SAMVEA | DESIGN STUDIO

Documentation

User guide and workflow reference



Connected design.
Controlled project information.

Engineering models / Structured data / Document review

2026-11-14

SDS-HELP | Complete guide

DOCUMENTATION / WORKFLOWS AND REFERENCE

SAMVEA Design Studio

Documentation and getting started

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Complete documentation guide | A4 portrait

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Page numbers include the cover and contents. Interactive examples are captured as they appear when the PDF is created.

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SDS complete user guide

SAMVEA Design Studio | User edition | 24 October 2026

This handbook describes the current SDS desktop: engineering data, drawings and models, documents, project control, electronics, development tools, accounts and collaboration. It covers the installed command families and separates usable workflows from reserved or experimental functions. A visible button alone is not a promise of an engineering solver.

Choose your first workflow

- Find your way around the workspace, restore AI Chat and DOS, and arrange documents.
- Create or edit a TJS workbook; use combined tables for file-backed records.
- Edit a piping database and its linked 3D route, or build a tank or exchanger.
- Prepare a datasheet, edit a DJS document, and preview or export PDF.
- Register project documents, checkpoint saved files, review changes and publish controlled copies.
- Inspect PCB and schematic files or work with FPGA and ARM1 demonstrations.

How SDS connects your work

Authoritative work	Working views	Controlled output
TJS records, DJS text, CAD drawings, saved models and source code	Workspace tree, properties, spreadsheet, vector preview and MDI viewers	PDF or HTML exports, Git checkpoints, review versions and peer releases

Edit the native source first. A preview represents that source; a PDF, checkpoint or release represents a particular saved or exported snapshot. Saving, committing and publishing are separate actions.

Availability and editions

Instructions apply to the current x64 Windows build. Installed libraries, helper programs, account rights and the active document determine what a command can do. Ribbon buttons remain accessible; a command with missing prerequisites explains what is needed. Commands marked Planned or Reserved are described in the reference but do not perform the advertised future operation.

This is a user handbook, independent of the F2 developer guide. It contains no customer credentials, private keys or fixed commercial prices. The editable DJS edition and PDF publication use the same chapter content as this local help.

Complete contents

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- Start here / Projects, file opening and saving

- Spreadsheets / TJS workbooks, editing and JavaScript macros
- Spreadsheets / Combined tables and persistent record editing
- Spreadsheets / Formatted datasheets and Excel presentation
- Engineering / Piping database, connectivity and live 3D
- Engineering / Piping element editing and navigation
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Added: illustrated ribbon reference

14 November 2026. The original 53 topics, including their command references, are retained in full. The following new chapters describe the current ribbon. Each tab and section has an image; each button or control has its own image and explanation. For current tab names and tool availability, use this added reference.

- Ribbon 01 - Home
- Ribbon 02 - Document
- Ribbon 03 - Tables
- Ribbon 04 - Planning
- Ribbon 05 - Publish
- Ribbon 06 - CAD
- Ribbon 07 - PCB
- Ribbon 08 - Simulation
- Ribbon 09 - Developer
- Ribbon 10 - View / Workspace
- Ribbon 11 - Piping
- Ribbon 12 - Equipment
- Ribbon 13 - Structure
- Ribbon 14 - Electrical
- Ribbon 15 - Version Control

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Workspace, navigation and restored panes

The working areas

The title bar holds library search, synchronization, review, account and compact editing tools. The ribbon groups commands by task. The left workspace tree browses projects, files, libraries and model objects. Its properties area presents the selected record; the vector pane shows supported parameter drawings. Central MDI tabs hold documents. AI Chat, SAMVEA Card and Tiny8086 occupy the right column.

Use the small triangles to collapse or expand a pane. Drag dividers to resize the columns. View / Workspace restores Workspace tree, Properties, Logs / DOS and AI Chat. Collapsing a pane does not delete its document or history.

Restore AI Chat, chat history and DOS

1. Choose View / Workspace > AI Chat, or View > HTML / Chat IA > Chat IA. The right column expands.
2. Use Chats or the conversation-history icon to find previous conversations. The index is searchable; opening an old chat does not resend its messages.
3. Choose Home > DOS terminal or Emulator > Focus Terminal. This reveals Tiny8086 even when it is stopped.
4. If the console says to start Tiny8086, choose Emulator > Start. Focus Terminal places keyboard input in the guest. The right pane also has Disk sync and Logs tabs.

Task ribbons and document tabs

Home > Show all task tabs displays the complete ribbon vocabulary. Follow active view selects the relevant task tab as you activate a document. Collapse ribbon reduces its height; Appearance provides the theme, reset and classic toolbar options. Reset ribbon also resets contextual ribbon preferences.

Use the central tab strip to switch documents. Split and stack controls arrange views; Pop out moves an existing view into its own window and closing that window returns it. Right-click a spreadsheet or source tab and choose Open another view for a second view of the same document. Edits and undo are shared; scrolling and selection remain independent. The chain control links zoom between those views.

Selection and context

Select a tree item to load its properties. Double-click a supported file to open its dedicated viewer. Click the target document before using Save, Preview PDF or an editing command. A command that requires a selected object cannot operate merely because a different document is visible. Save or cancel unfinished edits before switching records.

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Projects, file opening and saving

Open a file

Use File > Open (Ctrl+O) or the workspace tree. Dedicated commands open PDF, KiCad, a 3D model, PCF piping, PSD animation, Verilog and schedules. Opening a project folder makes files browsable; it does not automatically register every file for version control.

A TJS workbook opens as a spreadsheet; DJS opens in its document renderer; DXF uses CAD; PDF uses the PDF viewer. Source/text files use the source editor. Imported or converted formats may need a matching installed helper. An unsupported extension is not converted just by renaming it.

Save the correct source

Ctrl+S saves the active editable document. Save As creates an independent file where supported. Individual record inspectors and combined piping tables write accepted edits to the persistent record; an ordinary workbook retains a dirty state until saved. Some model editors commit validated changes to their owning database. Check the status message for the active workflow.

When SDS reports that a file changed externally, preserve your draft and inspect the newer saved copy before retrying. Closing the last view of a modified workbook, source document or DJS prompts about unsaved changes. Closing one of several shared views does not discard the document in the other views.

Copies, identity and naming

Use the managed Move or Relink commands for registered files. Copying an entire project keeps its project identity; it is a replica, not an unrelated new project. Create a new project register for an independent job. Equipment tags and display names are labels; stable internal identifiers carry links and history.

Examples and working copies

The workspace includes example workbooks, pump datasheets, piping folders, model demonstrations and project-control examples when installed. Copy examples into a new working folder before experimenting. Reopen an existing plant to continue it: repeatedly importing a demonstration can create separate model instances.

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TJS workbooks, editing and JavaScript macros

Create and edit

1. Choose Home or Developer > New workbook. A new document starts with Sheet1.
2. Use Developer > New sheet to add a worksheet. Tabs select worksheets within the workbook.
3. Double-click a cell, or press Shift+F2, to edit. Enter accepts; Escape cancels. Plain F2 opens the developer guide.
4. Use Ctrl+C and Ctrl+V to exchange rectangular tab-separated data with another spreadsheet. Delete clears selected cells.
5. Save workbook or Ctrl+S writes the TJS file. Use File > Save As for a separate copy.

Typed and pasted cell edits are text, preserving leading zeros. Loaded JSON numbers remain numeric. A string beginning with = is literal text: SDS does not implement Excel's calculation engine. Imported formulas use their saved results. Use an explicit macro for calculations.

Create a calculation macro

1. Select the workbook and choose Developer > New macro.
2. Choose Edit macro; the source appears in Text / macros. Select a named macro from the ribbon list when several exist.
3. Store macro saves its source into the workbook without running it. Run macro stores the pending source and executes against a draft of the workbook.
4. A successful run commits all cell changes together; an error rolls back that run. Save the workbook to persist its data and embedded source.

```
var sheet = sds.tables.get('Sheet1');
var length = Number(sheet.get('B2'));
sheet.set('C2', length * 2);
```

Use the actual stable worksheet ID in your file; the displayed tab name may differ. Scripts do not execute when a workbook is opened. Ordinary table macros have bounded execution and no file, shell or network access. Equipment and vector recipes use their own qualified hosts; their scripts are not interchangeable with a grid macro.

Undo and viewing

Ctrl+Z or Undo reverses a complete cell edit, paste or successful macro operation. Macro-source storage and execution have separate undo entries. Zoom commands and Ctrl+wheel change viewing scale from 10 to 400 percent without modifying the workbook. Overview dragging pans; Ctrl+drag in the overview zooms to an area.

Workbook limits

The current grid has 64 sheets, 256 rows and 78 columns (A through BZ) per sheet, with eight undo snapshots. Individual cells hold scalar values, not nested objects. Large workbooks, automatic formulas, VBA execution and

unrestricted Excel interchange are outside this editor's scope.

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Combined tables and persistent record editing

One file per record

Place records of the same supported TJS structure in a directory. Each file remains authoritative. A combined table transposes property names into column headings and places each record's values in a row. Source file identifies the backing record; the compiled workbook is temporary memory, not a second master file.

1. Select an individual record to inspect its properties under the workspace tree.
2. Ctrl+click the containing directory. SDS checks structural uniformity and opens the combined spreadsheet in the MDI area.
3. Edit an allowed cell and finish the cell edit. SDS validates the value and writes it to that row's original file.
4. Reopen the individual record to check persistence. Ctrl+Z in the combined workflow restores the backed record where the edit is supported.

Validation and refresh

Keep property names, order and schema consistent within a table. Do not combine different record types into one row layout. If a numeric field rejects a value, use a number with a decimal point and the field's expected units; a display label such as mm or bar is not part of the numeric value unless the schema explicitly allows it.

Accepted edits refresh the open combined views, properties and linked piping geometry. External saves and record additions/removals are detected automatically. Refresh waits for an active cell edit to finish. Invalid input leaves the last valid table/model visible and reports the problem.

A database containing several tables

Ctrl+click a Piping root containing its database manifest to open every declared table as a worksheet tab, including empty tables with headers. Each table is a subdirectory and each entry is a TJS file. The supplied MDB-derived example declares 40 tables. Template records are excluded. The current compilation supports up to 255 records per table and 77 data columns plus Source file.

Linked selection

Selecting a row highlights its element in the linked piping view. Selecting a rendered element highlights its row and loads its persistent TJS in properties. Shift+click the basic-element directory to open the route preview. If no highlight appears, make sure both views belong to the same directory and that the selected row represents a drawable element.

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Formatted datasheets and Excel presentation

Properties, datasheets and drawings

Document	Use
Properties TJS	Edit parameters of the selected engineering element in the inspector.
Datasheet TJS	Open a formatted sheet in the central MDI area, with print presentation.
Combined TJS	Edit homogeneous records as rows backed by their source files.
Vector preview	See a parameter-labelled schematic associated with a supported workbook.

What an Excel-derived TJS preserves

The supported XLS converter preserves cell dimensions, fonts, colors, alignment, wrapping, rotated headings, borders, number formats and merged ranges in layout metadata. The application frame stays dark while the sheet keeps its imported cell colors. Saved formula results are imported; formula code, VBA, images and Excel print settings are not imported by that converter.

Use an installed converted datasheet, such as the pump example, and save a working copy. Conversion is a preparation tool, not a promise that File > Open can open every Excel format. Editing ordinary values retains supported layout metadata. Review large merged cells and page breaks after any content change.

Preview and export the current datasheet

1. Open and activate the actual imported datasheet TJS in MDI.
2. Edit its fields, finish the edit and save the workbook.
3. Choose Documents > A4 / A3 page setup and set the intended paper presentation.
4. Choose Preview PDF. Check the sheet, page size, margins, text, lines and page count.
5. Choose Export PDF and select a destination. Register the PDF and link the TJS if controlled publication is required.

PDF preview follows the active supported document. Activating an older PDF or a different workbook before preview can show a different source. The parameter vector drawing is illustrative unless its own drawing specifies a scale; the datasheet's paper format is the publication layout.

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Piping database, connectivity and live 3D

Database organization

The TJS piping example follows the extracted database tables: Piping contains table subdirectories, and each entry is a persistent TJS file. INPUT_BASIC_ELEMENT_DATA holds the main element list. Specialized tables store bends, SIF/tee data, forces, uniform loads, wind, expansion-joint and hanger input. The root manifest declares the tables and columns.

From and To node numbers describe physical connectivity. The element's node-number filename supports ordering; the filename alone does not define every relationship. Linked-table references are database keys, not Windows shortcuts or memory pointers. Use the linked ribbon commands to create/open companion records instead of inventing a second unrelated record.

Open the complete model

1. Browse the Piping example root and Ctrl+click it to open all database tables.
2. Select INPUT_BASIC_ELEMENT_DATA to inspect the route rows.
3. Shift+click that table's directory to build the linked 3D preview.
4. Select a row or pick the matching 3D element. Its source properties appear in the inspector.
5. Change an editable dimension or coordinate and finish editing. The saved record and route update automatically after validation.

Straight pieces, bends and branches

Basic records describe straight pipe, elbows, tees and supported rigid elements. Delta coordinates position one node relative to the other. Global defines a disconnected segment's starting position. Use the piping database's reviewed long-radius or short-radius elbow entries for the appropriate nominal geometry; an unresolved catalogue entry needs correction, not an assumed radius.

Changing a coordinate can move downstream connected geometry. Check node labels, lengths and the final route after insertion or splitting. A visible solid is a geometric representation; this workflow does not itself calculate piping stresses or establish code compliance.

Linked input tables

Forces opens INPUT_FORCMNT; Uniform Loads opens INPUT_UNIFORM; Wind/Wave opens INPUT_WIND. Expansion Joints opens INPUT_EXPJT, Hanger Design Control Data opens INPUT_HANGERS, intersection SIF opens INPUT_SIFTEES, and bend SIF opens INPUT_BENDS for a selected elbow. These are input-record editors. Automatic hanger sizing, expansion-joint assembly generation and stress calculations are not provided by those commands.

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Piping element editing and navigation

Continue, insert and duplicate

Activate a piping table or its linked view and select an element. Continue moves to the next element; at the end it creates a new element. Next, Previous, First and Last only navigate. List opens the temporary combined element table.

Duplicate copies the selected element before or after it. Insert adds a straight element before or after a selected straight element using exact delta coordinates. Review the dialog's new nodes, direction and dimensions before accepting. Increment sets the automatic node-number step. Do not assume that alphabetically renaming files will repair an existing route's connectivity.

Split and remove

Break divides an eligible element at a chosen node or into equal lengths. Inspect the proposed intermediate nodes and resulting geometry. Delete removes the current element; check all affected node relationships afterwards. Supported routing changes have Undo and Redo. A new change after Undo clears the redo branch.

Find and geometry checks

Find searches elements containing one or both specified nodes and can zoom to the result. Find Node uses From and To fields: either can be supplied, or both to identify a connection. Global sets absolute start coordinates for disconnected segments. Close Loop fills the delta coordinates needed to reach a target node. Distance measures origin-to-node or node-to-node distance.

Review Current Units displays the input/report units; it does not convert existing numeric values. Check units before pasting values from another application.

Commands still planned

The Valve catalogue-placement command, Static Load Case editor and Dynamic Load Case editor remain planned in the current piping ribbon. Their descriptions are retained for discoverability. Catalogue browsing and linked load input records are available through their separate workflows.

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Piping display, labels and catalogue routing

Inspect the route

Center Line View displays straight centre lines, elbow arcs and tee branches. Shaded View shows surfaces; Wire Frame shows the mesh; Translucent reveals overlapping objects. Silhouette and Hidden Line Wire Frame are planned commands in this build.

Right and ISO View set the view direction. Perspective and Orthographic change projection. Orbit rotates the view; Pan translates it. Select Element and Select Group choose the selection mode. Node Numbers and Show Length add geometry-checking labels.

Colour by engineering data

Colour By commands cover Diameters, Insulation, Wall Thickness, Materials, Temperatures, Pressure, Corrosion Allowance, Pipe Density, Fluid Density and Insulation Density. Use the legend to relate colors to the stored values and the available case selector when several operating values exist. These displays help find inconsistent inputs; they are not computed stress or thermal results.

PCF and SQLite projects

1. Use CAD > Piping / PCF > Import PCF to validate and preview a file and create its SQLite project.
2. Open SQLite reopens that project without requiring the original PCF.
3. Save piping stores the validated project. Save piping as writes a new database path.
4. Export PCF writes a new PCF file. Keep the original import for comparison.

PCF/SQLite plant projects and the file-backed TJS database are distinct authoring workflows. Opening both does not automatically merge their persistent storage.

Route from equipment nozzles

In a supported plant, create/select equipment nozzles, choose Route from nozzle and define the route with the mouse. Finish route accepts it; Cancel route abandons the current route operation. Catalogue elbow and Dimensioned bends provide fitting geometry; New open branch creates a branch. Use Delete selected and routing history for supported changes. Check connectivity after changing nozzle dimensions or equipment placement.

Browse piping parts in title-bar library search. Entries marked for source review cannot generate a trustworthy nominal DXF; reference-only entries retain their original table data. Previewing a catalogue item does not itself insert it into the plant.

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Pumps, tanks and heat exchangers

Create a supported assembly

1. Open the target plant/model. Use Equipment > Equipment library to inspect available templates.
2. Choose New pump, New tank or New heat exchanger.
3. Select the created assembly and choose TJS properties. Edit its instance values and the relevant equipment tabs.
4. For a tank or exchanger, set Vertical or Horizontal and inspect its shell/head orientation. Tube bundle applies to the supported exchanger.
5. Save through the owning model workflow and reopen to check the stored assembly.

Templates contain demonstration dimensions; replace them with project values. Diagram placement and scale do not define physical size. Activate equipment explicitly upgrades a compatible legacy plant to shared equipment ownership and starts compatible history; ordinary Undo does not reverse that format upgrade.

Vessel sections

Element commands include Cylinder, Ellipse, Torisphere, Sphere, Cone, Welded Flat Head and ANSI/Bolted Flange. Select the vessel and its intended host section before adding details. Edit section dimensions and attachment position through the supplied TJS fields, then inspect the generated model.

Details and internal parts

Stiffening Ring, Nozzle, Platform, Packing, Tray, Tubesheet and Generic Clip describe section-associated details. A nozzle on a tank/exchanger has a host section, station, azimuth and dimensions in its Nozzles tab. Use available piping-library flange dimensions for the intended nominal size/type. Pump connection nozzles remain tied to their supported template.

Supports and repeated legs

Skirt and base ring support vertical vessels; Saddle supports horizontal cylinders. Lug, Legs and Lifting Lug Data provide the corresponding attachments. Leg properties support count, automatic angular distribution, beam-profile selection and base plates. Set the count and orientation, then check the whole arrangement and clearances.

Layers, loads and assessment records

Weight, Force and Moment, Liquid, Insulation and Lining store the corresponding data and supported visual layers. Halfpipe Jacket and ASME Appendix 9 Jacket describe jacket geometry/input. API-579 Flaw/Damage Input/Analysis stores assessment data. The ASME-labelled and API-labelled tools do not implement the corresponding code calculations.

Selection, diagrams and history

Qualified shared assemblies expose component entries for selection and focused properties. Whole-assembly and component editing depend on the template adapter; a component is not necessarily independently movable. Place selected, Unplace selected and Save diagram concern the diagram workflow. Undo equipment and Redo equipment operate on supported equipment changes. Equal tags do not automatically link independent P&ID and physical objects.

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3D editing, property brush and appearance

Move, copy and rotate

1. Select a supported 3D object and choose Move in the 3D Modify group.
2. Choose the required axis before dragging to constrain direction. The small dialog accepts exact numeric values.
3. Tick Copy when you need a new object instead of moving the source. Review the displacement and confirm.
4. Choose Rotate and select the intended rotation arc/axis before dragging or entering the exact angle.
5. Use Delete for the selected editable object. Use the compact Undo/Redo buttons or the owning model's history commands to reverse supported changes.

The transformation must be supported by the owning model. A picked subpart, imported reference or read-only snapshot may not be independently editable. Save the owning project after the accepted operation.

