

# Exploiting Digital Data and Standards

Annalise Suzuki & Phil Spreier  
Elysium

## GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2023



# Presenters Bio

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Annalise Suzuki

VP, Technology & Engagement  
12 years at Elysium  
GPDIS Executive Council  
AIAG MBE Workgroup Chair  
PDES Board Member  
DMSC Member  
JT Open TRB



Phil Spreier

Customer Engagement Lead  
30 years in Interoperability Industry  
ISO Committee Member:  
PDF (TC 171 SC2)  
STEP/JT (TC 184 SC4 JWG16)  
PDF Association Representation  
Adobe Acrobat Certified Expert

# Abstract

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With the race to digital transformation at-hand, organizations are collaborating using standard CAD formats for sharing model-based data, whether it is with suppliers, manufacturing, customers, or for long-term archival.

Because of the measured pace of standards development, it is often necessary to augment standards to meet company requirements today. Waiting until solutions are perfect is unrealistic. This means it is also critical to allow room for flexibility to adapt as capabilities advance. Finding the right line between out-of-the-box with standards and tailored for optimization can be difficult, but knowing your data and consumers of it can help you to exploit your digital data and make productive use of standards.

Join us as we discuss successful standard deployment activities and workflows, and showcase a few case studies where stretching beyond the standard has accelerated the adoption. This presentation will reference a variety of examples including standard formats such as JT, STEP, QIF, 3D PDF, and others.

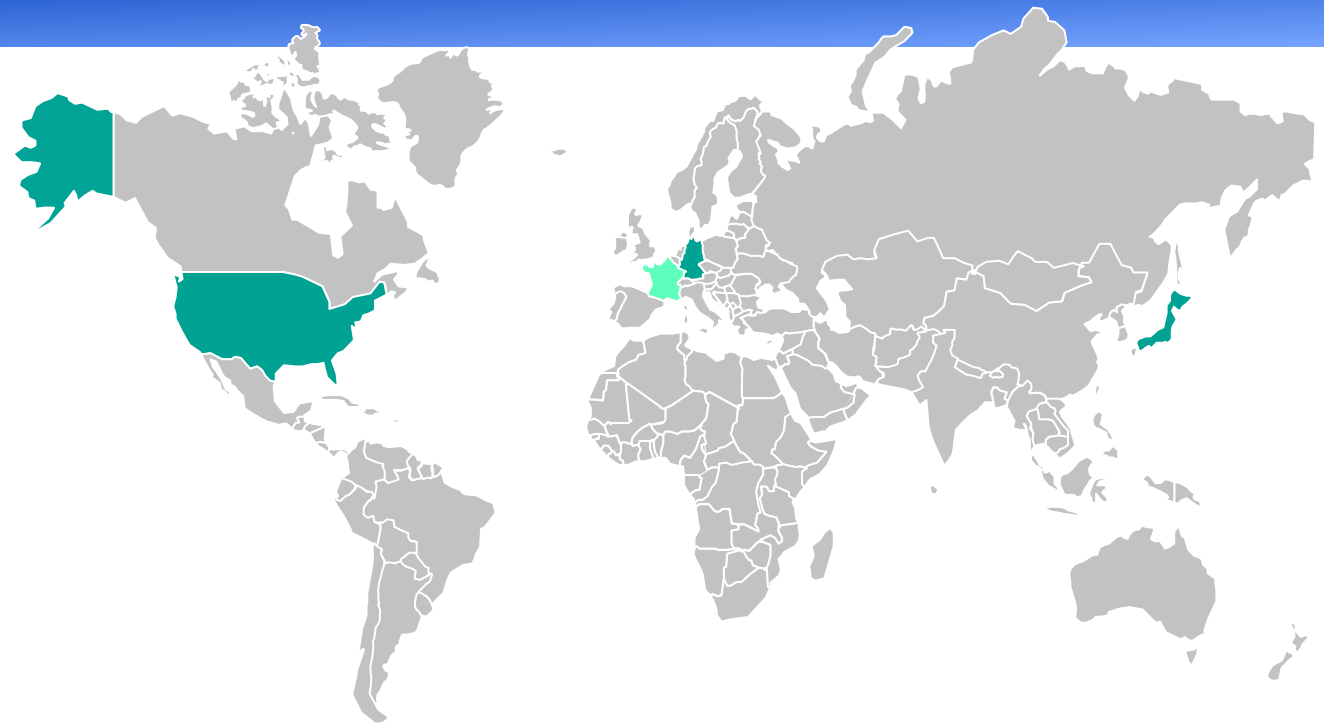
# Elysium Intro

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## True Model-Based Interoperability

- Over 35 years of CAD Expertise
- Strong partnerships with CAD Vendors
- 3D Data Expertise
- “Off-the-Shelf” Software, Development Projects & Migration Services



