

Legacy Migration Extension (LMX)

Legacy Drawing Associator (LDA)

Annotation Converter (AC)

Assembly Configuration Collapse (ACC)



- Introduction to Legacy Migration Extensions (LMX)
- Case Study
 - ITC Infotech, Inc.
- Roadmap
- Questions



Introduction to the Legacy Migration Extension

- The Legacy Migration Extension (LMX) consists of 3 products that are available as a single licensed package

- Legacy Drawing Associator (LDA)
 - Automatically connects parametric models to imported legacy drawings

- Annotation Converter (AC)
 - Automatically converts drawing dimensions & notes to 3D annotations

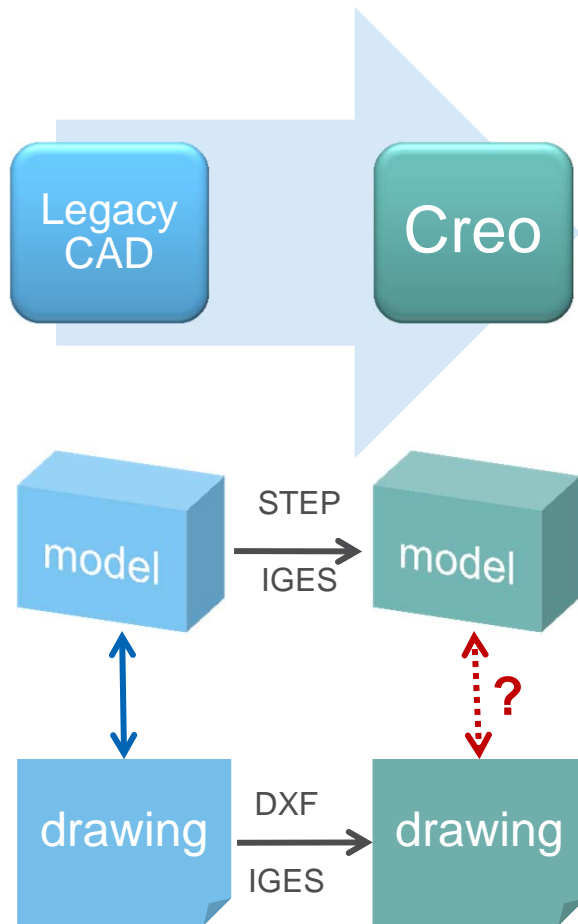
- Assembly Collapse Configurator (ACC)
 - Recreates representations as Simplified-Reps and Explode States in Creo
 - Specifically from converted Accu-Trans assemblies