Copy a beam section with the brush

1. Open the compatible structural/model view and select the source beam.
2. Use the compact brush beside Undo/Redo. Its dropdown selects the supported properties; the implemented initial property is the beam section.
3. Apply to a target beam. The cursor changes to a brush while the mode is active.
4. Hold Ctrl to continue applying to additional beams; release Ctrl to end continuous application.

The brush is not a general pipe-size, schedule or flange copier. Those possible extensions must not be inferred from the icon or from another discipline's tab.

Per-object and whole-model presentation

Appearance > Color changes selected objects. Transparency applies to the selection; All transparency applies across the model. Surface selects supported shaded/wire presentation. Reset selected restores selected appearance. Check the active object scope before applying to all. Display effects do not change wall thickness, physical material or engineering density.

Measure and inspect

CAD > Measure 3D offers Distance and Angle, with Vertices, Edges and Faces selection filters. Clear measure removes the measurement display; Navigate returns to navigation. Section controls cut along X, Y or Z, flip the retained side and reset sectioning. They inspect the model without permanently cutting the source solid.

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Steel profiles and reserved discipline ribbons

Use the beam library

Search library components in the title bar, for example IPE 240 or HEA200. Beams are grouped by family and actual dimensions. Select an entry to see its nominal cross-section and dimensions; Enter or double-click opens a separate generated DXF. Catalogue browsing is read-only and does not place a member in a model.

Compatible existing structural models and tank legs can use the installed section library. The beam-section brush copies that supported section property. A nominal preview is not a manufacturing drawing; catalogue discrepancies are shown when known.

STEEL FRAME organization

The ribbon reserves Sections; Plates; Stairs Ladders Handrails; and Walls & Floors. Section commands cover beams, columns, braces, curved sections, joints, baseplates, stiffeners, trim/extend, mitres and splitting. Plate commands cover rectangular/polygon/bounded plates, grating, openings, notches and thickness. Access tools cover stairs, ladders, handrails, gates and platforms. Wall/floor tools reserve walls, floors, slabs and openings.

These discipline commands currently describe reserved UI and are marked not implemented. They are separate from the working beam catalogue, existing model editing and equipment leg features. Clicking a reserved command explains its status rather than creating a hidden object.

Electrical organization

Cabling System reserves cableways, branches, cables, bundles, junction boxes, endpoints, routing, connection/disconnection, fill levels and cable lists. Cable Tray reserves straights, bends, tees, crosses, reducers, risers, supports and specification. Equipment > Electrical is also reserved. Do not treat these buttons as a completed cable-routing or electrical-checking application.

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CAD drawings, layers, sketches and solids

Open and navigate a drawing

Open a supported DXF in CAD, or use New DXF. Keep Model and paper/layout tabs distinct: model entities belong to model space and sheet entities/viewports belong to the selected layout. Use Fit drawing, zoom and pan to inspect extents. Selecting an engineering vector preview is a different workflow from opening a paper-space title block.

Draw and modify

Draw provides Line, Circle and Rectangle. Modify provides Move, Rotate, Scale, Mirror, Trim and Extend for the supported entity types. Follow the on-screen prompts to select geometry and enter points or values. Undo edit and Redo edit operate on drawing edits. Save CAD Copy preserves a separate edited copy; verify it by reopening.

Layer Manager controls layer visibility and selection. Round Coordinates, Pattern Review and Recognize Symbols support drawing cleanup/inspection. Review proposed results on a copy, especially when drawings contain repeated title blocks or imported text. Entity support differs by format; preserve the original source for unsupported information.

3D primitives and sketches

The CAD primitive group creates cylinders, parallelepipeds, cones, spheres, tori, pyramids, truncated cones and truncated pyramids. New sketch and Import DXF prepare sketch geometry; Extrude and Update sketch build/update a supported extrusion. Union, Subtraction and Intersection operate on compatible solids. Select valid inputs and inspect the resulting shape before saving.

Imported and scripted models

Open model loads supported exchange formats through the installed model importer. Fit model and section planes aid inspection. Open script, Edit script and Run script provide explicit scripted geometry generation; Cancel build interrupts supported imports/builds. Save project and Save as preserve the CAD project. Export CAD files writes supported exchange representations.

FBX animation provides Play, Pause, Rewind, Clips / timeline and Scene script for imported animation data. These controls do not turn a static import into a rigged animation. Consult the import result for missing geometry or unsupported features.

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Parameter vector previews and P&ID projects

Small vector pane under properties

A supported TJS may contain a drawing recipe which turns parameters into a 2D vector projection. Select that workbook/element to load its properties and vector view. The pump example labels dimensions with parameter names and separates pump, motor and skid layers. Selecting its matching tab emphasizes the corresponding layer and dims the others.

The illustration fits the pane and need not be to physical scale. Changing supported parameters regenerates the drawing. A missing recipe, incompatible workbook or unrelated selected object produces no parameter preview. Datasheet TJS opens in MDI; it should not replace the selected element's property inspector.

Create a P&ID project

1. Use File > P&ID project > New project, or CAD > P&ID project.
2. Open Components table and enter/select component records using the supplied schema.
3. Open P&ID sheet, select a component and choose Place component. Click the CAD position.
4. Use Unplace component to remove a diagram placement, Duplicate for a new record, and Delete for the selected project component.
5. Undo P&ID / Redo P&ID reverse supported changes; Reload / rebuild cache reconstructs the derived view from saved project records.

Symbols and physical equipment

Libraries > P&ID symbols contains instruments, valves, equipment, signal/piping marks, sensing elements, logic gates and electrical controls. Preview symbols as vector DXFs. Catalogue preview and persistent project placement are different actions. Schematic coordinates and symbol ports do not supply physical nozzle dimensions. A matching tag alone does not establish a 2D-to-3D ownership link.

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DJS document editing and HTML publication

Read an editable document

DJS is the SDS Document JavaScript file format: a structured JSON document containing styled text, paragraphs, tables, images and page settings. Open a .djs file through File > Open or the tree. It renders directly in a specialized MDI document. Use the heading navigator, page controls and zoom to move around.

The current renderer lays out the document with its own pagination. It preserves supported imported styles, tables and embedded images, but it is not Word's layout engine. Converted floating drawings may appear in reading order. Check long tables and page breaks before publishing.

Edit and format a document

1. Activate the document and open the dedicated DJS ribbon tab. Choose Edit document to type directly in the page.
2. Select text, then use Text style, Formatting and Paragraph to change fonts, size, colors, emphasis, headings, alignment, lists or quotes. The selection is retained when using the ribbon.
3. Use Insert for links, tables, images, local videos and symbols. Images and videos are embedded in the DJS file.
4. Choose Save or Ctrl+S. The previous saved file is retained as a backup and conflicting external changes are rejected. Undo and Redo are also available.

The document pane contains pages and status; editing and navigation controls are in the native ribbon. View includes page navigation, zoom, contents, finding text and reload. Source edits validated document JSON. Repeated header/footer copies share source text. Embedded macros remain data and are never executed.

Publish Word, PDF or HTML

DJS > Export provides Word (.docx), PDF and HTML. Documents > Preview PDF opens the rendered publication in the PDF MDI viewer. Exports include unsaved changes without saving the DJS or clearing its dirty state. Word applies its own pagination; use PDF for the rendered page layout. Local videos play in DJS and HTML and appear as captions in Word and PDF.

The exported HTML is static and requires no SDS document server. It contains no document/editor scripts. Its modern print CSS is intended for a full browser; it is not a replacement for the simplified native F1 HTML help package. Editing a DJS guide does not change the original help HTML automatically.

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PDF preview, export, annotations and OCR

Context-sensitive publication

Documents > Preview PDF and Export PDF act on the active supported source: formatted TJS, DJS or DXF. Activate the intended document immediately before using the button. TJS page setup offers A4/A3. DXF publication must respect the selected drawing/layout; inspect paper size, viewports, linework, text and logos. DJS uses its own page geometry.

Preview opens a generated PDF in MDI. Export asks for a destination. PDF output is a snapshot: subsequent native edits require a new preview/export. Keep the source file with the PDF, especially for controlled publication.

Read PDFs

Open PDF or the library folder picker locates documents. Previous/Next page, Fit width, zoom and Rotate control reading. Multiple pages and Continuous scroll switch page presentation. PDF files can be opened independently of a datasheet or drawing.

Local annotations and CAD

Select / move, Line and Rectangle add or adjust local annotation geometry. Delete removes the selected annotation; Undo/Redo reverse annotation edits. Annotation CAD shows the linked annotation-only drawing; the original CAD remains available. Export page DXF writes current-page annotation geometry. These local marks are different from review-server comment threads.

PDF2DXF and raster recovery

PDF2DXF converts supported page content to editable CAD paper space. Vector text and linework differ from scanned page pixels. OCR page or OCR rectangle uses the installed local OCR worker; Review text lets you inspect recognized words and Edit text corrects a selected OCR annotation. Cancel OCR stops the worker.

Raster lines and Lines rectangle reconstruct candidate strokes from a scanned image. Review the proposed geometry before accepting it. OCR and tracing can miss or misread content; retain the original PDF and compare the final CAD. A scanned logo is not automatically reconstructed as clean colored vectors.

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Document review, decisions and obsolete PDFs

Open review

Use the title-bar Review button, workspace Review & Version Management, or Version Control > Review & versions. SDS opens the review service in an MDI view. The configured local service must be running. Use the current SDS session where supported; browser access to a separate service may need that service's authentication.

Comment on a specific revision

1. Select a document and use the version selector to choose the revision.
2. Read the PDF, change page or zoom. Add a document comment, page comment, point or dragged rectangular location.
3. Click a thread's location to navigate to its page. Reply and use status filters.
4. Resolve or reopen a thread if your role/ownership allows it. Reviewer files attach to that exact revision.

Earlier versions and their threads remain readable. A new publication does not silently move old comment locations onto changed pages. Comments are stored separately from the original PDF; they are not rewritten into its native annotation objects.

Four review decisions

Action	Who may use it
Review	Reviewer, Approver, Document Controller or Administrator.
Validate	Approver or Document Controller only; Administrator alone is insufficient.
Major issue	Reviewing roles above; a reason is required.
Refuse	Reviewing roles above; a reason is required.

Authors publish and comment; they need an additional reviewing role to make decisions. Readers view permitted files and comments. Each newly published revision begins with its own Submitted workflow state.

Upload, versions and obsolete

An authorized author publishes a saved model/document through SDS or the review interface. Changed files receive increasing version numbers. Unchanged bytes and unchanged source provenance do not create a duplicate version. Optional engineering revision labels remain separate from the numeric version.

An authorized Approver can select a current PDF, enter a reason and Mark obsolete. SDS produces the supported OBSOLETE-watermarked rendition while preserving the archived source. Models and other attachments may be downloads with whole-document comments; the review portal does not promise general interactive 3D rendering.

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Document register and source links

Create a project register

1. Choose Version Control > New project and select an existing project folder, or Open project for a registered project.
2. Choose Register file and select a saved file inside the project.
3. Set its document number, title and discipline. Save metadata writes these fields; Revert edits discards the current metadata draft.
4. Use Link source to associate native TJS, DJS, CAD, model or code files with a managed publication.
5. Use Open document, Open source and Open PDF to navigate those associations.

The register has search and pages of records. Save or explicitly revert a metadata draft before selecting another row. Refresh reloads saved changes. A stale draft cannot overwrite a newer metadata revision.

Keep permanent identity

Move file renames/moves a registered asset within its project while retaining identity. Relink file repairs a missing location or attaches an imported document's current file. Existing destinations are not overwritten. Recover move handles a recorded interrupted operation after checking the files.

Import catalogue brings existing review document identities into the register; missing source links still require explicit assignment. Registering the same path reuses its identity. Renaming a file in Explorer is not automatically inferred as a managed move.

Three different numbers

Identifier	Meaning
Metadata revision	Changes to the register's editable record.
Git checkpoint	Saved registered source files and metadata at a commit.
Review version	A published file snapshot and its review history.

Approval comes from the review workflow, not from editing a title or revision label. When the review service is offline, its status is shown as unavailable rather than guessed.

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Local Git history, comparison and restoration

Create a saved checkpoint

1. Open the project register, then Version Control > History.
2. Initialize the project's private history if it has none.
3. Save your native editors. Refresh Status and inspect changed registered files.
4. Choose Commit saved and enter a meaningful change description.

SDS uses integrated libgit2; an external Git executable is not required. A checkpoint includes registered saved files and registry metadata, not unsaved editor buffers or arbitrary unregistered project files. Missing registered files or a stale status preview block an incomplete checkpoint.

Inspect and recover

Select a file and a checkpoint. Compare shows a text diff for eligible text, or size/hash information for binary and large files. Restore a copy writes the historical bytes to a new filename inside the project; it does not overwrite the active file or automatically register the recovered copy. Verify history checks reachable records and hashes.

Link a PDF to its source checkpoint

1. Register the PDF and link its saved native sources.
2. Commit the PDF, native sources and metadata.
3. Select the PDF and Publish saved file.
4. In Review & versions, inspect Source checkpoint for the project, document, source hashes and commit.

For initialized Git projects, traced PDF publication requires matching checkpointed sources and metadata. A new source checkpoint may produce a new publication even if the page bytes are unchanged. The archived PDF embeds a JSON provenance attachment; the working PDF is not rewritten. Signed input PDFs are rejected for that transformation. Provenance establishes the recorded association, not proof that a particular generator produced the page content.

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Branches, reservations and merge conflicts

Work on a branch

1. Save and checkpoint the project.
2. Open Branches / merge, enter a lowercase branch name and Create branch.
3. Select it and Open workspace. Edit files opened from that branch's register.
4. Save and checkpoint the branch before requesting a merge.

Each branch has a separate working folder and owner. The main workspace remains the shared target. Traced publication is from main after the changes have been merged.

Reserve a file

Reserve file applies to a selected native asset across the project's branches. Release file is performed by its owner. Another account cannot checkpoint/merge a conflicting reserved asset. Reservations do not expire automatically and are not operating-system locks against external editors.

Preview and apply

1. Return to the target workspace and ensure saved files match its checkpoint.
2. Select the incoming branch and Preview merge.
3. For each conflict, inspect Base, Current and Incoming; choose Use current or Use incoming.
4. Close affected editors, then Apply merge. Reopen the documents to inspect the merged saved result.

TJS cell maps and compatible DJS structures can merge independent JSON property edits. Competing values need explicit decisions. Concurrent structural/reordering changes and unsupported/binary files use whole-value or whole-file choices. SDS does not geometrically merge DXF or solid models.

Registry additions/removals, renames/relinks and engineering metadata changes require separate reconciliation; this merge path expects matching registry structures. A changed branch head, reservation or permission invalidates the preview. Recover merge resumes a verified interrupted merge and preserves unknown external edits for inspection.

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Engineering items, BOM and dependency links

Build the engineering register

Open a project register and choose Items & links. New item / Save item creates an assembly, equipment, part, system or other item. Give it a unique project tag. The item is a managed information record; creating it does not generate a CAD shape.

Add a typed relationship

Relationship	Connects
contains	Parent item to child item, with positive quantity and unit.
drawing	Item to registered document.
model	Item to registered native file.
depends	A registered entity to another entity on which it depends.

Select the source and target and add the relationship. Stable identities preserve the link through managed file moves. Duplicate and invalid references are checked. Use Save quantity to change a contains relationship without replacing its identity.

Explore the graph

BOM shows immediate components and quantities. Dependencies shows outgoing drawing/model/dependency links; Where used shows direct incoming links. Follow link or double-click traverses the selected relationship. Open file opens the registered document or native asset in its viewer.

Quantities are per parent. This release does not automatically extract a model BOM or calculate rolled-up multilevel quantities. Save and checkpoint relationship changes for controlled publication. The impact report uses these relationships, so missing links mean missing propagation paths.

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Change requests and approved baselines

Propose a controlled change

1. Open Change requests from the Version Control ribbon.
2. Create a request with title, reason and affected entities. Choose the checkpoint or baseline from which the change starts.
3. Edit and save the native documents, then create a Git checkpoint.
4. Refresh and run Impact report. Inspect all differences, including changes outside the declared scope.
5. Submit checkpoint to fix the exact candidate and impact record for decision.

Approve the exact candidate

An Approver or Document Controller enters a decision note and approves or rejects. Administrator or Reviewer alone is not an approval role. A rejected request can be revised by an editor; previous decisions remain recorded. Approval remains bound to the submitted commit even if newer work exists.

Release and verify

An authorized approver/controller releases an approved request as a uniquely named baseline. Verify baseline checks its commit, manifest and approved impact. Compare to HEAD compares against the current clean checkpoint. Export report writes a new inspection report.

A baseline covers the full registered checkpoint, not only the request's selected scope. Impact follows source-to-document-to-item-to-assembly and reverse dependency relationships; it is not a physics calculation. Local change-control decisions are separate from Webio document review decisions. Exporting a baseline record does not import remote approval or replicate the workflow automatically.

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P2P synchronization and exFAT releases

Working project versus published disk

The project register and Git history remain the authoring source. An exFAT release is an immutable package of checkpointed files for transfer and browsing. The Disk sync tab, beside Tiny8086 and Logs, displays transfer state. The title-bar Sync command provides access to the configured peer workflow.

Create a release

1. Save all registered files and commit a clean main checkpoint.
2. Open Version Control > Peer publications.
3. Choose Create exFAT release and wait for packaging and verification.
4. Select the release and Verify release before distribution.
5. Use the publication view's configured peer settings to share or receive the matching release.

The package contains registered files, registry records and a manifest. It excludes unregistered files and private Git history. Existing verified identical releases are reused; a newer checkpoint has a different release identity. Recipients browse the corresponding files and load supported models from the published disk.

Integrity and practical limits

Block hashes and manifest pins detect corruption and support restart/recovery. Do not modify a verified release image in place. A peer release is not proof of review approval, nor a complete project backup. The current bounded release supports up to 128 MiB payload and a 256 MiB disk image, subject to record limits.

exFAT has no per-user or per-group file permissions. SDS view/edit policy is application access control; it cannot revoke an already copied file or protect it from external disk tools. Use the configured trusted network; this guide does not assume encrypted public-Internet peer deployment.

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Maintenance, backup and recovery

Check compatibility

Open a project register, then Version Control > Maintenance. Compatibility checks supported metadata, registered files, engineering relationships, workspaces, history, change evidence and baseline manifests. Inspect the result before migration or recovery.

Create and verify a complete backup

1. Save all editor buffers. A backup captures saved bytes, not unsaved text.
2. Enter an absolute backup folder outside the project; its parent must already exist.
3. Choose Create backup using a new destination. Wait for completion.
4. Verify the backup manifest before relying on it. Keep it on a suitable separate storage location.

A complete backup includes registered and unregistered files, empty folders, .sds metadata, Git history, branch workspaces, reservations, changes, baseline pins and publications. It can also include private peer configuration. It is not encrypted. A standalone PDF or exFAT release is not an equivalent backup.

Restore safely

Use the maintenance restore/migration controls to a new folder and inspect compatibility before opening the recovered project. Restore does not overwrite a live project. For one historical file, use Restore a copy in Git History. For a recorded interrupted move or merge, use its dedicated Recover command rather than manually deleting journal files.

Keep native files and the entire .sds directory together. Account, billing and chat stores are separate user data and need their own consistent backup procedure. Do not copy a live SQLite main file while ignoring its active WAL; use the supported service backup or stop the owning service first.

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Sign-in, users, groups and permissions

One SDS session

The small person icon in the title bar opens sign-in/account actions. After login it identifies the current user. My account, Change password and Sign out apply to that session. Native account management uses the existing SDS session; application settings and user billing settings are different stores.

Demonstration launchers may use explicitly configured automatic test sign-in. This is not production Super Admin provisioning. Each SDS process has its own session; explicit sign-out does not immediately sign the user back in.

Administrator user management

Only a system Administrator sees Users and Groups administration in the workspace. Right-click Users > New user, supply account details and set a temporary password in the account dialog. Select an account to edit Account and Roles; Groups shows membership. Passwords are not exposed in TJS cells.

