Contents

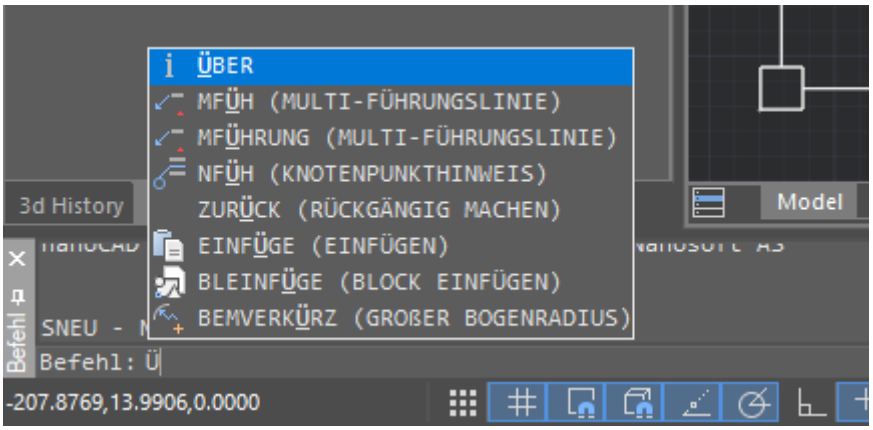
New in nanoCAD 26

* The most up-to-date and complete description of the new features of **nanoCAD 26** is available online.

New nanoCAD Functionality

Native Command Aliases

We've introduced localized alias files for French, Spanish, German, and Portuguese — so you can now use command shortcuts in your native language:



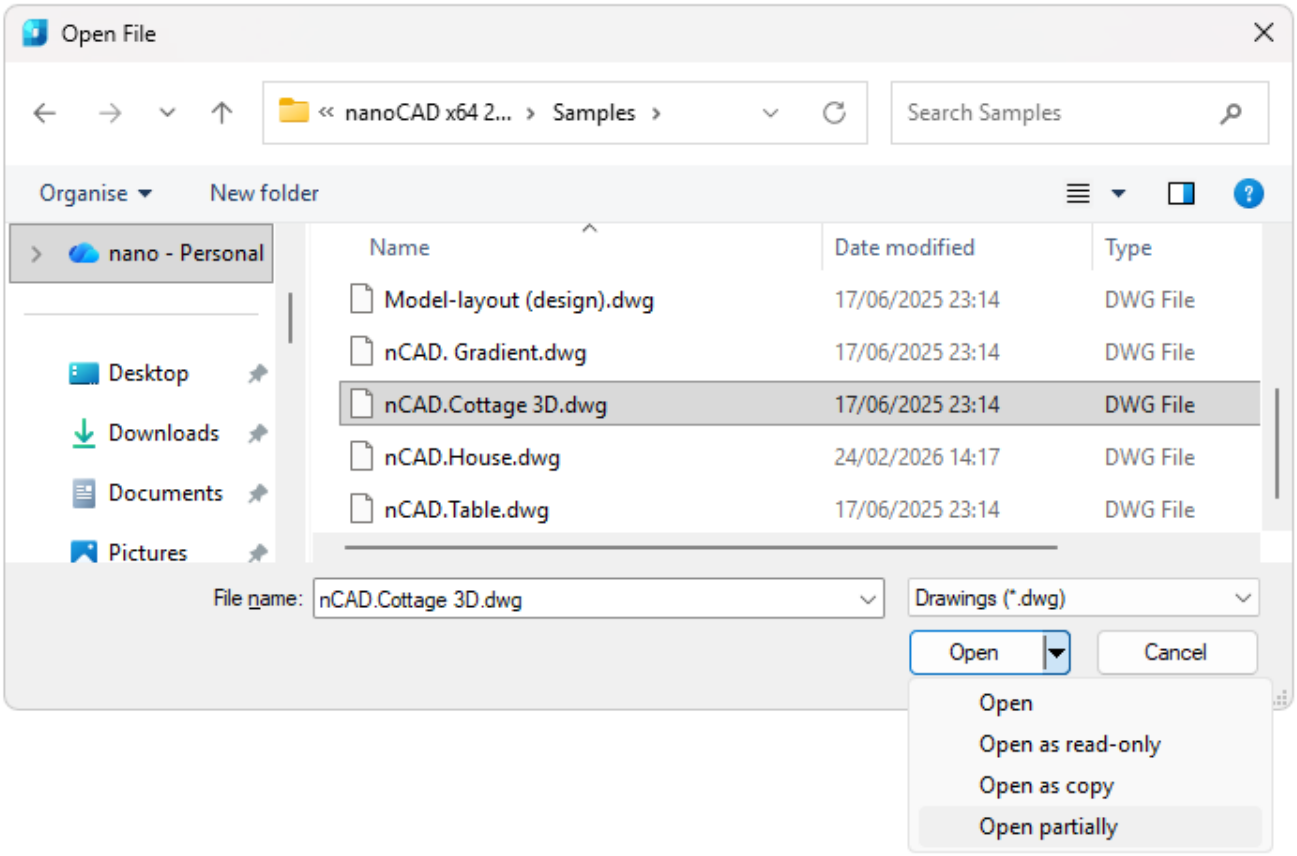
Call commands through the command line or dynamic input using familiar abbreviations, reduce typing time, and streamline your drafting workflow.

Document Partial Opening

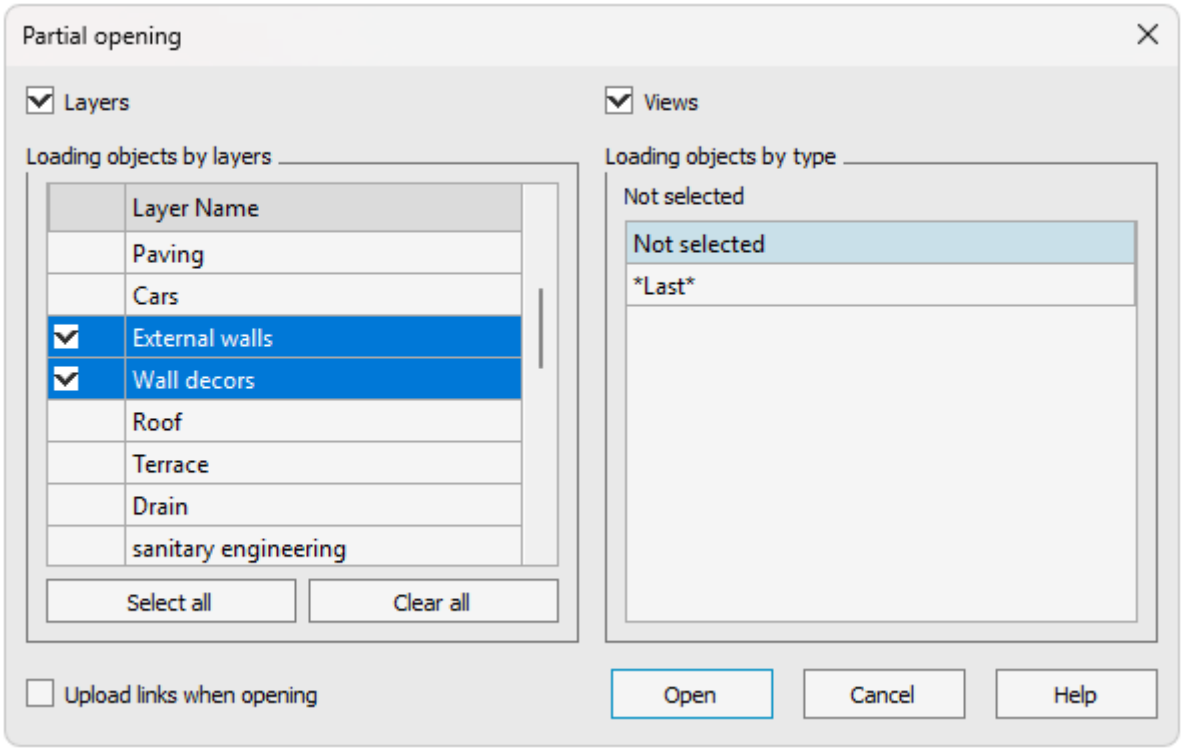
For working with large files, nanoCAD has added a partial document opening mode.

In partial opening mode, only objects that match user-defined criteria (the selected view and layers) are loaded, significantly reducing system resource consumption and speeding up file opening. Other objects remain in the file on disk and are not loaded into RAM. Unloaded objects are not displayed and cannot be directly edited, but their associative links are preserved.

To partially open a file, click the arrow next to the **Open** button in the standard **Open File (OPEN)** dialog box and select **Open Partially**:

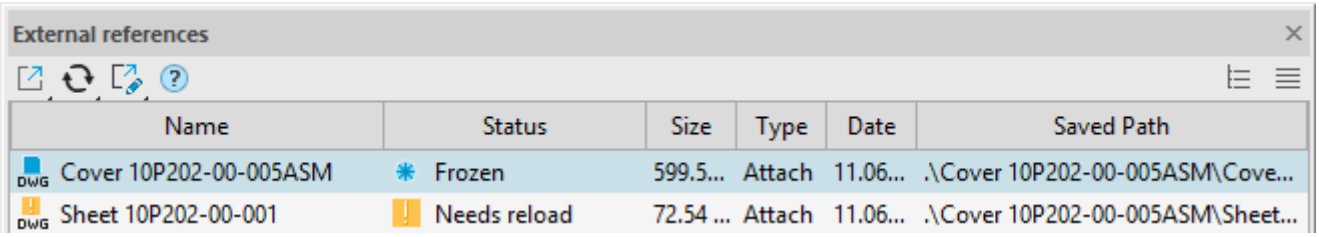


In the **Partial Opening** (**PARTIALOAD**) dialog box, select the view and layers, which objects should be loaded:

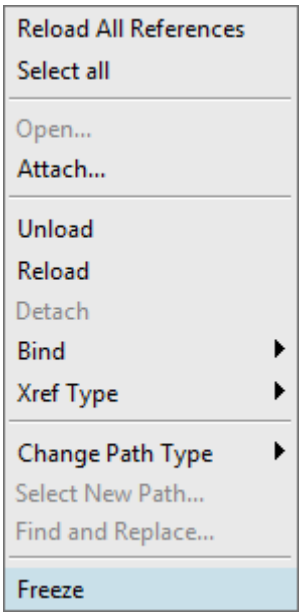


External References Freezing

A new status has been added for external references: **Frozen**.



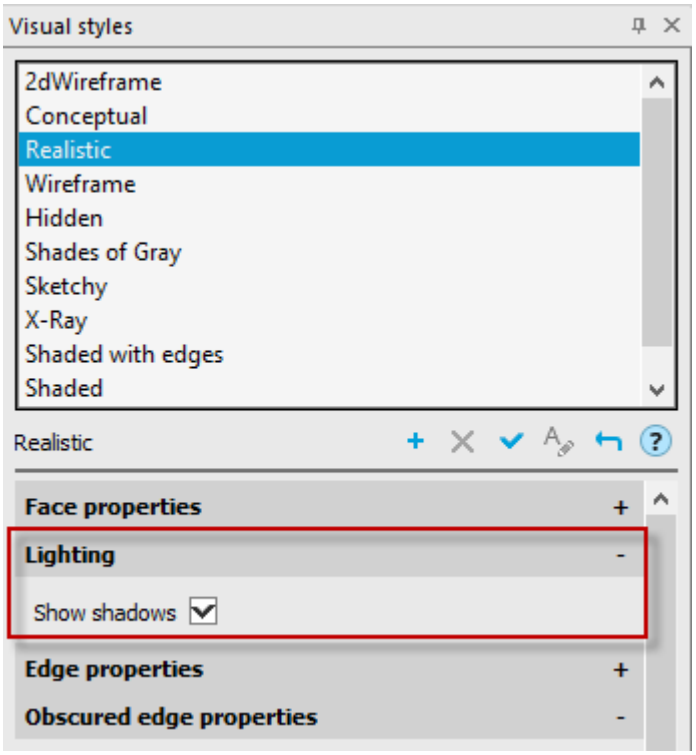
Freezing is controlled through the **External References** panel. To assign a status to a loaded reference, select **Freeze** from the context menu.



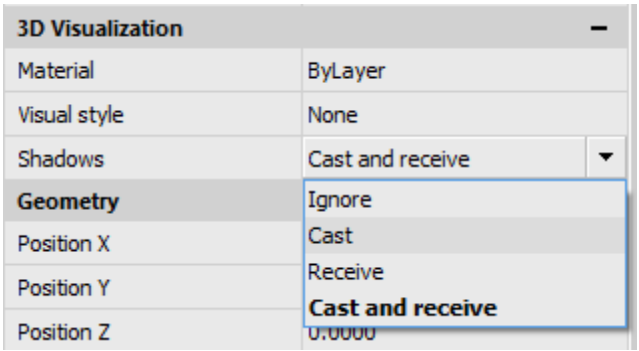
Freezing an external reference frees up RAM. When frozen, the external reference itself is not loaded into memory, and the graphics cache obtained at the time of freezing is used for display.

Visual Style Improvements

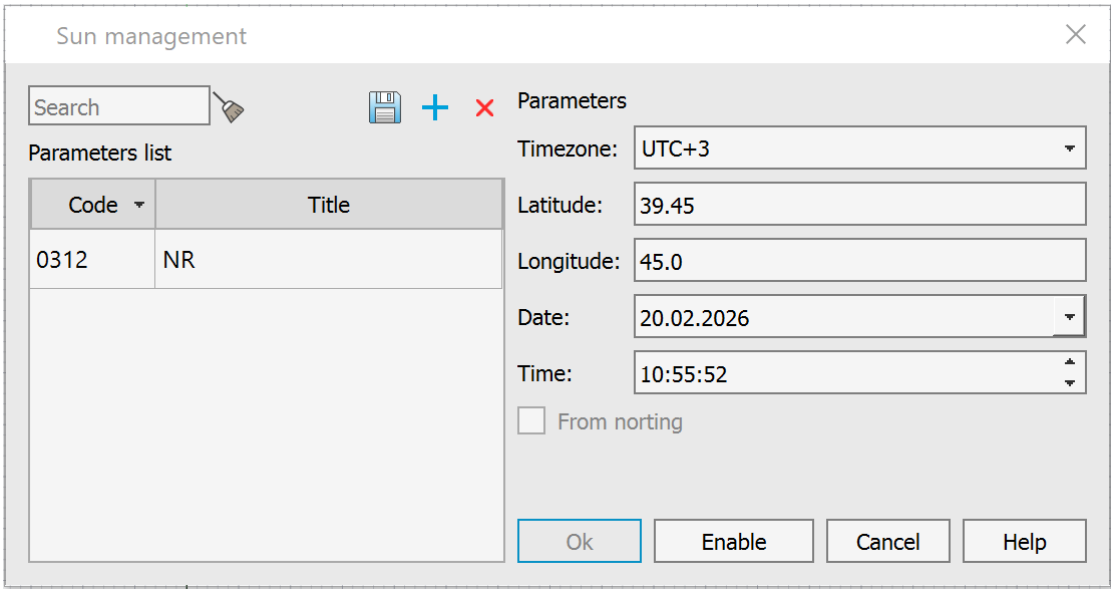
A **Lighting** section has been added to the **Visual Styles** (**VISUALSTYLES**) panel, containing a checkbox for enabling/disabling shadows:



A new **Shadows** property has been added to the **3D Visualization** section of the **Properties** panel.



A **SUNPROPERTIES** command has been developed for creating realistic natural lighting that simulates sunlight. This command opens the **Sun Management** dialog, where you can fine-tune sunlight parameters based on the object's geographic location, specific date, and time of day. Sunlight parameters can be saved as presets. Saved presets are displayed in a table on the left side of the dialog.



Opening Third-Party Files

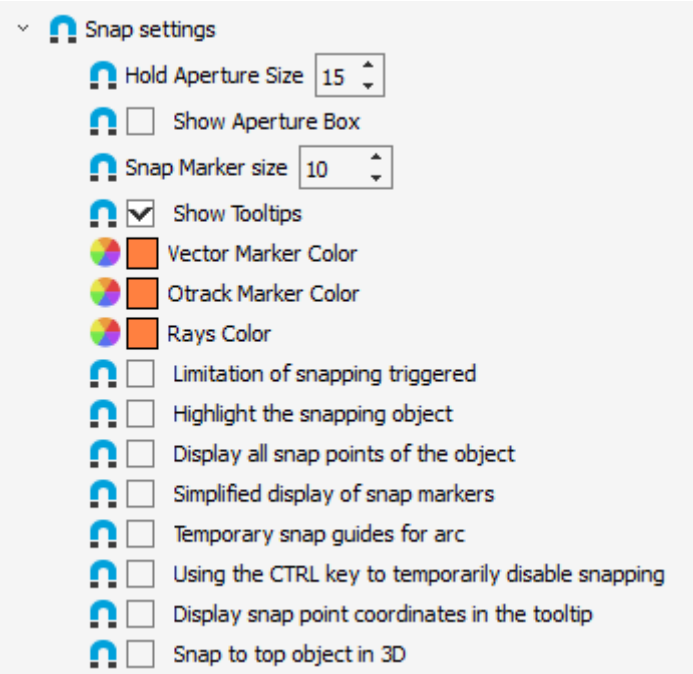
A warning message has been added when opening a DWG file created or edited in software applications not affiliated with the **Nanosoft AS** company.