# Elysium Standards Involvement

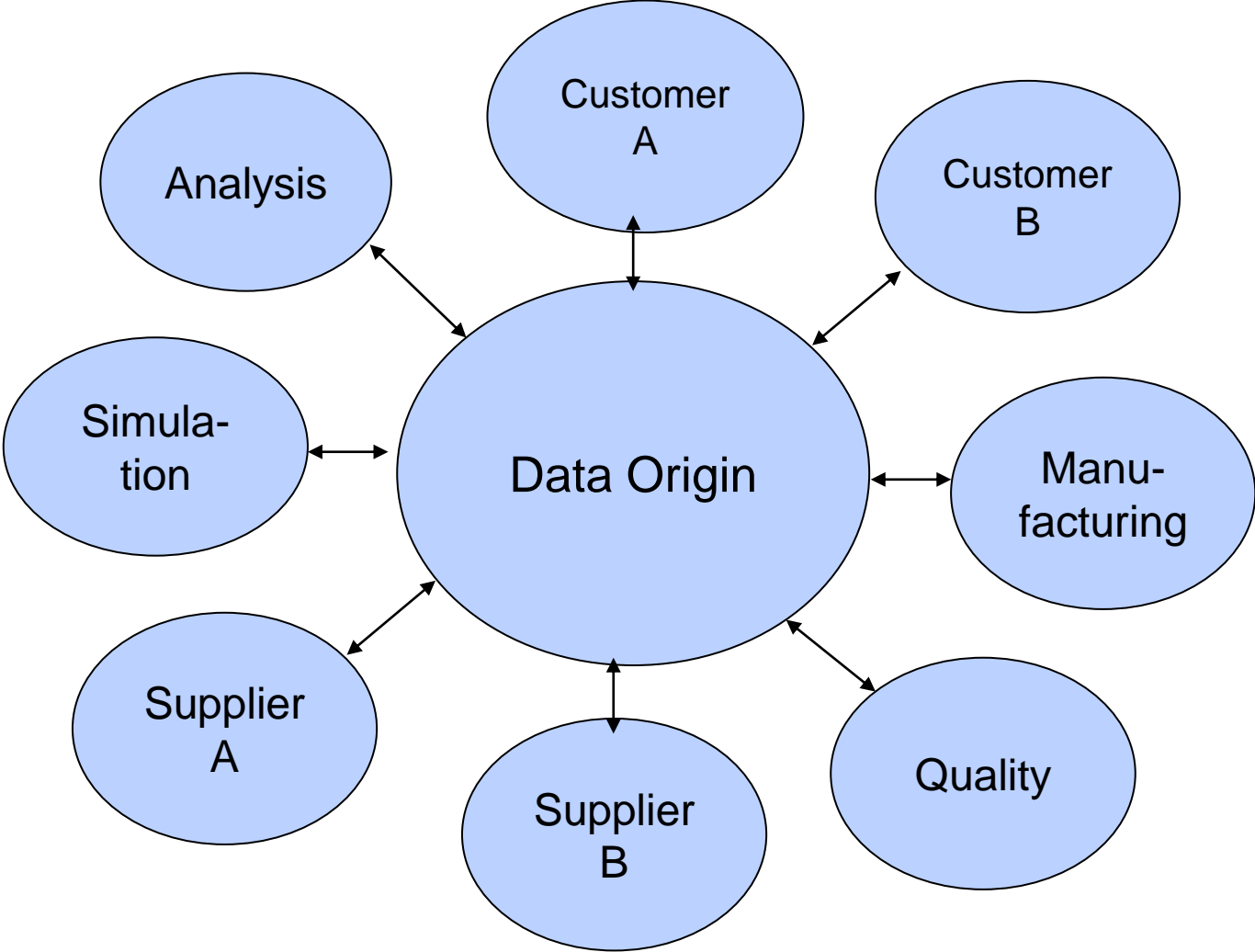
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- ISO
- PDES Inc.
  - STEP
  - LOTAR
  - MBx-IF
  - CAX-IF
- DMSC
  - QIF
- PDF Association
  - PDF (3D PDF)
- JT Open TRB
  - JT
- Prostep IVIP
- SASIG
  - AIAG
  - JAMA
- JAPIA
- JEITA