Accounts can be enabled/disabled, assigned multiple roles and have temporary passwords reset. The last enabled system administrator cannot be disabled or demoted. Disabling an account, changing its roles or resetting its password revokes its active sessions.

Create access groups

1. Right-click Groups > New group.
2. Edit the name/description in Group and choose members in Members.
3. In Permissions grant View, Edit and Run scripts for the intended resource families.
4. After memberships and rights are ready, select Groups root and enable the Workspace permission policy.

Enabled groups combine grants; a missing grant denies access when enforcement is on. Edit and Run require View. Mutating macros need Edit and Run. Group changes take effect on subsequent operations; stale administrative edits require refresh. Groups control access and need not exist merely to create a billing user.

Roles versus licenses

A license enables a product option; a group grants workspace access; a workflow role authorizes a review action. Having one does not automatically grant the others. Approval still requires Approver or Document Controller. Showing every ribbon button does not grant privileges. The proposed remote Super Admin/pricing blockchain hierarchy is not a completed feature of the current native account interface.

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Subscriptions, prepaid activation and assigned seats

Open subscription management

Use the title-bar account button or Workspace > Subscription & Credit. Native tabs include Overview, Options, Activate, Invoices, Credit, Receipts and Profile. Administrators also see Users; subscription owners see Seats where configured. This management view remains separate from the compact SAMVEA Card pane.

Choose options and inspect entitlements

Overview shows the user's account/grants. Options provides the installed option catalogue, quantities and a quote. Read the displayed billing interval and validity dates; do not infer monthly billing from an option name. The installed catalogue and signed offer determine terms. A perpetual entitlement and a dated subscription have different expiry behavior.

Use the service's current quote for prices. This handbook intentionally has no price list that could become inconsistent with the account catalogue.

Activate prepaid purchases

1. Complete the supplier registration/certificate process for the same authenticated user.
2. Obtain the supplier's signed PDF receipt and its separately issued activation code after payment confirmation.
3. In Activate, import the receipt and enter the code.
4. Check accepted options, validity dates and receipt history. Reimporting the same receipt does not grant duplicate credit or seats.

The local prototype verifies signatures, user/card binding, sequence and validity. It has no automatic payment-provider webhook or email sending. A six-digit code alone is not a payment or a substitute for the signed receipt. A newer receipt can replace the complete option snapshot; review its contents.

License other users

An administrator/subscription owner uses Users and Seats to create users and assign/release available named licenses within the purchased capacity. A user can receive an assigned license without owning a personal prepaid account. Refresh after a change and test the recipient's session. Releasing a seat removes that assignment; it does not delete the user or edit group policy.

Receipts, invoices and credit

View the selected bill/receipt PDF in SDS, or save it with the adjacent export action. Profile changes follow the service's signed update process. Supplier-confirmed EUR credit is distinct from the card pane's isolated test-token balance. Check the label and source of every displayed balance.

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SAMVEA Card, contacts and test-token transfers

Compact card controls

The collapsible SAMVEA Card pane is between AI Chat and Tiny8086. Bottom tabs select SAMVEA Card, Transactions, Contacts and Transfer. The balance is in the pane header. Small header icons show the back, reveal/mask the number and refresh; the triangle collapses the pane. The card fits the available width without independent zoom or drag.

Card data is account-specific and persisted in SQLite in the current demonstration. Owner designation, card number, month/year expiry, rear verification digits and PIN data are variable fields rendered over the supplied artwork. The pane starts with the number masked and clears user data on sign-out. These identifiers are for the closed demonstration, not bank-card network credentials.

Send isolated test tokens

1. Select a permitted contact from the local directory.
2. Open Transfer, choose the recipient and enter the amount and description.
3. Inspect the recipient/amount before confirming. A successful transfer updates the test ledger and transaction history.
4. Refresh Transactions to inspect the recorded movement and balance.

This workflow uses isolated test tokens, as configured for the demonstration. It does not move euros, charge a payment card or submit a transaction to a public blockchain. It is separate from supplier-signed subscription credit.

History and monthly PDF

Transactions shows dates, descriptions/reasons, changes, resulting balances and references. Use paging to inspect older entries. Choose the statement month and View monthly PDF to display the supported statement in the PDF MDI view, then print/save through the PDF workflow. Where imported credit records have gaps, totals are qualified instead of pretending the history is complete.

Contacts expose permitted public names and account identifiers, not administrator-only private account information. Changing the card's rendered artwork does not change a transaction or entitlement.

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AI Chat, conversation history and controlled file access

Start and reopen conversations

Open View / Workspace > AI Chat. Chats shows a searchable conversation index; New starts a separate subject. Inside a conversation, the history icon opens a drawer without interrupting the current reply. Escape or its close control dismisses it. Titles can be renamed and older messages loaded on demand.

Conversations are saved in the current Windows user's SAMVEA/DesignStudio/chat.sqlite3 store. This is separate from the open engineering project. Previously sent attachment snapshots remain in that history. Reopening a conversation does not replay its file creation or other completed actions.

Choose the responder

Settings > AI Connection selects the local CPU model or configured remote provider. Apply AI only changes that configuration without changing unrelated settings. A local runtime and GGUF model must be present. With neither provider enabled, the scripted demonstration responder remains available. Provider keys stay in protected native settings.

The selected provider determines what leaves the computer. The interface previews and confirms remote sends. Current local-model behavior is bounded and may not include previous conversation turns as model context even though those turns remain visible in history.

Use answers and drafts

Copy beneath an answer copies the original response. Copy beside a prompt copies its text; Edit puts it into the composer as a new draft without altering history or sending it. Code blocks have Copy/Select and an explicit Open editor action. Review/Approve/Reject decisions against attached text are saved decisions, not automatic file writes or code execution.

Stop stops waiting; a request already accepted can still finish and be stored. Reopen history to inspect its final state. Task messages describe actual sending/saved/error states, not guaranteed correctness of generated code.

Optional project-file access

1. Use Files to choose a project folder and grant the displayed read/create capability for the session.
2. Attach only the intended text/source files and inspect the prepared prompt.
3. Send the request. File selection alone does not send it.
4. Check the native Created/Failed result for a requested new file. Open and review that file before compiling or executing it.

The current attachment path accepts up to three UTF-8 text files of 4 KiB each. The bounded creation path can create one new text/code file of up to 8 KiB in the granted folder; it cannot overwrite existing files, delete, scan arbitrary folders or execute a shell. Revoking Files access invalidates pending writes. Access resets on restart. The project

bookmark in the tree is navigation, not an automatic upload.

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Source editing, build tools and packages

Edit text and code

Open a source file with File > Open or the workspace. The editor supports normal selection, cut/copy/paste and saving. Text > Syntax offers Automatic, Plain text, Select language and Reload syntax definitions. Manual language selection changes highlighting, not the compiler or file format. Ctrl+wheel changes text zoom.

Open another view from the document tab to inspect the same buffer in another split; edits and saved paths stay synchronized while caret/scroll position remain independent. A macro draft uses the shared editor but belongs to its workbook; Source editor returns to the ordinary source document.

Build and inspect output

Developer > Build > Compile source (F7) compiles the active supported source using the configured toolchain. Rebuild, Clean Build Outputs, Build RV32 Toolchain and Validate compiler provide their specific build operations. Open Compiler Settings to inspect paths and configuration. Read Logs/Build output for the actual result; a highlighted editor is not proof that a toolchain is installed.

Application packages

Package commands build the current application package, install/remove it, list installed packages, synchronize the configured repository, clean package cache and publish to Webio. Inspect the selected package and target before installation or publication. These commands operate on the installed packaging environment; they are not a general public app-store purchase system.

Markdown, HTML and stock workspaces

Supported Markdown/text documents can be edited and previewed. Open HTML and Open address use the desktop HTML view with Back, Forward, Refresh and Stop. The legacy Phone repair workspace provides Dashboard, Stock, Evaluate/Edit/Ticket and equipment selection for its installed example data. It remains separate from engineering models and SDS subscription billing.

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PCB, schematic and electronics inspection

Open a board project

Use File > Open KiCad schematic / PCB, Open KiCad project folder, or the installed iPhone 5 example. The project browser can refresh the folder, add a KiCad library folder and browse the prepared Altium-to-KiCad collection. A converted collection is not a direct importer for arbitrary Altium originals.

Board and schematic views

PCB > Board and Schematic activate their viewers. Fit board, Front, Back, All layers and 2D / 3D select presentation. The PCB bitmap view has its own Fit, Zoom and Clear selection tools. Signals opens signal search and contact details; select the intended view before using these controls.

Checks and exchange

Run ERC, Refill copper and Export DXF use the installed KiCad integration/tooling and compatible active project. Inspect their reports and output rather than assuming success from a button press. The current inspection workflows do not imply a complete schematic capture or PCB routing replacement.

DXF export is a drawing exchange representation. 3D board display and imported component assets depend on the available project libraries. Missing models/libraries can affect the visual result without deleting the original board data.

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ASIC, FPGA, waveforms and simulation

FPGA workflow

1. In Simulation / Animation > Simulation, open FPGA workspace and Open Verilog.
2. Compile with the installed configuration and inspect the log.
3. Run Place / route for the supported ICE40 flow when its tools/artifacts are available.
4. Reload artifacts if needed and Fit floorplan.
5. Reset, Step, Run and Pause control the available simulation; inspect signal waveforms and time zoom.

F5 invokes the FPGA place/route command, F6 steps and Space runs in the applicable FPGA context. Avoid using these shortcuts while editing unrelated text. The simulation pane is distinct from piping/equipment input data; there is no general mechanical physics solver behind it.

ARM1 transistor layout

Developer > ASIC > ARM1 silicon opens the installed transistor/layout demonstration. Reset, Step, Run and Stop control its simulation. Signals > Waveforms and time zoom inspect the available signals. FPGA workspace switches to the FPGA workflow.

Map pan and Map zoom area navigate the large layout; fit/zoom controls belong to the active specialized view. This ARM1 demonstration does not constitute a general ASIC synthesis, verification or foundry sign-off suite.

Resources and dependencies

Devices / Resources and hardware views expose the installed emulator/integration environment. Tool availability depends on configured libraries and generated artifacts. Preserve source and inspect logs when a build or simulation reports unsupported input.

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PSD layers, animation and variable artwork

Inspect PSD content

Simulation / Animation > Animation > Open PSD loads the source artwork. Fit, Actual size and zoom change the view. Layers exposes decoded layer information where supported. Previous screen, Next screen and Atlas navigate multi-screen artwork. A flattened image may look correct while individual editable layers are unavailable.

Layer rendering and edits

The PSD menus provide flattened-reference, decoded-layer, software recomposition and live OpenGL render paths. Supported DOM edits select layers, change visibility/opacity/position and apply text overrides. Save DOM edit state preserves those overrides separately; do not assume that this rewrites every original Photoshop structure.

The installed bridge can export/import supported Photoshop CS4 bridge edits. Text editing depends on decoded text layers and fonts; rasterized text is pixels. High-bit-depth or unsupported PSD features may require a prepared compatible asset. Keep the original source PSD.

Play an animation

1. Open animation JSON or Load demo and inspect the matching artwork.
2. Use Timeline and Play/Pause/Rewind.
3. Stop restores the animation's supported initial state; Reload JSON rereads saved animation data.

Advanced Script menus explicitly run supported JavaScript/ActionScript-like demonstrations and persistent frame callbacks. Loading artwork alone is not consent to execute arbitrary scripts. SAMVEA Card uses prepared variable artwork inside its own pane; its compact interface deliberately omits the layer checklist.

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Schedules, task hierarchy and Gantt views

Create a schedule

Choose Planning > New schedule or Open task table. The task grid and Gantt are linked: selecting a chart row selects its task. Columns include Task Name, Duration, Start, Finish, Predecessors and Resource Names. Enter dates in YYYY-MM-DD form.

1. Enter leaf task names and start/finish dates.
2. Double-click a date field to use the native date control. Enter accepts; Escape cancels.
3. Move up/down or drag row numbers to reorder tasks and their descendants.
4. Indent/Outdent establishes hierarchy. The outline marker collapses/expands children; parent dates derive from their leaves.
5. Save schedule writes the UTF-8 task table.

Read the timeline

Zoom in/out changes day width; Project start moves to the initial dates. A zero-duration same-day task is a milestone. Predecessor row references show supported finish-to-start arrows. Invalid/reversed dates or malformed predecessor entries show an error rather than a fabricated bar.

Copy/Paste exchanges tabular values; Undo reverses supported edits. The file format has six visible columns and optional outline level, with up to 200 tasks. Duration remains a label. There is no automatic work-calendar scheduling, critical-path engine, resource leveling or binary MPP importer in this integration.

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Tiny8086, other emulators and Webio

Use DOS/Tiny8086

Home > DOS terminal or Emulator > Focus Terminal reveals the right-hand console. Emulator > Start, Stop and Reset control the guest. The pane has compact/full-text presentation and a collapse triangle; View > Tiny8086 Full Text View provides the dedicated view. Click/focus the terminal to send keyboard input to the guest.

BIOS Setup restarts into configuration; the optional five-second countdown can be toggled. Disk images and boot settings are in Emulator settings. A guest disk in use by another process must not be opened for competing writes. Stop/reset affects the running guest, so save its work first.

Other installed demonstration runtimes

Run RV32 Desktop VM, Run PSD RV32 Render, PCSX-R and its Tetris test are specialized development/demo commands. F8 and F9 invoke the configured PSD RV32 and desktop VM actions. The integrated display/log views expose their output. Hardware and framebuffer demonstrations are not promises that arbitrary operating systems or commercial applications will run.

Start and inspect Webio

Developper > Server and the Server menu provide Start, Pause/Resume, Stop, Restart and Status. Settings define address, port and roots. Check the status/log before retrying a service. The assistant, account service, review portal and peer service can use different configured endpoints; starting one does not necessarily start all others.

Local help is independent of the web service. AI Chat can show its fallback page when the assistant endpoint is stopped. Restarting the web page should not erase the SQLite conversation store. Use the existing configuration; do not expose private data roots as public site content.

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Help navigation, editable guides and PDF printing

Find a topic

F1 opens user help for the current task. Home > Documentation and Help > SDS Documentation open the handbook. Select a topic in the summary tree, use Search, or follow internal links. All topics clears the search filter. Back/Forward also accept Alt+Left/Right; Ctrl+F focuses the search box.

F2 opens the separate Developer Guide. It has its own contents, history and PDF scope. In TJS, Shift+F2 remains cell editing. Help text is selectable; Ctrl+A/C copies it.

Publish help

The native help toolbar has Preview PDF and Export PDF with current-topic/whole-guide scope. Its print edition includes the SAMVEA splash cover, contents and page banners. Check the scope before printing. The native help PDF path needs its configured Windows PDF printer. The separate DJS edition uses the DJS PDF renderer.

Edit your guide copy

Open SAMVEA-SDS-Complete-User-Guide.djs from the installed Guides folder. Use Edit text, Save and Export HTML as described in the DJS chapter. Keep a separate copy for company procedures. Saving this DJS does not rewrite F1 help. Source help updates are distributed as local HTML content; Reload rereads the current topic and reopening the guide reloads its contents index.

The native help renderer supports a deliberately limited HTML/JavaScript profile for local documentation. It is not a full web browser. The interactive example demonstrates bounded page behavior; it is not a project model calculation.

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Troubleshooting and keyboard reference

Common situations

Symptom	Action
AI Chat or DOS disappeared	Restore AI Chat from View / Workspace; use Home > DOS terminal. Expand the right column and pane triangles. Start Tiny8086 only if stopped.
Command reports missing prerequisites	Activate the correct editable document, finish another operation and select its required object. Check account option, group rights and planned-command status.
Combined table does not open	Use Ctrl+click on the directory, not the individual file. Verify uniform record schemas or the piping root manifest.
Piping view does not update	Finish the cell edit. Correct validation errors and check that the route and workbook refer to the same source directory.
Numeric property is rejected	Use a finite number, a decimal point and the specified units. Do not paste a display unit into a numeric-only field.
Vector preview is missing	Select the property TJS with a supported drawing recipe and expand its vector pane. A plain workbook may have no drawing.
PDF preview looks old	Activate the native source, complete edits and regenerate Preview PDF. Confirm the current drawing layout/workbook before exporting.
DJS text cannot be edited	Choose Edit text and check edit rights. Only existing supported text runs are editable; images and structural layout are different data.
Save reports an external change	Preserve the draft, inspect/reload the newer saved copy, and reconcile. Do not repeatedly overwrite a stale document.
Review or account view is unavailable	Check the configured local service, session and option access. A desktop login and an unavailable server are different issues.
Commit or publication is rejected	Save registered files, refresh status, inspect missing files/reservations, then checkpoint the correct workspace. Publish traced PDFs from main with linked sources.
Peer release fails verification	Keep the original immutable release. Inspect the manifest/pin and transfer log; use supported retry/recovery instead of editing the image.

Keyboard and mouse reference

Input	Context and effect
Ctrl+O / Ctrl+S	Open / save the active supported document.
Ctrl+C / Ctrl+V / Ctrl+A	Copy, paste and select all in the focused editor.

Ctrl+Z	Undo in the active editor/workflow where supported.
F1 / F2	Task user help / independent developer guide.
Shift+F2	Edit the selected TJS cell.
Ctrl+click directory	Compile supported homogeneous records or a piping database into a temporary MDI workbook.
Shift+click basic-element directory	Build the linked TJS piping route preview.
Ctrl+wheel	Zoom in the supported spreadsheet/text view.
Ctrl held with property brush	Continue applying supported beam-section copies until release.
F7 / F8 / F9	Configured source compilation / PSD RV32 render / RV32 desktop VM.
F5 / F6 / Space	Context-dependent FPGA place/route, step and run; verify focus.
Alt+Left / Alt+Right	Back/Forward in native help.