Legacy Drawing Associator

Annotation Converter

Assembly Configuration Collapse

Legacy Drawing Associator

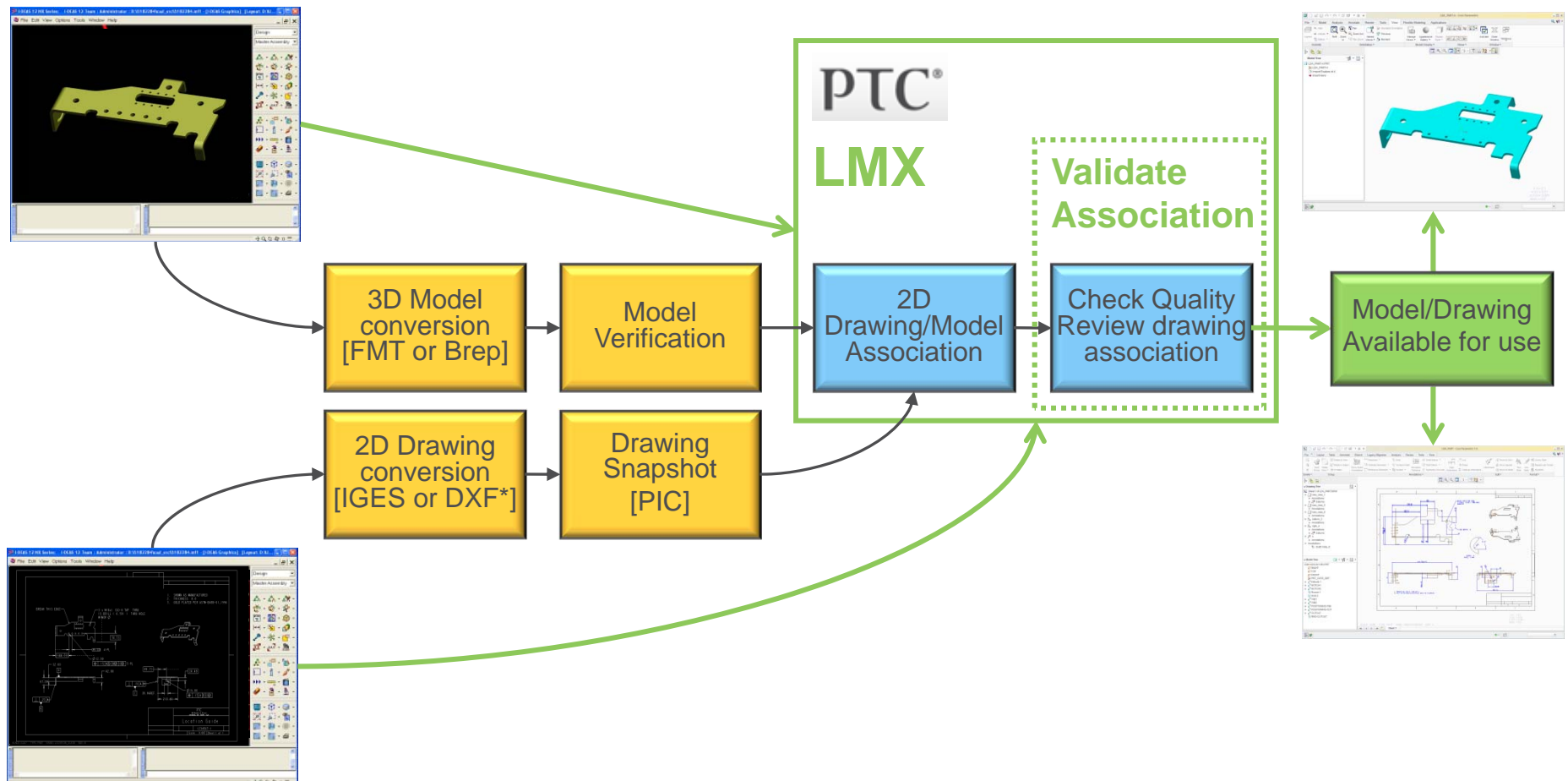


- A Manufacturer wants to move IP (models) and Documentation (drawings) from a legacy CAD System to Creo while
 - maximizing intelligence and flexibility of the content
 - minimizing migration costs and expertise required
- Existing Technologies cause models to lose associativity to their drawings and are very manual in nature
 - Feature Mapping Technology (STEP /IGES)
 - enables the IP (model) transfer (TTI, for example)
 - Standards-based Translation (IGES / DXF)
 - enables the Documentation (Drawing) transfer
- Associativity between transferred models and drawing is **missing.....**

Legacy System **Legacy Migration Extension (LMX)**

Creo

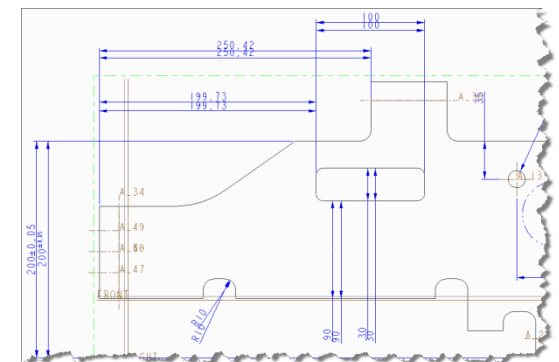
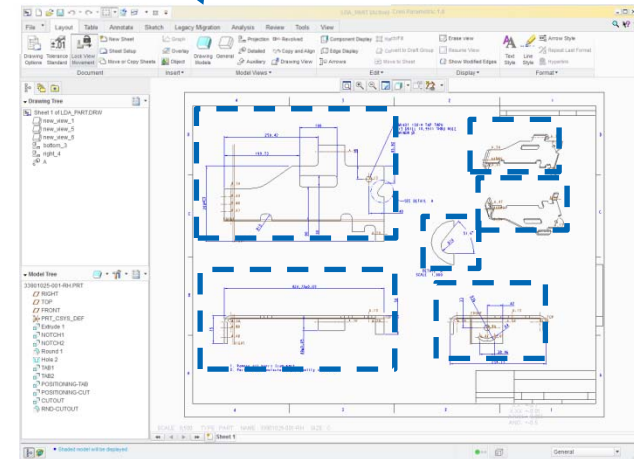
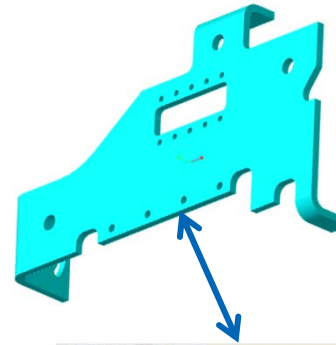
a smoother transition to improved productivity