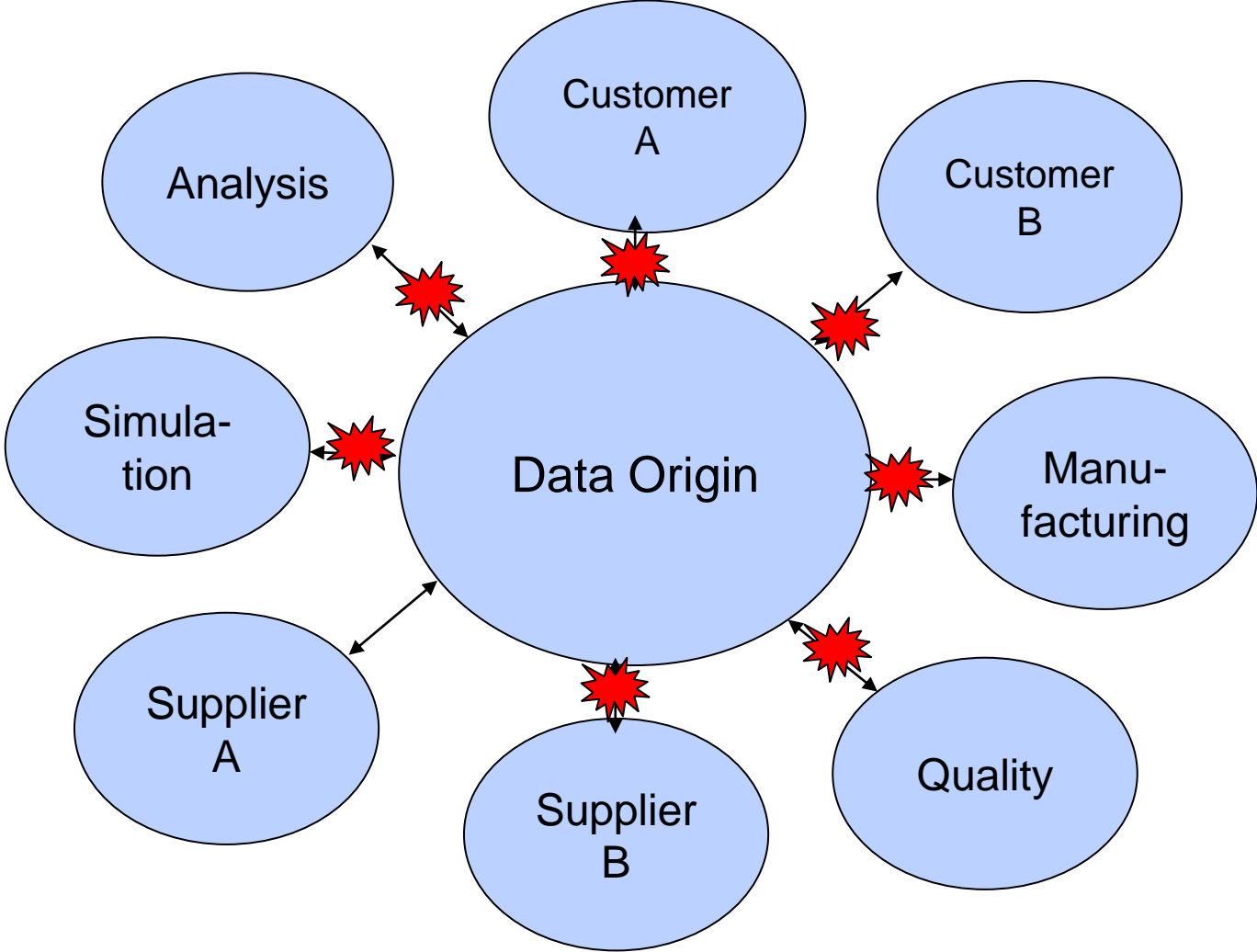
# Standard Interoperability in Concept

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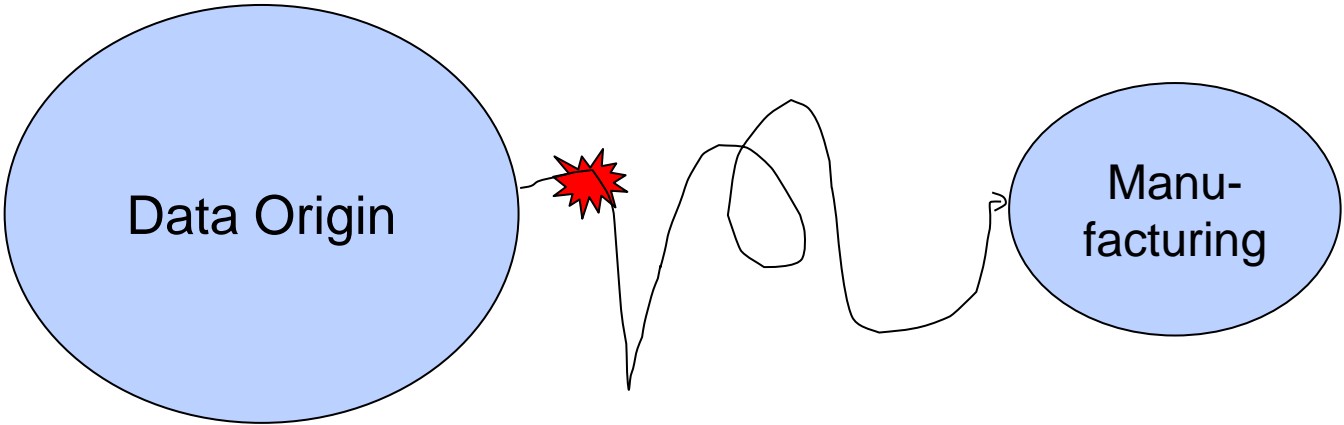
# Interoperability Reality

