MESAVISIONS
2016 Ed.

AUTODESK
Silver Partner
Specialization
Product Design & Manufacturing
Value Added Services
Product Support Specialized
Consulting Specialized
Authorized Training Center
Authorized Certification Center

The way you buy your Autodesk software is changing…

Starting August 1st, 2016 Autodesk will no longer offer new perpetual licenses of any software.

As you may have heard, back in February, Autodesk began transitioning to a subscription only option platform by ending the sales of perpetual licenses for its individual products like AutoCAD, Inventor, AutoCAD Electrical, and more.

Perpetual licenses of Suites products are still being sold, but that will end on July 31st, as well.

The reason Autodesk is gradually transitioning new software purchases of their products to subscription only options is to provide you:
- Greater flexibility
- More value from your software investments
- An improved user experience
- Access to a broader portfolio of technology

Here are your options:

Before August 1st

Starting August 1st

Buy Perpetual Licenses	Renew Maintenance	Subscribe	Renew Maintenance	Subscribe
Design & Creation Suites and remaining individual products	Use and maintain your perpetual licenses for as long as you want	Subscribe to the products you need, for individual and shared team use	Use and maintain your perpetual licenses for as long as you want	Subscribe to the products you need, for individual and shared team use
End of sale July 31st				

Starting on August 1st, Industry Collections will replace Design & Creation Suites...

What is an Industry Collection?

An Autodesk Industry Collection will be the most convenient and flexible way to access a wide selection of the most essential Autodesk software used in your industry.

Key Benefits

- Access to a wide selection of software
- Continuous access to latest releases and enhancements
- Flexible term lengths
- Single-user & multi-user access offered
- Previous Version Rights
- Global Travel Rights

AUTODESK® PRODUCT DESIGN COLLECTION

- **Inventor Professional**
- **AutoCAD**
- **Navisworks Manage**
- Vault Basic
- AutoCAD Electrical
- AutoCAD Mechanical
- AutoCAD Architecture
- Factory Design Utilities
- 3ds Max
- Rendering in A360*
- AutoCAD 360 Pro*
- Fusion 360*
- ReCap 360 Pro*
- Storage (25GB)*

AUTODESK® ARCHITECTURE, ENGINEERING & CONSTRUCTION COLLECTION

- **Revit**
- **AutoCAD**
- **AutoCAD Civil 3D**
- Navisworks Manage
- AutoCAD Architecture
- AutoCAD Electrical
- AutoCAD Map 3D
- AutoCAD MEP
- AutoCAD P&ID
- AutoCAD Plant 3D
- AutoCAD Raster Design
- AutoCAD Utility Design
- Vehicle Tracking
- 3ds Max

- Rendering in A360*
- AutoCAD 360 Pro*
- FormIt 360 Pro*
- InfraWorks 360*
- Insight 360*
- ReCap 360 Pro*
- Structural Analysis for Revit*
- Storage (25GB)*

Included cloud services

FAQ (and their answers)

How much does an Industry Collection cost?
Sample pricing for the Industry Collections is available on www.autodesk.com/collections. Final pricing will be made available on August 1st, 2016.

Can I switch to an Industry Collection subscription?
Yes, Autodesk will provide a convenient way for you to switch your existing subscriptions to an Industry Collection. If you currently have a perpetual license on a maintenance plan, the ability to switch to an Industry Collection subscription will not be available right away.

If I have a perpetual license on a maintenance plan, do I have to switch to an Industry Collection?
No, customers who have a perpetual license on a maintenance plan after July 31, 2016 will have the option to renew their maintenance plan for as long as they wish.

Do I have to download the entire Industry Collection?
No, you do not need to download the entire industry collection. Pick and choose the individual products that you want to use from within the collection, then download and install what you want, whenever you like.

Can I co-term Industry Collection subscriptions with other subscriptions or maintenance plans?
Yes, your new industry collection subscription contract can be pro-rated to align to an existing contract's end date. The option to co-term is available only through an Autodesk Reseller, and not available through the Autodesk E-Store (on-line).

If you have any questions about the new industry collections, please don't hesitate to contact us!

AUTODESK® VAULT 2017

Security
- Merge Role, Object and State Based permission
- Control access across divisions or departments
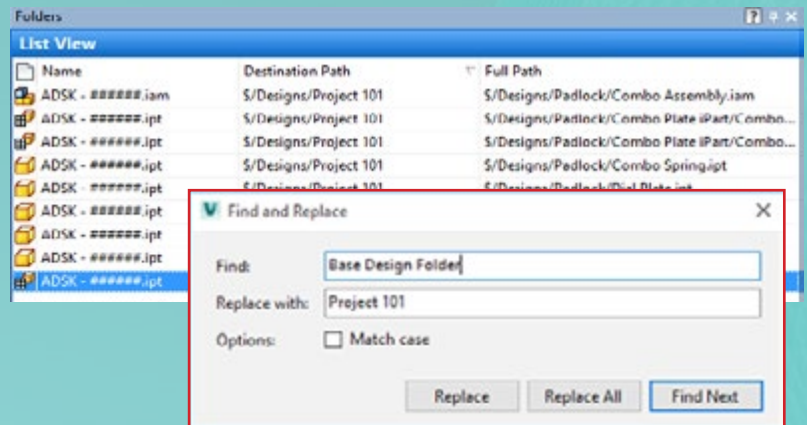- Simplify multiple lifecycle definition requirements