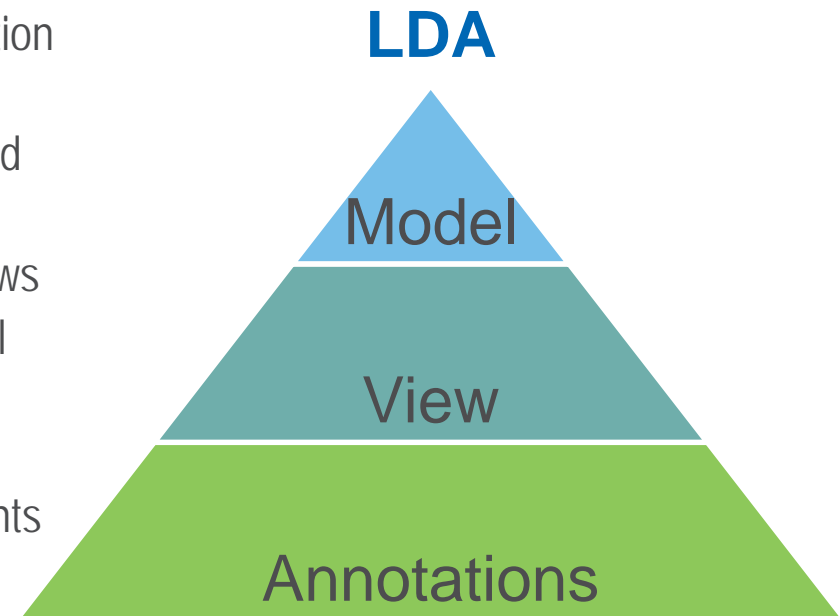
The Legacy Drawing Associator (LDA)

How does the LDA close the gap?

- The Legacy Drawing Associator provides three levels of association
 - Model > View > Annotation
- Works on **any** data retrievable by Creo
 - STEP, IGES, Mapped, DXF*, others....
 - Can be used to support migration now and for potential future migrations due to M&A activity, partnerships, etc.
- Market Considerations
 - None of the other major CAD vendors have support for this level of association
 - Even niche 3rd Party DEX companies have limited capabilities today and limited plans for commercial offerings like this.
 - The LDA addresses the issues of Cost and Accuracy which are the major roadblocks to Legacy Migration



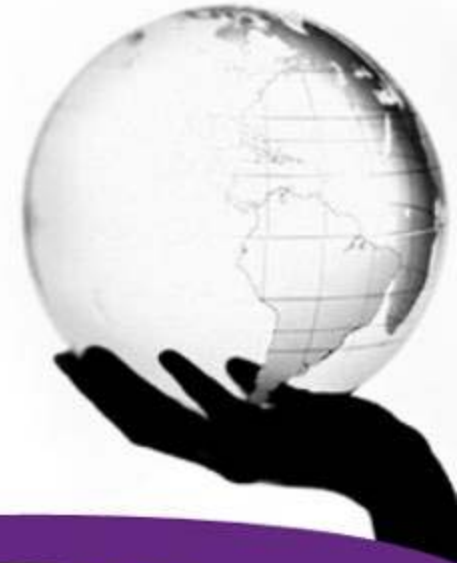
- Current migration methods lose associativity between the model and drawing and are painstakingly manual in nature
- The LDA reconnects legacy drawings and models with associativity at 3 levels
- **Benefits**
 - No more manually searching for the model to map
 - Re-linked model & drawing retain their association when checked into PDMLink
 - Future model changes are immediately reflected in the drawing
 - The LDA takes care of recreating & placing views
 - Witness line attachment to model means model changes are reflected in drawing dimensions
 - LDA allows control of how dimensions are displayed to meet specific company requirements