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Command reference: Workspace

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Workspace

Open workflow instructions

Group / command	Availability or purpose
Files / New	Reserved launcher
Files / Open source	Context/module dependent
Files / Save	Context/module dependent
Files / Save as	Context/module dependent
Files / New workbook	Context/module dependent
Files / New schedule	Context/module dependent
Files / Open schedule	Context/module dependent
Files / Document register	Context/module dependent
Files / PDF	Context/module dependent
Files / KiCad	Context/module dependent
Files / 3D model	Context/module dependent
Files / PCF piping	Context/module dependent
Files / PSD animation	Context/module dependent
Files / Verilog	Context/module dependent
Files / iPhone 5 example	Context/module dependent
Files / Project folder	Context/module dependent
Files / KiCad libraries	Context/module dependent
Views / CAD	Context/module dependent
Views / ARM1 silicon	Context/module dependent
Views / PDF documents	Context/module dependent
Views / PSD animator	Context/module dependent
Views / Documentation	Context/module dependent
Workspace / Phone repair	Context/module dependent
Workspace / CAD / PCB	Context/module dependent

Workspace / ASIC / FPGA	Context/module dependent
Workspace / Debug	Context/module dependent
Workspace / Settings	Context/module dependent
Workspace / DOS terminal	Context/module dependent
Ribbon / Collapse ribbon	Context/module dependent
Ribbon / Follow active view	Context/module dependent
Ribbon / Show all task tabs	Context/module dependent
Ribbon / Visual Studio Dark	Context/module dependent
Ribbon / Reset ribbon	Context/module dependent
Ribbon / Classic toolbars	Context/module dependent
Ribbon / Move	Context/module dependent
Ribbon / Rotate	Context/module dependent
Ribbon / Delete	Context/module dependent
Ribbon / Color	Context/module dependent
Ribbon / Transparency	Context/module dependent
Ribbon / Surface	Context/module dependent
Ribbon / All transparency	Context/module dependent
Ribbon / Reset selected	Context/module dependent

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Command reference: CAD

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

CAD

Open workflow instructions

Group / command	Availability or purpose
Sketch / extrusion / New sketch	Context/module dependent
Sketch / extrusion / Import DXF	Context/module dependent
Sketch / extrusion / Extrude	Context/module dependent
Sketch / extrusion / Update sketch	Context/module dependent
Boolean solids / Union	Context/module dependent
Boolean solids / Subtraction	Context/module dependent
Boolean solids / Intersection	Context/module dependent
3D Primitives / Cylinder	Context/module dependent
3D Primitives / Parallelepiped	Context/module dependent
3D Primitives / Cone	Context/module dependent
3D Primitives / Sphere	Context/module dependent
3D Primitives / Torus	Context/module dependent
3D Primitives / Pyramid	Context/module dependent
3D Primitives / Truncated cone	Context/module dependent
3D Primitives / Truncated pyramid	Context/module dependent
Drawing files / New DXF	Context/module dependent
Drawing files / New DGN	Context/module dependent
Draw / Line	Context/module dependent
Draw / Circle	Context/module dependent
Draw / Rectangle	Context/module dependent
Modify / Move	Context/module dependent
Modify / Rotate	Context/module dependent
Modify / Scale	Context/module dependent
Modify / Mirror	Context/module dependent

Modify / Trim	Context/module dependent
Modify / Extend	Context/module dependent
Drawing edits / Undo edit	Context/module dependent
Drawing edits / Redo edit	Context/module dependent
Drawing edits / Save CAD Copy	Context/module dependent
Layers / Layer Manager	Context/module dependent
Layers / Round Coordinates	Context/module dependent
Layers / Pattern Review	Context/module dependent
Layers / Recognize Symbols	Context/module dependent
P&ID / P&ID project	Context/module dependent
P&ID / New project	Context/module dependent
P&ID / Open project	Context/module dependent
P&ID / Reload / rebuild cache	Context/module dependent
P&ID / Components table	Context/module dependent
P&ID / Unplace component	Context/module dependent
P&ID / Duplicate component	Context/module dependent
P&ID / Delete component	Context/module dependent
P&ID / Close project	Context/module dependent
P&ID / P&ID sheet	Context/module dependent
P&ID / Place component	Context/module dependent
P&ID / Undo P&ID	Context/module dependent
P&ID / Redo P&ID	Context/module dependent
Navigate / Fit drawing	Context/module dependent
Navigate / Zoom in	Context/module dependent
Navigate / Zoom out	Context/module dependent
Navigate / Map pan	Context/module dependent
Navigate / Map zoom area	Context/module dependent
Model / Model viewer	Context/module dependent
Model / Open model	Context/module dependent
Model / Fit model	Context/module dependent
Model / X section	Context/module dependent
Model / Y section	Context/module dependent
Model / Z section	Context/module dependent
Model / Flip section	Context/module dependent
Model / Reset sections	Context/module dependent
Model / Section options	Context/module dependent

Scripted 3D / Open script	Context/module dependent
Scripted 3D / Edit script	Context/module dependent
Scripted 3D / Run script	Context/module dependent
Scripted 3D / Cancel build	Context/module dependent
CAD project / Save project	Context/module dependent
CAD project / Save as	Context/module dependent
CAD project / Undo	Context/module dependent
CAD project / Redo	Context/module dependent
FBX animation / Play	Context/module dependent
FBX animation / Pause	Context/module dependent
FBX animation / Rewind	Context/module dependent
FBX animation / Clips / timeline	Context/module dependent
FBX animation / Scene script	Context/module dependent
Piping / PCF / Import PCF	Context/module dependent
Piping / PCF / Open SQLite	Context/module dependent
Piping / PCF / Save piping	Context/module dependent
Piping / PCF / Save piping as	Context/module dependent
Piping / PCF / Export PCF	Context/module dependent
Piping / PCF / Add pump	Context/module dependent
Piping / PCF / Add tank	Context/module dependent
Piping / PCF / Live HTML viewer	Context/module dependent
CAD exchange / Export CAD files	Context/module dependent
Measure 3D / Distance	Context/module dependent
Measure 3D / Angle	Context/module dependent
Measure 3D / Vertices	Context/module dependent
Measure 3D / Edges	Context/module dependent
Measure 3D / Faces	Context/module dependent
Measure 3D / Clear measure	Context/module dependent
Measure 3D / Navigate	Context/module dependent
3D Modify / Delete	Supported editable models
Appearance / Color	Supported editable models
Appearance / Transparency	Supported editable models
Appearance / Surface	Supported editable models
Appearance / All transparency	Supported editable models
Appearance / Reset selected	Supported editable models

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Command reference: PCB

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

PCB

Open workflow instructions

Group / command	Availability or purpose
Documents / Board	Context/module dependent
Documents / Schematic	Context/module dependent
PCB bitmap / PCB view	Context/module dependent
PCB bitmap / Fit PCB	Context/module dependent
PCB bitmap / Zoom in	Context/module dependent
PCB bitmap / Zoom out	Context/module dependent
PCB bitmap / Clear selection	Context/module dependent
PCB bitmap / Signals	Context/module dependent
PCB / Open KiCad	Context/module dependent
PCB / Fit board	Context/module dependent
PCB / Front	Context/module dependent
PCB / Back	Context/module dependent
PCB / All layers	Context/module dependent
PCB / 2D / 3D	Context/module dependent
Inspect / export / Run ERC	Context/module dependent
Inspect / export / Refill copper	Context/module dependent
Inspect / export / Export DXF	Context/module dependent

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Command reference: Documents

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Documents

Open workflow instructions

Group / command	Availability or purpose
PDF publication / Preview PDF	Context/module dependent
PDF publication / Export PDF	Context/module dependent
PDF publication / A4 / A3 page setup	Context/module dependent
PDF files / Open PDF	Context/module dependent
PDF files / Library folder	Context/module dependent
PDF pages / Previous page	Context/module dependent
PDF pages / Next page	Context/module dependent
PDF pages / Multiple pages	Context/module dependent
PDF pages / Continuous scroll	Context/module dependent
PDF view / Fit width	Context/module dependent
PDF view / Zoom out	Context/module dependent
PDF view / Zoom in	Context/module dependent
PDF view / Rotate	Context/module dependent
PDF annotations / Select / move	Context/module dependent
PDF annotations / Line	Context/module dependent
PDF annotations / Rectangle	Context/module dependent
PDF annotations / Undo	Context/module dependent
PDF annotations / Redo	Context/module dependent
PDF annotations / Delete	Context/module dependent
PDF annotations / Export page DXF	Context/module dependent
PDF annotations / Annotation CAD	Context/module dependent
Convert / PDF2DXF	Context/module dependent
Convert / OCR / tracing	Context/module dependent
Convert / OCR rectangle	Context/module dependent

Convert / Review text	Context/module dependent
Convert / Edit text	Context/module dependent
Convert / Cancel OCR	Context/module dependent
Convert / Raster lines	Context/module dependent
Convert / Lines rectangle	Context/module dependent
HTML / Open HTML	Context/module dependent
HTML / Open address	Context/module dependent
HTML / Chat IA	Context/module dependent
HTML / Desktop HTML	Context/module dependent
HTML / Load desktop	Context/module dependent
HTML / Back	Context/module dependent
HTML / Forward	Context/module dependent
HTML / Refresh	Context/module dependent
HTML / Stop loading	Context/module dependent
HTML / Welcome page	Context/module dependent

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Command reference: Animation

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Animation

Open workflow instructions

Group / command	Availability or purpose
PSD / Open PSD	Context/module dependent
PSD / Open animation	Context/module dependent
PSD / Reload JSON	Context/module dependent
PSD / Load demo	Context/module dependent
Playback / Rewind	Context/module dependent
Playback / Play	Context/module dependent
Playback / Pause	Context/module dependent
Playback / Stop	Context/module dependent
Playback / Timeline	Context/module dependent
Screens / Previous screen	Context/module dependent
Screens / Next screen	Context/module dependent
Screens / Atlas	Context/module dependent
View / edit / Fit	Context/module dependent
View / edit / Actual size	Context/module dependent
View / edit / Zoom in	Context/module dependent
View / edit / Zoom out	Context/module dependent
View / edit / Layers	Context/module dependent

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Command reference: Simulation

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Simulation

Open workflow instructions

Group / command	Availability or purpose
FPGA / Open Verilog	Context/module dependent
FPGA / Compile	Context/module dependent
FPGA / Place / route	Context/module dependent
Simulation / Reset	Context/module dependent
Simulation / Step	Context/module dependent
Simulation / Run	Context/module dependent
Simulation / Pause	Context/module dependent
Floorplan / waveforms / Fit floorplan	Context/module dependent
Floorplan / waveforms / Zoom in	Context/module dependent
Floorplan / waveforms / Zoom out	Context/module dependent
Floorplan / waveforms / Time zoom in	Context/module dependent
Floorplan / waveforms / Time zoom out	Context/module dependent
Navigation / FPGA	Context/module dependent
Navigation / ARM1 silicon	Context/module dependent
Navigation / Map pan	Context/module dependent
Navigation / Map zoom area	Context/module dependent

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Command reference: Build

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Build

Open workflow instructions

Group / command	Availability or purpose
Compiler / Compile source	Context/module dependent
Compiler / Rebuild	Context/module dependent
Compiler / Validate compiler	Context/module dependent
Packages / Build package	Context/module dependent
Packages / Install	Context/module dependent
Packages / Installed packages	Context/module dependent
Packages / Publish Webio	Context/module dependent

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Command reference: Developper

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Developper

Open workflow instructions

Group / command	Availability or purpose
Server / Start server	Context/module dependent
Server / Pause server	Context/module dependent
Server / Stop server	Context/module dependent
Server / Status	Context/module dependent
Spreadsheet / New workbook	Context/module dependent
Spreadsheet / New sheet	Context/module dependent
Spreadsheet / Save workbook	Context/module dependent
Spreadsheet / Undo	Context/module dependent
JavaScript macros / New macro	Context/module dependent
JavaScript macros / Edit macro	Context/module dependent
JavaScript macros / Run macro	Context/module dependent
JavaScript macros / Store macro	Context/module dependent
Spreadsheet zoom / Zoom out	Context/module dependent
Spreadsheet zoom / Zoom in	Context/module dependent
Spreadsheet zoom / 100%	Context/module dependent
Editor / Source editor	Context/module dependent
Editor / Syntax language	Context/module dependent
Editor / Reload syntax	Context/module dependent

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Command reference: Planning

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Planning

Open workflow instructions

Group / command	Availability or purpose
Schedule / New schedule	Context/module dependent
Schedule / Open task table	Context/module dependent
Schedule / Save schedule	Context/module dependent
Tasks / Move up	Context/module dependent
Tasks / Move down	Context/module dependent
Tasks / Indent	Context/module dependent
Tasks / Outdent	Context/module dependent
Edit / Undo	Context/module dependent
Edit / Copy	Context/module dependent
Edit / Paste	Context/module dependent
Timeline / Zoom in	Context/module dependent
Timeline / Zoom out	Context/module dependent
Timeline / Project start	Context/module dependent

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Command reference: View / Workspace

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

View / Workspace

Open workflow instructions

Group / command	Availability or purpose
Panes / Workspace tree	Context/module dependent
Panes / Properties	Context/module dependent
Panes / Logs / DOS	Context/module dependent
Panes / AI Chat	Context/module dependent
Documents / Text editor	Context/module dependent
Documents / CAD	Context/module dependent
Documents / PDF documents	Context/module dependent
Documents / FPGA	Context/module dependent
Documents / ARM1 silicon	Context/module dependent
Documents / Animation	Context/module dependent
Layout / Collapse ribbon	Context/module dependent
Layout / Settings	Context/module dependent
Layout / DOS terminal	Context/module dependent

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Command reference: Piping

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Piping

Open workflow instructions

Group / command	Availability or purpose
Equipment / Create nozzles	Context/module dependent
Mouse route / Route from nozzle	Context/module dependent
Mouse route / Finish route	Context/module dependent
Mouse route / Cancel route	Context/module dependent
Fittings / Catalogue elbow	Context/module dependent
Fittings / Dimensioned bends	Context/module dependent
Branches / New open branch	Context/module dependent
Branches / Delete selected	Context/module dependent
3D Modify / Move	Supported editable models
3D Modify / Rotate	Supported editable models
3D Modify / Delete	Supported editable models
Appearance / Color	Supported editable models
Appearance / Transparency	Supported editable models
Appearance / Surface	Supported editable models
Appearance / All transparency	Supported editable models
Appearance / Reset selected	Supported editable models
Elements / Continue	Go to the next element; create a new element if there is no next element.
Elements / Duplicate	Copy the selected element before or after the current element.
Elements / Insert	Insert a straight pipe before or after the selected straight element, using exact delta coordinates.
Elements / Break	Split an element at a chosen node or into equal-length elements.

Navigation / Find	Find an element containing one or both specified nodes, with optional zoom to the result.
Navigation / Find Node	Find an element by its From node, To node, or both; highlight it and zoom to its location.
Navigation / List	Open the temporary combined element table. Each edited value is saved to its original TJS record.
Navigation / Next Element	Go to the next element.
Navigation / Previous Element	Go to the previous element.
Navigation / First Element	Go to the first element.
Navigation / Last Element	Go to the last element.
Nodes / Global	Set absolute coordinates for the first node of a disconnected piping segment.
Nodes / Close Loop	Close a loop by filling the delta coordinates between two nodes.
Nodes / Increment	Set the automatic node-number increment.
Nodes / Distance	Measure the distance from the origin to a node, or between two nodes.
Nodes / Review Current Units	Review the current input and report units without converting existing values.
Components / Valve	Planned
Components / Expansion Joints	Open or create the element's linked INPUT_EXPJT record to edit expansion-joint input data. Assembly generation is not yet available.
Components / Hanger Design Control Data	Open or create the selected element's INPUT_HANGERS record. Automatic hanger sizing and system-wide criteria are not yet available.
Loads / Edit Static Load Case	Planned
Loads / Edit Dynamic Load Case	Planned
Loads / Forces	Open or create linked nodal-force and moment input records in INPUT_FORCMNT.
Loads / Uniform Loads	Open or create linked uniform-load input records in INPUT_UNIFORM.
Loads / Wind/Wave	Open or create linked wind/wave input records and coefficients in INPUT_WIND.
History / Undo	Undo the last supported piping-model edit.
History / Redo	Reapply the last undone piping-model edit. A new edit clears the redo history.
SifReview / Review SIFs at Intersection Nodes	Open or create the linked INPUT_SIFTEES record to edit SIF input data. Stress calculation is not yet available.
SifReview / Review SIFs at Bend Nodes	Open the selected elbow's linked INPUT_BENDS record for bend and SIF input data.
Display / Center Line View	Show pipe centre lines, elbow arcs and tee branches, with selectable element and node labels.
Display / Shaded View	Display pipe surfaces as shaded solids.
Display / Silhouette	Planned
Display / Hidden Line Wire Frame	Planned
Display / Wire Frame	Show the pipe mesh as wireframe.

Display / Translucent	Show translucent pipe surfaces to reveal overlapping and internal elements.
View / Right	View the piping model from the right.
View / ISO View	Show an isometric view of the piping model.
View / Perspective	Use perspective projection, with distant objects appearing smaller.
View / Orthographic	Use parallel projection without perspective foreshortening.
View / Orbit	Rotate the model interactively around the current rotation centre.
View / Pan	Move the view horizontally or vertically without rotating the model.
Selection / Select Element	Select an individual piping element and inspect its information.
Selection / Select Group	Select a group of piping elements and inspect their information.
Annotations / Node Numbers	Display node-number labels on the piping model.
Annotations / Show Length	Display element lengths on the model to check the input geometry.
ColourBy / Diameters	Colour pipe elements by diameter and show a legend to identify size changes.
ColourBy / Insulation	Colour pipe elements by insulation data and show a legend.
ColourBy / Wall Thickness	Colour pipe elements by wall thickness and show a legend.
ColourBy / Materials	Colour pipe elements by material and show a legend.
ColourBy / Temperatures	Colour pipe elements by the selected operating-temperature case and show a legend.
ColourBy / Pressure	Colour pipe elements by the selected operating or hydrotest pressure and show a legend.
ColourBy / Corrosion Allowance	Colour pipe elements by corrosion allowance and show a legend.
ColourBy / Pipe Density	Colour pipe elements by pipe-material density and show a legend.
ColourBy / Fluid Density	Colour pipe elements by fluid density and show a legend.
ColourBy / Insulation Density	Colour pipe elements by insulation density and show a legend.

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Command reference: Equipment

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Equipment

Open workflow instructions

Group / command	Availability or purpose
Create / Activate equipment	Context/module dependent
Create / Equipment library	Context/module dependent
Create / New pump	Context/module dependent
Create / New tank	Context/module dependent
Create / New heat exchanger	Context/module dependent
Orientation / Vertical	Context/module dependent
Orientation / Horizontal	Context/module dependent
Orientation / Tube bundle	Context/module dependent
Edit / TJS properties	Context/module dependent
Diagram / Place selected	Context/module dependent
Diagram / Unplace selected	Context/module dependent
Diagram / Save diagram	Context/module dependent
History / Undo equipment	Context/module dependent
History / Redo equipment	Context/module dependent
3D Modify / Move	Supported editable models
3D Modify / Rotate	Supported editable models
3D Modify / Delete	Supported editable models
Appearance / Color	Supported editable models

Appearance / Transparency	Supported editable models
Appearance / Surface	Supported editable models
Appearance / All transparency	Supported editable models
Appearance / Reset selected	Supported editable models
0 / Cylinder	Cylindrical vessel shell section.
0 / Ellipse	Elliptical vessel head.
0 / Torisphere	Torispherical head with crown and knuckle radii.
0 / Sphere	Spherical vessel head or shell.
0 / Cone	Conical head or transition section.
0 / Welded Flat Head	Flat closure welded to a vessel section.
0 / ANSI/Bolted Flange	Bolted body flange joining vessel sections.
0 / Skirt	Vertical vessel skirt and base ring.
1 / Stiffening Ring	Circumferential stiffener on a cylindrical section.
1 / Nozzle	Add a section-mounted nozzle to a tank or heat exchanger. Edit host, station, azimuth and dimensions in its Nozzles TJS tab. Pumps retain their predefined connection nozzles.
1 / Platform	Platform attached to the selected vessel section.
1 / Packing	Packing within the selected section.
1 / Tray	Repeated internal trays in a vertical cylindrical section.
1 / Tubesheet	Tube-support plate in the selected section.
1 / Generic Clip	Local attachment clip on the selected section.
2 / Saddle	Saddle support for a horizontal cylindrical vessel.
2 / Lug	Support lug on a vertical vessel section.
2 / Legs	Leg supports for a vertical vessel.
2 / Lifting Lug Data	Lifting attachment and its engineering data.
3 / Weight	Additional piping or miscellaneous mass on a section.
3 / Force and Moment	External force and moment applied to a section.
3 / Liquid	Operating liquid level and density data.
3 / Insulation	External insulation thickness and density data.
3 / Lining	Internal lining thickness and density data.
3 / Halfpipe Jacket	Halfpipe jacket attached to a cylindrical section.
3 / ASME Appendix 9 Jacket	Vessel jacket data. No ASME calculation is implemented.
3 / API-579	

Flaw/Damage Input/Analysis	Flaw and damage assessment data. No API-579 analysis is implemented.
Equipment / Create / Electrical	Reserved: Create a catalogue electrical component or connection point on equipment.