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# Interoperability Reality

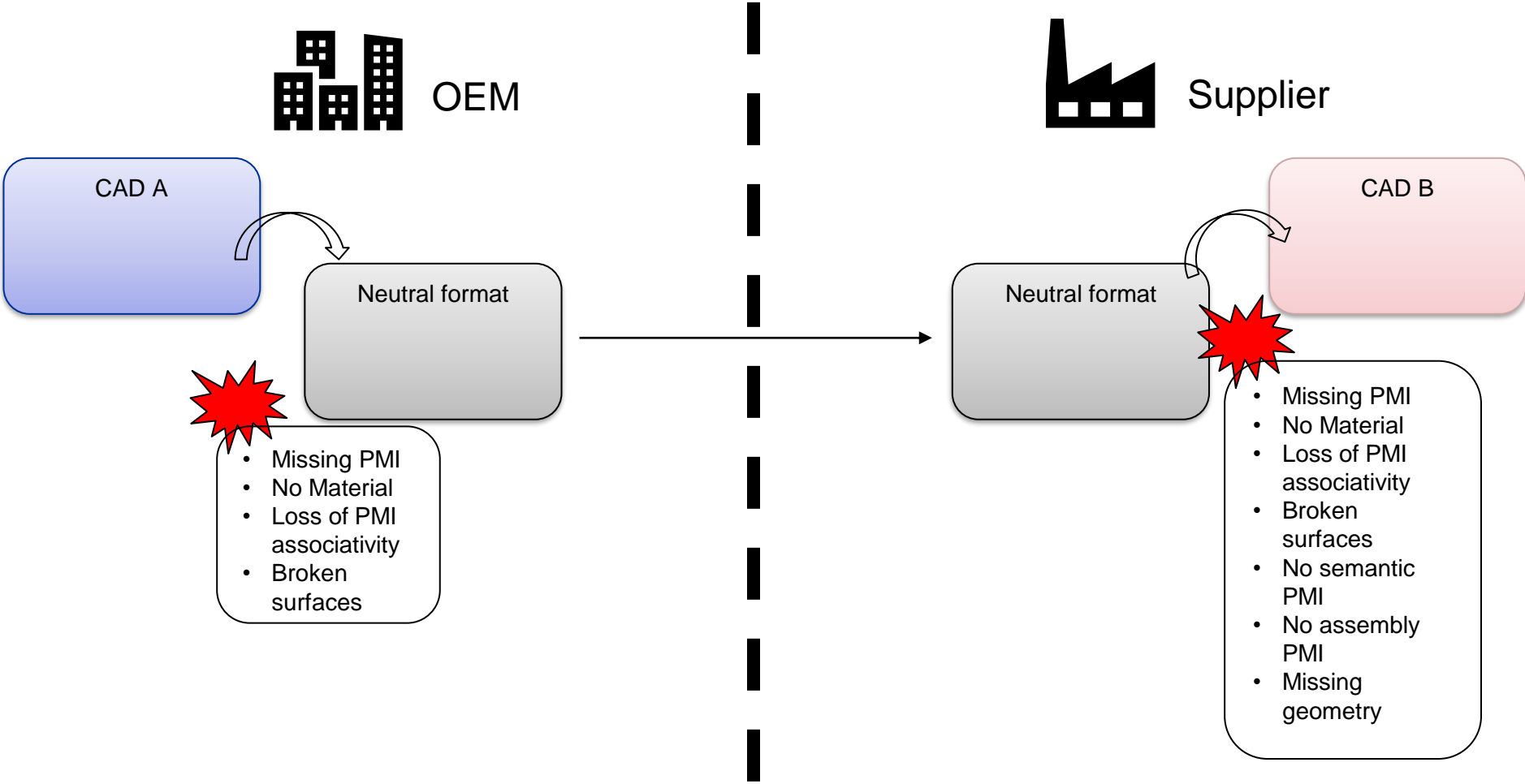
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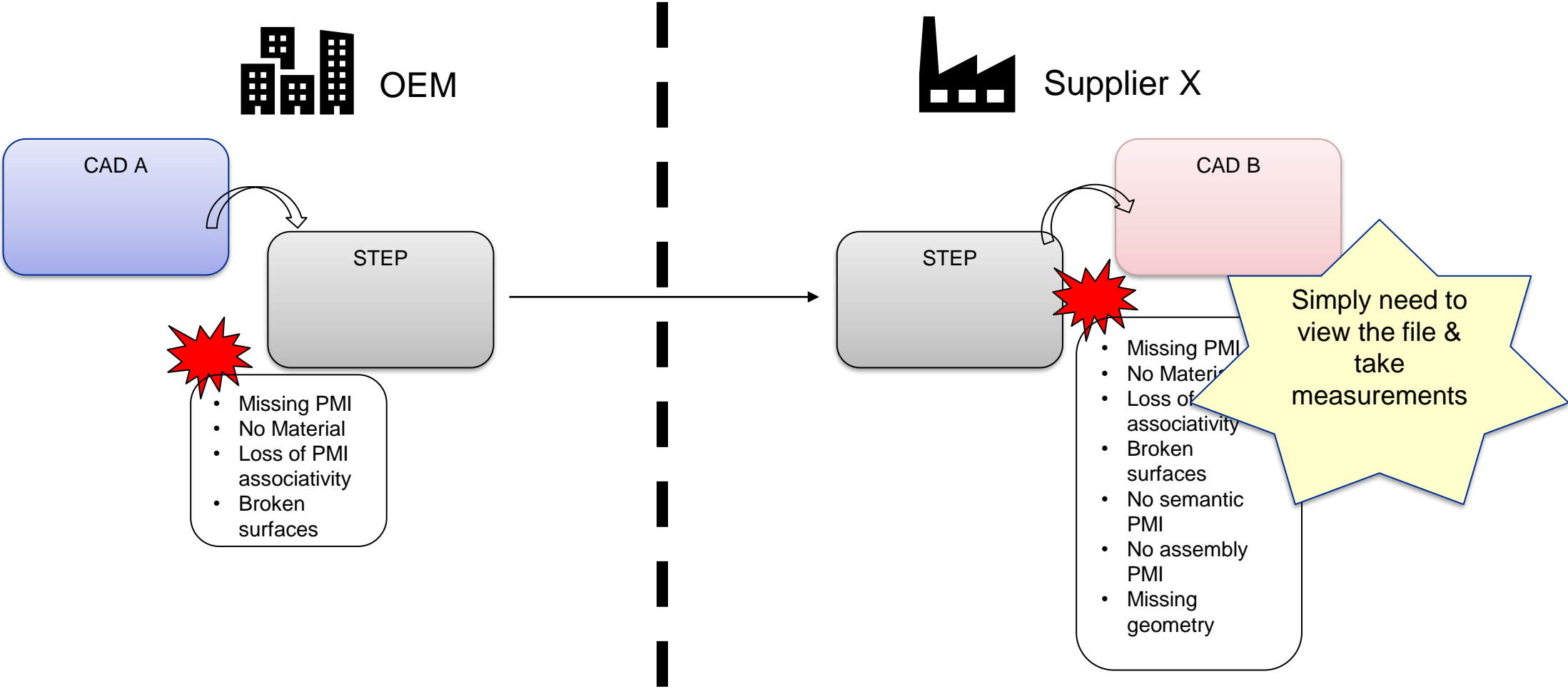
# Interoperability Reality: 1