- **Yes** – the document will be loaded.
- **No** – the document will not be loaded.
- **Do not show this message again** – disables the warning message.

The message is also displayed in the command line.

Snap

New **Snap Settings** have been added to the **Settings** dialog box (**OPTIONS**).



Limitation of Snapping Triggered – Enables/disables the mode in which object snapping is triggered when the crosshair (aperture) is positioned directly over an object's keypoint, such as the endpoint of a line segment.

Highlight the Snapping Object – Enables/disables object highlighting for snapping. Only objects whose keypoints correspond to activated (enabled) snaps are highlighted.

Display All Snap Points of the Object – Enables/disables the display of snap markers for all object snap points. Only markers for activated (enabled) snaps are displayed.

Simplified Display of Snap Markers – Enables/disables the simplified display of snap markers.

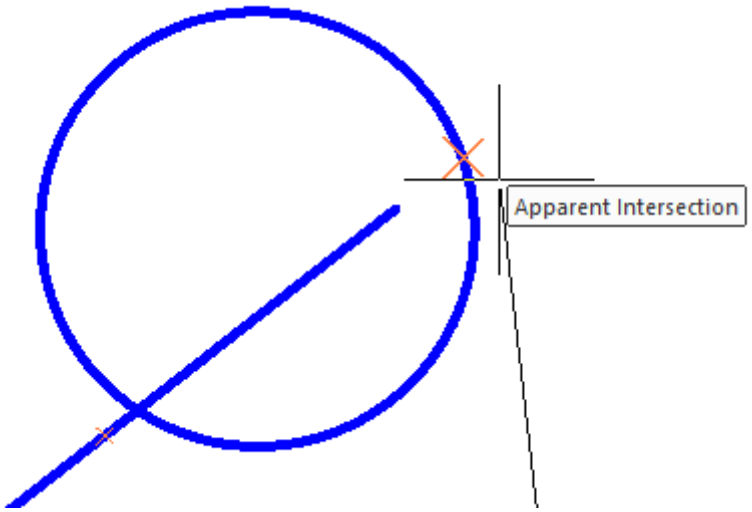
Temporary Snap Guides for Arcs – Enables/disables the creation of a temporary auxiliary line for snapping that is an extension of an arc, including an elliptical arc. Activated when hovering over the arc's endpoint.

Using the CTRL Key to Temporarily Disable Snapping – Enables/disables the use of the CTRL key to temporarily disable snapping.

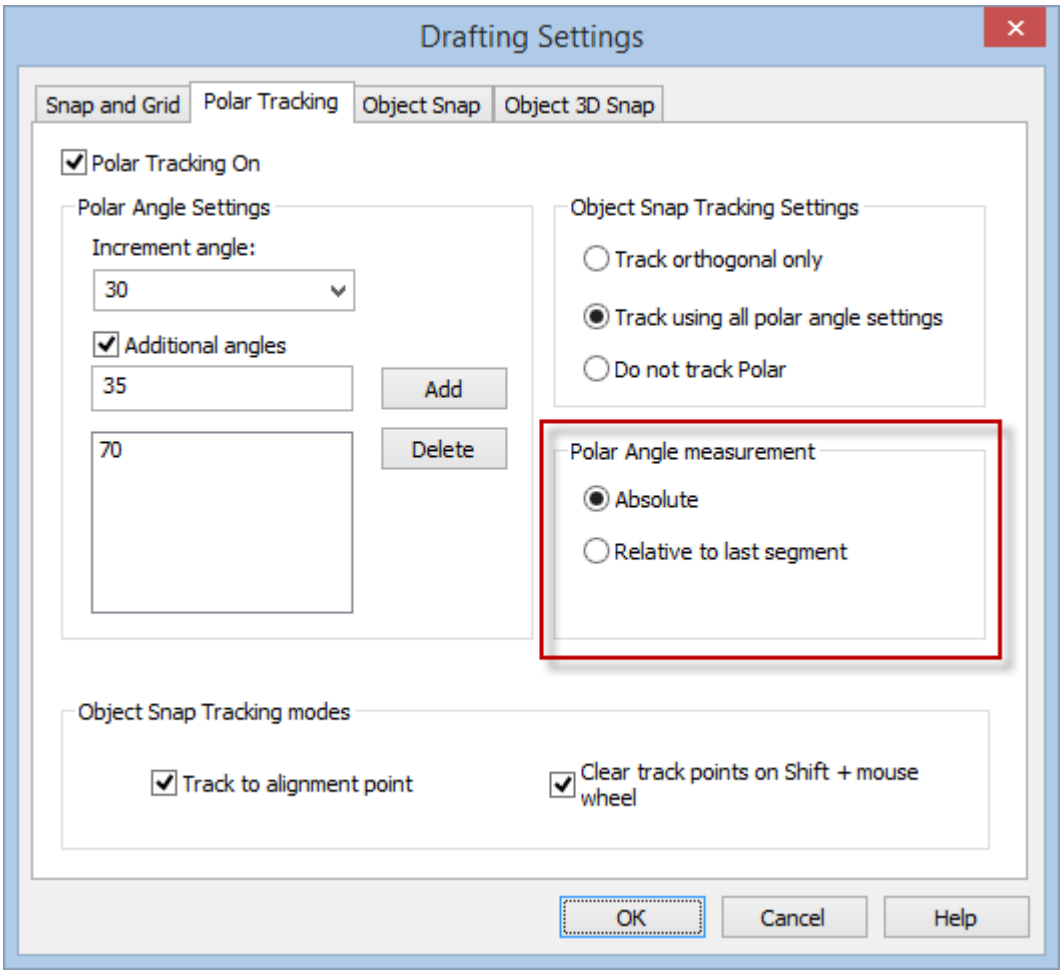
Display Snap Point Coordinates in the Tooltip – Enables/disables the display of snap point coordinates in the tooltip.

Snap to Top Object in 3D – Enables/disables snapping only to the top object in 3D space.

The **Apparent Intersection** is a new special mode of the **Intersection** snap has been implemented. It allows you to find the intersection points of objects if they were extended. **Apparent Intersection** can be enabled as a one-time **Intersection** object during creation and editing objects.



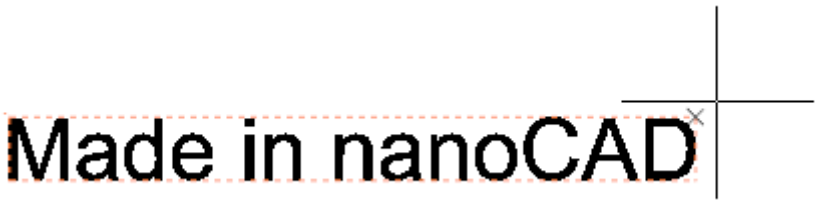
Polar angle measurement options have been added to the **Polar Tracking** tab of the **Drawing Settings** dialog box:



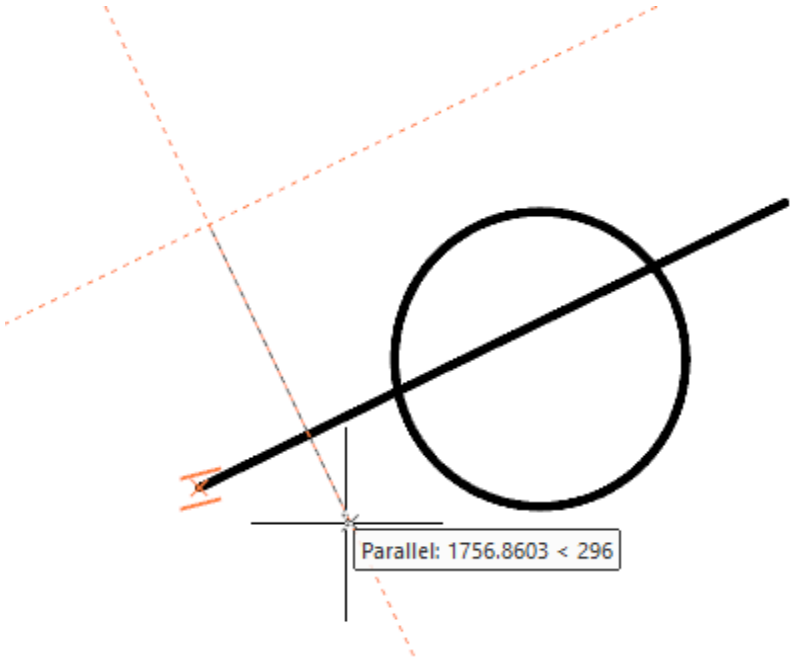
Absolute – enables the angle measurement mode based on the X-axis of the WCS.

Relative to Last Segment – enables the angle measurement mode based on the direction of the previous line.

Snapping to the boundary points of text objects is now supported when **Track to Alignment Point** is enabled in the **Polar Tracking** tab of the **Drafting Settings** (**DSETTINGS**) dialog.



Construction geometry has been updated for the **Parallel** snap. Along with the parallel rubber band, a rubber band perpendicular to the object is displayed on the screen, allowing you to draw a linear object normal to an existing object.



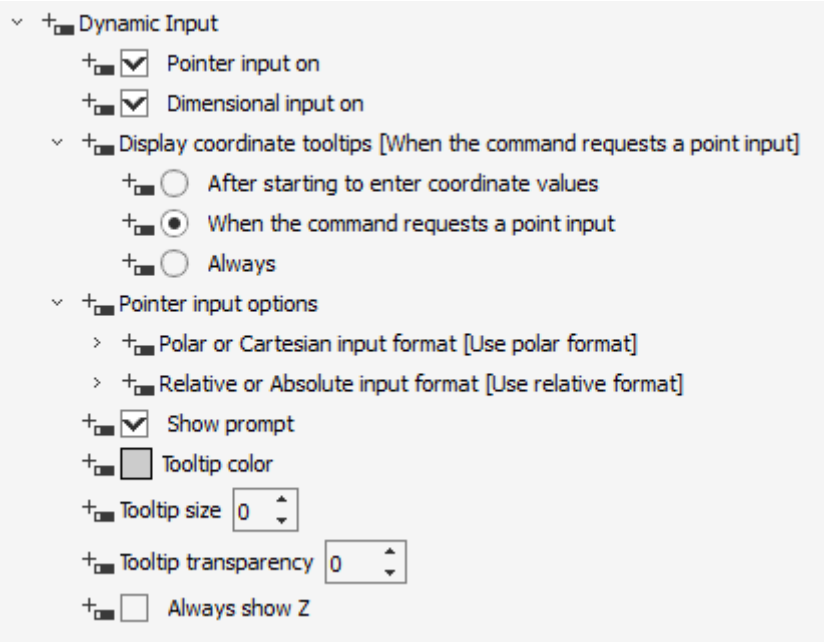
Unlike the standard **Perpendicular** snap, the second point can be specified anywhere during construction, not necessarily on the object to which the normal is being drawn.

Object snap capabilities have been expanded for **Mesh**, **Polyface Mesh**, and **3D Face** objects:

- When 3D object snaps are enabled (**Face Nearest**, **Vertex**, **Face Center**, **Face Perpendicular**), snapping to the **mesh face** is triggered.
- When 3D object snaps are disabled but the Object Snap (**OSNAP**) mode is enabled (**Nearest**, **Node**, **Center**), snapping to the **face edge** is triggered.

New Options

New **Dynamic Input** tooltip settings have been added to the **Options** (**OPTIONS**) dialog.



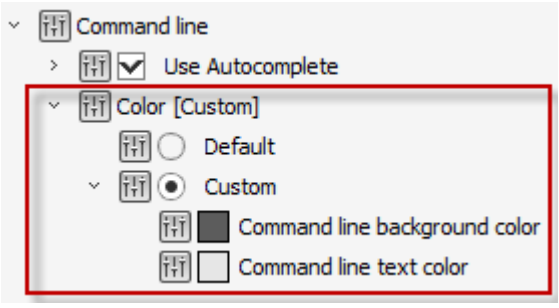
Display coordinate tooltips – subsection for controlling the display of tooltips for coordinates (**DYNPIVIS** system variable):

- **After starting to enter coordinate values** – display tooltips only when you start entering coordinate values.
- **When the command requests a point input** – display tooltips when a command prompts for a point.
- **Always** – always display tooltips, even in non-command mode.

Tooltip Size – specifies the size of the tooltips. The range is from -3 to 6. The default is 0.

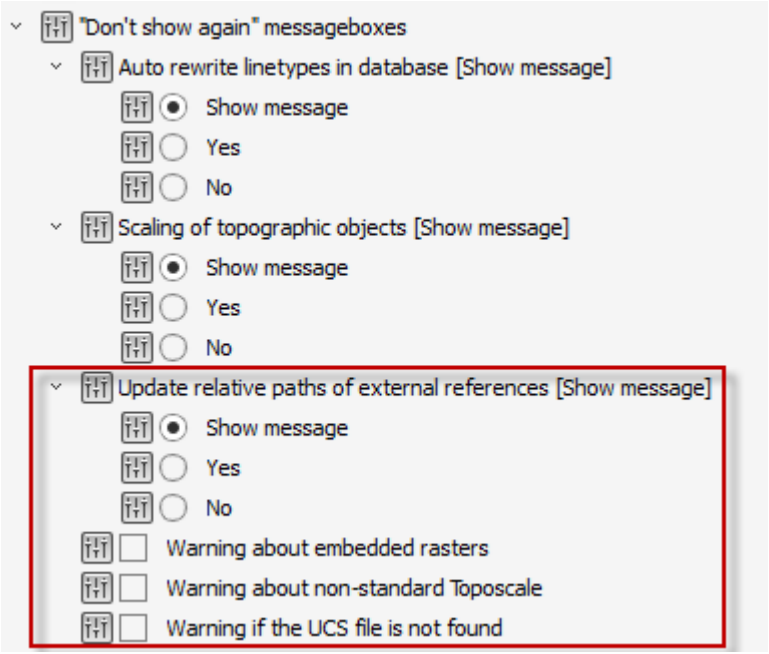
To display the Z coordinate in tooltips next to the cursor, enable the **Always show Z**.

New command line color settings have been added to the **Options** (**OPTIONS**) dialog.



- **Default** – command line colors are specified by the visual style of the interface.
- **Custom** – specify custom colors:
  - **Command Line Background Color** – set the background color.
  - **Command Line Text Color** – set the command line text color.

New settings have been added to the **"Don't Show Again" Messageboxes** section of the **Options (OPTIONS)** dialog.

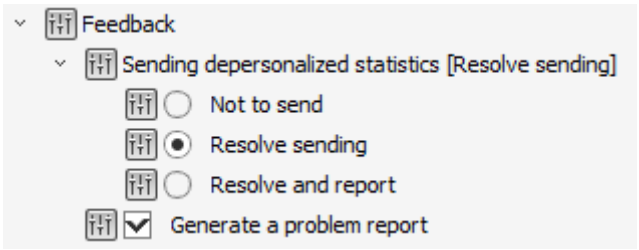


Update relative paths of external references – Enable/Disable the message when changing the file location using the **Save As** command for drawings containing external references with relative paths.

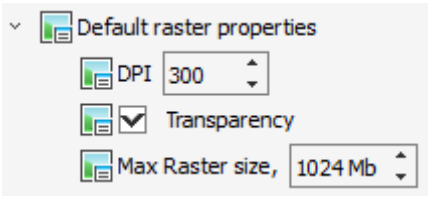
Warning about embedded raster – Enable/Disable the warning when embedding a raster into a drawing.

Warning if the UCS file is not found – Enable/Disable the warning about missing user coordinate system file.

Added the ability to disable the **Generation of a Problem Report** (**REPORTPROBLEM**) in the **Feedback** section of the **Options** (**OPTIONS**) dialog.

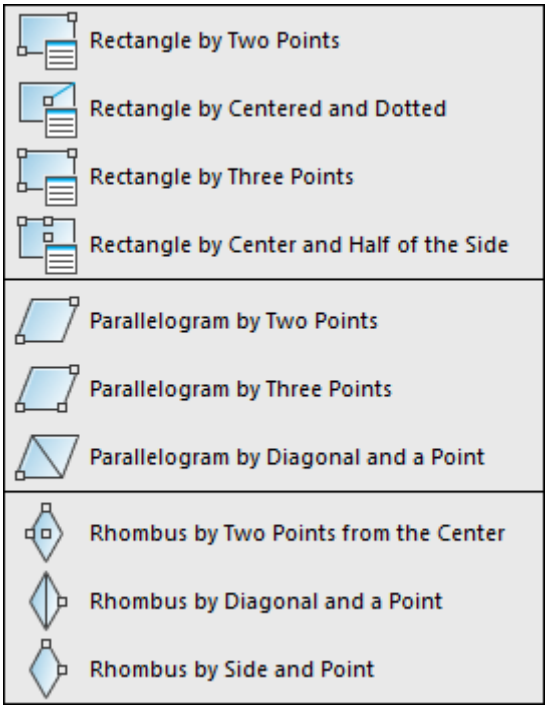


A **Max Raster Size** setting has been added to the **Default Raster Properties** section of the **OPTIONS** dialog (**MAXRASTERSIZE** system variable). This setting specifies the maximum size of raster (in MB) that can be fully loaded into RAM. If the size is larger than this value, inline dynamic loading will be used, and raster will be loaded in read-only mode.