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Command reference: STEEL FRAME

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

STEEL FRAME

Open workflow instructions

Group / command	Availability or purpose
3D Modify / Move	Supported editable models
3D Modify / Rotate	Supported editable models
3D Modify / Delete	Supported editable models
Appearance / Color	Supported editable models
Appearance / Transparency	Supported editable models
Appearance / Surface	Supported editable models
Appearance / All transparency	Supported editable models
Appearance / Reset selected	Supported editable models
Sections / Create / Beam	Reserved: Place a beam between two points using a library profile.
Sections / Create / Column	Reserved: Place a vertical structural member using a library profile.
Sections / Create / Brace	Reserved: Connect structural members with a diagonal brace.
Sections / Create / Curved section	Reserved: Sweep a structural profile along a curved path.
Sections / Specification / Profile catalogue	Reserved: Select the profile family and size for new structural members.
Sections / Connections / Joint	Reserved: Add a connection between structural members.
Sections / Connections / Baseplate	Reserved: Add a column baseplate and anchor pattern.
Sections / Connections / Stiffener	Reserved: Add a stiffening plate to a structural member.
Sections / Modify / Trim / extend	Reserved: Trim or extend a member to a selected reference.
Sections / Modify / Mitre	Reserved: Create matching angled ends on connected members.
Sections / Modify / Split	Reserved: Split a structural member at a selected position.
Sections / Properties / TJS properties	Reserved: Edit the selected structural component in the workspace inspector.
Plates / Create / Rectangle	Reserved: Create a rectangular plate on a selected plane.
Plates / Create / Polygon	Reserved: Create a plate from a closed polygon.
Plates / Create / Bounded plate	Reserved: Create a plate bounded by selected structural members.

Plates / Create / Grating	Reserved: Create a grating panel using a catalogue specification.
Plates / Details / Opening	Reserved: Add an opening to a plate.
Plates / Details / Notch	Reserved: Notch a plate around an intersecting member.
Plates / Modify / Thickness	Reserved: Change the selected plate thickness.
Plates / Modify / Split plate	Reserved: Divide a plate along a selected cutting reference.
Access / Create / Stair flight	Reserved: Create a stair flight from rise, run and width.
Access / Create / Step ladder	Reserved: Create an inclined access ladder.
Access / Create / Rung ladder	Reserved: Create a vertical rung ladder.
Access / Access / Handrail	Reserved: Create a handrail along a selected path.
Access / Access / Gate	Reserved: Insert an access gate in a handrail.
Access / Access / Landing / platform	Reserved: Create a structural landing or access platform.
Access / Specification / Standards	Reserved: Select an access-system template and dimensional defaults.
WallsFloors / Walls / Straight wall	Reserved: Create a wall along a straight baseline.
WallsFloors / Walls / Curved wall	Reserved: Create a wall along a curved baseline.
WallsFloors / Floors / Floor	Reserved: Create a floor from a closed boundary.
WallsFloors / Floors / Slab	Reserved: Create a structural slab on a selected plane.

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Command reference: Electrical

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Electrical

Open workflow instructions

Group / command	Availability or purpose
Cabling / Create / Cableway	Reserved: Create a cableway routing network.
Cabling / Create / Branch	Reserved: Add a branch to a cableway.
Cabling / Create / Cable	Reserved: Create a cable with equipment endpoints and a specification.
Cabling / Create / Bundle	Reserved: Group cables into a routing bundle.
Cabling / Equipment / Junction box	Reserved: Place a junction box with electrical connection points.
Cabling / Equipment / Electrical connection	Reserved: Add a cable connection point to equipment.
Cabling / Routing / Route cable	Reserved: Route a cable through a selected cableway path.
Cabling / Routing / Auto route	Reserved: Find a cableway route between cable endpoints.
Cabling / Connections / Connect	Reserved: Connect a cable to an electrical endpoint.
Cabling / Connections / Disconnect	Reserved: Disconnect a cable endpoint.
Cabling / Check / report / Fill level	Reserved: Inspect cableway occupancy and available capacity.
Cabling / Check / report / Cable list	Reserved: List cable endpoints, specifications and routed lengths.
Cabling / Properties / TJS properties	Reserved: Edit cable data in the workspace inspector.
CableTray / Components / Straight tray	Reserved: Place a straight cable-tray component.
CableTray / Components / Bend	Reserved: Place a cable-tray bend.
CableTray / Components / Tee	Reserved: Place a three-way cable-tray junction.
CableTray / Components / Cross	Reserved: Place a four-way cable-tray junction.
CableTray / Components / Reducer	Reserved: Connect cable trays of different widths.
CableTray / Components / Riser	Reserved: Place a vertical cable-tray transition.
CableTray / Supports / Support	Reserved: Add a support beneath a cable tray.
CableTray / Specification / Tray catalogue	Reserved: Select tray type, width and component specification.

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Command reference: ASIC

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

ASIC

Open workflow instructions

Group / command	Availability or purpose
Silicon / ARM1 silicon	Context/module dependent
ARM1 simulation / Reset	Context/module dependent
ARM1 simulation / Step	Context/module dependent
ARM1 simulation / Run	Context/module dependent
ARM1 simulation / Stop	Context/module dependent
Signals / Waveforms	Context/module dependent
Signals / Time zoom in	Context/module dependent
Signals / Time zoom out	Context/module dependent
RTL / FPGA / FPGA workspace	Context/module dependent
RTL / FPGA / Open Verilog	Context/module dependent

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Command reference: Version Control

This inventory includes submenu commands and reserved buttons. Use the linked workflow chapter for prerequisites and operation. Context/module dependent means that the appropriate editable document, installed module and permissions are still required.

Version Control

Open workflow instructions

Group / command	Availability or purpose
Project / Document register	Context/module dependent
Project / New project	Context/module dependent
Project / Open project	Context/module dependent
Register / Register file	Context/module dependent
Register / Refresh	Context/module dependent
Register / Import catalogue	Context/module dependent
Open / Open document	Context/module dependent
Open / Open source	Context/module dependent
Open / Open PDF	Context/module dependent
Metadata / Properties	Context/module dependent
Metadata / Save metadata	Context/module dependent
Metadata / Revert edits	Context/module dependent
Links / Link source	Context/module dependent
Links / Move file	Context/module dependent
Links / Relink file	Context/module dependent
Links / Recover move	Context/module dependent
Local Git / History	Context/module dependent
Local Git / Initialize	Context/module dependent
Local Git / Status	Context/module dependent
Local Git / Commit saved	Context/module dependent
Deployment / Maintenance	Context/module dependent
Recovery / Compare	Context/module dependent
Recovery / Restore a copy	Context/module dependent
Recovery / Verify history	Context/module dependent

Collaboration / Branches / merge	Context/module dependent
Collaboration / Reserve file	Context/module dependent
Collaboration / Release file	Context/module dependent
Collaboration / Recover merge	Context/module dependent
Engineering / Items & links	Context/module dependent
Engineering / BOM	Context/module dependent
Engineering / Dependencies	Context/module dependent
Engineering / Where used	Context/module dependent
Change control / Change requests	Context/module dependent
Change control / Baselines	Context/module dependent
Change control / Impact report	Context/module dependent
P2P releases / Peer publications	Context/module dependent
P2P releases / Create exFAT release	Context/module dependent
P2P releases / Verify release	Context/module dependent
Review / Review & versions	Context/module dependent
Review / Publish saved file	Context/module dependent

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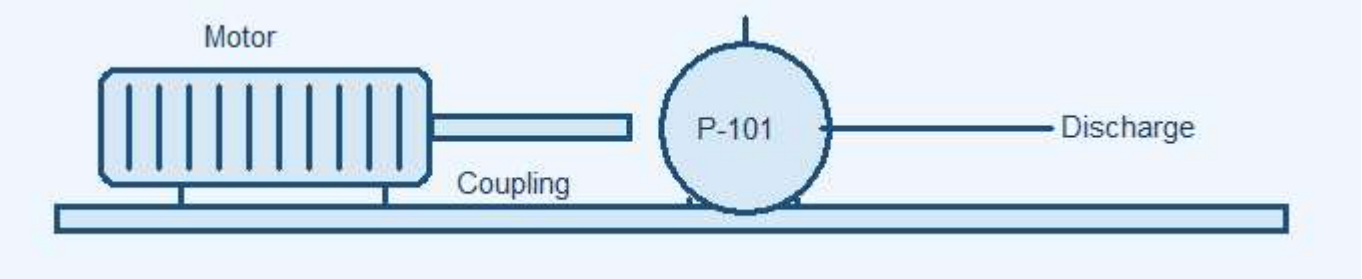
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Interactive help demonstration

SDS Documentation > Help viewer

This page demonstrates an interactive explanation. Its values are local to the help page and do not modify an SDS model.



Pump flow example

Parameter	Value
Flow	120 m3/h
Head	48 m
Illustrative hydraulic power	15.70 kW

Increase flow by 10 | Reset example

Changes: 0

Interactive help is ready.

What happens

1. A link dispatches a click event to the page's DOM.
2. MuJS runs the calculation and changes the text nodes.
3. The help viewer redraws the page with the updated values.

The calculation uses water density of 1000 kg/m3 and gravity of 9.81 m/s2. It excludes efficiency and is an illustration, not a pump selection or design calculation.

Help viewer controls and updating pages

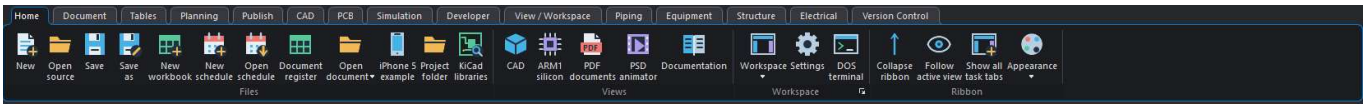
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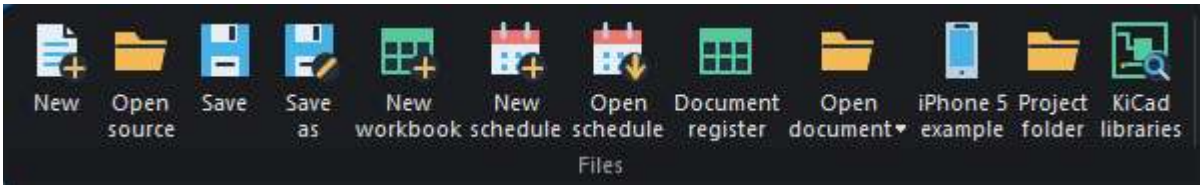
Ribbon 01 - Home

Start or open work, switch workspaces and restore the main views. Save acts on the active source document; project registration and publication are separate operations.



Ribbon path: **Home**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Files



New

Create a new source document in the editor. Enter its content, then use Save or Save as to choose a file.

Open source

Choose a DXF drawing or supported source file to open in its appropriate SDS view.

Save

Save changes to the active source document. Use Save as to choose a new destination.

Save as

Save the active source document under a chosen filename. Use this when making a separate working copy.

New workbook

Create an editable TJS workbook with cells and JavaScript macro support. Save the workbook to keep its data and scripts together.



New schedule

Create a schedule with an editable task table and a linked timeline. Enter project tasks, dates and hierarchy, then save it.



Open schedule

Open an existing supported task table as a schedule and display its timeline.



Document register

Show the current project's document register in an MDI tab.



Open document

Open the Open document menu, then choose one of the commands described below.



Open document > PDF

Open a PDF file.



Open document > KiCad

Choose a supported KiCad board or schematic file and open it in the native viewer.



Open document > 3D model

Choose a supported 3D model file and load it in the model viewer. Review import messages for unsupported data or missing references.



Open document > 3D scan (XYB / LAZ)

Open a FARO XYB or LAS/LAZ point cloud. Display RGB or intensity with orbit, zoom and clipping sections. Large scans use a bounded preview; originals remain unchanged.



Open document > PCF piping

Import and validate a PCF piping file, then create its supported SQLite plant representation. Keep the source PCF for comparison.

Open document > PSD animation

Open a PSD document.

Open document > Verilog

Open a Verilog source for the integrated FPGA workspace.

iPhone 5 example

Open the supplied iPhone 5 example project for inspecting its demonstration resources. This is an example project, not a new engineering document.

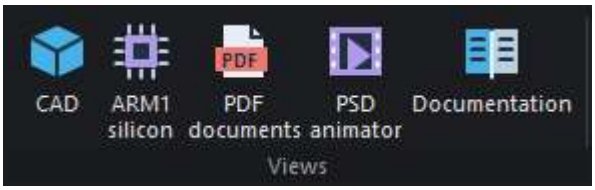
Project folder

Choose a project folder to browse its supported electronics documents and related files.

KiCad libraries

Choose the root folder of KiCad symbol and footprint libraries. SDS registers the folder without copying its files and refreshes the workspace tree.

Views



CAD

Open CAD/DXF workspace.

ARM1 silicon

Open the full ARM1 transistor layout without replacing CAD.

PDF documents

Activate the PDF documents MDI view and its document library. Open a PDF to read pages or use PDF navigation and annotation tools.

PSD animator

Open PSD editor/animator workspace.

Documentation

Open offline SDS documentation with contents, search and interactive examples. Press F1 for the current task.

Workspace



Workspace settings

Click the small panel launcher to open settings. Open application settings.

Workspace

Open the Workspace menu, then choose one of the commands described below.

Workspace > Phone repair

Select the legacy Phone repair workspace layout and its associated task views. This layout entry is separate from the removed refurbishment dialog.

Workspace > CAD / PCB

Select the CAD / PCB workspace layout for drawing and electronics inspection.

Workspace > PSD animator

Select the PSD animator workspace layout for layers, screens and animation controls.

Workspace > ASIC / FPGA

Select the ASIC / FPGA workspace layout for logic, silicon and waveform views.

Workspace > Debug

Select the debugging workspace layout for source, build output and emulator inspection.

Settings

Open application settings.

DOS terminal

Reveal the Tiny8086 DOS terminal and give it keyboard focus. If the emulator is stopped, use its Start command. The CPU pauses when the DOS view is fully collapsed.

Ribbon



Collapse ribbon

Collapse or expand the ribbon command area to change the space available for documents.

Follow active view

Toggle automatic selection of the ribbon tab associated with the active MDI document.

Show all task tabs

Show all task tabs, including those unrelated to the current document. A visible command still needs its required document, selection and permissions.

Appearance

Open the Appearance menu, then choose one of the commands described below.

Appearance > Visual Studio Dark

Apply the Visual Studio Dark ribbon appearance.

 Appearance > Reset ribbon

Restore the ribbon's default layout and contextual preferences. Use it to recover an unexpected ribbon configuration.

 Appearance > Classic toolbars

Switch from the ribbon presentation to the classic toolbar interface.

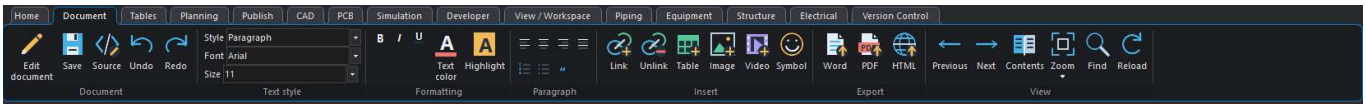
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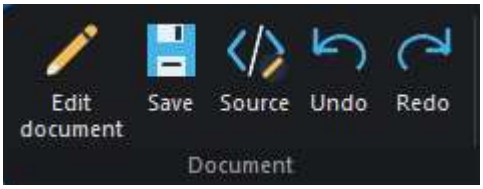
Ribbon 02 - Document

Edit a DJS document in its dedicated MDI view. Activate the document and enable editing before formatting a selection. Viewing and exporting require an open document; editing also requires edit access. The font, paragraph, insertion and export tools belong to this Document tab.



Ribbon path: **Document**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Document



Edit document

Enable or finish direct document editing.

Save

Save document text, formatting and inserted content (Ctrl+S).

Source

Edit and validate the structured DJS document source.

Undo

Undo the last document edit (Ctrl+Z).

Redo

Redo the last undone document edit (Ctrl+Y).

Text style





Style

Apply a paragraph or heading style to the selected paragraphs.



Font

Change the font of selected text or subsequent typing.



Size

Set the selected text size in points.

Formatting





Bold

Toggle bold on selected text (Ctrl+B).



Italic

Toggle italic on selected text (Ctrl+I).



Underline

Toggle underline on selected text (Ctrl+U).



Text color

Choose a text color for the current selection.

Highlight

Choose a highlight color for the current selection.

Paragraph



Align left

Align selected paragraphs to the left margin.

Center

Center selected paragraphs between the page margins.

Align right

Align selected paragraphs to the right margin.

Justify

Justify selected paragraphs so supported lines align with both margins.

Numbered list

Toggle a numbered list for the selected paragraphs.

Bulleted list

Toggle a bulleted list for the selected paragraphs.

Block quote

Toggle an indented block quote.

Insert



Link

Insert or edit a link on selected text. Ctrl+click follows the link.

Unlink

Remove links from selected text.

Table

Choose rows and columns, then insert a table after the current paragraph.

Image

Embed a local image at the document selection.

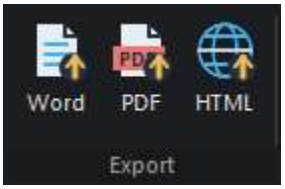
Video

Embed an MP4 or WebM video. Printed documents show its caption.

Symbol

Insert an emoji or a symbol at the selection.

Export



Word

Export the current document, including unsaved edits, to Word (.docx).

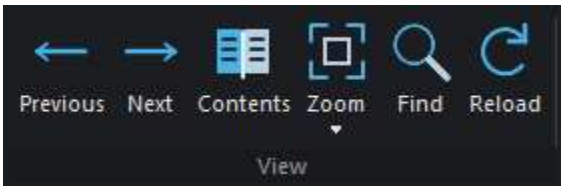
PDF

Export the current document, including unsaved edits, to PDF.

HTML

Export a standalone HTML publication including embedded media.

View



Previous

Go to the previous page of the active DJS document.

Next

Go to the next page of the active DJS document.

Contents

Go to a document heading.

Zoom

Open the Zoom menu, then choose one of the commands described below.

Zoom > Fit width

Fit the DJS page width to the document viewport.

Zoom > 100%

Restore DJS view magnification to 100%.

 Zoom > Zoom in

Increase DJS document magnification without changing its saved page dimensions.

 Zoom > Zoom out

Decrease DJS document magnification to see more of the page.

 Find

Find text in the active DJS document.

 Reload

Reload the DJS document from its saved source. Save intended edits first and respond to any unsaved-change prompt.

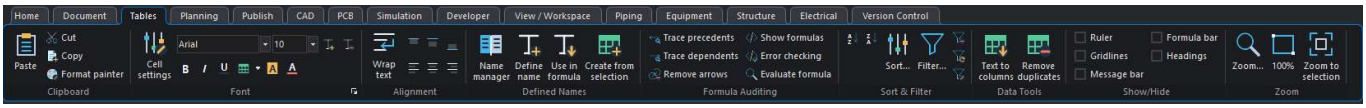
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Ribbon 03 - Tables

Edit and format TJS spreadsheets. Select the workbook and cells first. Individual workbooks support saved cell formatting; combined tables write supported changes back to their source records. Use Cell settings for source-cell controls, locks and colors. The planned spreadsheet commands are identified individually below.



Ribbon path: **Tables**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Clipboard



Paste

Paste clipboard cells into the selection, respecting cell locks and validation.

Cut

Copy the selected cell values and clear them when editing is permitted.

Copy

Copy selected cells as tab-separated text (Ctrl+C).

Format painter

Click to copy the focused cell's format; select a destination and click again to apply. Values and cell protection are retained.

Font



Font settings

Click the small panel launcher to open settings. Edit the focused cell's dropdown expression, lock, text color and background color.



Font family

Choose the font family for selected cells in an individual TJS workbook. Save the workbook to retain the formatting.



Font size

Set the selected cells' text size in points in an individual TJS workbook.



Increase font size

Increase the selected cells' font size in an individual TJS workbook.



Decrease font size

Decrease the selected cells' font size in an individual TJS workbook.



Bold

Toggle bold text for selected cells in an individual TJS workbook.



Italic

Toggle italic text for selected cells in an individual TJS workbook.



Underline

Toggle underlining for selected cells in an individual TJS workbook.



All borders

Apply borders to the selected cells in an individual TJS workbook. The dropdown also provides No borders.

All borders > All borders

Apply borders to the selected cells in an individual TJS workbook. The dropdown also provides No borders.

All borders > No borders

Remove explicit borders from selected cells. View gridlines can remain visible independently.

Fill color

Choose a background fill for selected cells in an individual TJS workbook. For combined tables, use Cell settings on the source cell.