Case Study



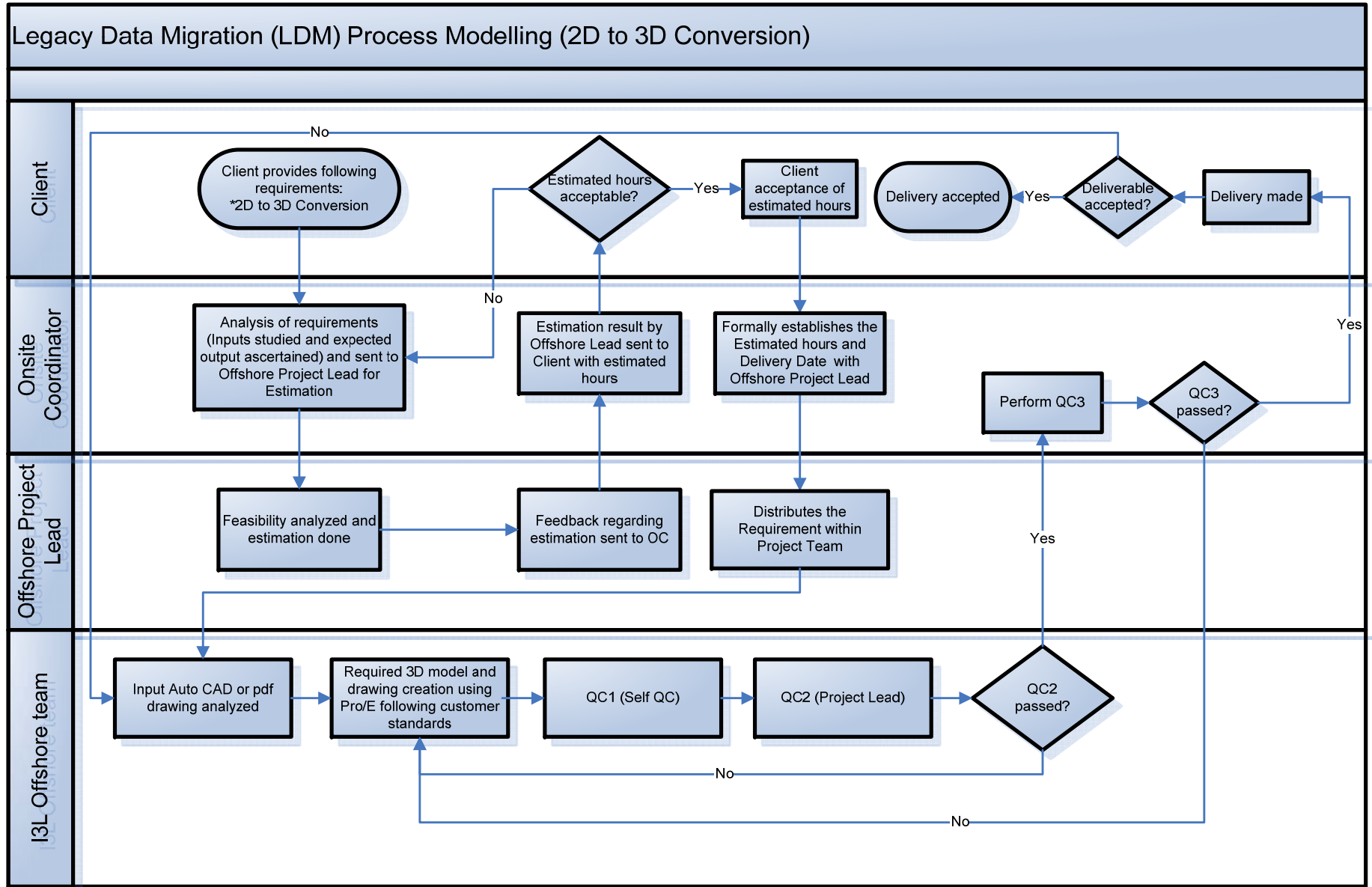
Business-friendly Solutions



Legacy Migration with Automation

Gurmeet Mann
Dr AS Prakash

Typical Process Flow - Legacy Data Migration



Acc-u-Trans - Feature Based Part Translation

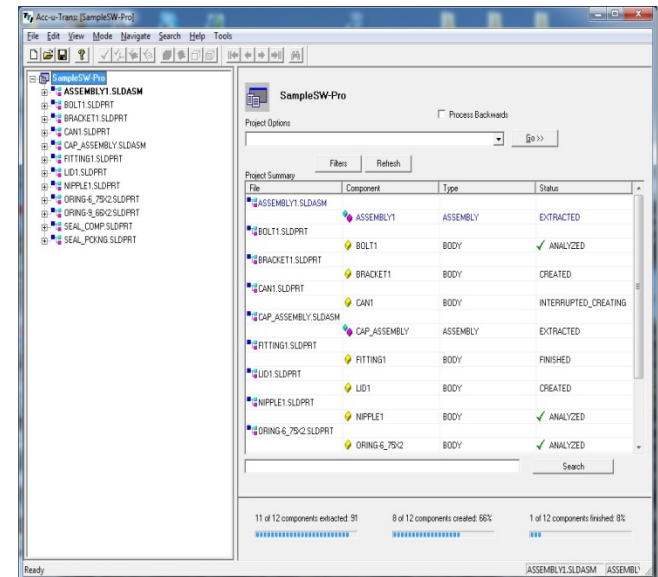


Acc-u-Trans Process Description

- Acc-u-Trans builds the model feature by feature right in the target CAD system.
- If the target CAD system needs assistance with any feature Acc-u-Trans goes through it's patented "Interrupt" process correcting potential issues rather than embedding them into the translated feature tree.
- Once the issue is resolved the system continues the creation process.