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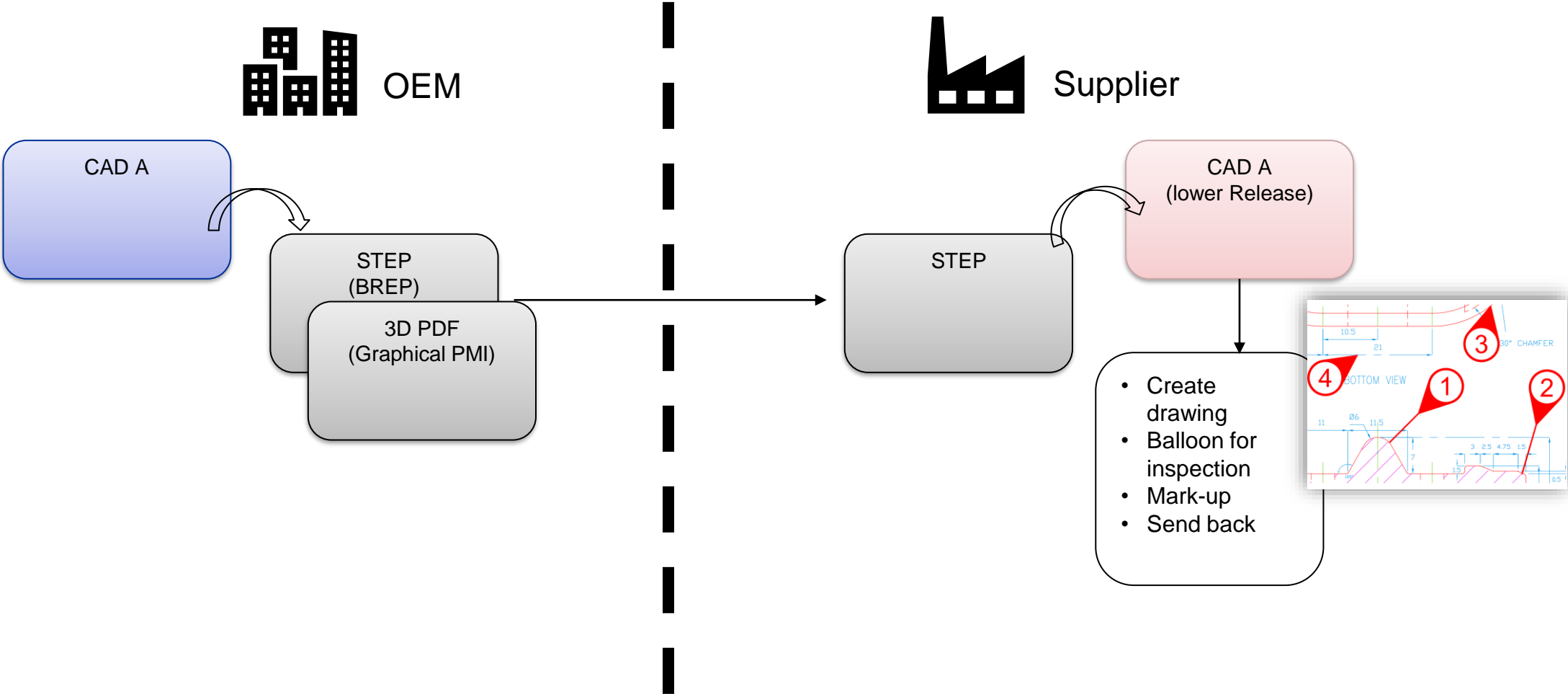
# Interoperability Reality: 2

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# Interoperability Reality: 3

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# An Analogy...

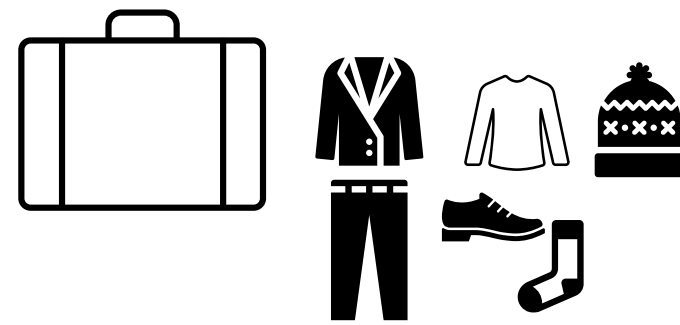
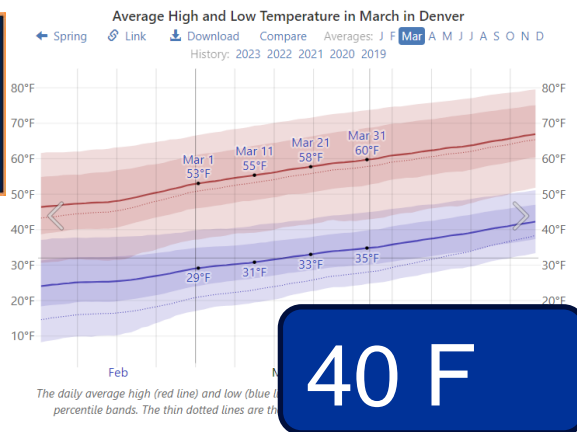
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Phoenix, AZ  
September



Denver, CO  
March



# What To Do?

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## A Data Strategy starts with 2 key questions:

### 1. Who needs your data?

- What do they need?
  - Why?
- What format?

### 2. What do you have?

- What's missing?
- What's obsolete?