Font color

Choose the selected cells' text color in an individual TJS workbook. Combined source-cell colors are changed through Cell settings.

Cell settings

Edit the focused cell's dropdown expression, lock, text color and background color.

Alignment



Align top

Align selected cell contents to the top of their cells.

Align middle

Center selected cell contents vertically.

Align bottom

Align selected cell contents to the bottom of their cells.

Align left

Align selected cell contents to the left.

Center

Center selected cell contents horizontally.

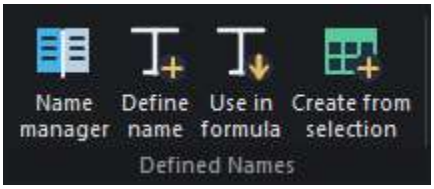
Align right

Align selected cell contents to the right.

Wrap text

Toggle wrapping of text within the selected cells in an individual TJS workbook.

Defined Names



Name manager

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Manage named ranges and their definitions for reuse in formulas.

Define name

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Assign a reusable name to the selected cell or range.

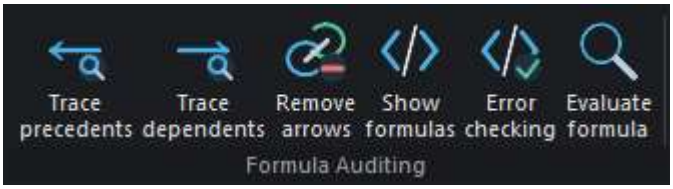
Use in formula

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Insert a defined name into a formula.

Create from selection

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Derive range names from labels in the selected cells.

Formula Auditing



Trace precedents

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Show which cells supply values to the selected formula.

Trace dependents

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Show which formulas depend on the selected cell.

Remove arrows

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Remove formula-dependency tracing arrows from the worksheet.

Show formulas

Show the TJS dropdown expressions in cells. Ordinary cell values are retained.

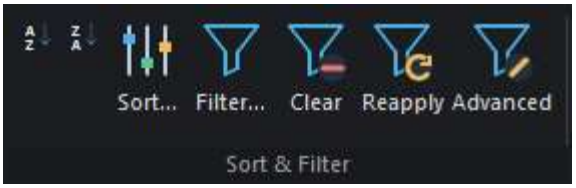
Error checking

Check the active sheet's dropdown rules and report invalid expressions or values.

Evaluate formula

Evaluate the focused cell's select(workbook.enumeration(...)) expression and display its choices. This does not run JavaScript macros.

Sort & Filter



Sort ascending

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Sort the selected data in ascending order.

Sort descending

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Sort the selected data in descending order.

Sort...

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Choose sorting keys and direction for a data range.

Filter...

Show rows whose active-column value contains the entered text. Filtering changes only this view; the first row stays visible.

Clear

Restore all rows in the current view.

Reapply

Reapply this view's text filter to the current cell values.

Advanced

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Apply more detailed filter criteria than the implemented active-column text filter.

Data Tools



Text to columns

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Split delimited text values into separate columns.

Remove duplicates

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Identify and remove duplicate rows using selected comparison columns.

Show/Hide



Ruler

Show a horizontal centimetre ruler using the worksheet's 96-DPI layout and current zoom.

Gridlines

Show or hide cell gridlines; explicit cell borders are retained.

Message bar

Show or hide the workbook message strip. Application status messages remain available.

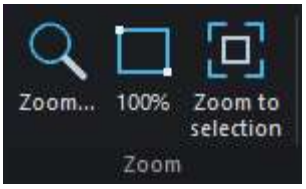
Formula bar

Show the active cell's value above the grid. Enter applies an edit; Escape cancels. Dropdown expressions are edited in Cell settings.

Headings

Show or hide row numbers and column letters.

Zoom



Zoom...

Set spreadsheet magnification between 10% and 400%.

100%

Restore spreadsheet zoom to 100%.

Zoom to selection

Fit the selected cell range inside the grid viewport.

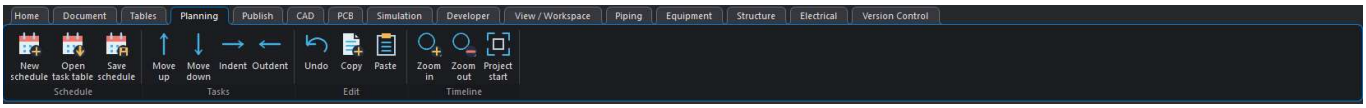
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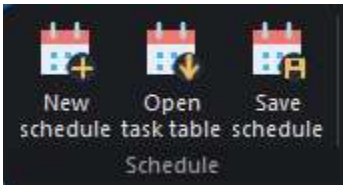
Ribbon 04 - Planning

Maintain task tables and inspect their Gantt timeline. Activate a schedule before changing task order, hierarchy or dates. Save the schedule after accepted changes.



Ribbon path: **Planning**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Schedule



New schedule

Create a schedule with an editable task table and a linked timeline. Enter project tasks, dates and hierarchy, then save it.

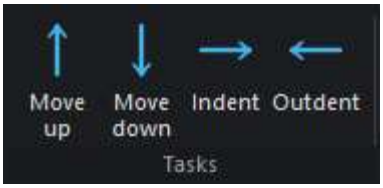
Open task table

Open an existing supported task table as a schedule and display its timeline.

Save schedule

Save the active schedule's supported task data and hierarchy.

Tasks



Move up

Move the selected schedule task upward in task order.

Move down

Move the selected schedule task downward in task order.

Indent

Indent the selected task to make it a child within the schedule hierarchy.

Outdent

Move the selected task one level outward in the schedule hierarchy.

Edit



Undo

Undo the last supported task-table edit.

Copy

Copy the selected schedule data to the clipboard.

Paste

Paste clipboard data into the supported schedule selection. Review the resulting task values before saving.

Timeline



Zoom in

Increase timeline magnification to inspect shorter time intervals.

Zoom out

Decrease timeline magnification to show a longer time span.

Project start

Move the timeline view to the project's starting date.

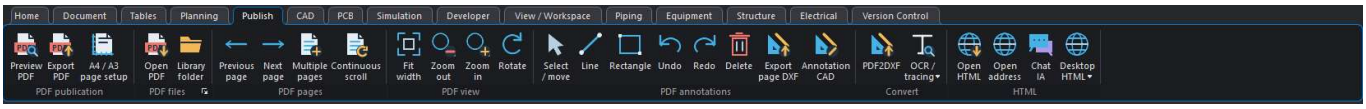
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Ribbon 05 - Publish

Publish the active TJS datasheet, DJS document or DXF drawing, and read or annotate PDFs. This tab is named Publish in the current ribbon. Choose the source document before Preview PDF or Export PDF. PDF annotations, OCR and browser controls act on their respective active views.



Ribbon path: **Publish**. Section titles below match the panel names. Menu commands are shown with their parent menu.

PDF publication



Preview PDF

Generate a PDF preview of the active supported TJS datasheet, DJS document or DXF layout and open it in the PDF MDI viewer. Supported in-memory edits are included; generate a new preview after further edits.

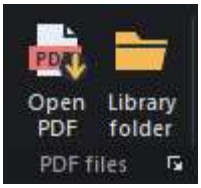
Export PDF

Export the active supported TJS datasheet, DJS document or DXF layout to a chosen PDF file. The PDF is a publication snapshot and does not replace saving its native source.

A4 / A3 page setup

Open Publication settings: A4 or A3, orientation and margins.

PDF files



PDF files settings

Click the small panel launcher to open settings. Open application settings.

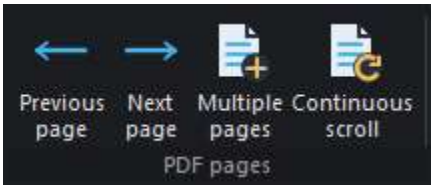
Open PDF

Open a PDF file.

Library folder

Choose the PDF library folder.

PDF pages



Previous page

Show the previous PDF page.

Next page

Show the next PDF page.

Multiple pages

Toggle single page / two-page spread; narrow panes use one column.

Continuous scroll

Toggle paged view / continuous document scrolling.

PDF view



Fit width

Fit the PDF page to the view width.

Zoom out

Zoom out of the PDF.

Zoom in

Zoom into the PDF.

Rotate

Rotate the PDF clockwise by 90 degrees.

PDF annotations



Select / move

Select and drag an annotation in PDF or CAD.

Line

Drag a line over the PDF; CAD updates live.

Rectangle

Drag a rectangle over the PDF; CAD updates live.

Undo

Undo an annotation edit.

Redo

Redo an annotation edit.

Delete

Delete the selected annotation.

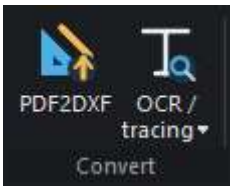
Export page DXF

Export current page geometry only as DXF.

Annotation CAD

Toggle annotation-only CAD; preserve original CAD drawing.

Convert



PDF2DXF

Convert supported PDF page content into a CAD drawing. Vector pages and scanned images produce different results; inspect the conversion against the source PDF.

OCR / tracing

Recognize raster text on this PDF page with local Tesseract.

OCR / tracing > OCR rectangle

Recognize text inside the selected annotation rectangle.

OCR / tracing > Review text

Review recognized words before CAD import.

OCR / tracing > Edit text

Correct the selected OCR text annotation.

OCR / tracing > Cancel OCR

Cancel the isolated OCR worker.

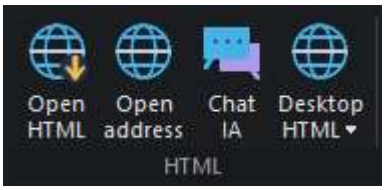
OCR / tracing > Raster lines

Review raster wire and symbol-outline strokes before creating CAD lines.

OCR / tracing > Lines rectangle

Reconstruct strokes within the selected PDF annotation rectangle.

HTML



Open HTML

Open a local HTML document in the HTML view.

Open address

Enter an address to navigate the HTML view. Network pages require connectivity and the configured web-view support.

Chat IA

Reveal AI Chat with its conversation history. Select or start a conversation; file access and external requests use the configured assistant permissions.



Desktop HTML

Activate the Desktop HTML view. Its dropdown contains navigation and desktop-page commands.



Desktop HTML > Load desktop

Load the configured HTML desktop page in the HTML view.



Desktop HTML > Back

Return to the previous page in the HTML view's navigation history.



Desktop HTML > Forward

Move forward through HTML navigation history after using Back.



Desktop HTML > Refresh

Reload the current HTML page from its source.



Desktop HTML > Stop loading

Stop the current HTML page-loading request.



Desktop HTML > Welcome page

Open the HTML view's welcome page.

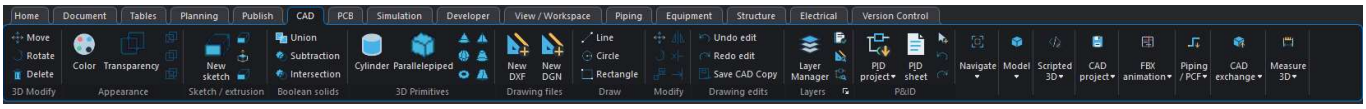
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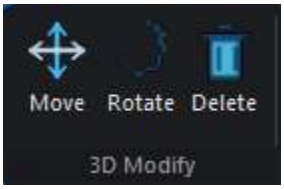
Ribbon 06 - CAD

Create and edit supported drawings, inspect imported models and generate solids. Drawing tools operate on the active CAD drawing; model, Boolean and 3D modification tools require a compatible model and selection. Model and paper-space layouts remain distinct.



Ribbon path: **CAD**. Section titles below match the panel names. Menu commands are shown with their parent menu.

3D Modify



Move

Move selected editable 3D objects with a mouse preview or exact displacement. Shift-click selects multiple objects; Enter applies and Escape cancels. Ctrl+Z undoes a supported move.

Rotate

Rotate selected editable 3D objects about the chosen axis using the interactive preview or an exact angle. Enter applies, Escape cancels and Ctrl+Z undoes a supported rotation.

Delete

Delete selected editable 3D objects from their owning model. Ctrl+Z restores a supported deletion; save the project after accepting the change.

Appearance



Color

Choose a display color for selected model objects. This changes appearance, not their physical material properties.

Transparency

Set transparency for the selected objects to reveal geometry behind them.

Surface

Choose the supported surface presentation for the selected objects, such as shaded or wire display.

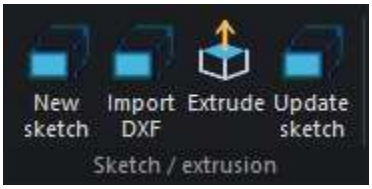
All transparency

Set transparency across the displayed model. Check the whole-model scope before applying the value.

Reset selected

Restore the selected objects' default appearance settings.

Sketch / extrusion



New sketch

Create a sketch for a supported 3D extrusion. Define a closed profile before building a solid.

Import DXF

Import a DXF profile into the sketch workflow. Check contour closure, units and the sketch plane before extrusion.

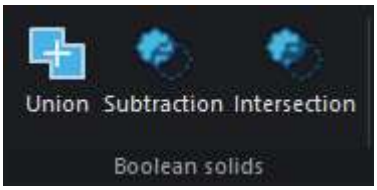
Extrude

Generate a supported solid by extruding the selected sketch profile through the specified depth.

Update sketch

Rebuild the supported sketch-derived geometry after changing its profile or parameters.

Boolean solids



Union

Join compatible selected solids into a Boolean union. Shift-click the input solids; the source objects are retained but hidden when a result is created.

Subtraction

Subtract the other selected solids from the first selected solid. Selection order defines the retained body. Source objects are retained but hidden when a result is created.

Intersection

Create the volume shared by compatible selected solids. Inputs must overlap to produce a volume; source objects are retained but hidden.

3D Primitives



Cylinder

Create a cylindrical primitive using the supplied position and size parameters. Edit its parameters to set the required radius and height.

Parallelepiped

Create a box-shaped solid with length, width and height parameters.

Cone

Create a conical primitive with the supported base and height parameters.

Sphere

Create a spherical primitive and set its position and radius.

Torus

Create a ring-shaped solid using the supported major-radius and tube-radius parameters.

Pyramid

Create a pyramid primitive with a base and apex height.

Truncated cone

Create a conical frustum with different end radii and a specified height.

Truncated pyramid

Create a pyramid frustum with lower and upper profiles and a specified height.

Drawing files



New DXF

Create a new DXF drawing in the workspace CAD folder or another chosen location. Choose an unused filename; existing drawings are never overwritten.

New DGN

Create a MicroStation DGN V7 drawing from the installed blank template. Choose a new filename in a writable folder; an existing drawing is never overwritten.

Draw



Line

Start line drawing in the active CAD view. Follow the point-selection prompts to define the endpoints.

Circle

Start circle drawing in the active CAD view. Define its position and size using the drawing prompts.

Rectangle

Draw a rectangular outline in the active CAD view by defining its corners.

Modify



Move

Move selected CAD objects by X/Y displacement.

Rotate

Rotate selected CAD objects about a base point.

Scale

Uniformly scale selected CAD objects about a base point.

Mirror

Mirror selection about a two-point axis; keep text readable.

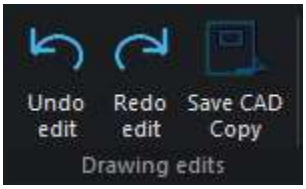
Trim

Select boundaries, then click near the LINE endpoint to trim.

Extend

Select boundaries, then click near the LINE endpoint to extend.

Drawing edits



Undo edit

Undo the previous CAD geometry edit.

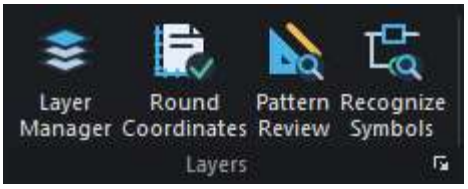
Redo edit

Redo the previous CAD geometry edit.

Save CAD Copy

Save imported DXF edits to a new copy; original protected.

Layers



Layers settings

Click the small panel launcher to open settings. Visible, frozen and display color settings for all drawing pages.

Layer Manager

Visible, frozen and display color settings for all drawing pages.

Round Coordinates

Open coordinate-rounding tools for drawing cleanup. Review the precision and affected geometry before saving a separate edited copy.

Pattern Review

Review repeated drawing patterns to inspect matching geometry. Check candidate matches before using them for cleanup or recognition.

Recognize Symbols

Run supported symbol recognition on drawing geometry. Inspect candidate symbols against the original drawing before accepting the result.

P&ID



P&ID project

Open a file-backed P&ID project and its saved component records. The arrow also exposes project creation, tables and record operations.



P&ID project > New project

Create a new P&ID project with its component data and diagram workspace.



P&ID project > Open project

Open a file-backed P&ID project and its saved component records. The arrow also exposes project creation, tables and record operations.



P&ID project > Reload / rebuild cache

Reload saved P&ID records and rebuild the derived diagram cache. Save intended edits first.



P&ID project > Components table

Open the P&ID component table to select and edit project records.



P&ID project > Unplace component

Remove the selected component's diagram placement while retaining its project record.



P&ID project > Duplicate component

Create a separate component record by copying the selected P&ID component. Review its identity and placement before use.



P&ID project > Delete component

Delete the selected P&ID component record and its associated project representation. Check the intended selection first.



P&ID project > Close project

Close the active P&ID project and return to the other open documents.



P&ID sheet

Open the active project's P&ID drawing sheet.

Place component

Place the selected project component on the P&ID sheet by choosing its drawing position.

Undo P&ID

Undo the last supported P&ID project edit.

Redo P&ID

Reapply the last undone P&ID edit. A subsequent new edit can clear redo history.

Navigate



Fit drawing

Fit the current drawing extents to the CAD viewport.

Zoom in

Increase magnification in the active CAD drawing.

Zoom out

Decrease magnification to show a larger area of the CAD drawing.

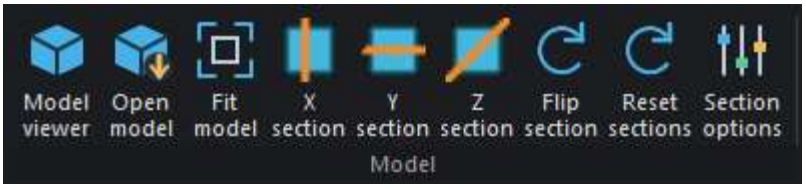
Map pan

Move the current viewport by dragging in the selected map.

Map zoom area

Draw a zoom rectangle in the selected map; preserves viewport aspect ratio.

Model



Model viewer

Activate the 3D model viewer for imported or generated geometry.

Open model

Choose a supported 3D model file and load it in the model viewer. Review import messages for unsupported data or missing references.

Fit model

Adjust the 3D camera to fit the model extents inside the viewport.

X section

Enable an X-oriented section plane to inspect the model interior. Sectioning affects the view rather than cutting the source solid.

Y section

Enable a Y-oriented section plane to inspect the model interior without modifying the source solid.

Z section

Enable a Z-oriented section plane to inspect the model interior without modifying the source solid.

Flip section

Reverse which side of the active section plane remains visible.

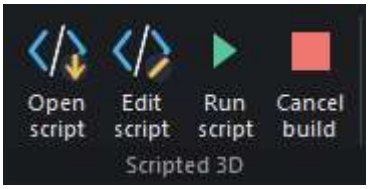
Reset sections

Turn off model sectioning and restore the unsectioned view.

Section options

Open section-plane options to adjust the supported clipping settings.

Scripted 3D



Open script

Open a supported model-generation script for the scripted 3D workflow.

Edit script

Open the current geometry script in the source editor so its parameters or construction logic can be changed.

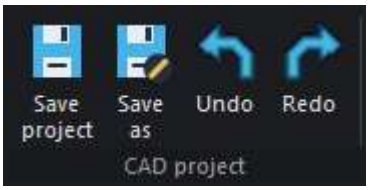
Run script

Execute the active supported geometry script and rebuild its model. Check build output when generation fails.

Cancel build

Request cancellation of the current supported model import or build. Wait for the operation to report that it has stopped.

CAD project



Save project

Save the current CAD project's supported model state to its existing project file.