Overview of Acc-u-Trans

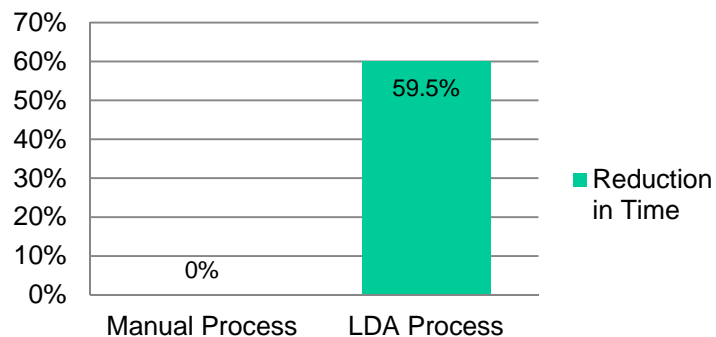
- Three Step, Feature Based, Process Centric Translation Software (Extraction, Creation, Analysis)
- Completely Feature Based Part Translation Between All Six Major CAD Systems (soon to release Inventor compatibility)
- 70% increase in productivity when compared to manually re-mastering models.
- Easy To Use Batch Processing
- Extensive Status and Summary Reports in Each Translation Step
- Automatic Assembly Creation
- Batch Processes Optimized For Assembly Structure
- Geometric Analysis of Translated Models with Mirror Model Comparator Software



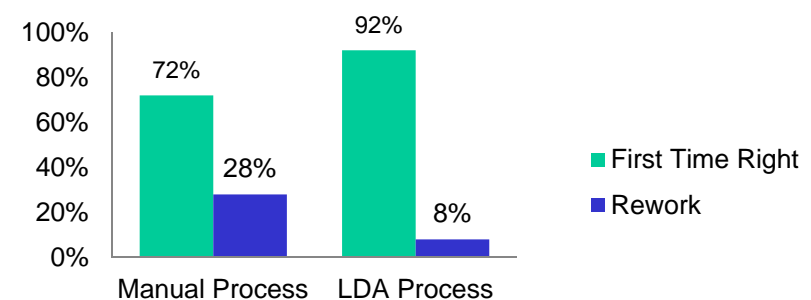
Advantages of LDA over Conventional Method

- LDA is fully automated; otherwise reduction in time over Manual method.
- LDA has shorter cycle time over Manual method.
- LDA can be used for any CAD system (Input is neutral format IGES / DXF).
- Easy to implement the customer standards since LDA map views, dimensions & notes to input IGES drawings.
- LDA is an simple tool & easy to understand by any CAD engineer (Semi skilled engineers)
- LDA process has very minimal Human errors compared to Manual process.
- LDA systematic approach eliminates loss of drawing entities.
- Easy to manage massive Mechanical/ electrical / electronic drawings
- LDA handle most languages like Chinese, Japanese etc.