# Who Needs Your Data and Why?

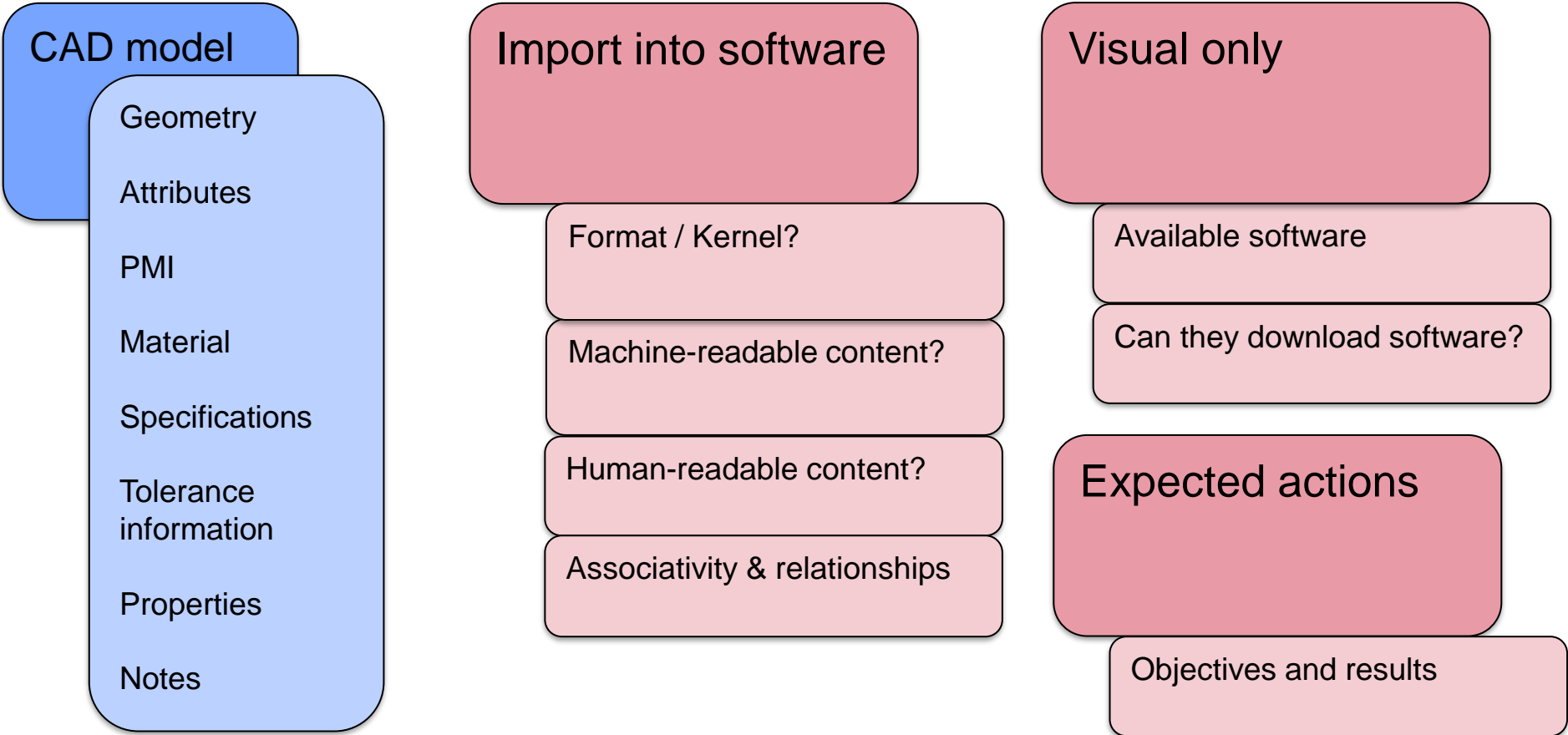
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- **Quality/Inspection**
- **Manufacturing**
- **Supplier Communication**
- **Long-Term Data Retention**
- **Management/Visualization**

**Not all data consumers are created equal. Different users have different skill sets. Keep this in mind when developing your data strategy.**

# What Data Do They Need?

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# What Format Is Best?

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- **Neutral**
  - **3D PDF** (ISO 32000)
  - **JT** (ISO 14306)
  - **QIF** (ISO 23592)
  - **STEP** (ISO 10303)
- **Web**
  - **HTML**
- **Native CAD**
- **Drawings**



## The Ubiquitous Format

- Free viewing (Adobe Acrobat)
- Compact file size
- Data container
- Evolving towards more common 3D formats
  - STEP AP242 (ISO TS 24064)
  - glTF (ISO TS 32007)

## Strengths

## Weaknesses

- Dependent on Acrobat
- No mobile solution
- Not supported by all CAD systems
- Requires derivative PRC or U3D for viewing

## The OG CAD Visualization Format

- Teamcenter native format
- Widespread Industry Adoption (automotive)
- Free viewer (JT2Go)
- Free Acrobat plug-in

### Strengths

## Weaknesses

- Not supported OOB by all CAD systems
- ISO standard based on JT 9.5 –working on update to 10.5
- XT BRep not normative in ISO standard
- STEP AP242 BRep normative but not adopted by industry

- **The Metrology Standard Format**

- Machine readable (XML)
- UUIDs
- Tailor made for quality processes
- Growing user community

## Strengths

## Weaknesses

- Lagging support by software vendors
- No free viewer

## Industrial Data Exchange Format

- Growing support by software vendors
- Large user community
- Completeness of data model
  - Tessellation
  - BRep
  - PMI
  - Wire Harness
  - Composites
  - BOM