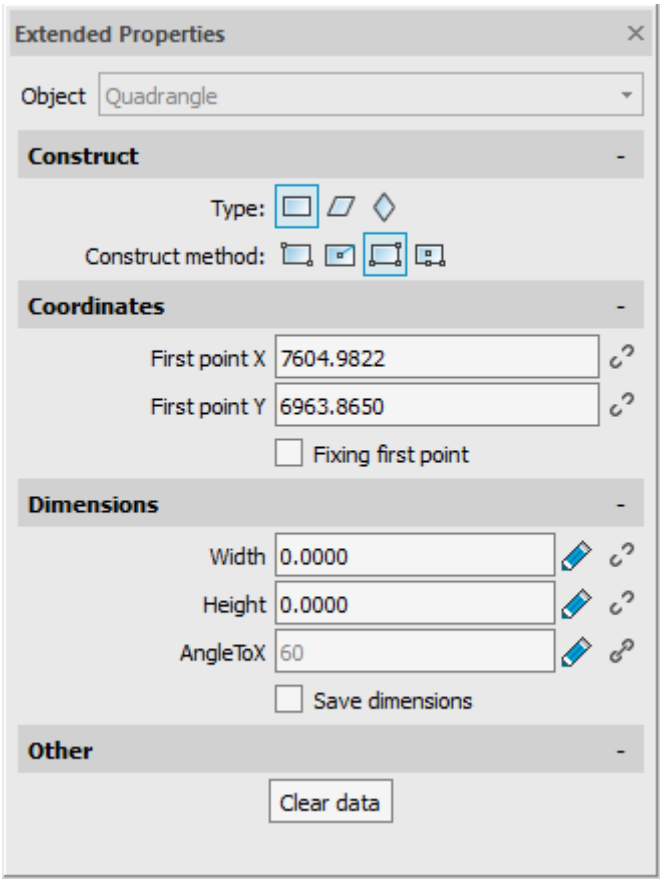


Quadrangle

A new **Quadrangle** (**CQUAD**) command for constructing geometric linear objects has been added. This command allows you to construct quadrilaterals of various types using various methods:



When you call this command, the **Extended Properties** functional bar appears:



To construct a quadrangle, specify the following properties:

- Type of quadrangle – rectangle, parallelogram, or rhombus.
- Construction method.
- Coordinates and/or dimensions of the quadrangle. The coordinates and dimensions of the quadrangle can be specified on the screen with the mouse cursor or entered as values in the corresponding fields.

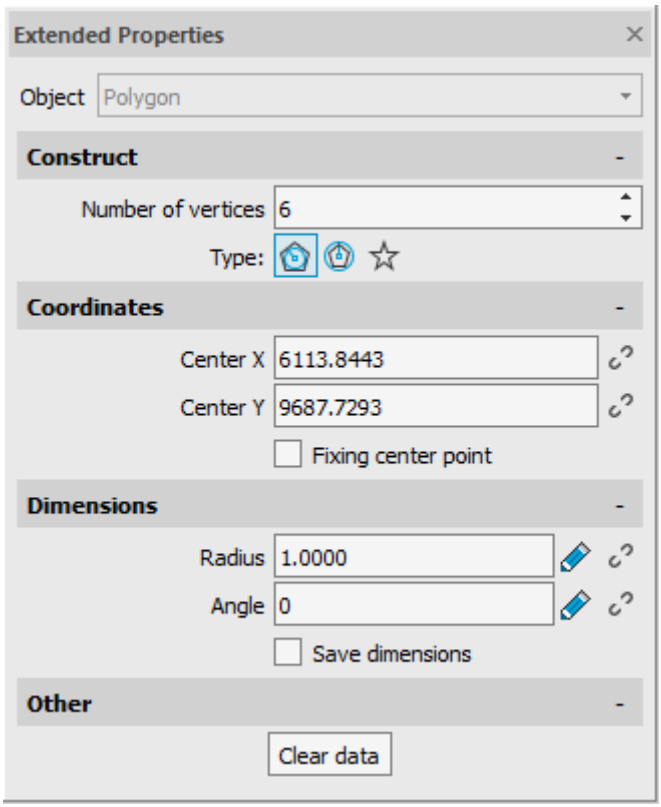
Quadrangle properties can also be specified via the command line.

PolygonPlus

A new **PolygonPlus** (**CPOLYGON**) command for constructing geometric linear objects has been added. This command allows you to construct various types of polygons:

- **Circumscribed** – constructs a circumscribed polygon by specifying the radius of the circle containing the midpoints of the polygon's sides.
- **Inscribed** – constructs an inscribed polygon by specifying the radius of the circle containing the polygon's vertices.
- **Star** – constructs a polygon with alternating external and internal vertices.

When you call this command, the **Extended Properties** functional bar appears:



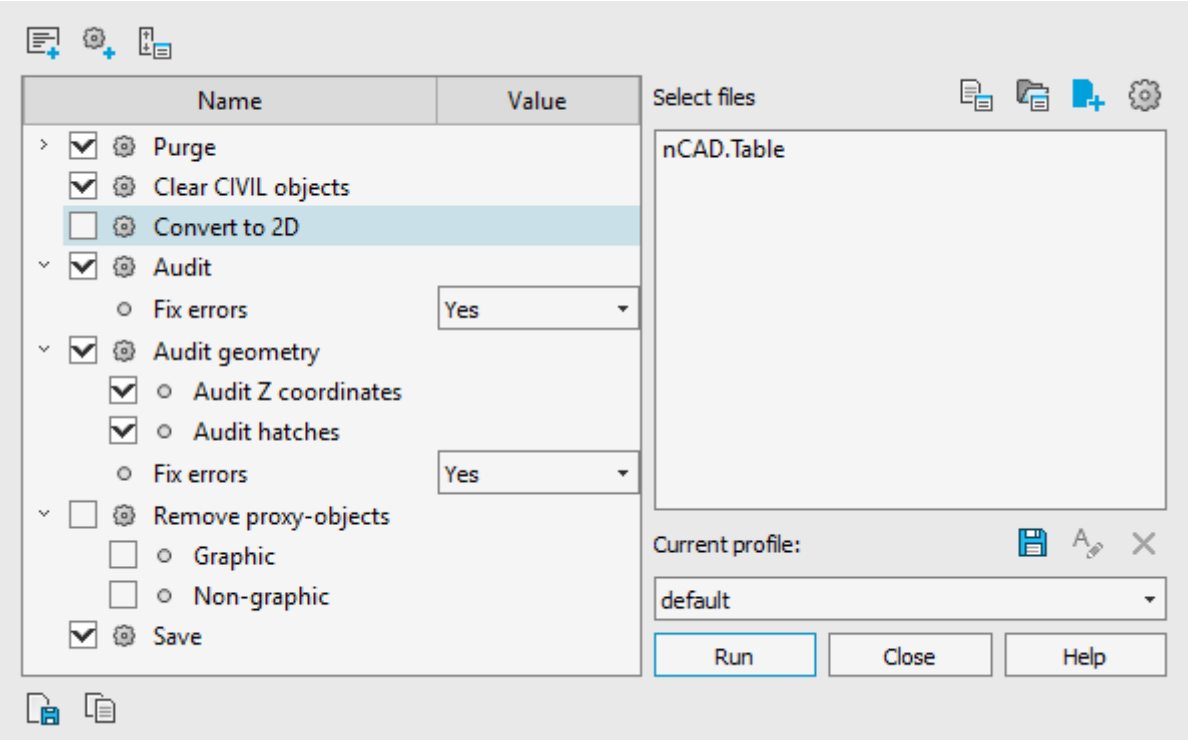
To create a polygon, specify the following properties:

- Number of vertices (rays).
- Polygon Type: circumscribed polygon, inscribed polygon, star.
- Coordinates of the center point.
- Polygon dimensions.

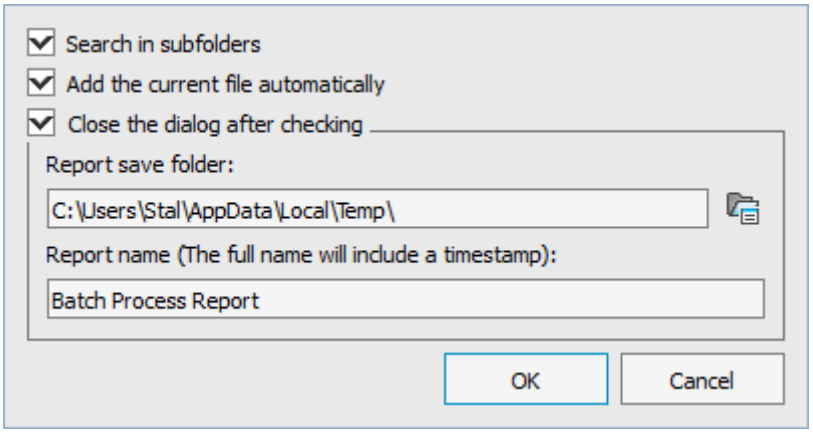
Polygon properties can also be specified via the command line.

Batch File Processing

One more processing stage has been added in the **Batch File Processing** utility (**BATCHPROCESS**) – **Convert to 2D** (**FLATTEN**). This option is disabled by default. This command projects selected objects with non-zero Z coordinates onto the XoY plane of the UCS.



The **Batch Processing** utility (**BATCHPROCESS**) now has an additional option: **Close the dialog after checking** (enabled by default).

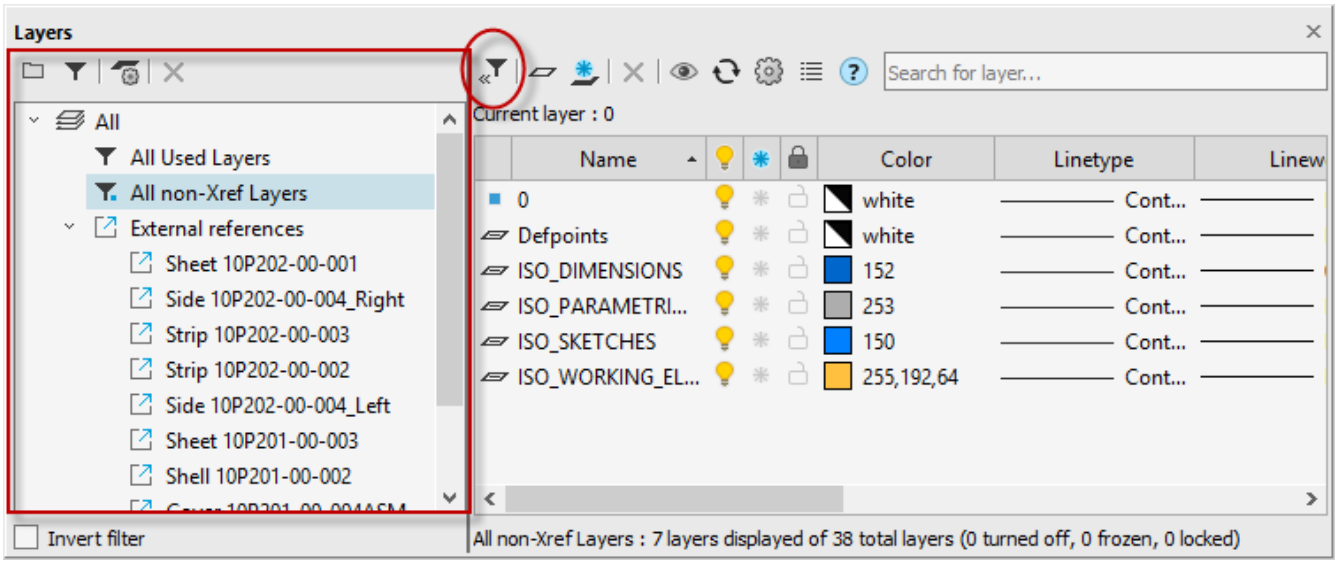


This option enables/disables automatic closing of the **Batch Processing** dialog box after file validation:

- **Report save folder** — the path to the folder where the program will save the batch file processing report. The default folder is C:\Users\UserName\AppData\Local\Temp.
- **Report name** — the field for specifying the name of the batch file processing report. A timestamp of the form HH-MM-SS_DD.MM.YYYY is automatically appended to the name.

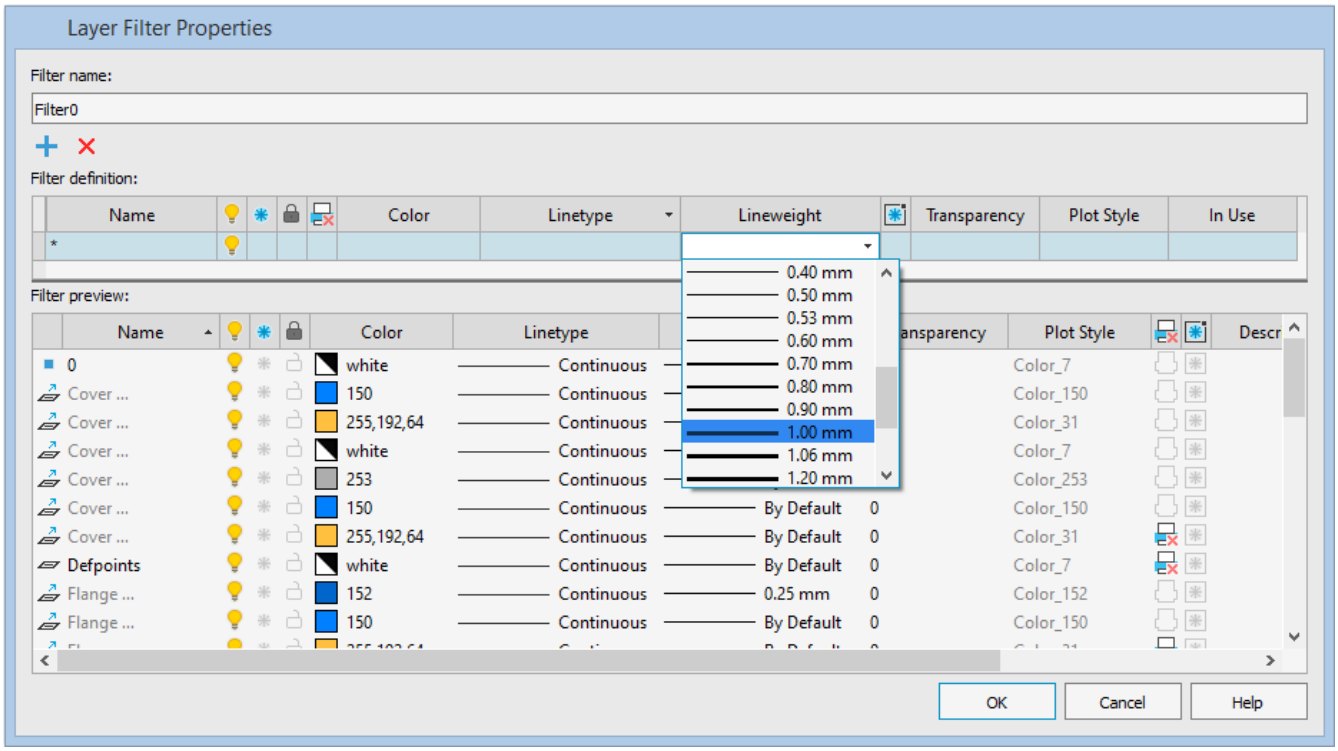
Layers

Tools for working with groups, filters, and configurations have been added to the **Layers** functional bar (**LAYERSQUICK**). The work is carried out in an additional panel, which can be opened by clicking the  **Expand Layer Filter Tree** button.