Time / Cost Savings

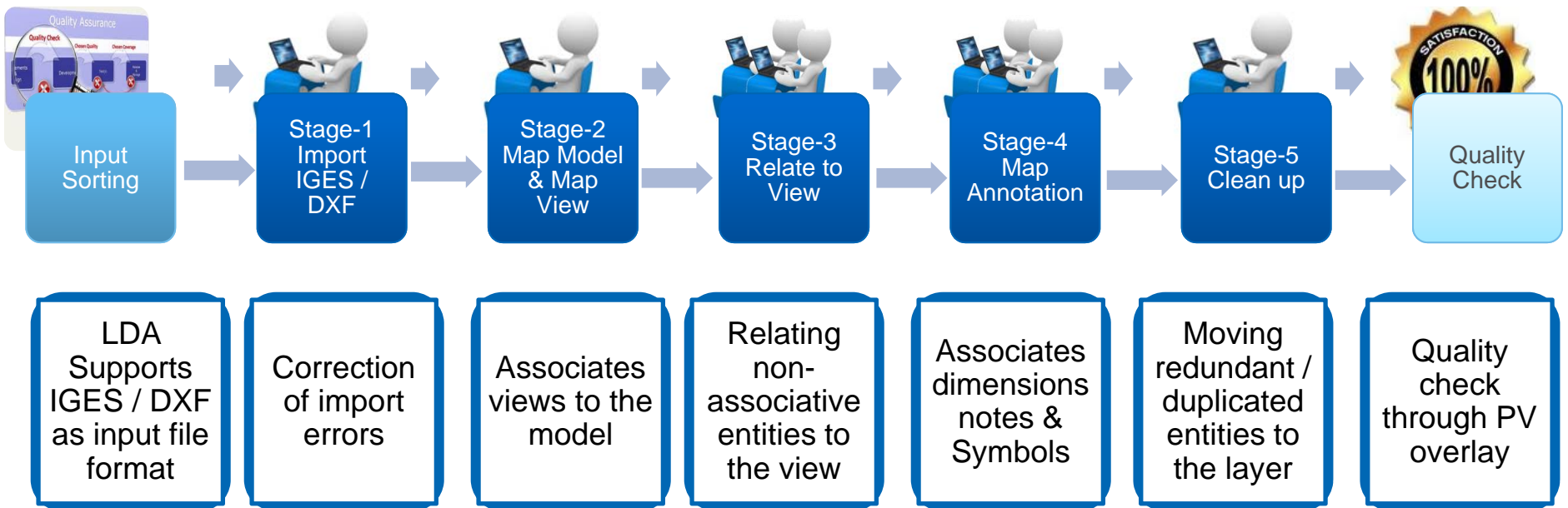


Quality



ITC Infotech Best Practice – Factory Model

Factory Model Concept



Advantages of Factory Model

1. Effective process for large volume of data migration.
2. Shorter cycle time, Increased productivity in terms of Time & Cost.
3. Engineers get expertise in their respective stages which leads to good quality drawing & reduction in production time.
4. Effective utilization of skilled & unskilled Pro/E, CREO engineers
5. Better Quality & reduction in Quality check time by Product View overlay process

Case study - Data migration

ITC INFOTECH migrated 2700 IGES / DXF drawings into Pro/E , CREO Associated Drawings using LDA tool in 2 Calendar Months with nearly 70% Cost Savings to the Customer

Client

A Leading Medical Diagnostic Equipment Manufacturer with sites across the globe

Scope

Migrate 2700 IGES / DXF input (from IDEAS) drawings to associated Pro/E drawings as per Input CGM using LDA tool in CREO

Input from Customer

- CGM, IGES / DXF from IDEAS drawing, BOM, Pro/E , CREO model

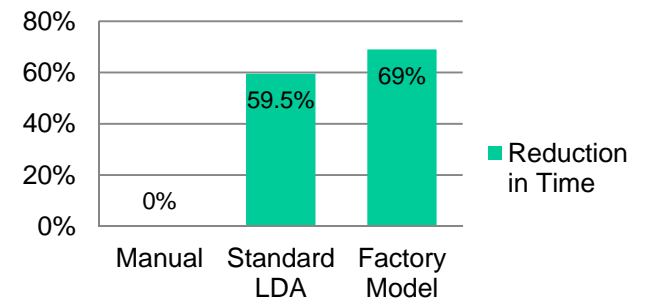
Deliverables from ITC Infotech

- Associated Pro/E CREO drawing, Final plot file of drawing, Product view compare file (CGM & Final plot)

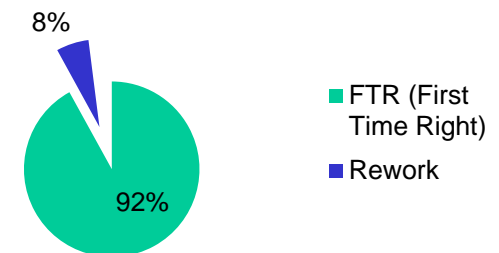
Business Benefits

- Drawing reproduction time was reduced by 70% over manual process using the LDA and our Factory model concept
- Rework / Rejection were very minimum which is less than 10%

