



# Automating your way to Automation

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# Takeaways

- ❑ No Company's Data is Perfect
- ❑ Legacy and Current Data is Always Changing
- ❑ Fixing Data is a daunting task
- ❑ Automation is the trick to getting to an Automated Process

# A PERFECT PICTURE



- CTO & ETO are handled according to your process
- Easy and Intuitive for users to get deliverables
- Configurator builds the required results - 100% of the time
- New products and options are seamlessly added
- What works today will work tomorrow (Creo and Windchill)

# Reality Check!



- Data is not ready for automation
  - Never enough time to standardize data
  - No one volunteers!
  - Models not in Creo
- Custom products are forgotten
- Change Happens!

# Models are inconsistent



- You name it.....it is inconsistent
- Standards are not fully developed or implemented
- Products and options change
- Suppliers change
- Standards change

# Models are not in Creo



- Never a perceived benefit to build all the models
- Too many variations
- Too complex
- No time to create Creo models
- Variations exist in spreadsheets

# The Human Factor!



- Lots of data to clean
- Lots of small details to account for
- Results are never consistent
  - Most issues found during usage

# Even after problem were worked out - Go Live!



- New products
- New options
- New part variants/updates
- Inconsistent data
  - Missing layers/inconsistently named
  - Missing parameters
  - Bad datums
  - Bad notes
- New version of Creo
- New version of Windchill



# Goal is a reliable system



- Needs High Level of Consistency!

$$f(\text{consistency}) = 1 / (\text{People} * \text{Manual\_Labor})$$

$$\text{People} \nearrow + \text{Manual Labor} \nearrow = \text{Consistency} \searrow$$

- Reducing manual labor increases consistency of data
- Consistent data guarantees reliability of automated system
- Automation guarantees consistent data

# Short Demo: Let's see an example

# Before you get started



- Don't panic
- Think of the most ideal process
- Consider how you want automation to interact with internal departments, clients, resellers
- Don't worry about having every detail figured out

# I'm Ready to Start



- Map out your rules and process
- Consider your inputs
- Determine your deliverables
- Pick a product line

# Scrub that Data



- How would you do it manually?
- Software should mimic that manual process exactly
  - You maintain full control of all actions
  - Checkout items (local or PDMlink)
  - Check and Fix any standards deviations you define
  - Save and Checkin fixed items
- The software never complains or takes vacation!!

# Short Demo: Dealing with Inconsistent Legacy Data

# Sustaining Consistency



- Making sure Data Stays Consistent
  - Make sure newly created models are also consistent
  - Make sure models used in automation are not broken by a change that happen

**Data is alive - Data consistency must be alive as well!**

# OOTB Tools to Ensure Data Consistency

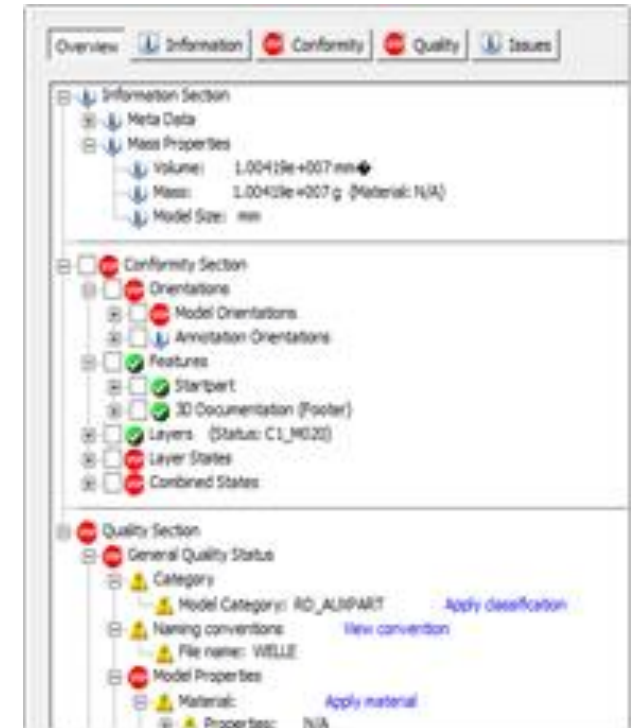


# SmartUpdate



- Tool for checking and updating CAD models, assemblies and drawings
- Can create, edit or remove features, layers, relations, parameters, combined states, etc.
- Provides flexible setup of checks and reports
- Runs analysis on your models, and Fix them for you
- Works Interactively, in batch, or lights-out
- Works directly in Windchill

**Ensures your Data Remains Consistent!**



# SmartUpdate for MBD Requirements



- Create and set up Combined States
- Adjust model Orientations
- Create layers and Layer States
- Remove unused layers and control layer content
- Harmonize relations
- Create and designate parameters
- Update your model setup file
- Many, many more

**Consistency, even when Requirements are High!**

# Short Demo: Sustaining Consistent Data

- Tool for organizing and placing standard annotations
- Allows user to quickly select and place annotations from a database
- Can place standard annotations automatically on drawings and within 3D models
- Can ‘translate’ drawing and model in prepared languages
- Can manage meta data and drawing formats
- Provides flexible setup for notes database