### Strengths

### Weaknesses

- Large, complex standard
- Few free viewers

# Strategize Data Flow by Use Case

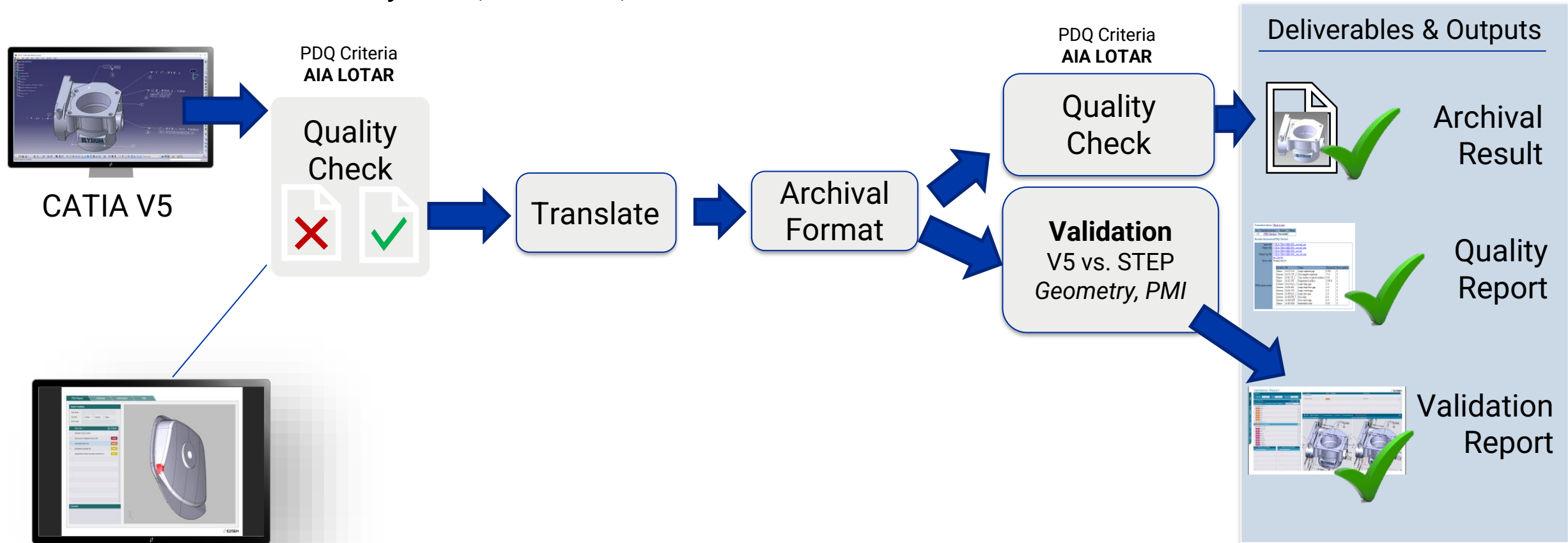
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- **Know Your Data and Workflows**
  - **Formats?**
  - **How much?**
  - **Volume?**
  - **Frequency?**
  - **Use cases?**
- **Track metrics, trends**
- **Analyze**
- **Optimize**

# Optimizing Data Standards & Flow

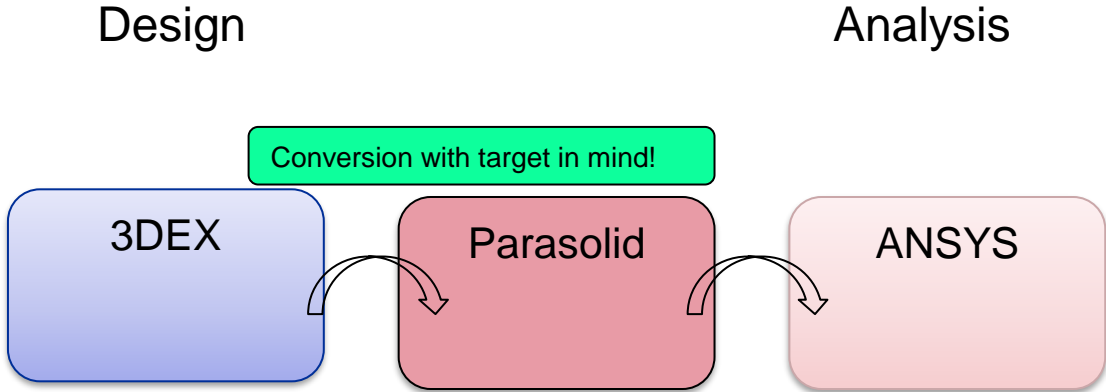
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## • Product Data Quality Check, Translation, & Validation