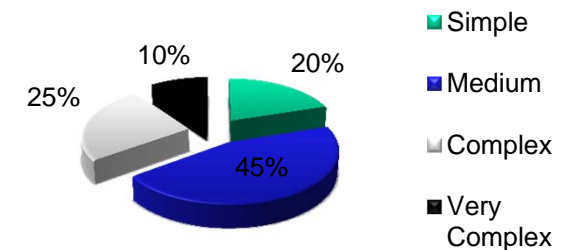
Time / Cost Savings



Quality Parameters



Complexity



Legacy Drawing Associator

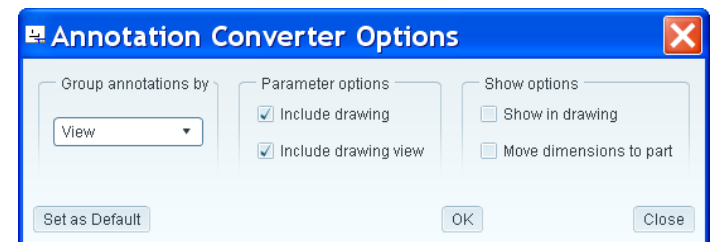
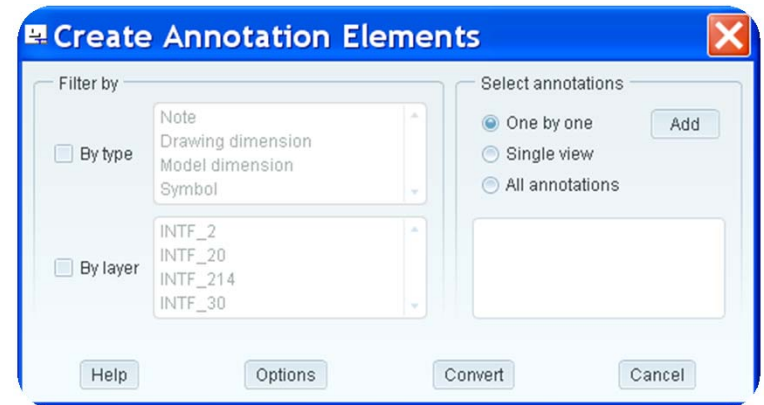
Annotation Converter

Assembly Configuration Collapse

Moving Legacy 2D Data into MBD

- Customers would like to begin moving to an MBD environment
- Moving legacy 2D Drawing annotation to 3D is tedious
 - The user must decide the orientation of the 3D annotation (placement plane)
 - The user must position the new annotation correctly
 - The user could create AEs from Driving Dims but placements are still required and it is accomplished on a one-at-a-time basis
- A mechanism is needed to rapidly convert legacy drawing annotations to 3D (MBD) annotations ...
- The Annotation Converter (AC) is the mechanism to do just that!

- Allow users to select 2D drawing annotations to be converted into a 3D annotation
- Data can be filtered and selected
 - By type, layer
 - One-by-one, by view, all annotations per sheet
- Grouping Options
 - How annotations will be collected in the model
 - One Annotation Feature created per View, per Annotation type, or for the entire Model
- Parameter Options
 - Include name of Drawing and/or drawing view in each Annotation Element as a parameter
- Tolerance Analysis
 - Move dimension from assembly to part level if all its references are contained within that part