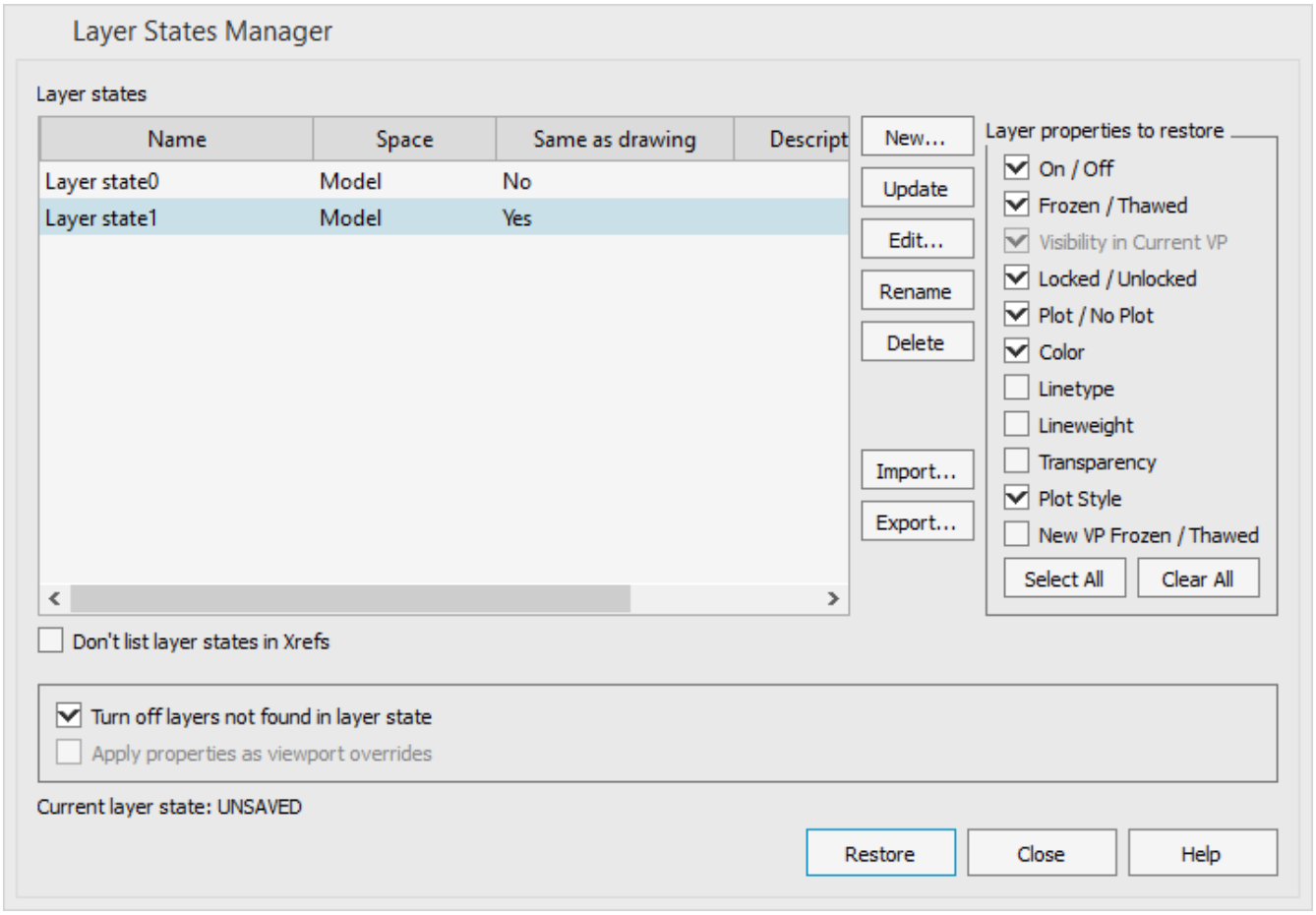
Layers grouping is useful if a document contains a large number of layers or if you frequently need to change the settings for several layers (for example, to quickly turn them on/off or to enable/disable printing capability).

A filter generates a list of layers that meet the filter criteria. Filter selection is performed in the **Layer Filter Properties** dialog box.



Layer configurations are saved sets of layer settings that allow you to quickly switch between different layer states in a drawing, such as visibility, freezing, locking, etc. A configuration is created for all layers in the document.

Detailed work with layer configurations is performed in the **Layer States Manager** dialog box.



Text

A new **Text Alignment** (**TEXTALIGN**) command has been added. This command allows you to align multiple text objects (**TEXT**, **MTEXT**):

- horizontally,
- vertically,
- at an angle.

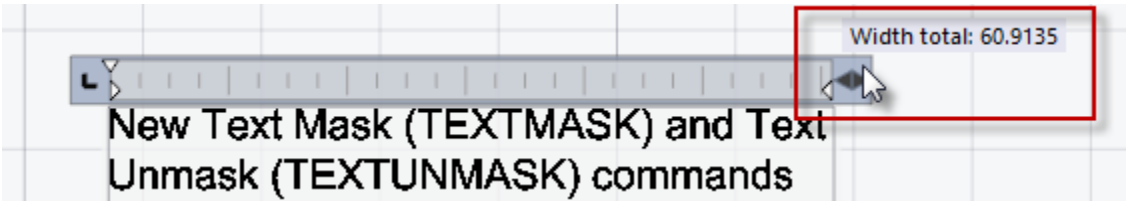
New **Text Mask** (**TEXTMASK**) and **Text Unmask** (**TEXTUNMASK**) commands have been added for applying/removing masking behind text. A **Wipeout** and **Solid** object can be used as a mask.

A new **Reset MText Formatting** (**REMOVEMTEXTFORMAT**) command has been added for resetting manual multiline text formatting. This removes manual formatting, returning it back to the values of the applied text style.

A new **Auto Numbering of Text** (**TCOUNT**) command has been added for sequential numbering of single-line (**TEXT**) and multiline (**MTEXT**) text objects, as well as attribute definitions (**ATTDEF**). Numbering can be displayed as a prefix or suffix, and can also replace specified text.

The ability to create different types of fractions in multiline text (**MTEXT**) using the characters / (slash), # (hash), and ^ (caret) has been added.

Added tooltips indicating the height and width of multiline text (**MTEXT**) to the button for setting the width (height) of a text input area:



A new **Convert Field to Text** (**FIELDTOTEXT**) command has been added for converting multiple fields to text. Possible command options:

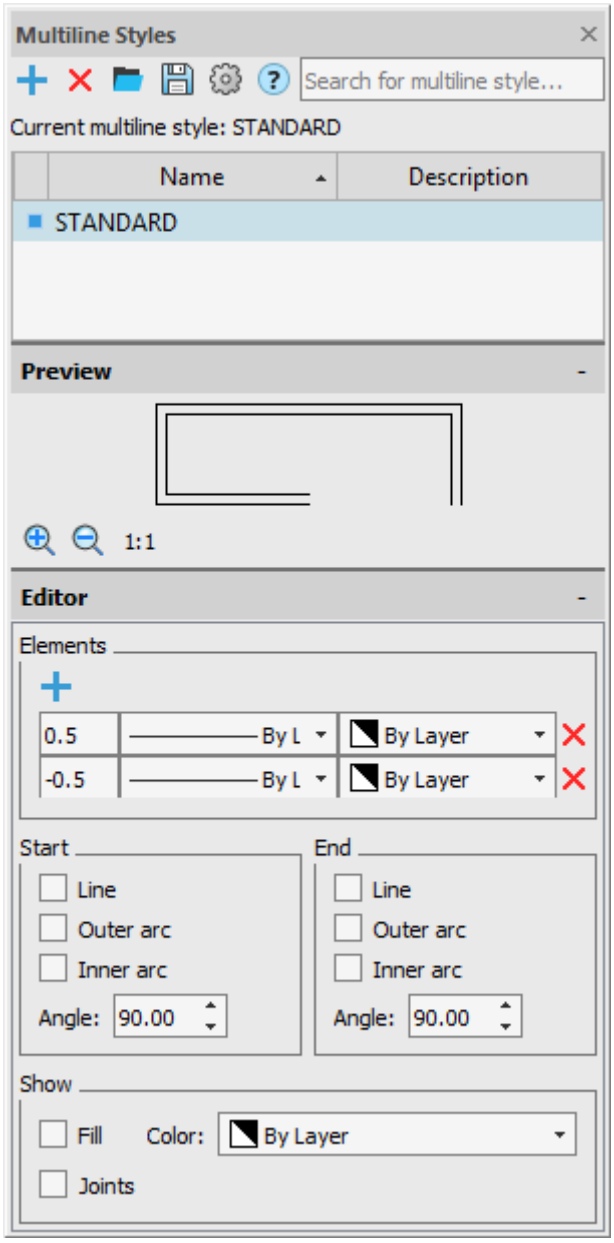
- **Drawing** – converts all drawing fields to text.
- **Layout** – converts all layout fields to text.
- **Sheetset** – converts all fields in a sheet set to text.

The **Convert Text to Multiline Text** (**TEXT2MTEXT**) command has been improved. It can now be used to combine multiline text objects (**MTEXT**) into a single multiline text.

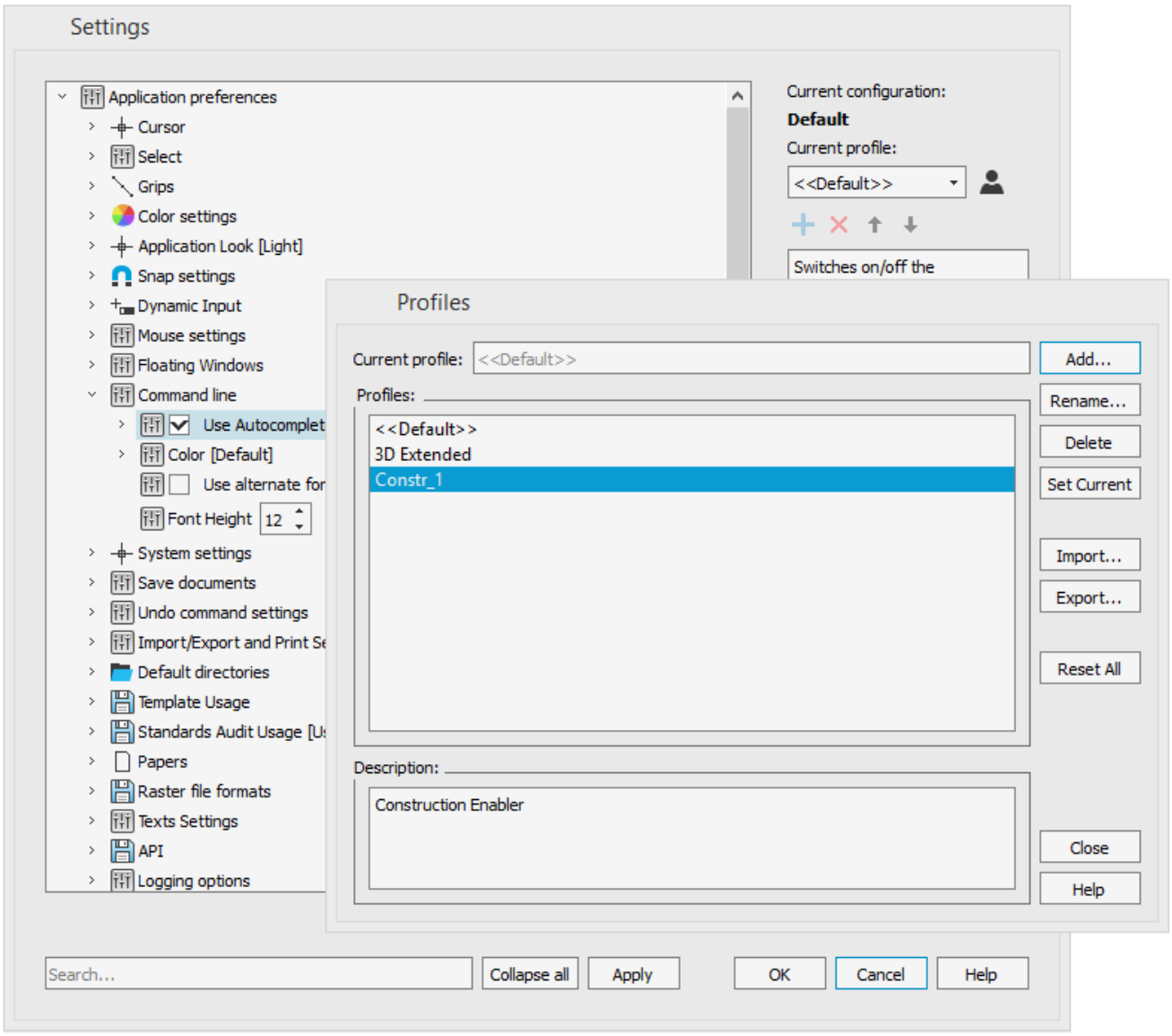
Added the ability to edit (**MTEDIT**) text objects (single-line and multi-line texts, texts in multileaders, texts in DWG tables, attribute values, dimension texts, including those with subdimension text) in block references and external links without having to open them in the corresponding editors.

Dialog and Interface Updates

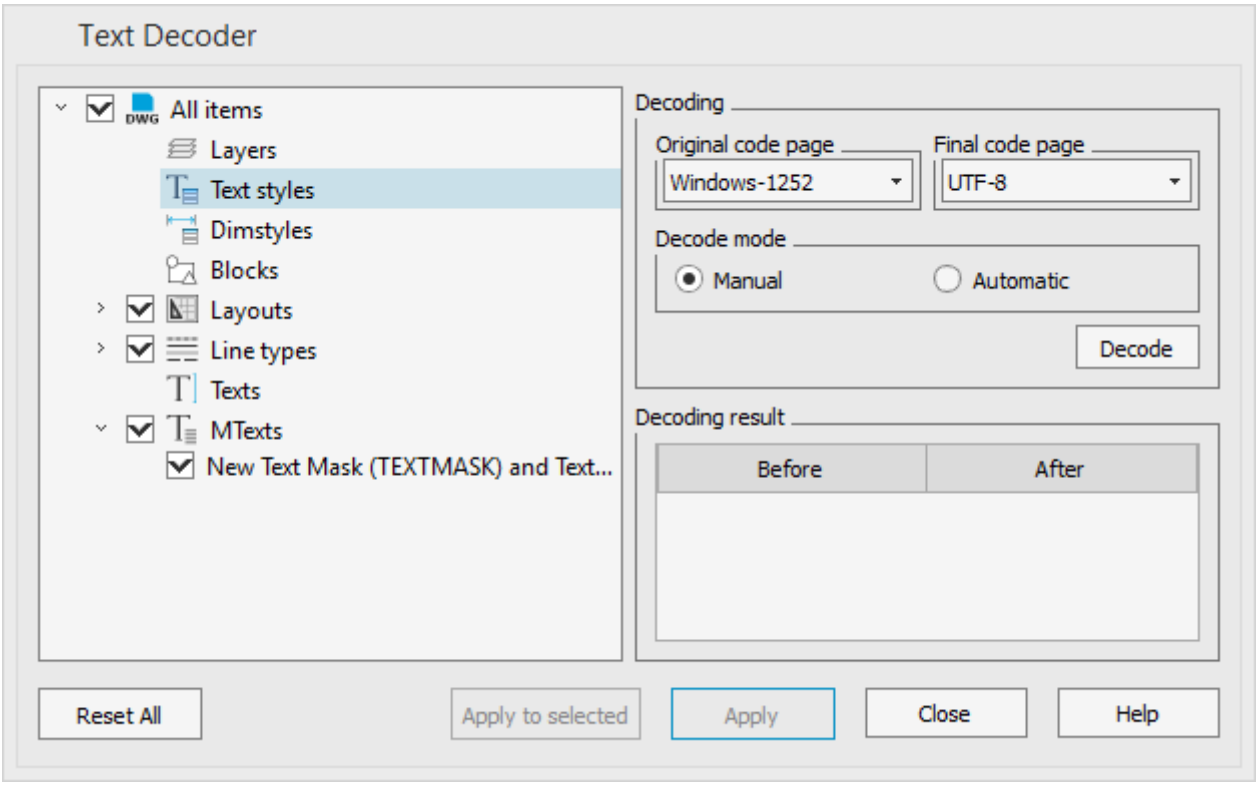
The features of the classic **Multiline Styles** (**MLSTYLECLASSIC**) dialog have been improved and implemented in the new **Multiline Styles** (**MLSTYLE**) panel. The editor is located directly on the functional bar and allows you to quickly edit the selected style or create a new one.



