

1) Significant UI revision – Why?

- a) Gives a more uniform visual appearance across the DS SolidWorks product line.
- b) Scales to 4K & 5K ultra HD monitors coming on the market.
 - i) Also less distortion when projected.
- c) Less eye strain.
- d) Enables Breadcrumbs & similar enhancements.
 - i) Breadcrumbs = incontext UI +
 - ii) Clicking [D] brings breadcrumbs to mouse cursor – minimizing carpal tunnel strain
 - iii) When editing parts in the context of an assembly, [D] also toggles back to assembly edit mode
- e) New triad manipulator – easier to see and click on correctly for the desired motion.
- f) 2016 shows both child & parent dependencies in the Feature Tree.
 - i) Easy on the fly assessment of impacts from further edits.
- g) Selection lists within feature property managers now auto expand to fit the list
 - i) Still allows for user control and toggling back to expanded state.
- h) Command Manager & other toolbars now stay properly docked.

2) Sketching – the starting function for most SW users continues to get enhanced!

- a) Show / hide visibility control for sketch dimensions has been added.
 - i) Easiest to access from the heads up view toolbar.
- b) In-context bar for sketch entities is persistent and thus allows adding multiple relations to be easier & faster.
- c) Midpoints highlight and can be selected with a simple hover & left click.
 - i) No RMB menu needed.
- d) [Instant 2D] – a quick edit mode like Instant 3D, allows single click dimension changes and click & drag editing of dimensions.
- e) Offset sketch entities can be set to reversed direction after creation now.
- f) RMB – Detach segment on drag, allows easy repositioning of joined line segments.
 - i) Other new snaps & relations still auto create as segment is repositioned.
- g) Sketch entity `Segment' function – enhanced in 2016 with an automatic `equally spaced' relation. If a point is deleted (or added) to the set, the set respaces itself correctly.
 - i) Great enhancement for making bolt circles or sketch driven patterns.
- h) Convert Entities now has an option to select internal nested loops as well as the outer loop, (reduces the number of times the command needs to be executed to get a complete sketch)
 - i) User choice to get internal, external, or both.
- i) Cap ends option for offset entities.
- j) B-Spline options added to Style Spline.
- k) RMB `Detach Segment on Drag' momentarily over rides constraints.

3) Hole Wizard –

- a) Easier & faster redefinition
- b) Change an existing hole from one type to another (c'bore to tapped) and the size as well as termination condition will be maintained.
 - i) Even works if original was custom sized relative to the standards.

4) Assemblies –

- a) Copying multiple components now also copies the mates remaining between the selected components.
- b) Component preview window [icon on pop-up incontext bar] provides easier selection of far side faces or edges.

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- c) Fixing 1 bad mate now offers to fix all mates related to same reference or component.
 - i) Even for multiple instances of that component.
 - d) Preselecting 2 faces gets `profile center' mate on incontext mate bar, preselecting 4 faces gets `width' on incontext bar.
 - e) NEW Mate Controller – allows easy mechanism position based editing of multiple mates for motion studies and animations.
 - i) Positions can be dragged into proper location or set with mate values.
 - ii) Motion between positions is automatically interpolated by SOLIDWORKS.
 - f) Subassemblies can be opened from incontext bar of a related component in the graphics window.
 - i) [Open Part] icon now has a drop list of levels to choose from.
 - g) Components can be renamed in the assembly feature tree, and it will take full effect when all the documents are saved.
 - h) New RMB option to remove all appearances for every component at once.
 - i) Improved Form/Disolve subassemblies, now supporting patterned & mirrored items.
 - j) Temporary Fix – Group components function now accessible on RMB menu.
 - k) New selection filter – Select Identical Components.
 - i) Great for quick selection of all matching hardware.
 - l) Purge Unused command – RMB @ top of Feature Tree
 - i) Removes suppressed features, sketches, & reference geometry.
- 5) **Toolbox –**
- a) New [Favorites] folder where commonly used items can be placed at the top of the library.
 - b) Can now multi-select and `Edit Toolbox Definition' to resize many fasteners at once.
 - c) Edit Toolbox now has option to completely reset the fastener type as well as size or length.
 - i) Swap hex screws for socket heads for instance...
- 6) **Costing –**
- a) Support for costing assemblies as a set, complete with build time & roll up.
 - i) New reports for assembly cost in Word or Excel format.
 - b) Sheet metal costing allows for bounding box nesting to estimate sheet stock usage.
 - c) New options for rules based costing using IF and IF/THEN conditions to change operations and so on.
- 7) **Drawings –**
- a) Easier sheet scale change via drop list in lower right of status bar.
 - b) Flag Notes with associated balloons.
 - c) New sheet format creation & edit utility.
 - i) With a title block editor also provided.
 - d) Foreshortening is now allowed for linear dimensions.
 - e) Smart Dimension applied on a cosmetic thread produces a simplified tapped hole callout.
 - f) Break views in models can be reused in drawings.
 - g) Performance Evaluation tool now available for drawings.
 - i) Identifies sheets or views that are taking the most rebuild time.
- 8) **eDrawings –**
- a) Option to display component descriptions.
 - b) Multiple documents in one application window with [tabs] for each.
 - c) Measure units properly inherit the setting of the source SOLIDWORKS file.
 - d) Weld beads and callouts now properly display.
 - e) Ability to display and markup SW Electrical schematics.

9) SOLIDWORKS Electrical

- a) New properties panel on right side replaces many pop-up dialogs.
- b) Granular user right control projects and the sheet types within.
- c) Project snapshots can be made and restored from.

10) Routing –

- a) Auto Route capability added to rectangular section routes.
- b) Flex Cables functionality added for electrical routing.
- c) Covering or insulation function added for rectangular section routes.
- d) Auto Route of wires & harnesses through cable tray routes.