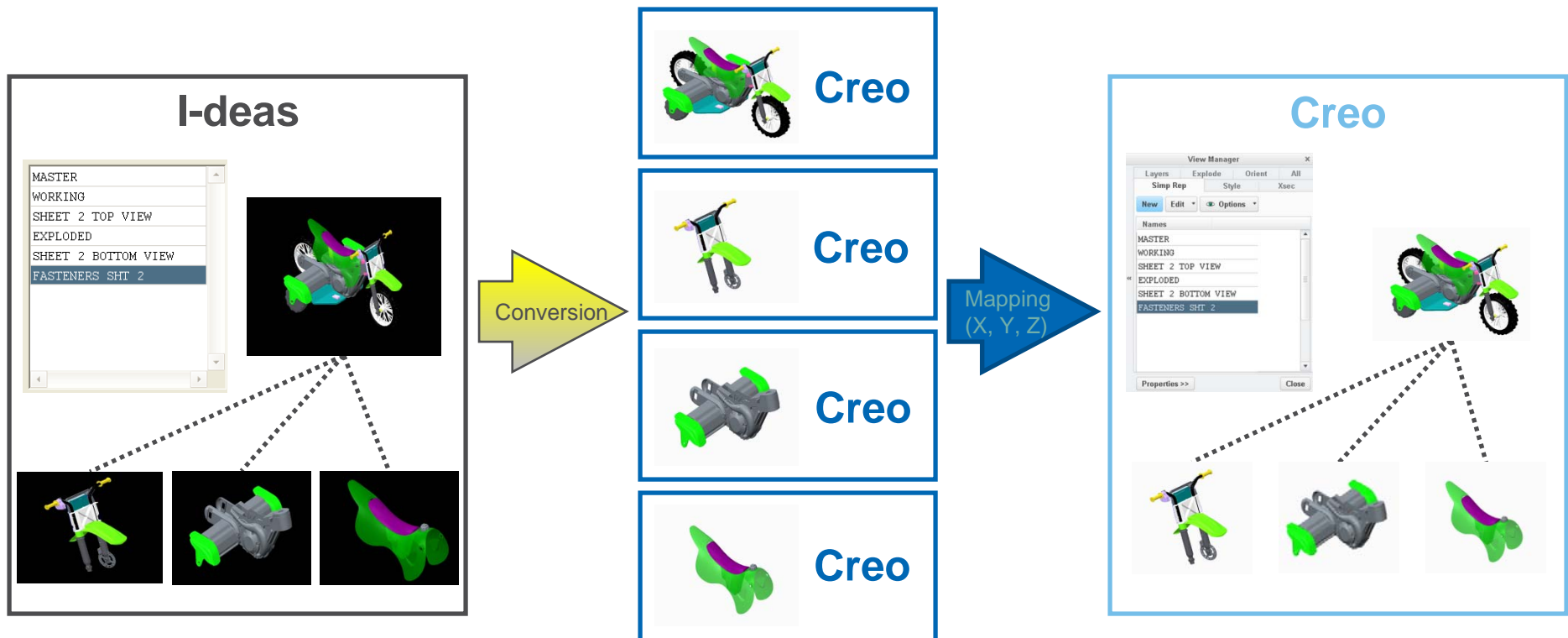
Legacy Drawing Associator

Annotation Converter

Assembly Configuration Collapse

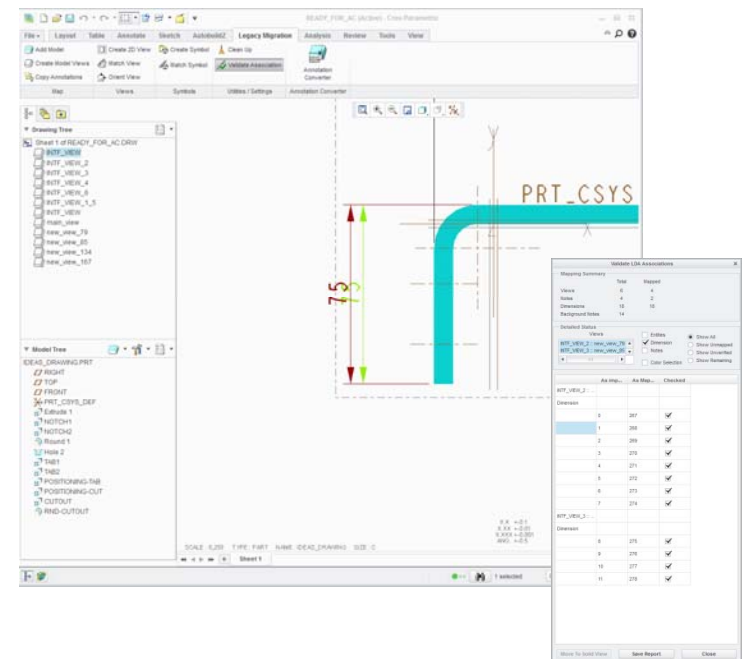
Assembly Configuration Conversion to Creo

- Each configuration is converted into one Creo assembly file
 - with Simplified-Reps and Explode States (Assembly Configuration Collapser)
 - Specifically for converted Accu-Trans assemblies
- Prepares assembly drawings for use in the LDA



Creo 2.0

- **Refined Visualization in Validate Association Dialog**
 - Improvements to pan and zoom of highlighted entity that is being checked
 - Placed in the center of the screen
 - Different colors for entity comparison
- **Automatically Create Basic Dimensions***



*Beta functionality for Creo 2.0 F000

Road Map

Creo 3.0 Road Map

- **Improved Usability**
 - Prevent duplicate mapping of annotations

- **Additional support for view mapping**
 - Automatic view mapping for Assemblies
 - Automatic trimming of partial views
 - Use of combination states during drawing migration

- **Additional support for annotation mapping**
 - Automatic creation of ordinate dimensions
 - Automatic creation of notes with leaders
 - Improved symbol creation utilities

**Partial implementation in Creo 2.0. Possibly released in a Creo 2.0 MOR.*

Road Map

- **Improved Usability**
 - Move commands from Dialog into Ribbon UI

- **Functional Improvements**
 - Support for pushing annotations to combination states
 - Optionally create annotation in parts from an assembly drawing
 - Create Ordinate Dimension Annotation Elements

Licensing

- **Now available as a purchasable option**
 - CPT-3333-L
 - CPT-3333-F

- **Includes all three components**
 - Legacy Drawing Associator (LDA)
 - Annotation Converter (AC)
 - Assembly Configuration Collapse (ACC)

- **Also available in Creo Elements/Pro 5.0 M070 and later**

"The LDA significantly reduced the time for drawing migration. Many drawings required very little cleanup and the drawing accuracy was much easier to maintain with the LDA."

- a CAD Migration Service Manager



"The Annotation Converter provides a convenient tool to migrate from a drawing-centric approach to product documentation to a model-centric one. Users will save substantial effort over re-creating annotation from scratch."

- a Design Department Manager



Questions?

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Thank You