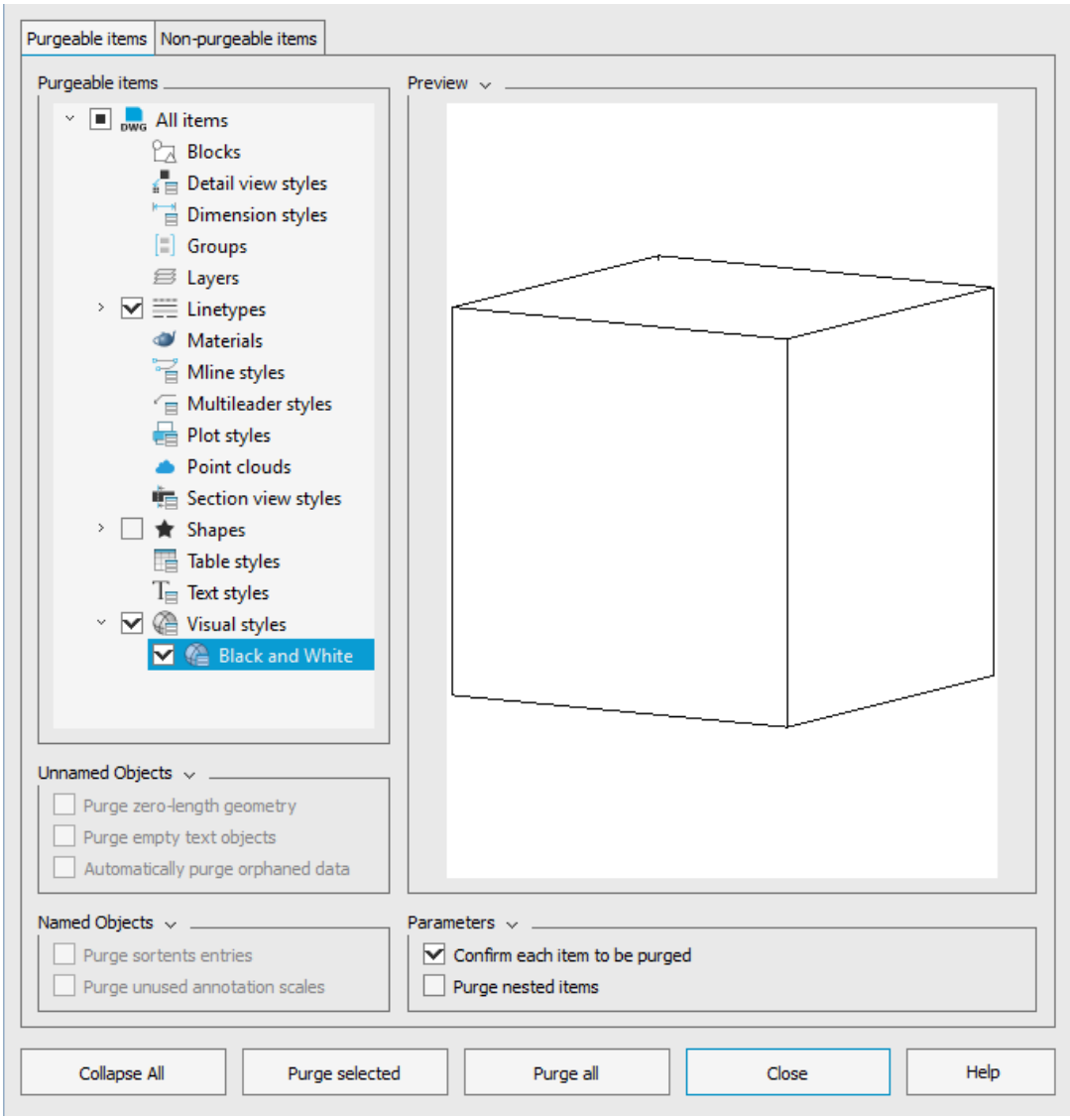
The **Options** (**OPTIONS**) and the **Profiles** (**PROFILES**) dialogs have been updated. The visual component has been improved, and the ergonomics of dialog boxes has been optimized.



The **Text Decoder** (**TEXTDECODER**) dialog has been updated. The arrangement of controls in the dialog box has been optimized.



The **PURGE** dialog has been updated. The visual component has been improved, and the ergonomics of the dialog box has been optimized.

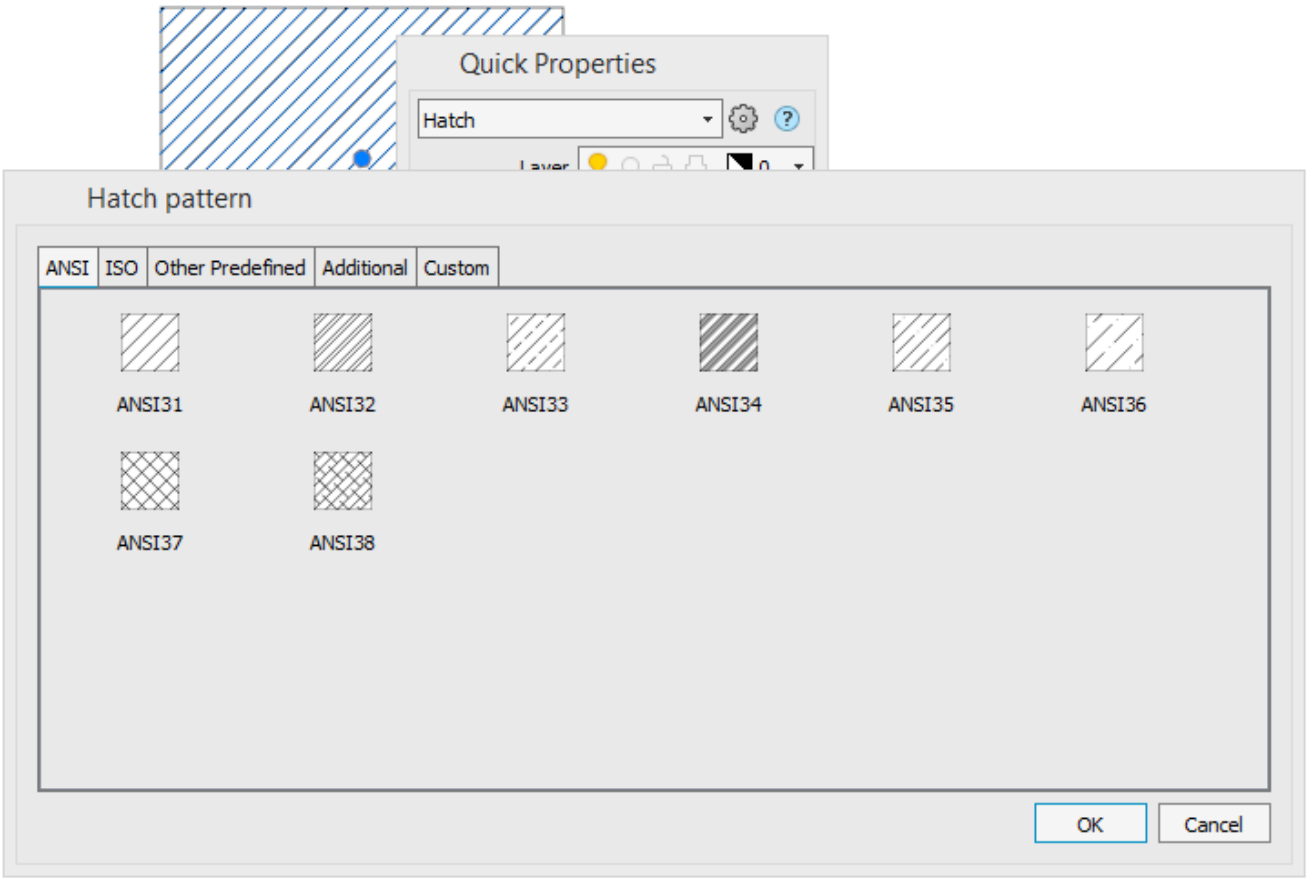


The CAD standards checking dialogs have been updated, including **Configure Standards** (**STANDARDS**), **Check Standards** (**CHECKSTANDARDS**), and **Standards Check Options** (**STANDARDSSETTINGS**).

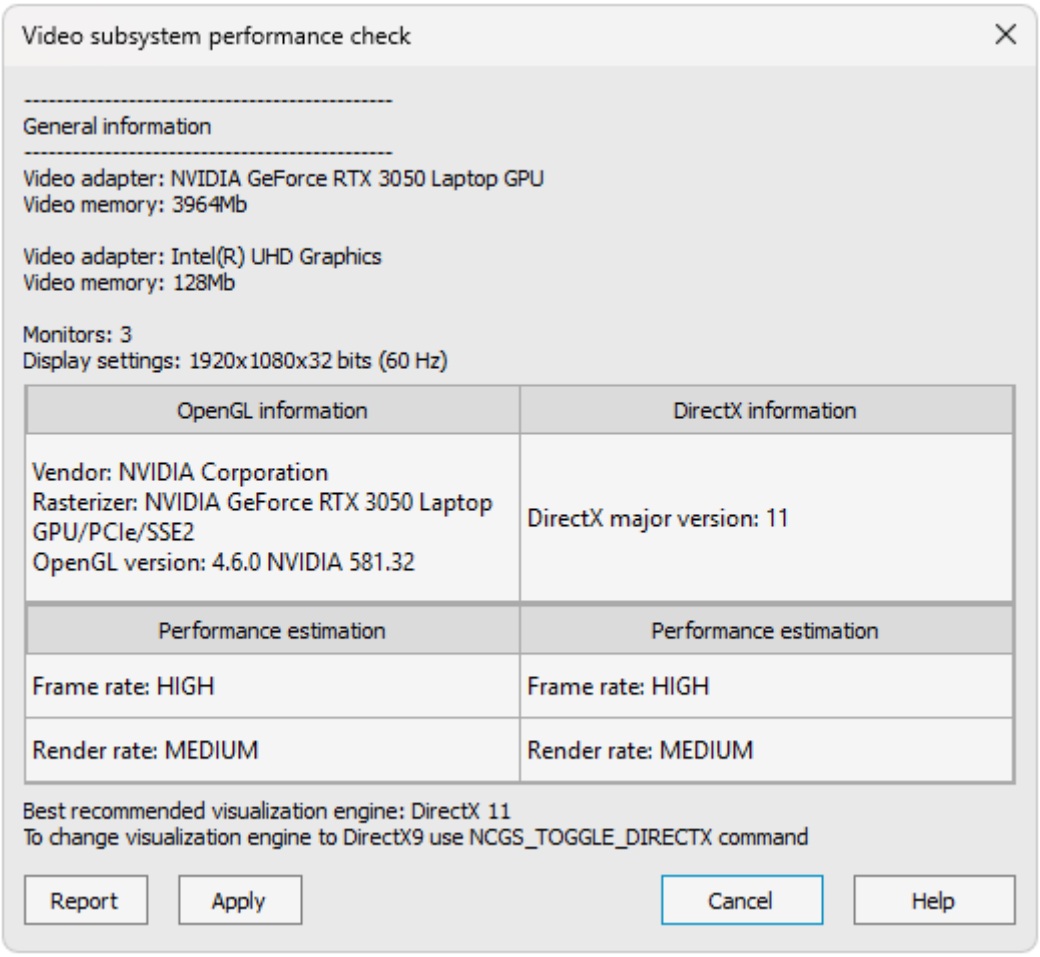
The **Viewports** (**VPORTS**), **Load/Unload Applications** (**APPLOAD**), **Attach Digital Signatures** (**DIGITALSIGN**), and **Layout Manager** (**LAYOUTSMANAGER**) dialogs have been updated.

The settings dialogs for the **built-in raster printer** (**PLOT**) have been updated.

The **Hatch Pattern** dialog has been updated. This dialog can be accessed through the **Quick Properties** (**QUICKPROPERTIES**) panel.



The **Video Subsystem Performance Test** (**VPERFTEST**) dialog has been updated. The visual presentation of information has been improved.



The visual representation of information and warning messages has been optimized.

The appearance of the application window **status bar** has been changed:

 – Toggles grid snap mode (**F9**).

 – Toggles grid display mode (**F7**, **CTRL+G**).

 – Toggles object snap mode (**F3**).

 – Toggles 3D object snap mode (**F4**).

 – Toggles object tracking mode (**F11**).

 – Toggles polar tracking mode (**F10**).

 – Toggles orthogonal mode (**F8**).

 – Toggles dynamic input mode (**F12**).

– Toggles rectangular isometric projection mode.

– Toggles lineweight display mode.

– Toggle hatch display mode.

MODEL PAPER – Multifunctional button for switching between model space and paper space.

– Lock scale for the selected viewport in paper space.

1:1 – View and set the scale for the selected viewport in paper space.

– Control the preview mode for selecting drawing objects.

– Control the display mode for drawing objects (isolate objects).

– Toggle the selection mode for objects on locked layers.

– Display the **Objects Selection** dialog box after selection of objects.

– Display the floating **Quick Properties** mini-bar.

– Dynamic UCS.

m1:1 – View and set the symbol scale and measurement scale for an objects.

– Pan.

– Zoom.

– Zoom All.

– Zoom Window.

– Dependent Orbit.

– Drawing Regeneration.

– Lock/Unlock interface elements.

– Indicates the presence of external references in the drawing.

– CAD Standards: configuring standards, checking for compliance, notification of standards violation.

– Toggle full-screen mode.

The **Batch Audit** (**__BATCH_AUDIT**) command has been implemented. Visualization of default **snap parameters** has been improved: the Cursor Aperture size, Snap Marker size, and Marker and Rays color have been increased. Settings can be changed in the **Snap Settings** section of the **Options** (**OPTIONS**) dialog box.

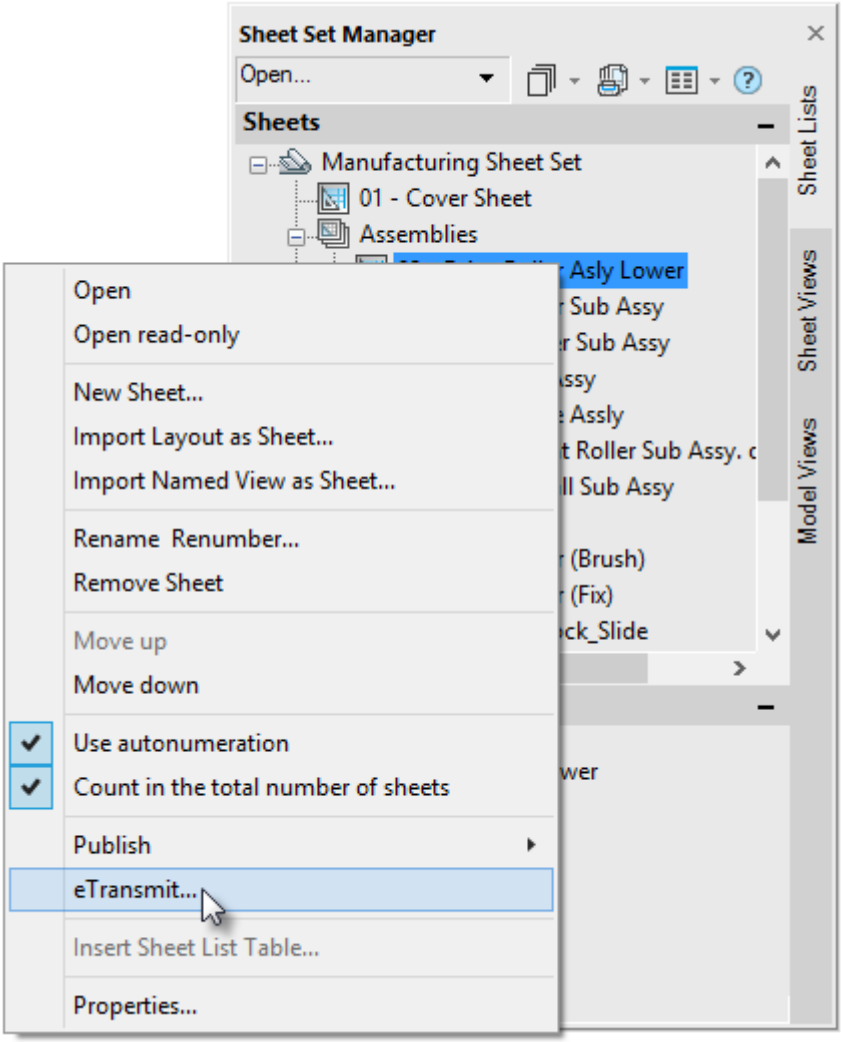
Highlighting of selected areas has been added when **Calculating the Object Area** (**AREA**) in the **Add Area** and **Subtract Area** modes.

Toolbars (widgets) with base commands have been added in a drawing's graphic area for the **Edit Block Definition** (**BEDIT**), **Edit 3D Block Definition** (**3DBEDIT**) and **Edit Reference** (**REFEDIT**) commands:

The ability to edit dynamic block properties has been added to the **Properties** panel.

Sheet Set

From now on, the **Sheet Set Manager** (**SHEETSET**) allows you to creating transmit package from a sheet set. Use the **eTransmit...** command in the context menu of objects.



The organization of sheets in sheet sets has been changed. The sheets in a set are now displayed in the same order as the sheet tabs in the original drawing file.

The conversion of absolute paths has been added when editing fields linked to a sheet set.

Added saving of sheet location paths in a documentation set when creating a new documentation set using a template.

Sheet paths in a sheet set are now saved when creating a new sheet set by template.

Other Features

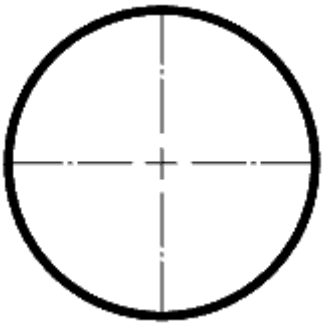
The **Cut with Basepoint** (**CUTWITHBASEPOINT**) command has been implemented. The command cuts the selected objects and places a copy on the clipboard. When cutting, a base point is specified, which is used when subsequently pasting a copy of the objects into the document.

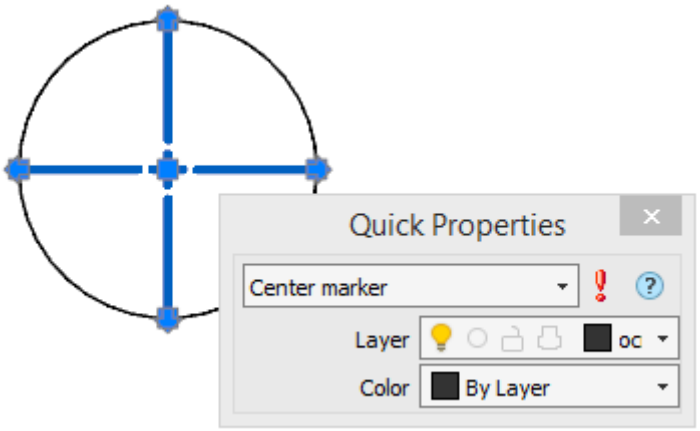
The ability to shift selected objects in orthogonal increments using the **CTRL** + arrow keys (Left, Right, Up, Down) has been added. The distance and direction of the shift depend on the snap settings.