☑ Read
☒ Modify
☒ Delete

☑ Read
☐ Modify
☐ Delete

☑ Read
☑ Modify
☐ Delete

Security Simplifed
- Clearer Permissions Grid
- View Effective Access
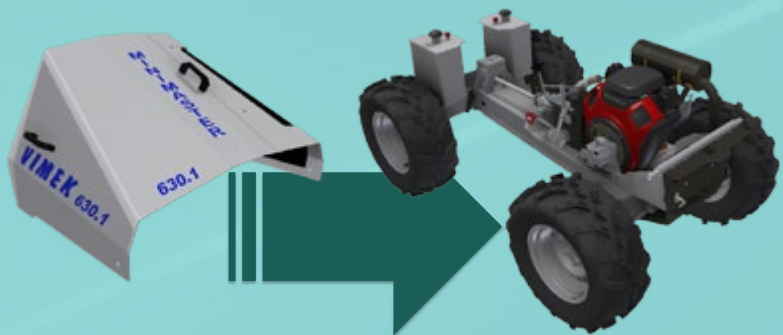- Propagate security
- Couple state and transition securities
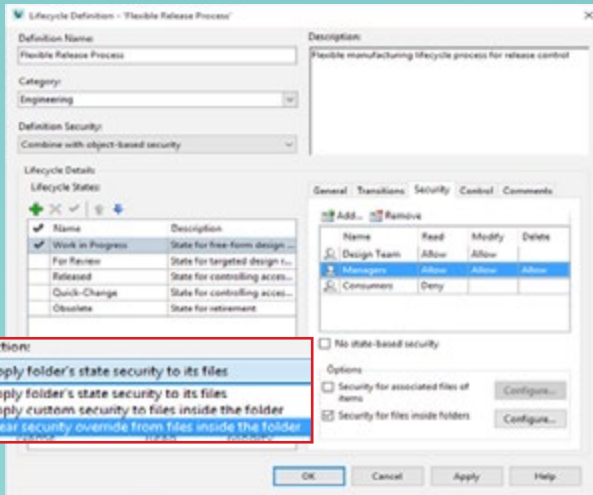
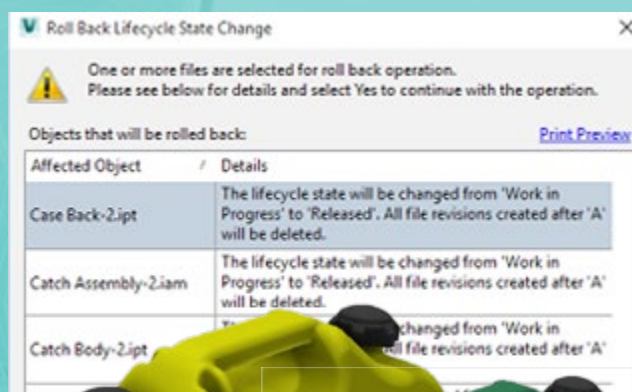## Copy Design Folder View
- Folder List View
- Find and Replace path

Place into CAD
- Insert from Vault Explorer to active CAD model
- Align with how customers work today
- Remove dialog and streamline workflow

Revision Roll Back
- Select multiple files to roll back revision
- Faster
- More Reliable

"Save Copy As" to Vault
- Vault Data Standard Update
- Save drawings to Vault as: 2D PDF & 2D DXF
- Save models as: STEP

PDF

DXF

STP

AUTODESK® AUTOCAD® 2017

Import PDF Files

PDFs have been added to the supported 'Import File' formats.

- Import geometry from a PDF file or underlay into the current drawing as AutoCAD objects

- Intelligently bring in TrueType text, geometry, and raster images and use them like any other AutoCAD object
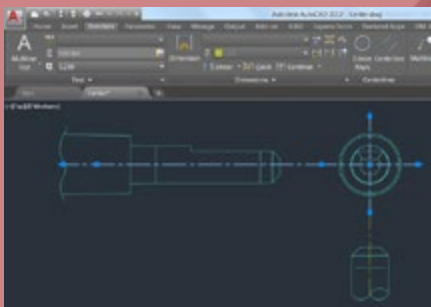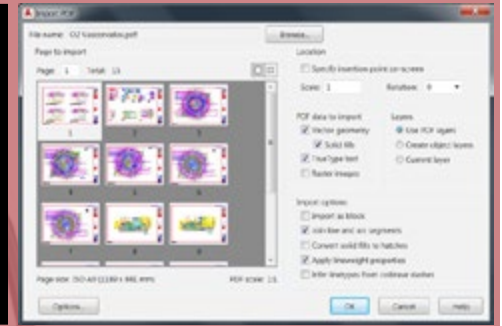
Smart centerlines & center marks

Creating and editing centerlines and center marks is faster and more intuitive.