11) File → Print 3D

- a) Now with option to show striation lines.
- b) Improved options to scale & orient part relative to print bed.
- c) Option to highlight faces needing print supports.

12) SOLIDWORKS PDM

- a) PDM based on mysql
- b) Replaces WorkGroup PDM over the next 3 years.
- c) 2016 users have the option to install either.
- d) Directly upgradable to EPDM (PDM Professional).

13) TreeHouse –

- a) Can now edit configuration specific file properties from the data cards.
- b) Option to open new SOLIDWORKS assembly file upon export of the modified hierarchy.
- c) Option to create new copies of files from items in an existing hierarchy.

14) CircuitWorks -

- a) New batch mode import of ECAD files.
- b) Option to have copper traces show as decals. (significant performance boost)
- c) Option for user specification of component heights if missing from ECAD file.
- d) Ability to save settings to an *.xml file for use on another computer.

15) DimXpert –

- a) User created [Basic] dimensions
- b) Support of DimXpert in assemblies (with MBD add in)
- c) Circular edge dimensioning.
- d) Silhouette edge selection for dimensions
- e) Improved datum & hole callout display
- f) Watermark annotations can now be placed in Parts and Assemblies.

16) Sheet Metal

- a) Through cut improvements for swept flanges.
- b) Improved profile editing for Edge Flanges.
- c) Option to have mass in cut list properties as flattened state or folded.

17) Weldments –

- a) Structural members now properly sort in size lists and show full names on mouse over.
- b) Total Length property added in Cut Lists.
- c) Option to directly transfer material properties from the library profiles.
- d) Improvements to End Cap positioning and editing.

18) Waterfall of Add-Ins...

- a) SOLIDWORKS Standard now gets SW Utilities & FeatureWorks
- b) Professional now gets ScanTo3D & TolAnalyst
- c) Premium adds Costing for Assemblies

19)Simulation –

- a) Blended Curvature mesh option for improved performance.
- b) Automatic Bonding for shell elements.
- c) Unconstrained Body detection function.
- d) Mesh Sectioning capability for quality review.
- e) Prescribed Displacement option in non-linear studies.
 - i) Via time variation curve setting.
- f) Additional report publishing options.

20)Flow Simulation

- a) Symmetric results display option.
- b) Mesh refinement via uniform shells
- c) Transient analysis – user set nested iterations limit
 - i) use with larger time step for improved solution speed
- d) Radiation studies can use the `Sunlight' light object set in the solid model.

21)Plastics

- a) New CICSAM solver option available for improved performance with Flow & Warp.
- b) Warp analysis adds a quadratic mesh option.
- c) An easier to read & customize report template set is provided.

22)Inspection –

- a) Inspection reports can goto Net-Inspect or QualityXpert on-line portals instead of Excel
- b) Horizontal report formatting is now supported.
- c) User creation for custom OCR dictionaries.

23)MBD –

- a) Improved 3D PDF template editor.
- b) Multi-sheet 3D PDF output is enabled.
- c) [3D Views] tab is enabled if a MBD user send a non-MBD user the native file.

24)PhotoView 360 –

- a) Preview Render window is improved.
- b) Ability to add motion blur is added for animations and stills.
- c) Lighting setup – proof sheet mode, makes it much easier to fine tune object and scene lighting.

25)Part modeling & features –

- a) Fillet now has a curvature continuous option.
- b) Intersect & Surface Trim now have dynamic previews that better illustrate the end result.
- c) Linear Pattern can accept planes, flat faces and other references for the direction vector.
- d) Variable Table Pattern can now export and import from Excel.
- e) Sweep now has option to generate its own circular profile.
 - i) No separate preset profile required.
 - (1) Useful to make holes at odd angles to part geometry.
 - ii) Sweeps with a profile sketch can have the sketch located in the middle of the path rather than be forced to be on an end. (effectively a bidirectional option for sweep)
- f) New fully detailed thread feature function! (for additive manufacturing & other uses)
 - i) Standardized for inch and metric with internal and external application.
 - ii) Sizing and pitch can be customized.
 - iii) Users can provide their own profile sketches to be used.
 - (1) In a separate *.sldlib file.

26)MISC...

- a) [Tab] to hide, [Shift][Tab] to unhide, now work for part bodies as well as assembly components.

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- i) Affects whichever body or component the mouse cursor is hovering over.
- b) STL files are imported 5x faster than before and the file size limit has been increased 5x.
- c) PTC Creo 3 files can now be imported.
- d) **SOLIDWORKS Visualize** (formerly Bunkspeed) will be available to Pro & Premium at SP2.
 - i) Very high end photo rendering.
- e) Plane parallel to Screen is now on the RMB menu when a face is selected in the graphics window.
- f) More surface functions can create solids directly; such as Boundary, or Trim Surface.
- g) New selection filter setting `Select Identical Components' makes it easy to multiple items for replacement, configuration switching, or other edits.

27) Announcing **SOLIDWORKS PDM Standard & PDM Professional** –

- a) PDM Standard replaces Workgroup PDM from prior versions & is free with SW Pro-Premium
 - i) Workgroup PDM will be fully discontinued at release 2018.
 - ii) PDM Standard uses MySQL as the database server structure.
 - iii) Improves performance over Workgroup PDM.
 - iv) Directly upgrades to PDM Professional later.
 - v) Can manage SOLIDWORKS and DraftSight files.
- b) PDM Professional is the 2016 upgrade for EPDM
 - i) Still uses SQL server.
 - ii) New plugin for managing PDF custom properties from PDM.
 - iii) Ability to resize preview thumbnails.
 - iv) User ability to sort on any of the columns in the client display.
 - v) Improved options for revision incrementing or setting.
 - vi) More immediate warnings for moved files & lost references.