The **Nested Copy** (**NCOPY**) command has been added. This command allows you to copy objects nested in blocks, external references or DGN underlays into the current drawing without having to break (embed) these elements.

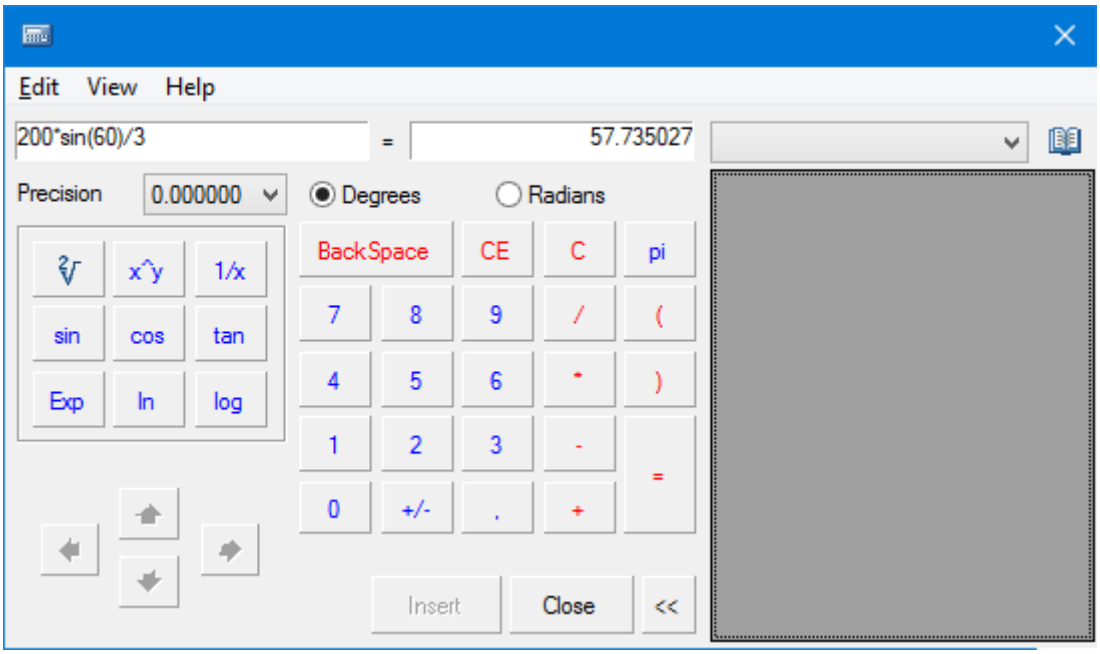
The **Center Line** (**CENTERLINE**) command has been added to create a centerline between two linear objects (**lines**, **polylines**). These can be parallel, intersecting, or angled lines. If the lines are not parallel, the centerline will be constructed as the angle bisector.

The **Center Marker** (**CENTERMARK**) command has been added to create an associative crosshair at the center of a selected circle or arc.





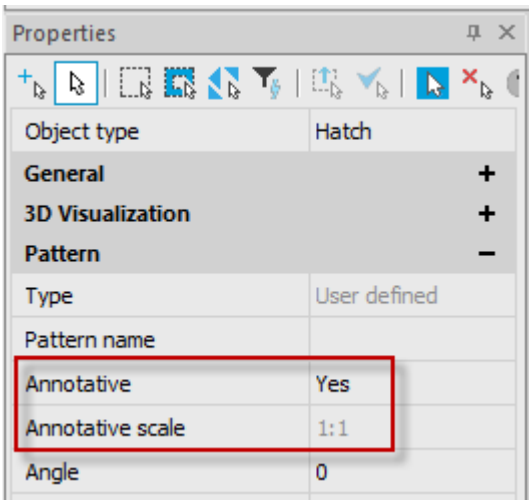
A **Quick Calculator** (**QCALC**) command has been added to perform simple and more complex mathematical calculations.



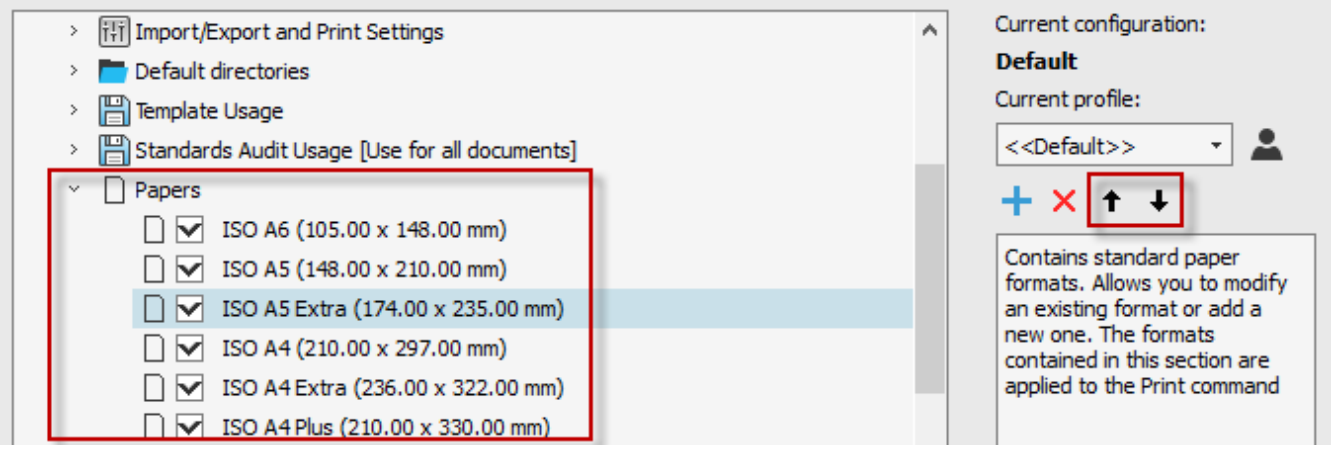
Added the ability to change properties for the **MPolygon** object in the **Properties** panel:

- Fill (hatch) color swatch
- Hatch (pattern) type
- Hatch (pattern) name
- Angle
- Scale
- Spacing
- Cross

Hatch (**HATCH**) annotation properties have been added to the **Properties** panel:



Added the ability to change the order of paper formats in the **Papers** section of the **Options** (**OPTIONS**) dialog box using the **Up** and **Down** buttons.



The new **XRef selection** option has been added for such commands as **Layer Off** (**LAYOFF**), **Freeze Layer** (**LAYFRZ**), and **Freeze Layer in All Viewports Except Current** (**LAYVPI**). This option is used to select the nesting level of external references:

- **XRef** – If the selected object is contained within an external reference, the external reference layer is turned off/frozen.
- **Entity** – If the selected object is contained within an external reference, the layer containing the object within the external reference is turned off/frozen.
- **None** – If an external reference is selected, the layer containing the external reference is turned off/frozen; layers of nested objects are not turned off/frozen.

```
Select an object on the layer to be turned off or [Settings/Undone]: Settings
Enter setting type for [Viewports/Block selection/XRef selection]: XRef selection
Enter XRef Selection nesting level [XRef/Entity/None] <Entity>:
Select an object on the layer to be turned off or [Settings/Undone]:
```

A warning message has been added to automatically update modified external references (**XREF**) when opening the **Reference Editor** (**REFEDIT**).

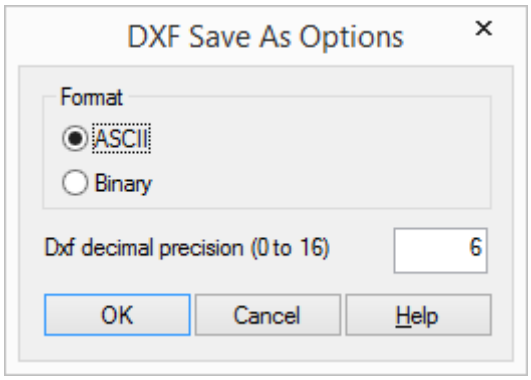
You can now copy a selected layout (**COPYLAYOUT**) by dragging it within the layout tabs area with the left mouse button and holding down the **CTRL** key.

A request has been added to the silent version of the **Purge Document** (**–PURGE**) command to create a text file containing full information about the command's execution:

Save log of purged items? [Yes/No]:

If you select **Yes**, a txt-file will be created. If you select **No**, the file will not be created. The default folder is C:\Users\UserName\AppData\Local\Temp.

An **Options** button has been added that opens the **DXF Save As Options** dialog box when saving (**SAVEAS**) and exporting (**EXPORT**) documents in DXF files. You can now set the DXF file format (**ASCII** or **Binary**) and specify a precision value for the ASCII file type.

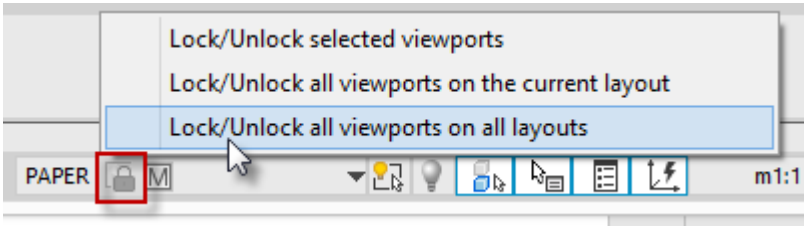


PDF underlays (**UATTACH**) now display PDF file markup (text comments, annotations, highlights, and vector graphics that have been added to the PDF file over the main content). Markup is visible in underlay insertion dialogs, on-screen, and in print, but is not imported or available for snapping.

From now on, you can import (**IMPORT**) PDF files by dragging them from the **Explorer** into a nanoCAD interface. When dragging a file in a drawing workspace, the PDF data will be inserted as nanoCAD native objects (**PDFIMPORT**).

It is now possible to create a viewport by the **Region** (**REGION**) object using the **Viewport by Object** (**ADDOBJECTVIEWPORT**) command.

Flexible viewport locking and unlocking capabilities have been added. The menu is accessible by left-clicking the  **Toggle Lock Unlock Viewport** button in the status bar:



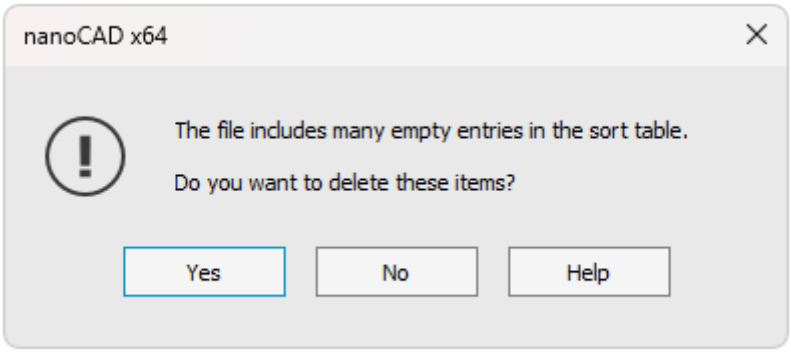
- **Lock/Unlock Selected Viewports** (**LOCKUNLOCKSELECTEDVIEWPORTS**) – the selected viewports will be locked/unlocked.
- **Lock/Unlock All Viewports on the Current Layout** (**LOCKUNLOCKALLSPACEVIEWPORTS**) – all viewports in the current layout will be locked/unlocked.
- **Lock/Unlock All Viewports on All Layouts** (**LOCKUNLOCKALLDOCUMENTVIEWPORTS**) – all viewports in all layouts will be locked/unlocked. This command is also available in **Model space**.

Group movement of block attributes (**ATT**) in model space is now possible. To do this, hold down the **SHIFT** key and sequentially select multiple attributes with the left mouse button.

When opening a document, an additional check for the presence of authoring elements that are not part of dynamic blocks is now performed. If such elements are detected, a warning message is displayed prompting you to delete the found elements.

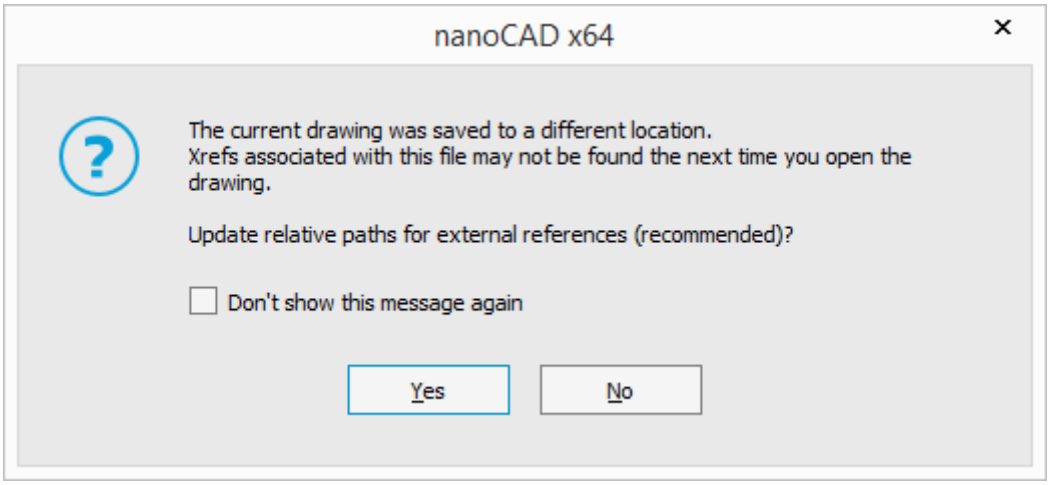
- **Yes** – Delete authoring elements that are not part of dynamic blocks from the file (**CLEARAUTHORINGELEMENT** command). After deleting elements, the file must be saved before closing.
- **No** – Do not delete authoring elements in the file being opened.

When opening a document, a warning message appears about empty entries in the sort table:



- **Yes** – Delete empty entries in the sort table from the file (**–PURGE** command, **sorTTable** option). The command line displays the number of entries successfully deleted. After deleting, the file must be saved before closing.
- **No** – Discard the deletion of empty entries in the sort table in the file being opened.

When changing the file location using the **Save As** command for drawings containing external references with relative paths, the following message has been added:



- **Yes** – the document is saved with updated relative paths for external references. When opening such a file, the external references status in the **External References** functional bar will be **Loaded**.
- **No** – the external reference paths are not changed. When opening such a file, a warning message will appear: **References – Files not found**. The external references status in the **External References** functional bar will be **File not found**.
- **Do not show this message again** – disables the warning message. You can enable the display of the warning message in the **"Don't Show Again" Messageboxes** section of the **Options** dialog (**OPTIONS**).

The new **MAXNUMPATTS** system variable defines the maximum number of linetype samples (**LINETYPE**) in an object. Valid values range from 0 to 1,000,000. The default value is **MAXNUMPATTS** = 10,000. If the specified value is exceeded, the line is displayed as a solid line. When the variable is set to 0, the limitation is removed, and lines are drawn according to the sample, regardless of the number of samples. However, removing the limit may reduce performance in busy drawings with long lines.

The new **VISIBLESCENEDEPTH** system variable specifies the method for determining the depth occupied by objects in the visible part of the scene. Valid values:

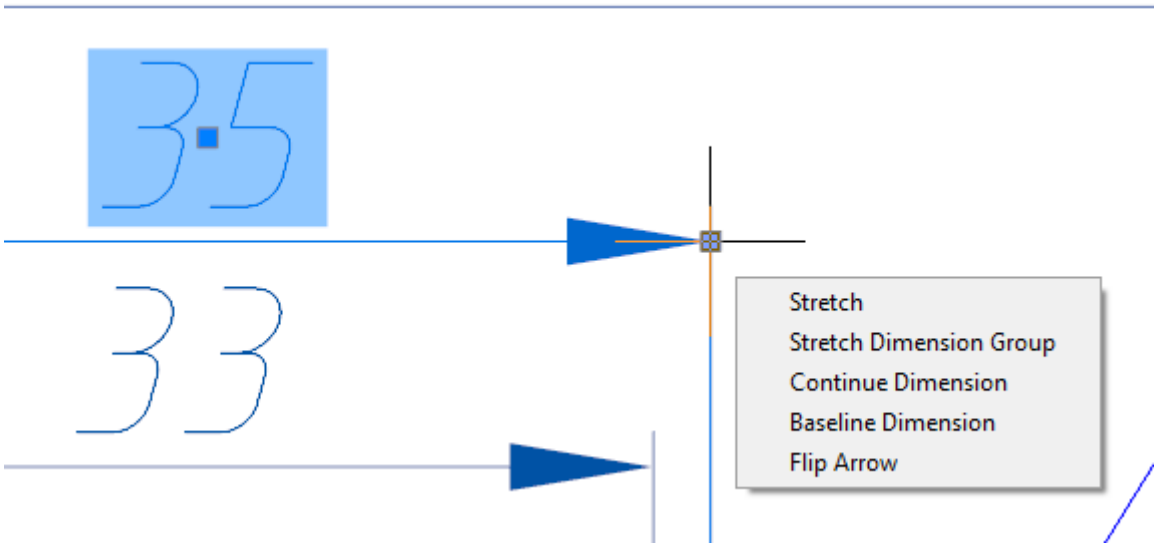
- **0** – Total scene depth, without calculating the boundaries of visible objects (default).
- **1** – Fast calculation, but with less accuracy, by transforming the total boundary of visible block objects into the local coordinate system.
- **2** – Accurate but slow calculation by summing the boundaries of visible block objects transformed into the local coordinate system.