- Create and edit centerlines and center marks simply

- When you move associated objects, the centerlines and center marks update accordingly

AUTODESK® AUTOCAD® ELECTRICAL 2017

Microsoft® SQL™ Server Support for Catalog Data

- Create an SQL Server instance and migrate the default Microsoft Access-based catalog and footprint databases to your SQL Server instance.
- Choose either to configure your SQL Server instance when you are installing AutoCAD Electrical 2017 or set up your SQL Server from the product.
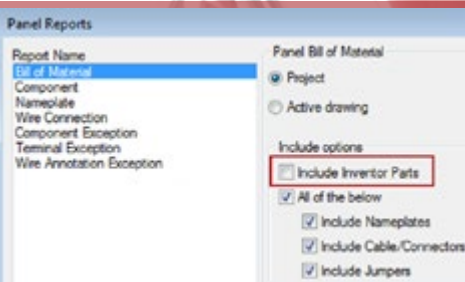
Combined Bill of Material Report

- If your project is linked to an Inventor assembly, you can generate a combined Bill of Material report.

- An option to include the Inventor parts is now available when you generate either a Schematic or Panel Bill of Material report.

Link Components in the Location View Tab

- In an electromechanical project, you can now link the AutoCAD Electrical component to the Inventor part right on the Location View tab of Project Manager. On the Location View tab, right-click either the AutoCAD Electrical component or Inventor part in the tree and click "Assign to Existing in Component Tree".
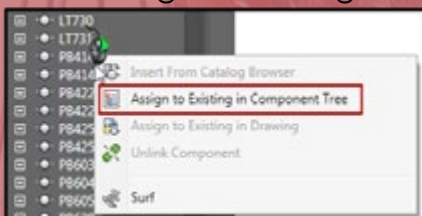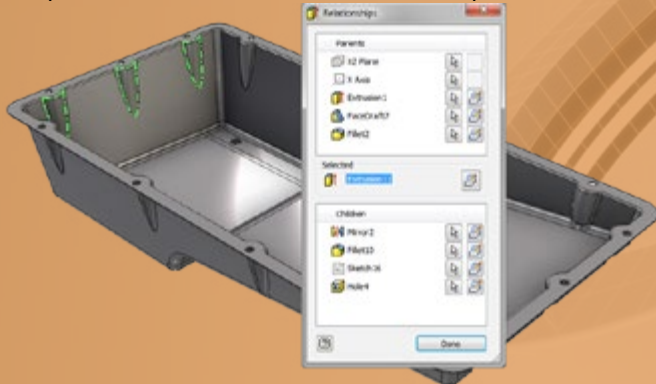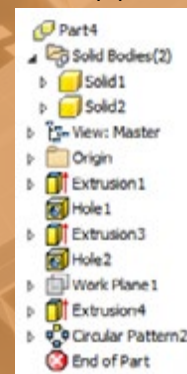
AUTODESK® INVENTOR® 2017

Part Creation

► The Feature Relationships tool identifies parent and child relationships

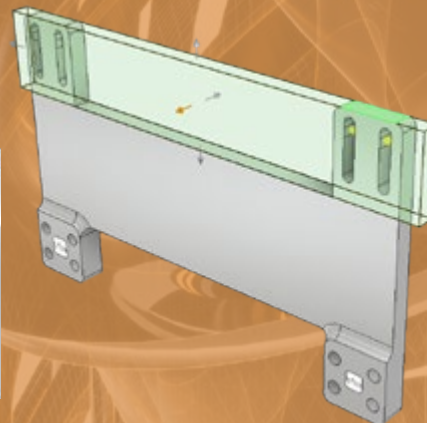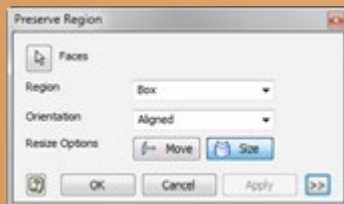► Polar Array now now has an option for fixed feature orientation

► Patterning and mirroring supported in Multibodies

Shape Generator

- Visual constraint feedback
- Interactive controls
- Member size criteria
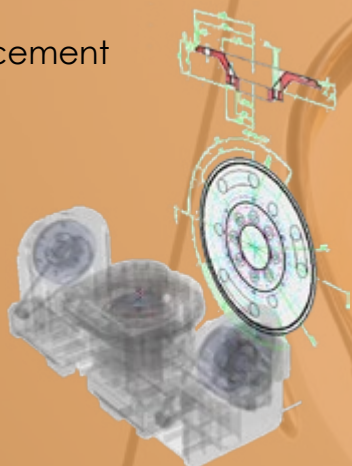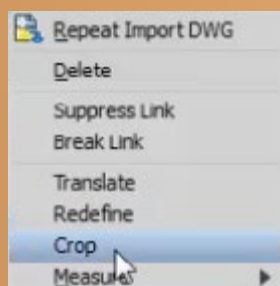- Target mass and % reduction
- Symmetry control

