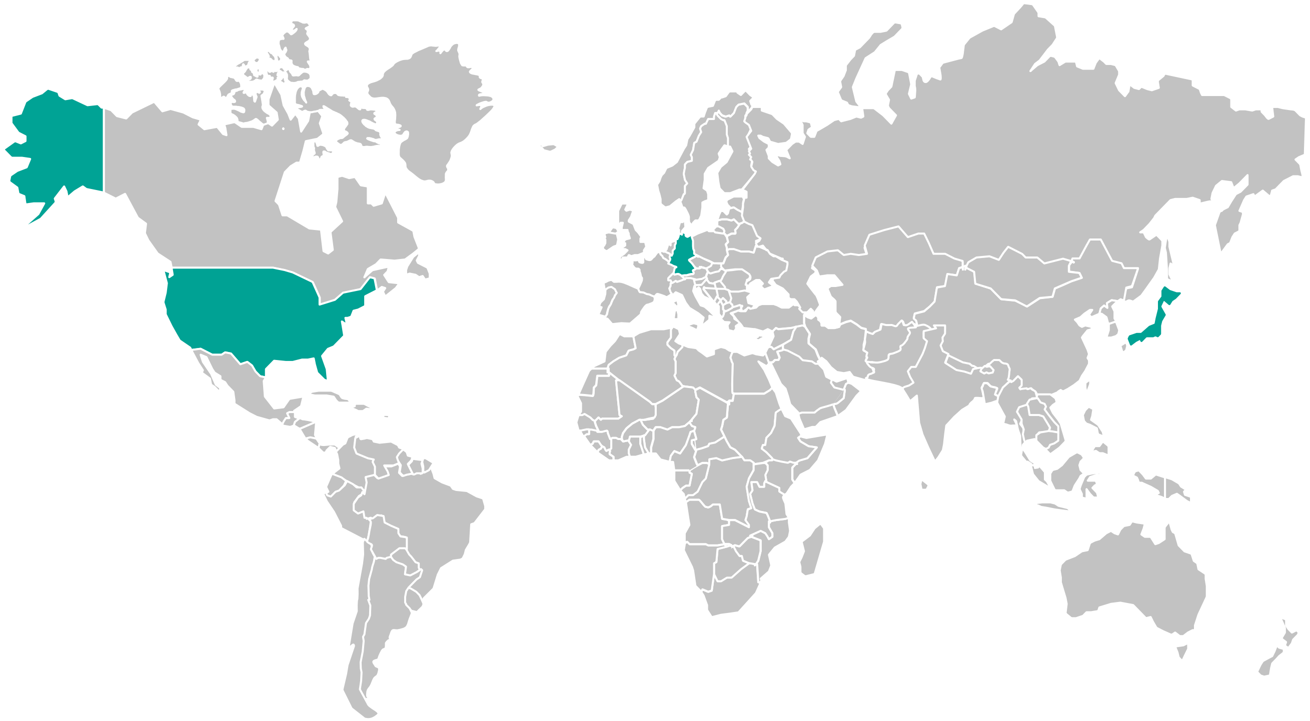
Chief Operating Officer

Dan Dezarov, Elysium

Manager of Applications & Services

Elysium Global

- **Specialized and dedicated technologies with a global reach**
  - **Over 40 years of CAD Expertise**
  - **Strong partnerships with CAD Vendors**
  - **3D Data Expertise**
  - **True Interoperability**



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CAD Translation

- **Typical use cases:**

Collaboration

- Multi-customer
- Multi-format

Delivery (Black Box)

- Specified Format
- Could be 3D and/or 2D

CAD Migration

Merge / Acquisition

- Consolidate Resources

Legacy CAD System

- Loss of support

Delivery (Design/ IP)

- Preserve design intent

Options to Migrate

- Internal re-create
  - Pro: Highest quality
  - Con: Time-consuming
  - Con: Expensive
  - Typical Outcome: Best for very high IP, complex, very limited volume; not sustainable for large volumes

- Translate via STEP
  - Pro: Faster than re-creation
  - Con: Data management challenges (duplicates)
  - Con: No features, quality issues
  - Con: 3D only
  - Typical Outcome: Acceptable for low quality requirements and low volumes

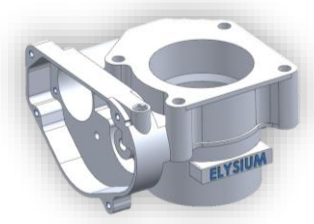
- Outsource re-mastering
  - Pro: Lower cost
  - Pro: Can retain features
  - Con: Time-consuming
  - Con: Lack of quality assurance

- Partner with Migration Software
  - Pro: Magnitudes Faster
  - Pro: QA can be included
  - Pro: Associative 2D possible
  - Con: Not created as if natively designed
  - Con: Still requires some level of re-mastering