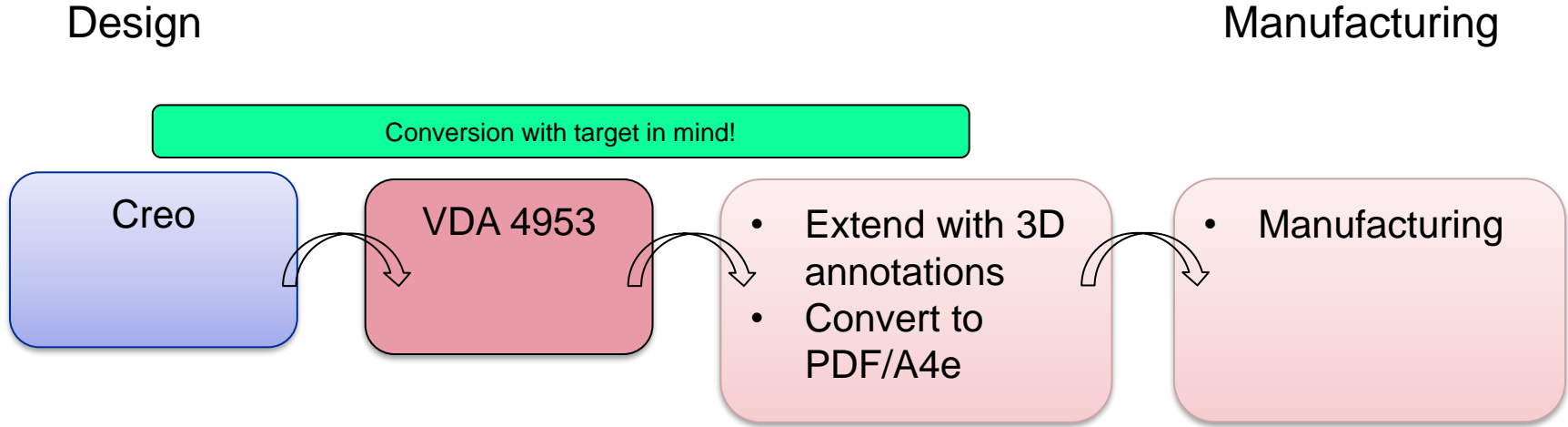
# Optimizing Data Without Standards

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# Optimizing Data Without Tailored Standards

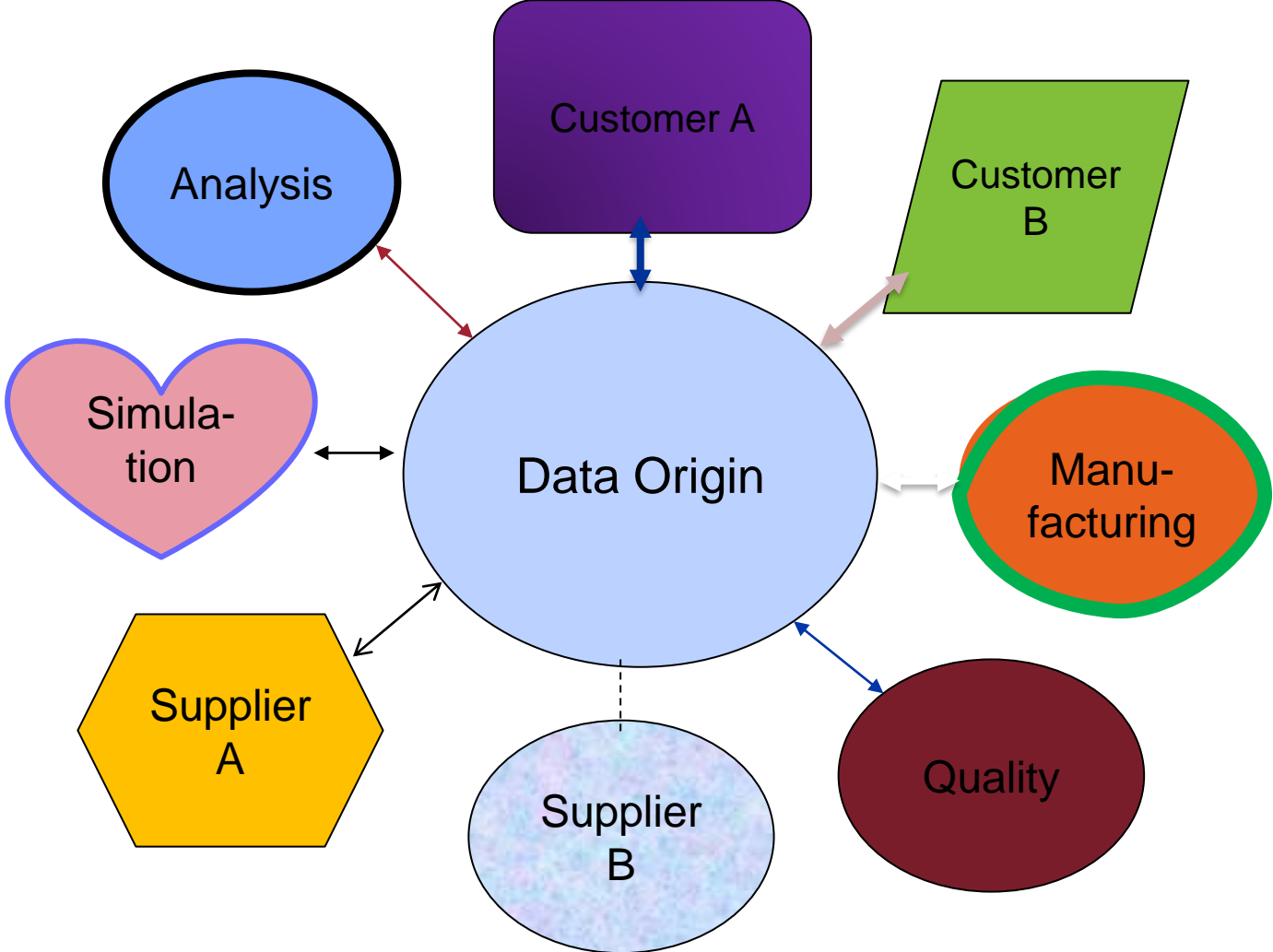
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# Exploiting your Data & Needing Flexibility of Formats over time

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# Benefits

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- **Trusted Data**
- **Proactive Data Strategy**
- **Data Control**
- **Data Quality**
- **Relationships with Data Recipients... everyone!**

# Thank You

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