Reference Model

- Enhanced file support of other CAD file types
- Increased support for multithreading allows faster updates & increased performance
- STEP reference and update support
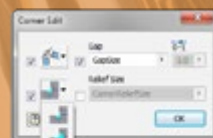 *(see image to the right)*

DWG Underlay Technology

- Associative DWG Underlay
- Crop workflow
- Associative placement
- Reinsert a DWG

Sheet Metal

- Punch Representation Visibility
- Improved flat pattern feedback
- Corner Relief enhancements
- Punch enhancements
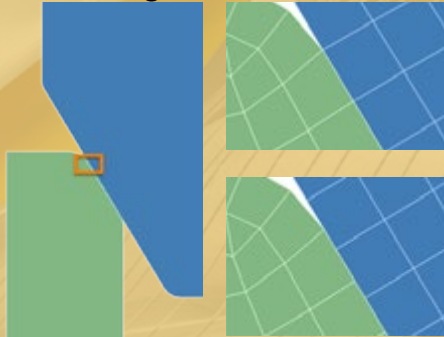- Defer Flat Pattern Update
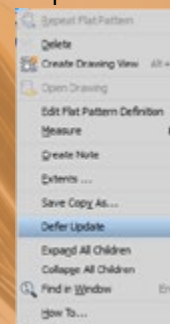
AUTODESK® SIMULATION MECHANICAL 2017

►Inquire multiple results in a single, modern interface

►Matched or Unmatched meshing
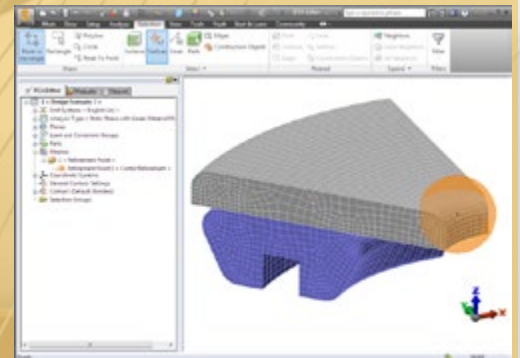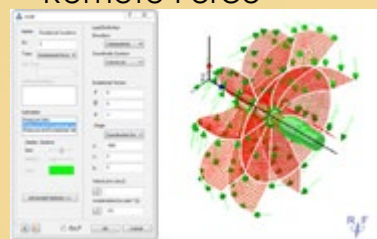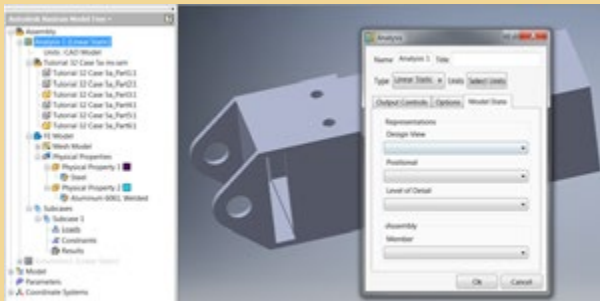

►Nodal mesh refinement
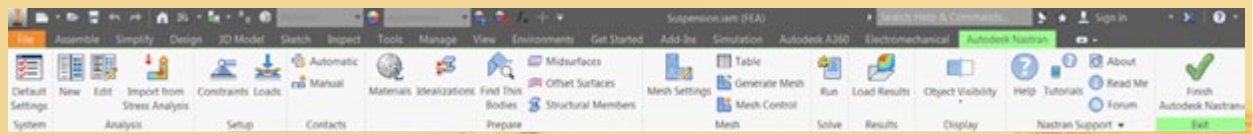

AUTODESK® NASTRAN® IN-CAD 2017

• Inventor rep view support

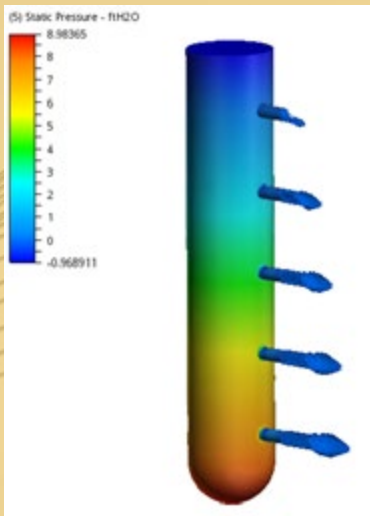• Origin of Rotational or Remote Force

• Exclude part from analysis

• Updated Icons

AUTODESK® CFD 2017

► Hydrostatic Pressure

► Humidification & Dehumidification

► Redesign particle traces

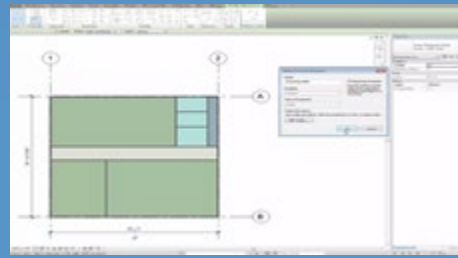

► Fully integrated surface wrapping

AUTODESK® REVIT® 2017

Global parameters
- Drive dimension and element instance parameters with project-wide parameters
- Capture formulaic relationships in the model
- Automate positioning of one element based on size of another element