The **REVCLOUDGRIPS** system variable has been added. It determines the number of grips for a cloud (**REVCLOUD**) object:

- **0** – Grips are displayed for each cloud arc segment.

- **1** – Grips are displayed at significant points of the original cloud object (polyline).

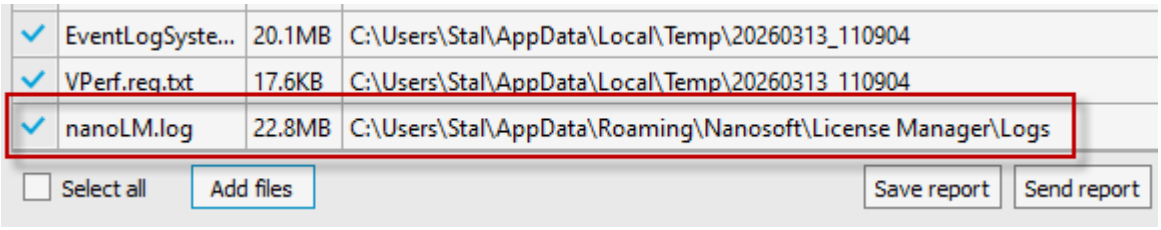
For editing dimensions using grips, the **Continue Dimension** and **Baseline Dimension** options have been added to the dynamic menu that appears when hovering crosshair over an arrow editing grip:



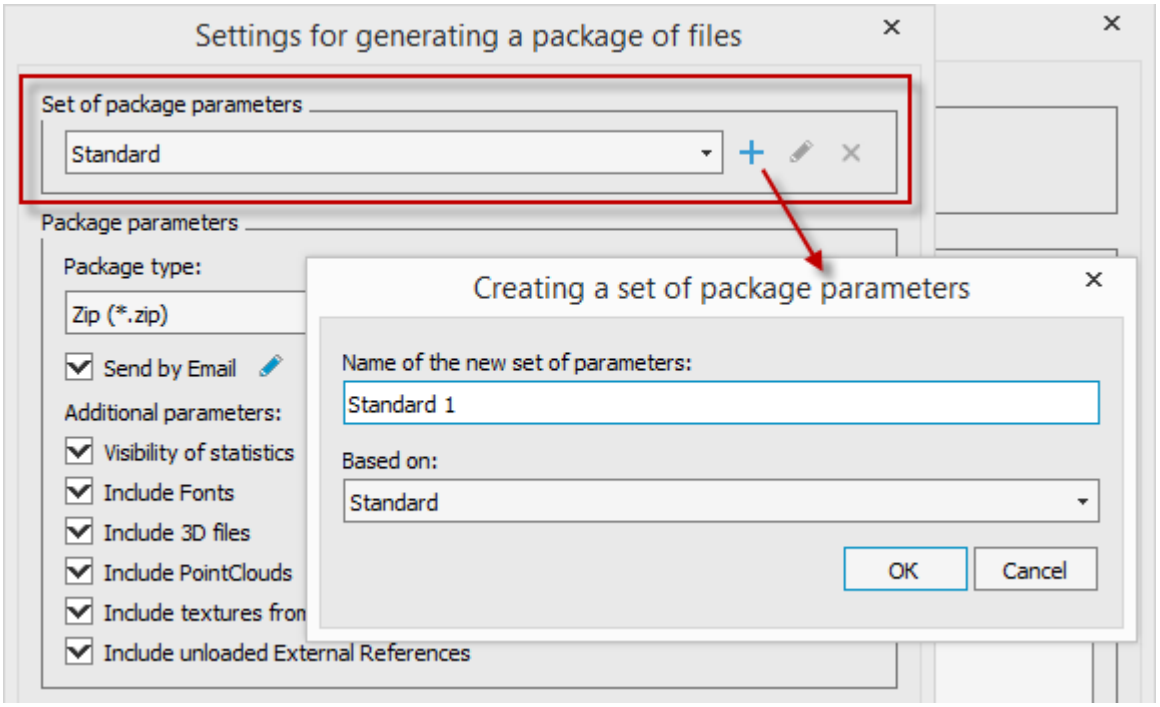
- **Continue Dimension** – creates a sequence of dimensions, where each subsequent dimension starts from the end point of the previous one. The **Continue Dimension** (**DIMCONTINUE**) command options are available in the command line.
- **Baseline Dimension** – creates a sequence of base dimensions, where each subsequent dimension is measured from a common starting point. The **Baseline Dimension** (**DIMBASELINE**) command options are available in the command line.

From now on, you can move, delete and/or replace individual array elements using the **Edit Array** (**ARRAYEDIT**) command.

When generating a **Problem Report** (**REPORTPROBLEM**), the option to include the licensing system log (nanoLM.log) has been added.



The ability to create sets of package parameters has been added to the file package generation command (**ETRANSMIT**):



You can now select a file to open in the start window (**WELCOMESCREEN**) before the application loads.

nanoCAD Fixes

Critical Errors

Fixed a bug that caused the program to crash on user files when editing text (**MTEXT**) with fields (**FIELD**).

Fixed a bug that caused the program to freeze when printing (**PLOT**) user files, including files with hatches.

Fixed a bug that caused the program to crash when working with custom drawings containing variation elements.

Fixed a bug that caused the program to crash on user files when working with a spline (**SPLINE**) with the **Midpoint** object snap mode enabled.

Fixed a bug that caused the program to freeze on user files with 3D polylines (3DPOLY) when hovering the cursor over object snap points (with the **Centroid** and **Apparent Intersection** modes enabled simultaneously).

Fixed a crash when opening drawings with a large number of proxy objects without a graphical representation.

Fixed a bug that caused the program to freeze when hatching an object (**HATCH**) using the **Add: Pick Points** method.

Fixed a bug that caused the program to freeze when executing the **Save as Raster** (**RASTEROUT**) command with a high DPI.

Fixed a crash when moving an object to a frozen or disabled layer using the **Quick Properties** (**QUICKPROPERTIES**) functional bar.

Fixed a bug that caused the program to freeze when snapping to a  **Big Radius** (**DIMJOGGED**) dimension located inside a block (**BLOCK**).

Other Fixes

Fixed errors when opening custom drawings created in other CAD systems.

Fixed issues with restoring drawings containing variation elements and empty entries in sorting tables, as well as files saved in earlier versions of the program.

Fixed a bug that prevented the **Synchronize Attributes** (**ATTSYNC**) command from updating the order of block entry attributes in the **Properties** panel and in the **Edit Block Attributes** (**ATTEDIT**) and **Enhanced Attributes Editor** (**EATTEDIT**) dialogs.

Fixed a bug that caused polyline (**PLINE**) editing grips to display incorrectly in a locked viewport (**VIEWPORT**).

Fixed errors when exporting splines (**SPLINE**) from other CAD systems.

Fixed the program freezing when selecting multiple layers in the **Layers** (**LAYER**) dialog box.

Fixed a bug when switching user coordinate systems (**UCS**) did not work in a file saved using **WBLOCK**.

The default folder for the **Write Block to a Separate File** (**WBLOCK**) command has been changed to the **Documents** folder.

Fixed a bug where the return to world coordinate system (**CLEARUCS**) command did not work.

Fixed an error that occurred when trimming (**TRIM**) a straight spline created in **ORTHO** mode.

Fixed a bug due to which, when stretching (**STRETCH**) a leader (**LEADER**), the leader shelf moved out of alignment with the text.

Fixed a text flipping error when mirroring (**MIRROR**) a multileader (**MLEADER**) in a rotated UCS.

Fixed a bug where multileader (**MLEADER**) rotation results were not displayed correctly when changing the current angle by more than 90 degrees.

Fixed a bug that caused **STRETCH** results for **MLEADER** to be displayed incorrectly.

Fixed a bug where it was impossible to interact with text (**MTEXT**) outside the text area boundaries.

Fixed an issue where the text would flicker in the edit field of multiline (**MTEXT**) or single-line (**TEXT**) text if the drawing contained constraints.

Fixed a bug where text formatting settings were not applied after pasting multiline text (**MTEXT**) via the clipboard.

Fixed a bug where multiline text did not inherit layer properties when converting text to mtext (**TEXT2MTEXT**).

Fixed an error in specifying line spacing values in the **Paragraph** (**MTEXT**) dialog box.

Point Clouds

New Features

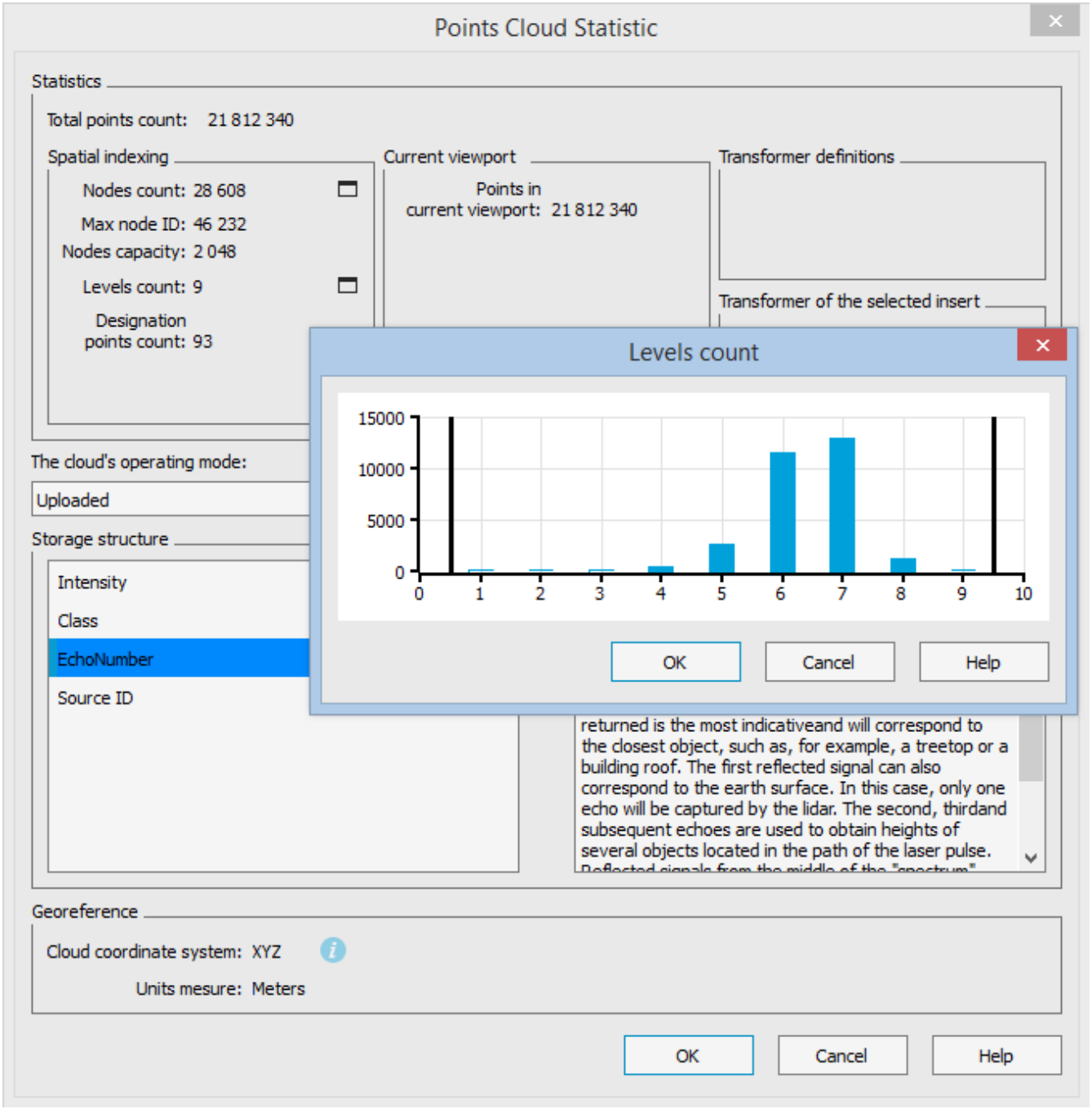
Point cloud storage has been changed. If there is insufficient RAM, the point cloud is not loaded into memory. Now all work and editing of the point cloud is performed from disk.

Automatic rebalancing of the point cloud between disk and memory.

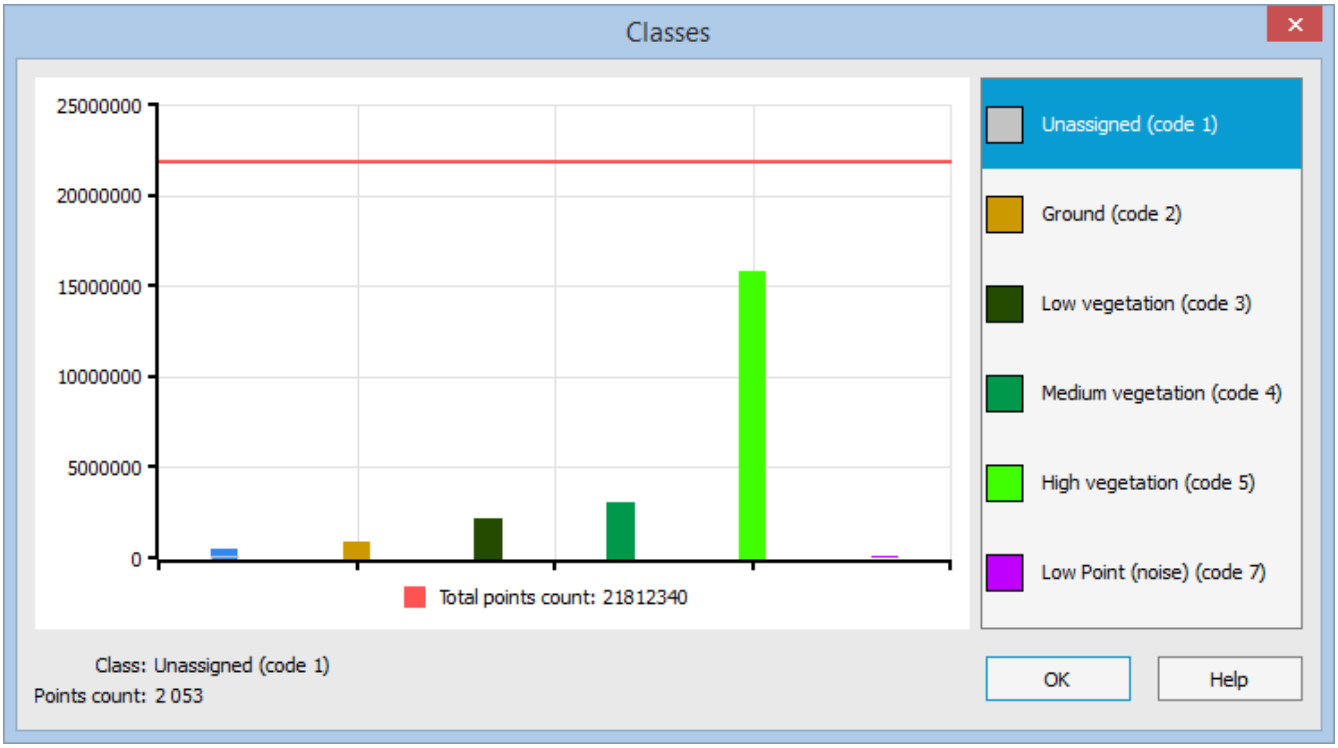
Added system variables **NPCWHOLEMEMORY** and **NPCMAXMEMORY** to control the size of the portion of the cloud loaded into RAM.

Optimized point cloud storage by excluding the current color channel from the NPC file.