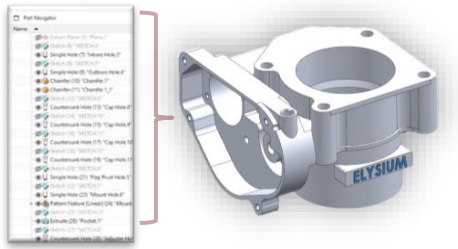
CAD Migration: Planning for Success

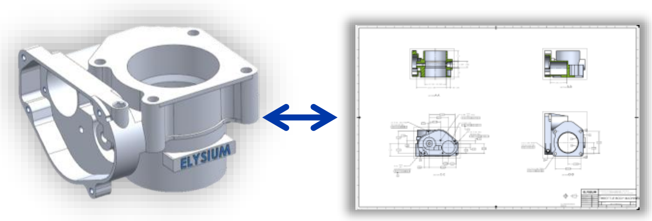
- Know your data
  - How much do you have
  - Where is it located
  - Is it managed by PLM
  - What type of data
    - – CAD systems, versions
    - – Product type
    - – Specialty modules used (sheet metal, electrical, composites, etc.)
      - – 3DEXPERIENCE
- Prioritize your data
  - What do you need
    - – Seed parts/templates
    - – Will attribute mapping be important
    - – How will you handle standard parts
  - Who will use it
  - For what purpose

- Prioritization determines strategy
  - Latest revision only?
  - 3D, and/or 2D
  - 3D: BREP vs. features



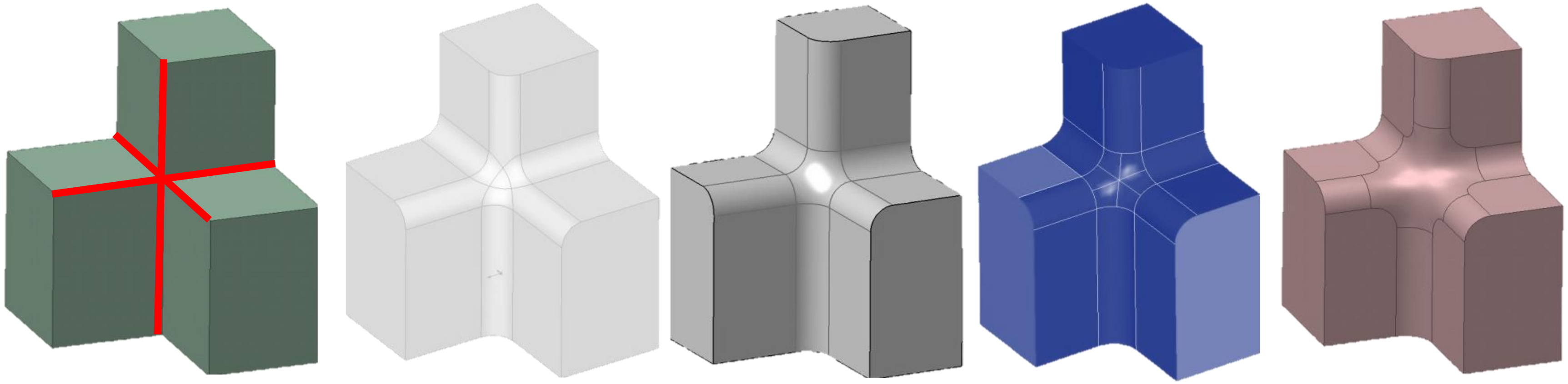
- What kind of timeline is required
  - What is realistic?
- What resources are required?
  - CAD / Migration administrator
  - Project members for re-mastering
  - CAD licensing





Feature-based Realities

- **Behavioral difference in modeling kernels**
  - **Mathematical tolerance differences**
  - **Feature creation algorithm differences**
  - **Solving a system of constraints**
  - **True whether done with automated solution or manual remastering**



Before Fillet | **CAD A** | **CAD B** | **CAD C** | **CAD D**

Process Sample Data

- **Identify representative sample**
  - **Per path/product/program**
  - **50~100MB**
  - **Assembly, parts, drawings**
  - **Representing data practices / product type**

- **Extract from PLM, migrate, Import to PLM**
  - **Ensure results are as-expected in final environment**

Post-process Planning

- **Track performance metrics**
  - **Identify realistic timing expectations**
  - **Enable project planning**
    - **(hardware/software/distributed computing)**

- **Identify gaps, priorities, disposition or completion process**
  - **Determine plans to close gaps:**
    - **Manual re-mastering (upon completion or as-needed)**
    - **Software enhancement**

Set Expectations

- **Use your sample data to plan**
- **Upward & Downward**
- **Leadership:**
  - **Cost, timeline, resources**
  - **Known limitations**
- **Users:**
  - **Reality of success rate**
  - **Gain help through advocacy early**

Summary: Key Takeaways

- **Know your data**
- **Know your usage needs of data (post-migration)**
- **Run a sample**
- **Plan accordingly**