Reinforcement connectors
- Define rebar connections requirements
- Comprehensive and detailed model
- Symbolic representations for rebar accessories
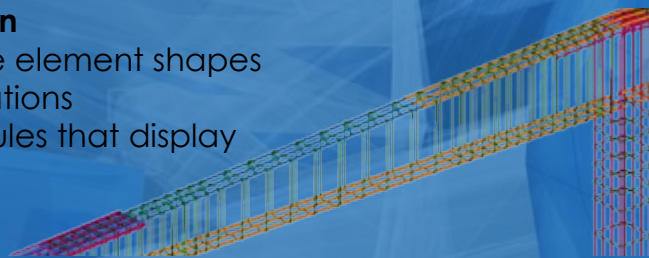- Coupler numbering
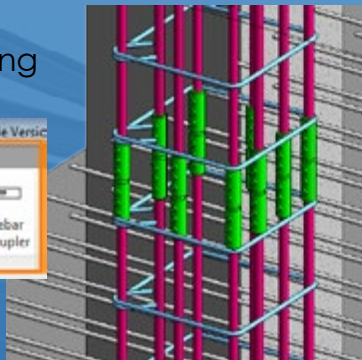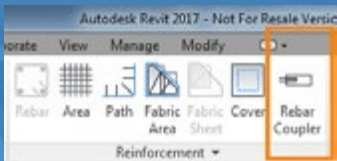
Improved structural foundations
- Attach structural columns to isolated foundations and footing
- Automatic column length adjustment when there are changes to the foundation level
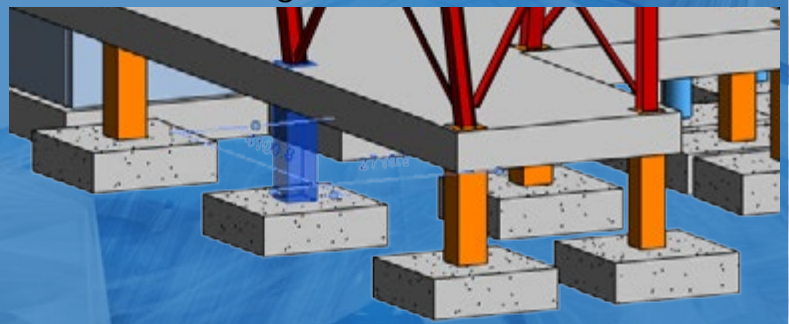
Variable rebar distribution
- Nonstandard concrete element shapes
- Use multi-rebar annotations
- More accurate schedules that display varying lengths

Design to Fabrication optimization
- Design to Fabrication
  - Service conversion
- Optimize lengths
  - Review for standard straight lengths
- Short segment optimization
  - Reposition part and adjust extension
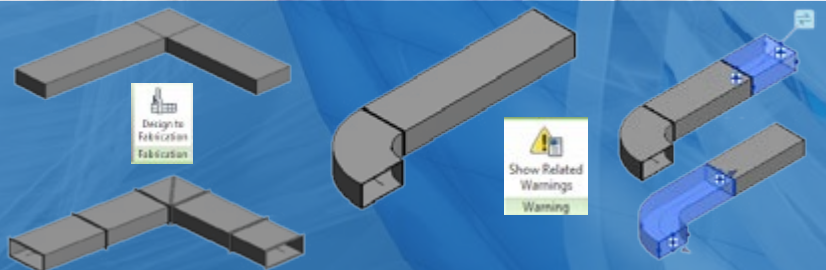
Fabrication layout improvements
- Change type > Swap fittings
- Slope control > Pitch elements
- Fabrication model documentation > Elevations, abbreviations, rise/drop, hidden lines

14"ø RA
TOP: 9' - 7"

10"ø SA
TOP: 7' - 5"

10"ø RA
TOP: 9' - 5"
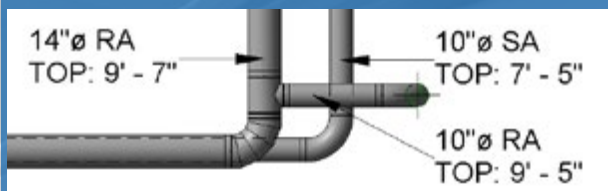
Hanger improvements
- Trapeze > Tiered layouts
- Adjust bearer and rod > Extend bearer and modify rod position
- Fitting support
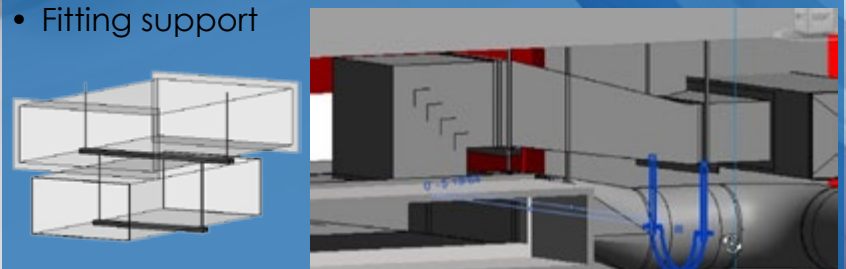
AUTODESK® AUTOCAD® CIVIL 3D® 2017