## Ensures Standard Notes Usage!

- ⊗ Cavity number  
0,1 mm raised  
letter type size 2,5 mm DIN 1451
- ⊕ Part index  
0,1 mm raised
  - Burr in parting line max. 0,03 mm
  - Parting mismatch max. 0,5 mm
  - Wallthickness acc. to cad-model, tolerance  $\pm 0,01$
  - Sprue rest max. 0,1 mm raised
- ⊖ Ejector pin marks  
permissible max. 0,1 mm raised
  - Dimensions with respect to the datums 

A	B	C
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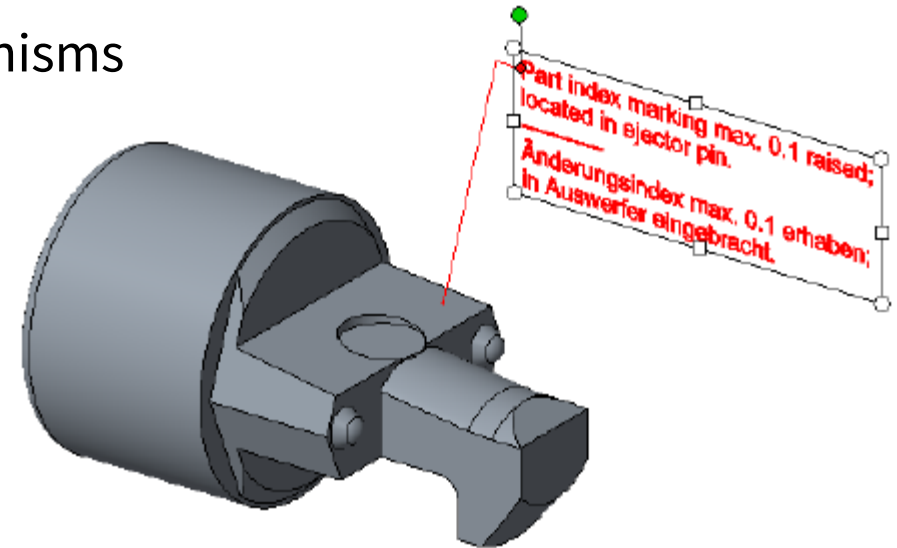
  
in measuring device
  - Dimensions specify the FINISHED PART  
with respect to the datums 

A	B	C
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# SmartAnnotate for MBD Requirements

- Manage your metadata in the 3D model
- Place flat-to-screen annotations automatically in predefined combined states
- Put your annotation elements in a predefined annotation features
- Name your annotation elements
- Easy selection of appropriate notes by intelligent filter mechanisms

**Consistency in Notes, even when Drawings not in use!**



# Short Demo: Sustaining Notes Consistency

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# Make Creo Special to YOUR Company!



- Nothing is too Custom
- Nothing is too Unique
- You have Rules YOUR Data must Follow
- Your Process Makes YOUR Company Unique
- Don't let Software dictate YOUR process - YOUR Process Must be Master

**YOUR Process! YOUR Product!**



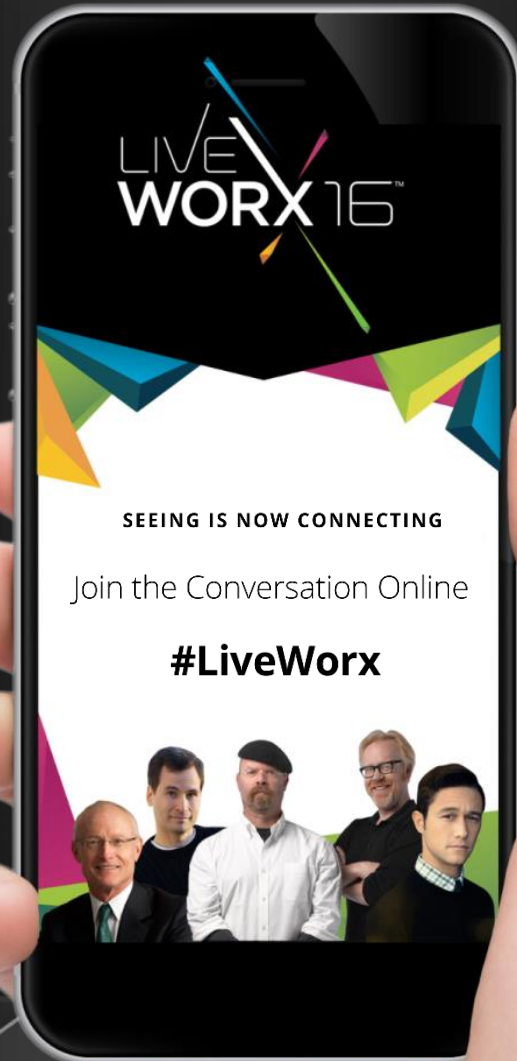
The image features several colorful geometric shapes, primarily triangles and lines, scattered across the white background. A large, multi-colored triangular shape is prominent on the right side, composed of various shades of blue, green, yellow, and purple. Several thin, colored lines (blue, pink, green, orange) radiate from the center of the text area. The text 'LIVE WORX 16' is the central focus, with 'LIVE' in a thin, outlined font and 'WORX 16' in a bold, solid black font. A small 'TM' trademark symbol is positioned to the upper right of the '16'.

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