Save as

Save the CAD project under a new path to create a separate project copy.

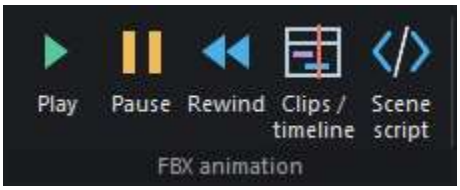
Undo

Undo the last supported edit in the active CAD project.

Redo

Redo the last undone CAD project edit.

FBX animation



Play

Play the selected animation in an imported FBX scene. The file must contain supported animation data.

Pause

Pause FBX playback at the current scene time.

Rewind

Return FBX animation playback to its beginning.

Clips / timeline

Open FBX clip selection and timeline controls to choose or inspect an animation.

Scene script

Open the scene-script controls for the supported FBX scene workflow.

Piping / PCF



Import PCF

Import and validate a PCF piping file, then create its supported SQLite plant representation. Keep the source PCF for comparison.

Open SQLite

Open an existing SQLite piping project without reimporting its original PCF.

Save piping

Save supported changes to the current SQLite piping project.

Save piping as

Write the current piping project to a new SQLite database path.

Export PCF

Export the supported piping project to a new PCF file. Inspect the exported route and component data before exchange.

Add pump

Add a supported pump assembly to the current plant/world workflow. Edit its instance parameters and placement after creation.

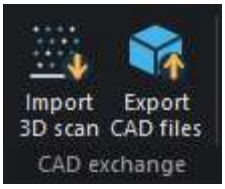
Add tank

Add a supported tank assembly to the current plant/world workflow. Review its dimensions, orientation and placement.

Live HTML viewer

Open the supported live HTML model viewer. It depends on the configured local model publication/viewer service.

CAD exchange



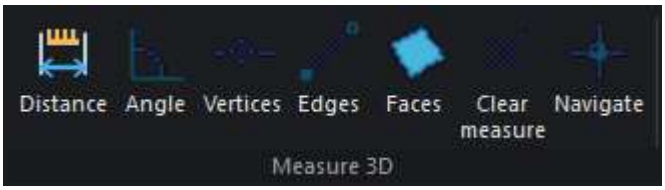
Import 3D scan

Open a FARO XYB or LAS/LAZ point cloud. Display RGB or intensity with orbit, zoom and clipping sections. Large scans use a bounded preview; originals remain unchanged.

Export CAD files

Export supported model geometry to the available CAD exchange formats. Choose the required representation and verify the exported file.

Measure 3D



Distance

Measure a distance between compatible picked model features. Use the selection filters to choose vertices, edges or faces.

Angle

Measure the angle between compatible selected model features. Check the feature selection and displayed result.

Vertices

Restrict measurement picking to model vertices.

Edges

Restrict measurement picking to model edges.



Faces

Restrict measurement picking to model faces.



Clear measure

Clear the current measurement selection and its displayed result.



Navigate

Leave measurement picking and return to normal model navigation.

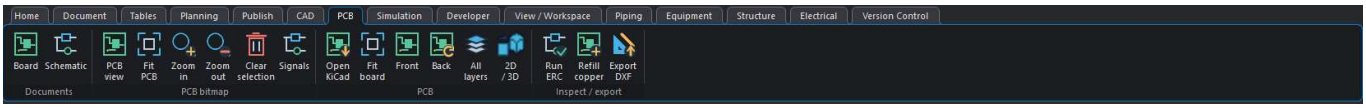
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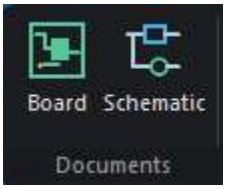
Ribbon 07 - PCB

Open KiCad boards and schematics, inspect their layers and view PCB reference images. Native viewing and external KiCad operations have different requirements; commands that use an installed helper require that helper to be configured.



Ribbon path: **PCB**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Documents



Board

Activate the KiCad board view for the current electronics project.

Schematic

Activate the schematic view for the current electronics project.

PCB bitmap



PCB view

Open the PCB bitmap/reference-image view. Its fit, zoom and signal controls are separate from the native KiCad board viewer.

Fit PCB

Fit the complete PCB in the canvas.

Zoom in

Zoom in on the PCB bitmap.

Zoom out

Zoom out on the PCB bitmap.

Clear selection

Clear signal selection and search.

Signals

Show PCB map selection, signal search and contact details in the right column.

PCB



Open KiCad

Choose a supported KiCad board or schematic file and open it in the native viewer.

Fit board

Fit the loaded KiCad board inside its view.

Front

Show the board's front-side presentation.

Back

Show the board's back-side presentation.

All layers

Show all available board layers for inspection.

2D / 3D

Switch the supported board presentation between 2D and 3D.

Inspect / export



Run ERC

Run the configured electrical-rule-check operation for the applicable KiCad document. Inspect its reported issues; the required KiCad helper must be installed.

Refill copper

Request copper-zone refill through the configured KiCad operation. Review the resulting board before using it for fabrication.

Export DXF

Export the supported KiCad drawing geometry to DXF using the configured export operation.

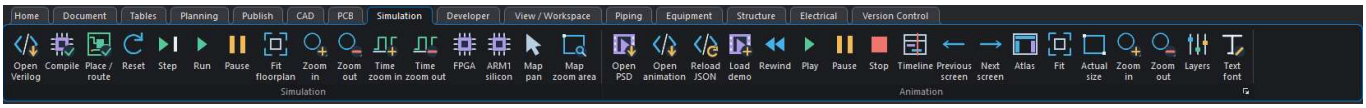
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Ribbon 08 - Simulation

Run the supported FPGA simulation and inspect floorplans or waveforms. The separate Animation section controls PSD animation projects. These are different documents and runtimes within the same ribbon tab.



Ribbon path: **Simulation**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Simulation



Open Verilog

Open a Verilog source for the integrated FPGA workspace.

Compile

Run the staged Verilog to linked JSON compile sequence.

Place / route

Run Yosys, nextpnr-ice40, and icepack for the active FPGA test.

Reset

Reset the integrated FPGA signal simulator.

Step

Step the integrated FPGA signal simulator one cycle.



Run

Run the integrated FPGA signal simulator.



Pause

Pause the integrated FPGA signal simulator.



Fit floorplan

Fit the waveform and ICE40 floorplan view.



Zoom in

Zoom in on the ICE40 floorplan.



Zoom out

Zoom out on the ICE40 floorplan.



Time zoom in

Increase the waveform time scale.



Time zoom out

Decrease the waveform time scale.



FPGA

Open the integrated Verilog/simulation/nextpnr ICE40 workspace.



ARM1 silicon

Open the full ARM1 transistor layout without replacing CAD.



Map pan

Move the current viewport by dragging in the selected map.

Map zoom area

Draw a zoom rectangle in the selected map; preserves viewport aspect ratio.

Animation



Animation settings

Click the small panel launcher to open settings. Configure property list filtering.

Open PSD

Open a PSD document.

Open animation

Open animation JSON.

Reload JSON

Reload current animation JSON.

Load demo

Load demo animation JSON.

Rewind

Rewind animation.

Play

Play animation.

Pause

Pause animation.



Stop

Stop and restore animation.



Timeline

Open the PSD animation timeline to inspect playback position and animation timing.



Previous screen

Show previous phone screen.



Next screen

Show next phone screen.



Atlas

Show all atlas screens.



Fit

Fit PSD screen to view.



Actual size

Show PSD at actual size.



Zoom in

Zoom in.



Zoom out

Zoom out.



Layers

Toggle PSD property inspector.



Text font

Edit selected text font and size.

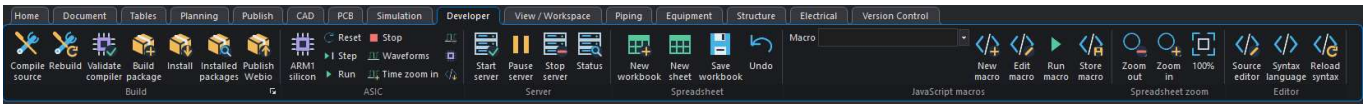
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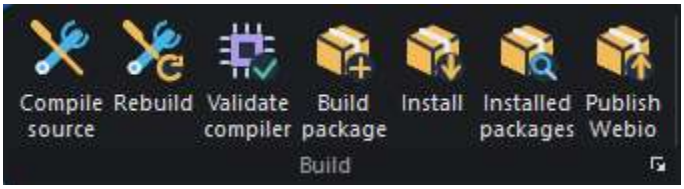
Ribbon 09 - Developer

Compile source, build and install packages, control the local server, and work with spreadsheet JavaScript. ASIC controls form a separate section. Activate the intended source, workbook or emulator before running its commands.



Ribbon path: **Developer**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Build



Build settings

Click the small panel launcher to open settings. Open application settings.

Compile source

Run configured retargetable compiler/assembler/linker.

Rebuild

Rebuild the current source using the configured retargetable RV32 toolchain.

Validate compiler

Generate RV32 assembly, object, and ELF for the vector test without WSL.

Build package

Create an application package from the selected project tree.

Install

Install the selected application package into the SAMVEA disk/package area.

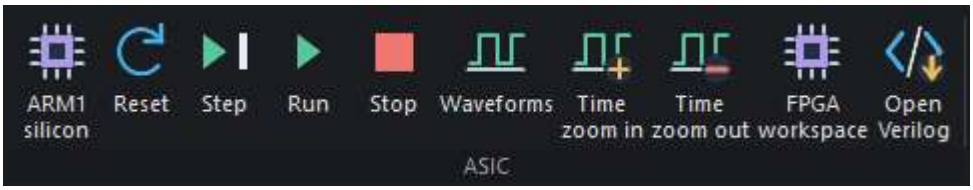
Installed packages

Open the package/app library listing.

Publish Webio

Publish the selected package through the embedded Webio server.

ASIC



ARM1 silicon

Open the full ARM1 transistor layout without replacing CAD.

Reset

Reset the supported ASIC/ARM1 simulation to its initial state.

Step

Advance the ASIC/ARM1 simulation by a supported single step for inspection.

Run

Run the supported ASIC/ARM1 simulation continuously.

Stop

Stop continuous ASIC/ARM1 simulation execution.

Waveforms

Show waveform signals from the supported simulation so their changes can be inspected over time.

Time zoom in

Increase the waveform time scale.

Time zoom out

Decrease the waveform time scale.

FPGA workspace

Open the integrated Verilog/simulation/nextpnr ICE40 workspace.

Open Verilog

Open a Verilog source for the integrated FPGA workspace.

Server



Start server

Start the embedded Webio TCP/HTTP server.

Pause server

Pause or resume the embedded Webio server.

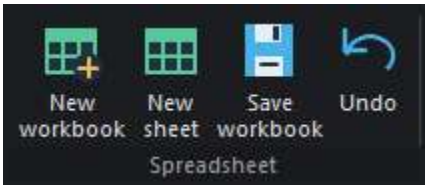
Stop server

Stop the embedded Webio server.

Status

Show embedded Webio server status and URL.

Spreadsheet



New workbook

Create an editable TJS workbook with cells and JavaScript macro support. Save the workbook to keep its data and scripts together.

New sheet

Add a sheet to the active TJS workbook.

Save workbook

Save the active TJS workbook, including its supported cells, formatting and stored macros.

Undo

Undo the last supported spreadsheet edit.

JavaScript macros





Macro

Choose the workbook macro used by Edit macro, Run macro and Store macro.

New macro

Create a new JavaScript macro entry in the active workbook.

Edit macro

Open the selected workbook macro in the source editor.

Run macro

Execute the selected workbook JavaScript macro in the supported TJS runtime. Review its code and expected cell changes before running it.

Store macro

Store the edited macro source in the active workbook. Save the workbook to persist it on disk.

Spreadsheet zoom



Zoom out

Decrease the active spreadsheet's view magnification.

Zoom in

Increase the active spreadsheet's view magnification.

100%

Restore spreadsheet view magnification to 100%.

Editor



Source editor

Open the active workbook's source in the editor for inspecting its TJS data or scripts.

Syntax language

Choose the source editor's syntax language and associated highlighting rules.

Reload syntax

Reload the source editor's syntax definitions after changing the installed rules.

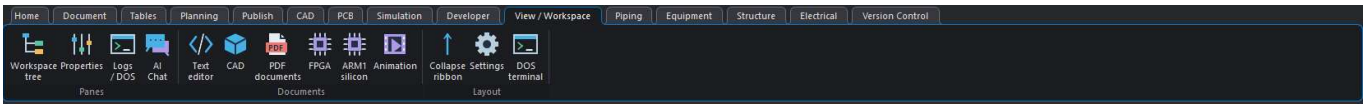
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Ribbon 10 - View / Workspace

Show the workspace panes and switch document views. These controls arrange the interface; they do not replace saving the active document. Collapsed panes can be reopened without deleting their contents.



Ribbon path: **View / Workspace**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Panes



Workspace tree

Show or hide the workspace tree used to browse project files, libraries and model objects.

Properties

Show or hide the properties area for the selected object or TJS record.

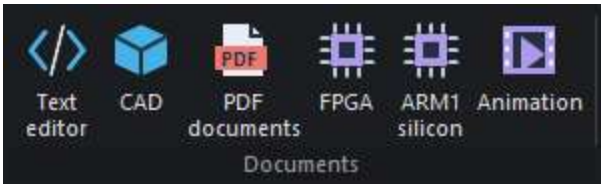
Logs / DOS

Show the logs/output area and its associated DOS controls. Use it to inspect operation and build messages.

AI Chat

Reveal AI Chat with its conversation history. Select or start a conversation; file access and external requests use the configured assistant permissions.

Documents



Text editor

Activate the source/text editor MDI view.

CAD

Open CAD/DXF workspace.

PDF documents

Activate the PDF documents MDI view and its document library. Open a PDF to read pages or use PDF navigation and annotation tools.

FPGA

Open the integrated Verilog/simulation/nextpnr ICE40 workspace.

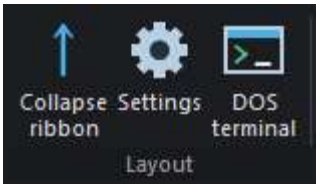
ARM1 silicon

Open the full ARM1 transistor layout without replacing CAD.

Animation

Open PSD editor/animator workspace.

Layout



Collapse ribbon

Collapse or expand the ribbon command area to change the space available for documents.

Settings

Open application settings.

DOS terminal

Reveal the Tiny8086 DOS terminal and give it keyboard focus. If the emulator is stopped, use its Start command. The CPU pauses when the DOS view is fully collapsed.

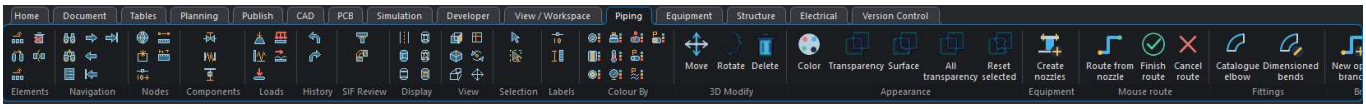
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Ribbon 11 - Piping

Edit a supported piping model and its linked TJS inputs. Select the line and element first. The combined table preserves the source records; geometry is regenerated from supported parameters. Loads and SIF records are inputs, not calculated stress results. PCF/SQLite routing and file-backed TJS authoring remain distinct storage workflows.



Ribbon path: **Piping**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Elements



 Continue

Go to the next element; create a new element if there is no next element.

 Duplicate

Copy the selected element before or after the current element.

 Insert

Insert a straight pipe before or after the selected straight element, using exact delta coordinates.

 Delete

Delete the current piping element.

 Break

Split an element at a chosen node or into equal-length elements.

Navigation



Find

Find an element containing one or both specified nodes, with optional zoom to the result.

Find Node

Find an element by its From node, To node, or both; highlight it and zoom to its location.

List

Open the temporary combined element table. Each edited value is saved to its original TJS record.

Next Element

Go to the next element.

Previous Element

Go to the previous element.

First Element

Go to the first element.

Last Element

Go to the last element.

Nodes



Global

Set absolute coordinates for the first node of a disconnected piping segment.

Close Loop

Close a loop by filling the delta coordinates between two nodes.

Increment

Set the automatic node-number increment.

Distance

Measure the distance from the origin to a node, or between two nodes.

Review Current Units

Review the current input and report units without converting existing values.

Components



Valve

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Choose a valve or flange by type, connection and class, using catalogue length and weight.



Expansion Joints

Open or create the element's linked INPUT_EXPJT record to edit expansion-joint input data. Assembly generation is not yet available.



Hanger Design Control Data

Open or create the selected element's INPUT_HANGERS record. Automatic hanger sizing and system-wide criteria are not yet available.

Loads





Edit Static Load Case

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Edit static load cases after model validation.



Edit Dynamic Load Case

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Edit dynamic load cases after model validation.



Forces

Open or create linked nodal-force and moment input records in INPUT_FORCMNT.



Uniform Loads

Open or create linked uniform-load input records in INPUT_UNIFORM.



Wind/Wave

Open or create linked wind/wave input records and coefficients in INPUT_WIND.

History



 Undo

Undo the last supported piping-model edit.

 Redo

Reapply the last undone piping-model edit. A new edit clears the redo history.

SIF Review



 Review SIFs at Intersection Nodes

Open or create the linked INPUT_SIFTEES record to edit SIF input data. Stress calculation is not yet available.

 Review SIFs at Bend Nodes

Open the selected elbow's linked INPUT_BENDS record for bend and SIF input data.

Display



 Center Line View

Show pipe centre lines, elbow arcs and tee branches, with selectable element and node labels.



Shaded View

Display pipe surfaces as shaded solids.



Silhouette

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Show pipe outlines for a clear view of the model shape.



Hidden Line Wire Frame

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Show visible model edges while hiding edges behind surfaces.



Wire Frame

Show the pipe mesh as wireframe.



Translucent

Show translucent pipe surfaces to reveal overlapping and internal elements.

View





Right

View the piping model from the right.



ISO View

Show an isometric view of the piping model.



Perspective

Use perspective projection, with distant objects appearing smaller.



Orthographic

Use parallel projection without perspective foreshortening.



Orbit

Rotate the model interactively around the current rotation centre.



Pan

Move the view horizontally or vertically without rotating the model.

Selection





Select Element

Select an individual piping element and inspect its information.



Select Group

Select a group of piping elements and inspect their information.

Labels





Node Numbers

Display node-number labels on the piping model.



Show Length

Display element lengths on the model to check the input geometry.

Colour By



Diameters

Colour pipe elements by diameter and show a legend to identify size changes.

Insulation

Colour pipe elements by insulation data and show a legend.

Wall Thickness

Colour pipe elements by wall thickness and show a legend.

Materials

Colour pipe elements by material and show a legend.

Temperatures

Colour pipe elements by the selected operating-temperature case and show a legend.

Pressure

Colour pipe elements by the selected operating or hydrotest pressure and show a legend.

Corrosion Allowance

Colour pipe elements by corrosion allowance and show a legend.

Pipe Density

Colour pipe elements by pipe-material density and show a legend.

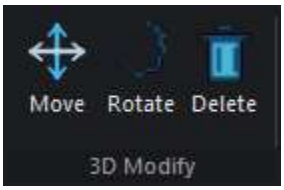
Fluid Density

Colour pipe elements by fluid density and show a legend.

Insulation Density

Colour pipe elements by insulation density and show a legend.

3D Modify



Move

Move selected editable 3D objects with a mouse preview or exact displacement. Shift-click selects multiple objects; Enter applies and Escape cancels. Ctrl+Z undoes a supported move.

Rotate

Rotate selected editable 3D objects about the chosen axis using the interactive preview or an exact angle. Enter applies, Escape cancels and Ctrl+Z undoes a supported rotation.

Delete

Delete selected editable 3D objects from their owning model. Ctrl+Z restores a supported deletion; save the project after accepting the change.

Appearance



Color

Choose a display color for selected model objects. This changes appearance, not their physical material properties.

Transparency

Set transparency for the selected objects to reveal geometry behind them.