- Expanded Pressure Pipe Parts Catalog
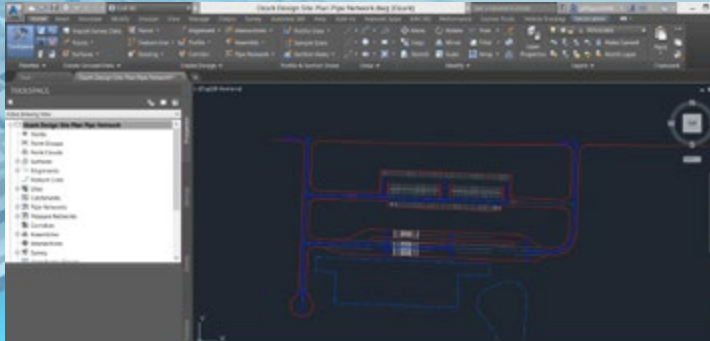
- Custom Property Sets for Corridor 3D Solids
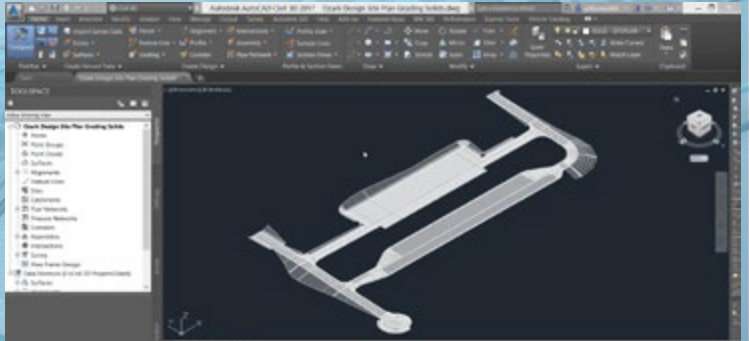
- "No Site" Option for Featurelines
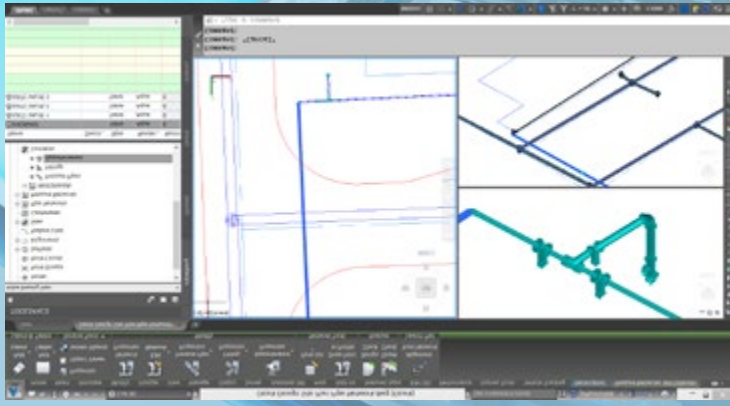
- Extract Multiple Featurelines from Corridor
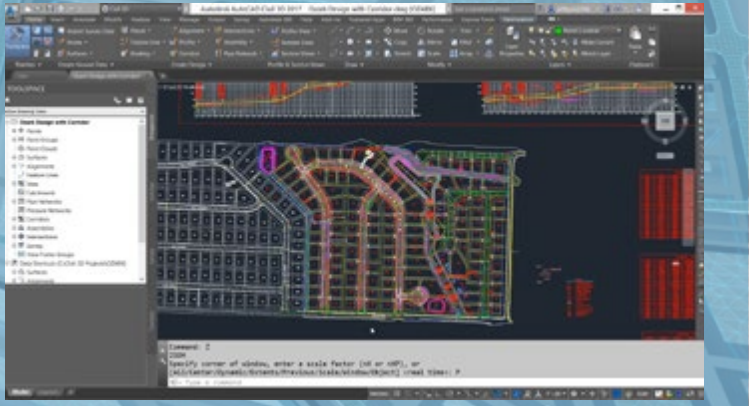
AUTODESK® ADVANCE STEEL 2017

- Parametric bridging connection for cold-rolled elements
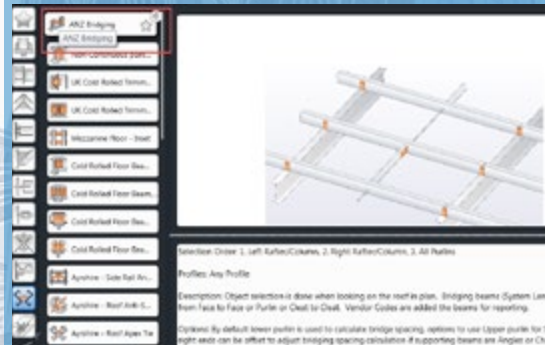
- Match properties for fabrication data
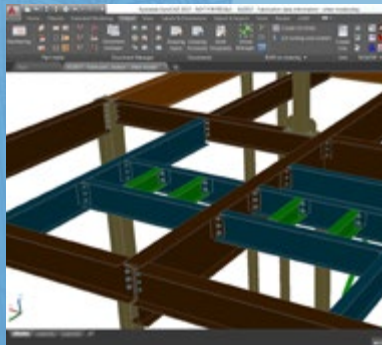
- Displays the offset value within the beam label

- Use snap points to efficiently dimension anchors on drawings
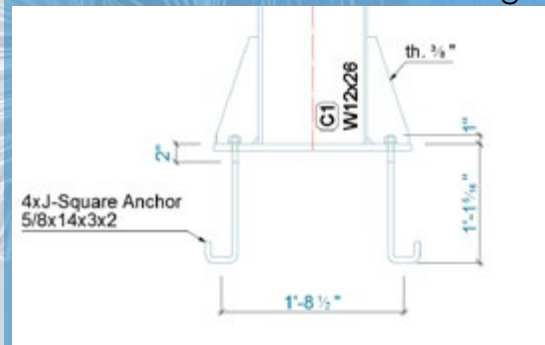
- User-defined formulas in BOMs
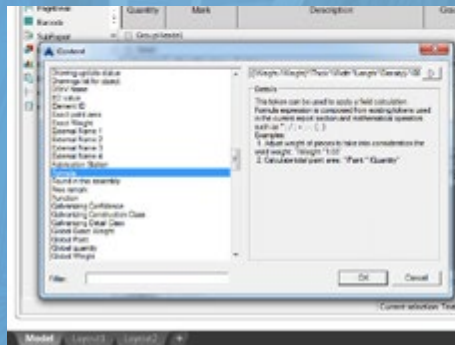
- Grid balloon placement control

iProperty Compliance Through iLogic
by Steve Olson

A common request we hear from CAD Managers is for a way to force their users to fill in all the necessary iProperties on models and/or drawings. We still have not found a way to force them to do so, but I have a way to use iLogic to "nudge" users toward iProperty compliance.

- The solution is fairly simple. First, you need to have an iLogic Form that has all mandatory iProperties (a Global Form would be best).
- To create the form, go to the iLogic browser, Global Forms tab and choose "Add Form" from the right click menu.
- Name the form (#1), drag iProperties to the form (drag from #2 to #3), then a preview of your form (#4) will appear.

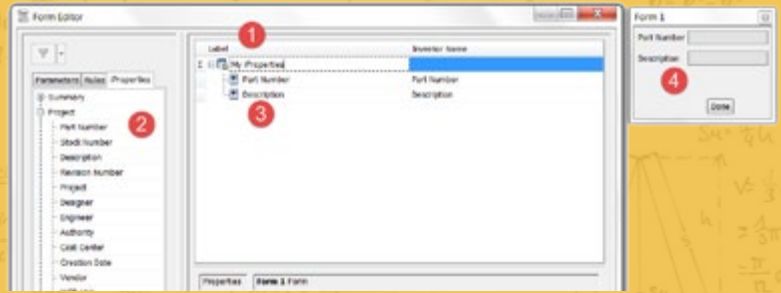- Next, create a rule that will display that iLogic Form. It is a pretty simple rule, just one line based on the Show Global Form snippet. Note that in the following text "My iProperites" is the name of the Global Form you created in the previous step.

      iLogicForm.ShowGlobal("My iProperties", FormMode.Modal)

- Once the form and the rule are complete, Event Triggers can be set for the events that should trigger the rule. The "After Open Document" would be a good choice for showing the iProperty Form.
- Another element that can be added to take the solution to the next level is a rule that will check to see if the iProperties have a value assigned. There are a couple ways to do this, but the easiest way is to test the length of the string to see if it is greater than "0" characters. We suggest creating an External Rule that tests for values in the iProperties so you can have a counter to count how many empty iProperties have been found. Once all the properties have been tested, an If/Then statement will be needed to run whatever procedure is determined should occur if empty iProperties exist in the file. There are several options here, but at the very least the iProperty Form should be displayed. Here is a sample of what that rule could look like.

```
BlankProps = 0

If Len(iProperties.Value("Project", "Part Number")) = 0 Then
    BlankProps = BlankProps + 1
End If

If Len(iProperties.Value("Project", "Description")) = 0 Then
    BlankProps = BlankProps + 1
End If

If BlankProps > 0 Then
        MessageBox.Show("Not all iProperties have been filled out!", "My iProperties Error",
            MessageBoxButtons.OK, MessageBoxIcon.Hand, MessageBoxDefaultButton.Button1)
    iLogicForm.ShowGlobal("My iProperties", FormMode.Modal)
End If
```