Surface

Choose the supported surface presentation for the selected objects, such as shaded or wire display.

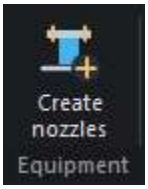
All transparency

Set transparency across the displayed model. Check the whole-model scope before applying the value.

Reset selected

Restore the selected objects' default appearance settings.

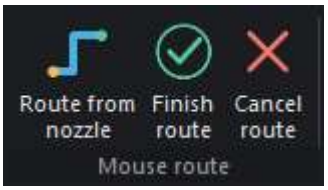
Equipment



Create nozzles

Create supported equipment connection nozzles in the active plant. Check their position and diameter before starting a route.

Mouse route



Route from nozzle

Start interactive pipe routing from a selected equipment nozzle. Define the route in the model view, then finish or cancel it.



Finish route

Accept the current interactive pipe route and finish the routing operation.



Cancel route

Cancel the current unfinished mouse-routing operation.

Fittings





Catalogue elbow

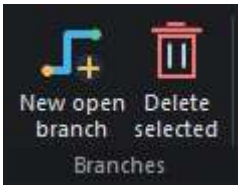
Use a catalogue elbow in the supported routing workflow. Review the selected size and catalogue geometry at the route corner.



Dimensioned bends

Use the dimensioned-bend routing option to control bend geometry. Check the resulting centre line and tangent clearances.

Branches





New open branch

Create a new open branch in the supported piping route. Review its connection node and direction.



Delete selected

Delete the selected supported routing item. Inspect the remaining route connections afterwards.

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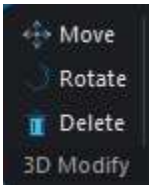
Ribbon 12 - Equipment

Create and edit supported pumps, tanks and exchangers. Select the assembly and, when required, its host section before adding a detail. TJS parameters drive supported geometry. ASME or API labels do not imply an implemented code calculation.



Ribbon path: **Equipment**. Section titles below match the panel names. Menu commands are shown with their parent menu.

3D Modify



 Move

Move selected editable 3D objects with a mouse preview or exact displacement. Shift-click selects multiple objects; Enter applies and Escape cancels. Ctrl+Z undoes a supported move.

 Rotate

Rotate selected editable 3D objects about the chosen axis using the interactive preview or an exact angle. Enter applies, Escape cancels and Ctrl+Z undoes a supported rotation.

 Delete

Delete selected editable 3D objects from their owning model. Ctrl+Z restores a supported deletion; save the project after accepting the change.

Appearance



Color

Choose a display color for selected model objects. This changes appearance, not their physical material properties.

Transparency

Set transparency for the selected objects to reveal geometry behind them.

Surface

Choose the supported surface presentation for the selected objects, such as shaded or wire display.

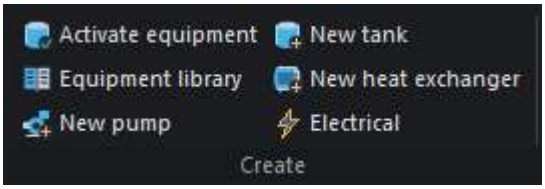
All transparency

Set transparency across the displayed model. Check the whole-model scope before applying the value.

Reset selected

Restore the selected objects' default appearance settings.

Create



Activate equipment

Activate shared equipment ownership in a compatible legacy plant. This is an explicit model-format upgrade and ordinary Undo does not reverse it; retain a saved copy before upgrading.

Equipment library

Browse the available equipment templates before creating an instance.

New pump

Create a pump from the supported equipment template. Set project dimensions, nozzle sizes and placement through its TJS properties.

New tank

Create a tank/vessel assembly from the supported template. Edit its sections, dimensions and details in TJS.

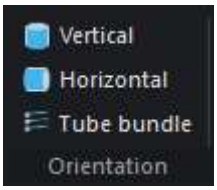
New heat exchanger

Create a supported heat-exchanger assembly. Review shell dimensions, orientation and tube-bundle parameters.

Electrical

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a catalogue electrical component or connection point on equipment.

Orientation



Vertical

Set a compatible selected tank or exchanger to vertical orientation.

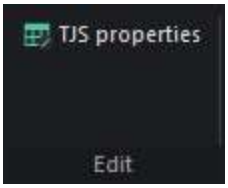
Horizontal

Set a compatible selected tank or exchanger to horizontal orientation.

Tube bundle

Add or edit the supported exchanger tube-bundle component and its parameters.

Edit



TJS properties

Open the selected equipment's editable TJS properties. Change instance parameters, then inspect the regenerated geometry.

Elements



Cylinder

Add or edit this component on a compatible selected vessel: Cylindrical vessel shell section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.

Ellipse

Add or edit this component on a compatible selected vessel: Elliptical vessel head. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.

Torisphere

Add or edit this component on a compatible selected vessel: Torispherical head with crown and knuckle radii. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.

Sphere

Add or edit this component on a compatible selected vessel: Spherical vessel head or shell. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.

Cone

Add or edit this component on a compatible selected vessel: Conical head or transition section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Welded Flat Head

Add or edit this component on a compatible selected vessel: Flat closure welded to a vessel section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



ANSI/Bolted Flange

Add or edit this component on a compatible selected vessel: Bolted body flange joining vessel sections. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Skirt

Add or edit this component on a compatible selected vessel: Vertical vessel skirt and base ring. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.

Details





Stiffening Ring

Add or edit this component on a compatible selected vessel: Circumferential stiffener on a cylindrical section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Nozzle

Add a section-mounted nozzle to a tank or heat exchanger. Edit host, station, azimuth and dimensions in its Nozzles TJS tab. Pumps retain their predefined connection nozzles.



Platform

Add or edit this component on a compatible selected vessel: Platform attached to the selected vessel section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Packing

Add or edit this component on a compatible selected vessel: Packing within the selected section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Tray

Add or edit this component on a compatible selected vessel: Repeated internal trays in a vertical cylindrical section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Tubesheet

Add or edit this component on a compatible selected vessel: Tube-support plate in the selected section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Generic Clip

Add or edit this component on a compatible selected vessel: Local attachment clip on the selected section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.

Supports





Saddle

Add or edit this component on a compatible selected vessel: Saddle support for a horizontal cylindrical vessel. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Lug

Add or edit this component on a compatible selected vessel: Support lug on a vertical vessel section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Legs

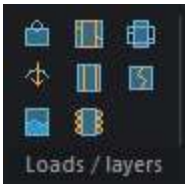
Add or edit this component on a compatible selected vessel: Leg supports for a vertical vessel. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Lifting Lug Data

Add or edit this component on a compatible selected vessel: Lifting attachment and its engineering data. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.

Loads / layers





Weight

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Additional piping or miscellaneous mass on a section.



Force and Moment

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: External force and moment applied to a section.



Liquid

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Operating liquid level and density data.



Insulation

Add or edit this component on a compatible selected vessel: External insulation thickness and density data. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Lining

Add or edit this component on a compatible selected vessel: Internal lining thickness and density data. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



Halfpipe Jacket

Add or edit this component on a compatible selected vessel: Halfpipe jacket attached to a cylindrical section. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



ASME Appendix 9 Jacket

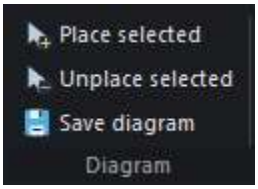
Add or edit this component on a compatible selected vessel: Vessel jacket data. No ASME calculation is implemented. Use its TJS fields to set dimensions and attachment parameters, then inspect the regenerated assembly.



API-579 Flaw/Damage Input/Analysis

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Flaw and damage assessment data. No API-579 analysis is implemented.

Diagram





Place selected

Place the selected equipment in the supported diagram workflow. Diagram position is distinct from physical dimensions.



Unplace selected

Remove the selected equipment's diagram placement while retaining the equipment definition.



Save diagram

Save the current supported equipment diagram arrangement.

History





Undo equipment

Undo the last supported equipment edit in the owning model's history.



Redo equipment

Reapply the last undone equipment edit.

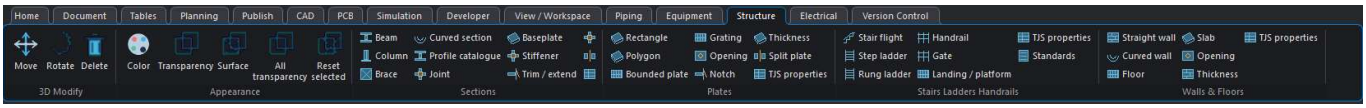
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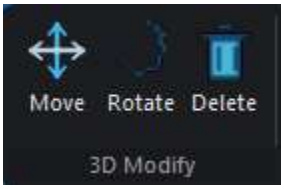
Ribbon 13 - Structure

Inspect and modify compatible structural objects using the shared 3D controls. The section, plate, access and wall creation buttons listed below are reserved ribbon commands in this build. Existing parametric TJS structures and section-library workflows can work independently of these reserved buttons.



Ribbon path: **Structure**. Section titles below match the panel names. Menu commands are shown with their parent menu.

3D Modify



Move

Move selected editable 3D objects with a mouse preview or exact displacement. Shift-click selects multiple objects; Enter applies and Escape cancels. Ctrl+Z undoes a supported move.

Rotate

Rotate selected editable 3D objects about the chosen axis using the interactive preview or an exact angle. Enter applies, Escape cancels and Ctrl+Z undoes a supported rotation.

Delete

Delete selected editable 3D objects from their owning model. Ctrl+Z restores a supported deletion; save the project after accepting the change.

Appearance



Color

Choose a display color for selected model objects. This changes appearance, not their physical material properties.

Transparency

Set transparency for the selected objects to reveal geometry behind them.

Surface

Choose the supported surface presentation for the selected objects, such as shaded or wire display.

All transparency

Set transparency across the displayed model. Check the whole-model scope before applying the value.

Reset selected

Restore the selected objects' default appearance settings.

Sections



Beam

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a beam between two points using a library profile.



Column

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a vertical structural member using a library profile.



Brace

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Connect structural members with a diagonal brace.



Curved section

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Sweep a structural profile along a curved path.



Profile catalogue

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Select the profile family and size for new structural members.



Joint

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add a connection between structural members.



Baseplate

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add a column baseplate and anchor pattern.



Stiffener

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add a stiffening plate to a structural member.



Trim / extend

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Trim or extend a member to a selected reference.

Mitre

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create matching angled ends on connected members.

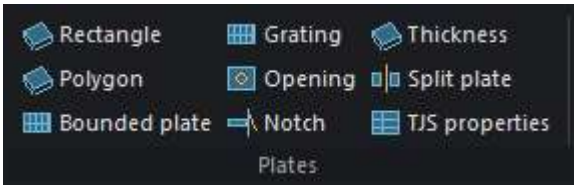
Split

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Split a structural member at a selected position.

TJS properties

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Edit the selected structural component in the workspace inspector.

Plates



Rectangle

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a rectangular plate on a selected plane.

Polygon

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a plate from a closed polygon.

Bounded plate

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a plate bounded by selected structural members.

Grating

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a grating panel using a catalogue specification.

Opening

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add an opening to a plate.

Notch

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Notch a plate around an intersecting member.

Thickness

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Change the selected plate thickness.

Split plate

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Divide a plate along a selected cutting reference.

TJS properties

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Edit the selected plate in the workspace inspector.

Stairs Ladders Handrails



Stair flight

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a stair flight from rise, run and width.

Step ladder

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create an inclined access ladder.

Rung ladder

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a vertical rung ladder.

Handrail

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a handrail along a selected path.

Gate

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Insert an access gate in a handrail.

Landing / platform

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a structural landing or access platform.

TJS properties

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Edit access dimensions in the workspace inspector.

Standards

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Select an access-system template and dimensional defaults.

Walls & Floors



Straight wall

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a wall along a straight baseline.



Curved wall

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a wall along a curved baseline.



Floor

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a floor from a closed boundary.



Slab

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a structural slab on a selected plane.



Opening

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add an opening to a wall or floor.



Thickness

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Change wall or floor thickness.



TJS properties

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Edit wall or floor parameters in the workspace inspector.

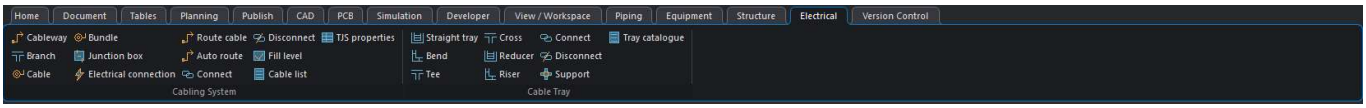
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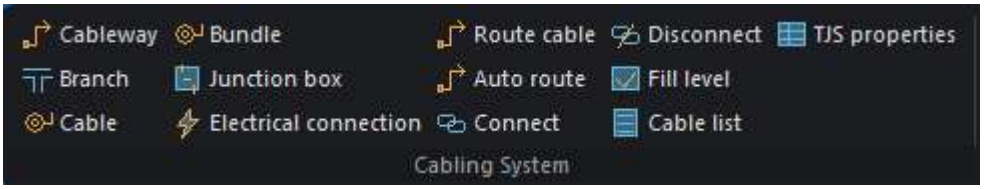
Ribbon 14 - Electrical

The Cabling System and Cable Tray panels define the intended electrical workflow. Their creation and routing commands are reserved in the current ribbon and do not yet modify the model. Read each entry as its intended future function.



Ribbon path: **Electrical**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Cabling System



Cableway

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a cableway routing network.

Branch

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add a branch to a cableway.

Cable

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Create a cable with equipment endpoints and a specification.

Bundle

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Group cables into a routing bundle.



Junction box

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a junction box with electrical connection points.



Electrical connection

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add a cable connection point to equipment.



Route cable

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Route a cable through a selected cableway path.



Auto route

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Find a cableway route between cable endpoints.



Connect

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Connect a cable to an electrical endpoint.



Disconnect

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Disconnect a cable endpoint.



Fill level

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Inspect cableway occupancy and available capacity.



Cable list

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: List cable endpoints, specifications and routed lengths.

TJS properties

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Edit cable data in the workspace inspector.

Cable Tray



Straight tray

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a straight cable-tray component.

Bend

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a cable-tray bend.

Tee

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a three-way cable-tray junction.

Cross

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a four-way cable-tray junction.

Reducer

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Connect cable trays of different widths.

Riser

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Place a vertical cable-tray transition.



Connect

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Connect compatible cable-tray components.



Disconnect

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Disconnect cable-tray components.



Support

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Add a support beneath a cable tray.



Tray catalogue

Planned function. This ribbon entry does not yet perform the operation described here. Intended use: Select tray type, width and component specification.

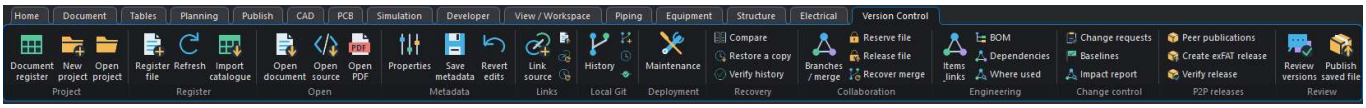
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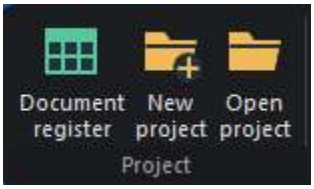
Ribbon 15 - Version Control

Manage a project's registered documents, native-source links, local Git history, engineering relationships and controlled releases. Save native documents before checkpointing or publishing. Register metadata, Git commits and review versions have separate identities and histories. Commands require the relevant project and account permissions.



Ribbon path: **Version Control**. Section titles below match the panel names. Menu commands are shown with their parent menu.

Project



Document register

Show the current project's document register in an MDI tab.

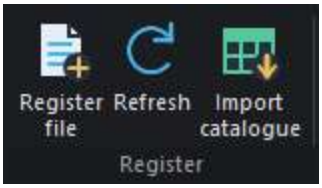
New project

Create permanent project identities in an existing folder. Files remain in place.

Open project

Choose a project folder containing an SDS registry.

Register



Register file

Register an existing file without changing its contents.

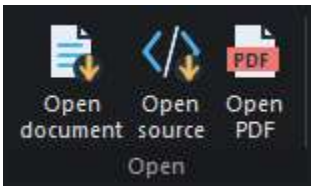
Refresh

Reload project metadata and fetch current review versions using your SDS session.

Import catalogue

Import document IDs from a review catalogue without changing review history.

Open



Open document

Open the selected document's managed file in SDS.

Open source

Open the selected native source; choose a source in the register when several are linked.

Open PDF

View the registered PDF in SDS. This does not regenerate or publish a new PDF.

Metadata



Properties

Edit the document number, title and discipline. Published document numbers stay fixed.

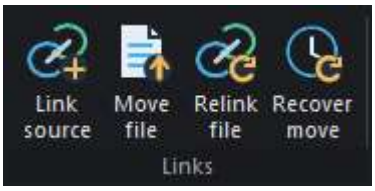
Save metadata

Save metadata with conflict detection. This does not create a new PDF version.

Revert edits

Discard your unsaved metadata edits and reload the saved record.

Links



Link source

Link an existing TJS, DJS, drawing, model or other native source to this document.

Move file

Move or rename the managed file and preserve its permanent identity and links.

Relink file

Link the working file of an imported document, or locate a file moved outside SDS. An old linked location must be missing.

Recover move

Complete an interrupted managed move when its journal and file hashes agree.

Local Git



History

Open local project history. Git runs inside SDS through the bundled libgit2 library.

Initialize

Initialize local history for the registered project files and metadata.

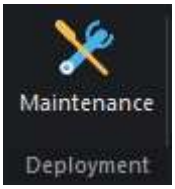
Status

Compare last saved files with the current checkpoint and refresh history.

Commit saved

Create a checkpoint of all registered saved files and metadata using your SDS account.

Deployment



Maintenance

Open project compatibility, complete backups and migration to a new folder.

Recovery



Compare

Compare the selected file with its content in the selected checkpoint.

Restore a copy

Recover the selected historical file to a new filename inside this project.

Verify history

Verify reachable history objects and saved content hashes.

Collaboration



Branches / merge

Open branch workspaces, file reservations and merge conflict decisions.

Reserve file

Reserve the selected file for your SDS account. Other accounts cannot checkpoint or merge changes to it.

Release file

Release your reservation on the selected file.

Recover merge

Complete an interrupted merge after closing file writers. Changed external files are preserved.

Engineering



Items & links

Manage engineering items and their drawings, models and relationships in this project.

BOM

Show the selected item's direct bill of materials with quantities and units. Double-click a component to explore it.

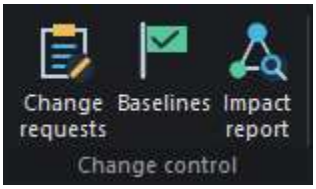
Dependencies

Show the selected item's outgoing links, drawings, models and dependencies.

Where used

Find the items, documents and files that refer to the selected entity.

Change control



Change requests

Open change requests, approval decisions and release baselines for the main project.

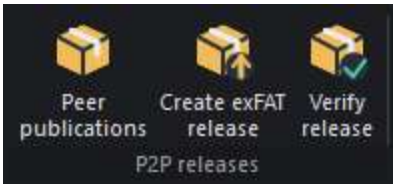
Baselines

Inspect named immutable baselines, their approved checkpoints and file manifests.

Impact report

Trace changed files and declared scope through document sources and engineering dependencies.

P2P releases



Peer publications

Open immutable checkpoint releases for the existing P2P exFAT service.

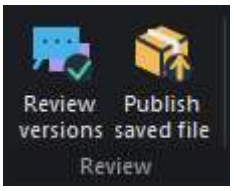
Create exFAT release

Package all registered files from the clean main checkpoint into a new verified exFAT release.

Verify release

Recheck every disk block and archived file against the selected release manifest.

Review



Review & versions

Open Review & Versions in SDS to read comments, history and decisions.

Publish saved file

Publish the saved file. PDFs in Git projects include a source checkpoint and metadata; commit the PDF and linked sources first.

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