- In this sample code from above, BlankProps is the name of the counter and it counts how many blank properties were found. The If/Then statement checks to see if any blank properties were found. If blank properties are found, iLogic will display a custom error window and show the My iProperties form for the user to fill out the missing iProperties. The syntax for the custom error window can be created using the Message Box Wizard found on the Wizards tab of the iLogic Rule editor.
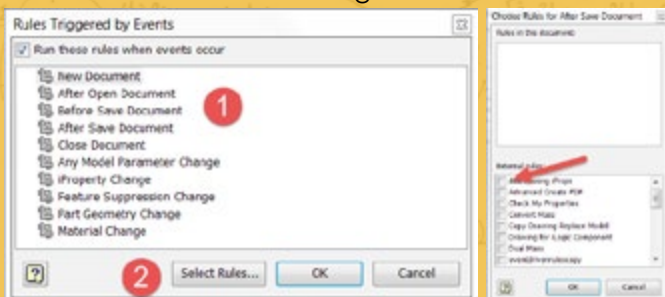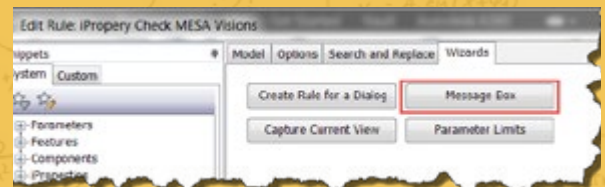
- It is then necessary to set an Event Trigger for the checking rule in your templates, "After Save Document" is a good choice for this. To set the Event Trigger, go to the Manage tab of Inventor, the iLogic panel and select Event Triggers. This will display a dialog where the user selects the event, then the Select Rules button. This will display another box where the user can select the rules to be run on that event.

Click <u>here</u> to see my video on how to implement this iLogic iProperty Compliance.

MESA U Extension Classes

We received great feedback regarding the classes at MESA U 2015. Everyone loved the sessions, but the two themes of the feedback were: Customers want a more hands-on experience and more time for each of the sessions.

We are now offering ½-day, hands-on versions of many of the sessions at last year's MESA U. They are designed to give the student a chance to learn about advanced concepts of many Autodesk products without having to dedicate a day or multiple days to a single course. Since many of these courses are considered advanced, we recommend you call us to make sure a potential student has the background experience to make the most of these courses.

- Design Accelerators
- AnyCAD & DWG Underlay
- Vault: Becoming a Metadata Jedi
- Fusion Test Drive
- Inventor Advanced Parameters

- Looking Into the i's of Inventor: iParts, iAssemblies, & iFeatures
- Customizing Inventor's Content Center
- Inventor Drawing Customization

- Configurator 360
- ReCap & ReCap360
- Visualizing Inventor Models in Showcase
- AutoCAD Electrical Migration

Please contact Steve Olson for session selecting, scheduling, and pricing!

Each session is only $195 per person and bundles are discounted!

Save 12% when you buy 5!   Save 25% when you buy 10!   Save 33% when you buy 12!

How can MESA Solutions make you more successful?

- **Training** - As an Autodesk Authorized Training Center, we provide the best way for beginners and experts alike to get up to speed. Find out about the latest productivity features, learn best practices, and develop the skills you need to make the most of your Autodesk software. Get the greatest return on your investment, faster, by building your knowledge in the areas you need the most.
- **Technical Support** - Customer support is the foundation of MESA. Our customers know we will be there for everything ranging from simple troubleshooting to situations that require advanced on-site assistance. It is important to us that our customers succeed, and because of that, we offer a wide range of free and fee-based support services.
- **3D Modeling & Design** - If you need fast, experienced designers to assist in a pinch, consider MESA as a source to help you complete your 3D project. We have over 125 years of combined real world design experience, 44 total years of using Autodesk Inventor, and over 23 years using other 3D applications. Our affordable rates, along with our dedication and experience will make your long-term or short-term project a success.
- **Data Management** - When companies start to use Digital Prototyping techniques, they create large amounts of data. The Autodesk Vault gives everyone involved in the design process managed access to the data they need. Our experienced Data Management Team will work with you through all stages of creating a successful data management implementation whether your engineering office has five or fifty people.
- **Visualization** - Our visualization team will work with your engineering and marketing staff to create a breath-taking animation that will not only convey your design, but will help you win business. We have a great deal of experience in creating everything from simple fly-by animations to complex process videos that include voice overs and music.
- **Consulting** - Your company is far more likely to succeed in utilizing new design tools if you have a well-conceived strategy to implement those tools. MESA will work with you to identify how new design technologies can work for you. Our consulting services will help you enjoy a faster return on your technology investment, assist you in moving forward with digital prototyping, and/or simply use the technology to gain a competitive advantage.
- **3D Printing** - Our highly affordable 3DP solution can be used to test or showcase your designs.
- **Design Automation** - If you have a design that can be driven by common parameters, we can use the latest programming techniques to create custom user interfaces to drive such designs. We can group several commands into one type of operation and develop the programming to make it a reality. By streamlining your design process, we can eliminate redundancy and increase productivity.