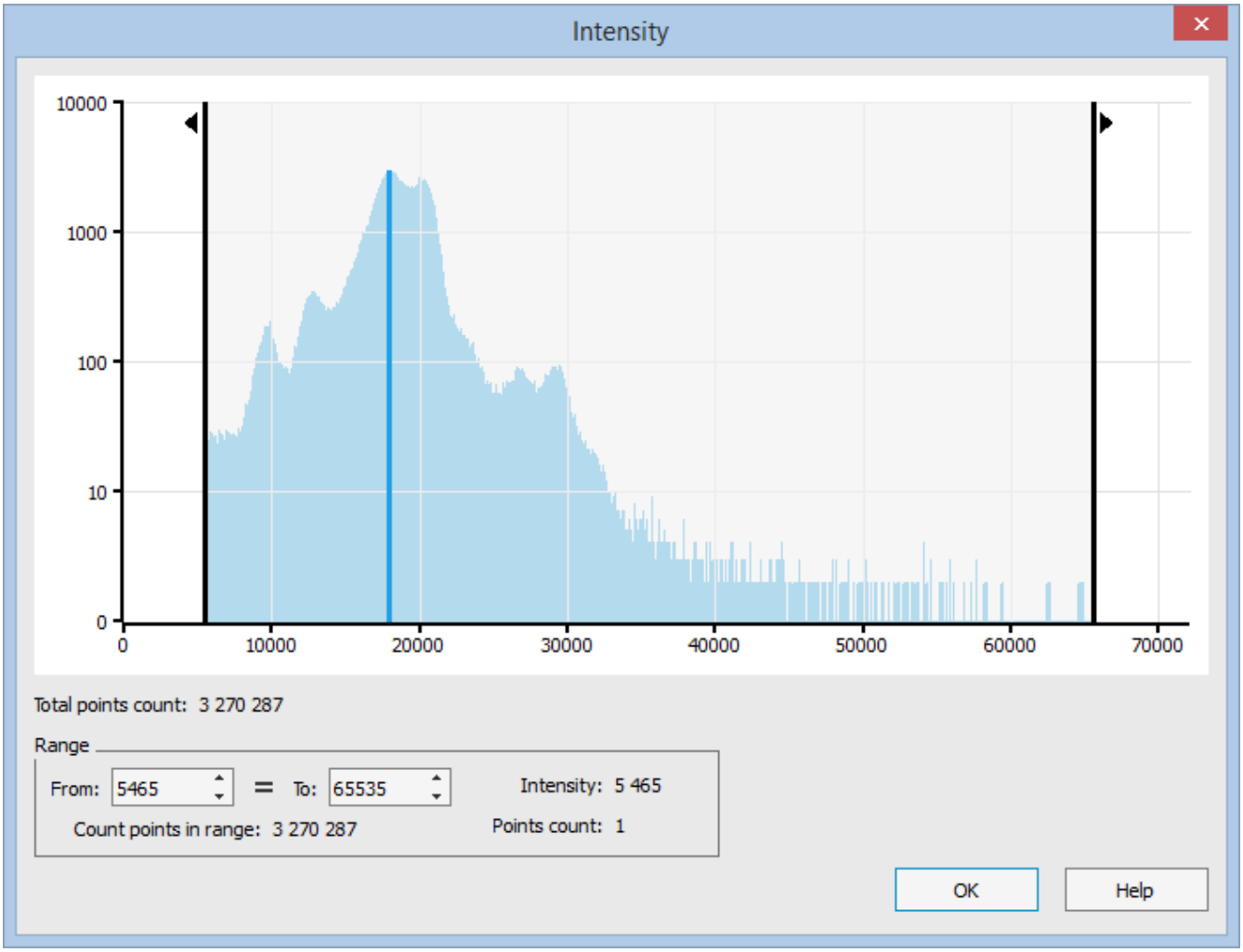
Improved the design of the **Point Cloud Information** (**NPC_INFO**) dialog.



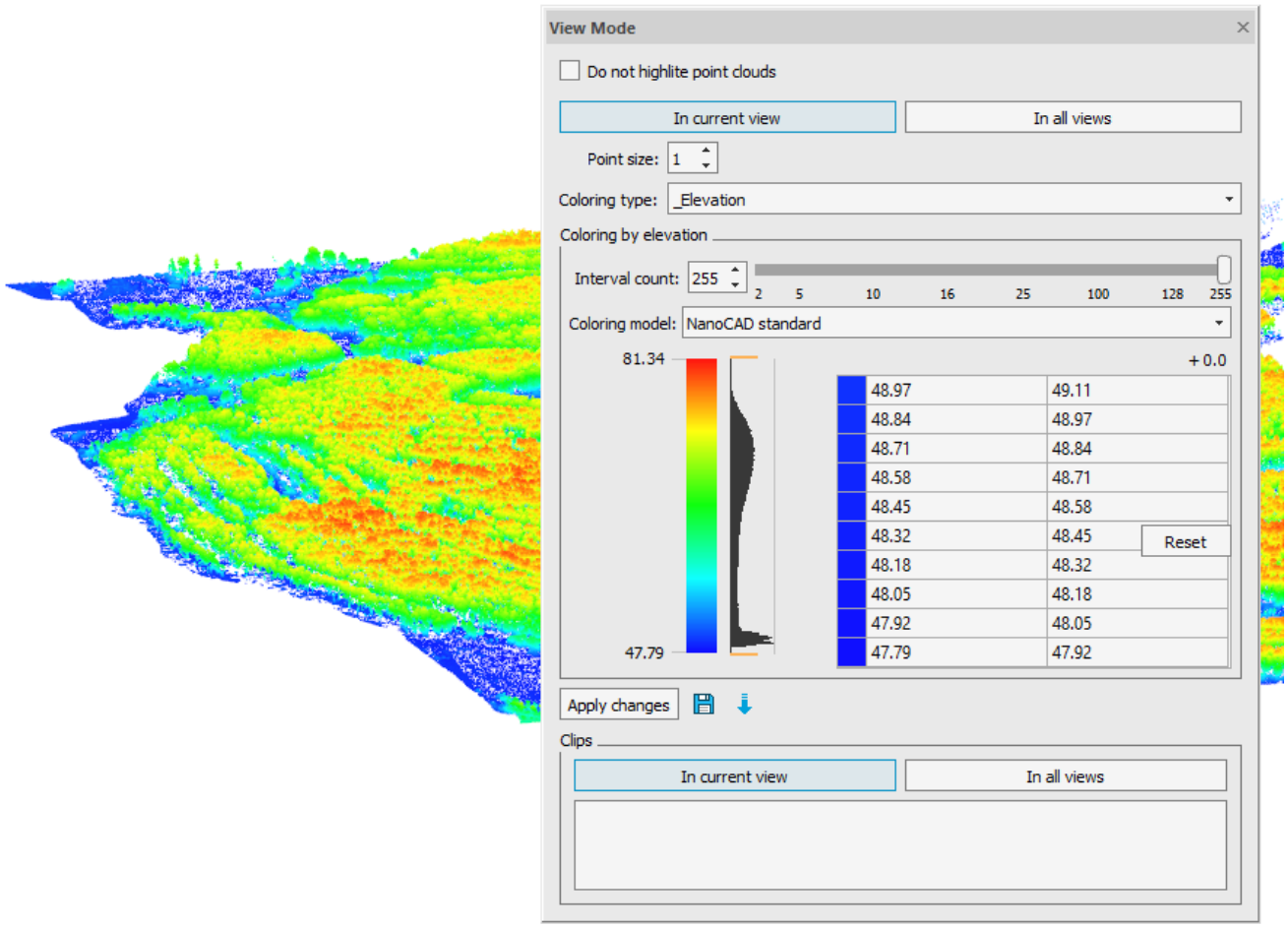
Improved the design of the histograms of classes and reflection numbers for the **Point Cloud Information** (**NPC_INFO**) dialog.



Improved the design of the **Intensity** histogram for the **Point Cloud Information** (**NPC_INFO**) dialog.



Improved the design of the **View Mode** functional bar when coloring the point cloud by **Elevation**, **Intensity**, **Deviations**, and **Fractal Dimension**.



Added explanatory tooltips to the buttons in the **View Mode** functional bar.

Improved implementation of coloring by **Deviation** and **Fractal Dimension**.

Improved the design of the **Point Cloud Import** (**NPC_IMPORT**) dialog.

Automatic enabling snap to **Node** for **NPC_CLIP_SPHERE**, **NPC_CLIP_SPHERE_INV** commands.

Improved functionality of the **Project Manager** panel (**NPC_PROJECT_MANAGER**). A scroll bar has been added.

Unfound clouds are now displayed in gray in the **Properties** panel.

Fixes

Fixed a bug where the **NPC_CROP_FROM_VIEW** and **NPC_EXTRACT_FROM_VIEW** functions incorrectly processed cropping of visible clouds when the **Use All Clouds in VView** option was selected.

When exporting to LAS using the **NPC_EXPORT** command, a warning about data loss was added for classes with codes higher than 31.

Histogram colors have been changed.

The **NPC_SECT_** command has been added, allowing dynamic adjustment of the section depth and movement step in an existing section without re-creating it.

The **NPC_VIEWMODE** interface for creating and editing attribute crops has been added to the visualization panel.

Incorrect positioning of numbers indicating the boundaries of the selected interval on the elevation gradient scale has been fixed in the **NPC_VIEWMODE** command.

The following changes have been made to the **Misc** section for point clouds:

- The **Frozen** status has been moved from the modes to a separate setting with a checkbox.
- The **Transformation** status has been converted to a **Transformation locked** checkbox for more intuitive operation.

Point Cloud Import

Fixed a preview window error when importing point clouds with different numerical orders.

Fixed an error where metachannel checkboxes remained enabled even when there was no data in these channels. Empty channels are now automatically disabled and marked with a warning icon during import.

Topoplan

New Topoplan Features

The **NG_TO_SUBDMESH** (**Convert to Mesh**) command now supports mesh creation with or without preserving edge positions.

The appearance of the markers for snapping the map underlay by control points in the drawing has been changed.

Added the ability to display the Z coordinate in the cursor tooltip and in the tooltip when snapping to objects with object snap.

The 2D slope creation command has been improved: the ability to select a color for all slope types and the ability to enable/disable the lower slope edge for all slope types have been added.

A **Label Rotation** angle field has been added to the **Properties** panel for the geopoint label style, allowing you to specify the rotation of the entire label, not just the marker.

Out-of-range color settings have been added, with a choice of **Boundary** or **Custom** mode. In **Custom** mode, two additional parameters are available: **Top Color** and **Bottom Color**, selectable via a palette (white by default, gray is also available).

A unified interface for selecting coordinate systems has been developed, with preview and the ability to disable selection.

More tooltips have been added for **Geocalculator** icons with brief descriptions.

A button for mutually replacing input and output data and the ability to select the display format for output coordinates have been added to the **Coordinate Transformations** dialog of the **Geocalculator** panel.

An algorithm for automatic recognition and conversion of coordinates between DMS, DM, and DD formats has been added to the **Geocalculator**.

A new command, **NG_DELETE_TOPOPLAN** (**Deleting Topoplan Data**), has been added, which deletes topoplan labels and coordinate system information.

Added a search field in the libraries of projections, ellipses and units for dialogs used for working with coordinate systems.

It is now possible to transform map underlays using the **NG_REPROJECTION** command.

Recalculation of map underlays is permitted only if the topographic plan has an established coordinate system. Otherwise, the operation is blocked and an explanatory message is displayed.

The grid boundary detection algorithm has been adapted to support quadratic cells (four vertices per plane), in addition to the existing support for triangular cells.

Support for smoothing the boundaries between color intervals in discrete coloring mode has been added, providing smooth transitions similar to continuous coloring for surfaces.

The **Slopes** folder has been added to the standard folders containing the slope linetype file (*.lin), located at: C:\Users\UserName\AppData\Roaming\Nanosoft AS\nanoCAD x64 26.0\Slopes

Support for import via the **NG_NEW_CRS** command and export via **NG_CRS_INFO** in three formats:

- esri wkt1 (old)
- wkt2 2018
- proj4

New command **NG_GET_MESH_FROM_3D_SLOPE** – Create a surface from a 3D slope.

New command **NG_COLOR_EDGES_GREATER** – Surface verification.

The **NG_MESH_VERTEX_DELETE** command has been improved: the ability to edit command properties via the **Property Inspector** has been added, allowing for the deletion of triangles without automatically filling voids with new triangles. Switching between modes and accessing command settings via the command line has also been implemented.

The **NG_SIMPLIFY** command now allows switching between simplification types: when selecting **Topographic Accuracy** the default settings are automatically disabled, and vice versa.

The design of the following commands has been improved:

- **NPC_EPSG_REPROJECTION** – Recalculating point cloud coordinates using EPSG.
- **NG_REPROJECTION** – Recalculating coordinates.
- **NG_NEW_CRS** – Creating a coordinate system.
- **NG_CRS_INFO** – Information about coordinate systems.
- **NG_IMPORT_POINTS** – Importing geopoints.

- **NG_NEW_CRS** – Creating a coordinate system.

Map underlay:

- Updated design and localization added.
- Fixed an issue with underlay size decreasing upon reopening.
- Fixed a critical error that caused the application to crash when opening a file with a map underlay as the first document in a session.

Cropping Underlay:

- Fixed an issue with the map underlay displaying incorrectly when changing the geometry of the cropping contour during active selection of the underlay and contour.

Contour lines:

- Fixed an issue with a gap appearing when creating contour lines.

Geocalculator:

- Updated design.
- Added visual separation of calculation results in the Geocalculator panel.
- For the **Transformations** and **Distance** windows, data can now be entered in any of the specified formats.
- Fixed an issue with unreadable characters appearing when selecting a coordinate system.
- Fixed an error with incorrect latitude recognition when calculating transformation parameters.
- Added error hints when entering latitude and longitude data in the **Calculate Transformation Parameters** panel.
- Creating Geopoints by Interpolation.
- Fixed an error where the projection of geopoints was not updated when changing the **Projection** parameter.

Project Location:

- The latest raster map settings are now saved when switching between map types.
- Improved accuracy when saving a custom city.
- Selected elevation units are now displayed in the warning message when adding a city.
- Fixed an error with applying elevation units above sea level to a selected city.
- Drawing accuracy for elevation (above sea level) is now taken into account when saving cities.

Block Elevation Attributes Management:

- Fixed an issue where block attributes would not move with the insertion point when using the **Swap Attribute and Z Coordinate** action.

KML/KMZ File Import:

- Fixed an issue where the **NG_KMLIMPORT** command dialog would close with the **No coordinate systems selected** warning message.
- Fixed an issue where checkboxes in the object list would not work correctly.
- KML import errors have been fixed: objects are no longer imported when checkboxes in the dialog are unchecked, and are automatically removed from the preview when unchecked.

Area Calculation:

- Fixed an error where the command would abort in **Profile** mode when calculating the area of a closed contour, which would display the message **An error occurred while calculating the area!** regardless of the contour shape and number of vertices.
- Fixed an issue where surface area was not calculated correctly when using a user coordinate system (UCS). Fixed a command interruption error when projecting a profile line onto the WCS in views other than the top view.
- Fixed an error causing incorrect area calculations in the command when using views other than the top view.

Surface Boundary Extraction:

- Fixed an error interrupting the **NG_MESH_GET_BOUNDARY** command when selecting a TIN surface.

Surface Merging:

- Fixed a program crash when using the **NG_MESH_JOIN** command.

Projecting Objects onto a Surface:

- Fixed an error causing incorrect object projections to be generated when using the **VScreen** direction for non-horizontal views.
- Fixed an issue where geopoints were not projected onto the mesh with any parameters of the **NG_MESH_PROJECT_OBJECTS** command.

Other Fixes

Fixed a triangulation error (all edges are now drawn correctly).

Fixed the rendering of pipe ends for the Utility Network object so that they are correctly trimmed along the well boundary.

Fixed the behavior of undoing the **Search for Key Lines** command during the triangulation stage.

Fixed creation of objects in the zero coordinate when working with **3D slopes** from the surface. They are now placed in the correct position according to the source data.

Fixed a bug with moving vertices of a polyhedral mesh: now it is possible to correctly move any vertex, not just the corner (top-left) vertex.

All source points are now taken into account when constructing a **TIN-surface**.

Fixed a bug that prevented the selection of the resulting surface after calculating the differences between two surfaces.

Fixed the construction and rendering of **2D-slopes**.

New features have been added to the **Public Servers** tab.

Geo Attributes are now displayed in the **Extended Properties** panel (the **Geo Attributes** panel is excluded from the interface).

The functionality for constructing 3D-slopes has been expanded, allowing you to set values: degrees, percentages, and fractions.

A new **Project Location** dialog has been developed, allowing you to link a DWG project to geo-coordinates and insert a underlay with the ability to rotate the marker.

The KML/KMZ file import dialog design has been improved.

3D Modeling

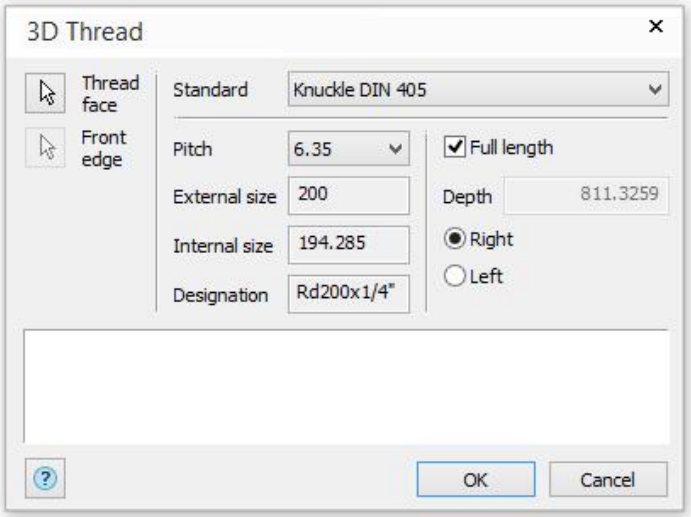
New Features

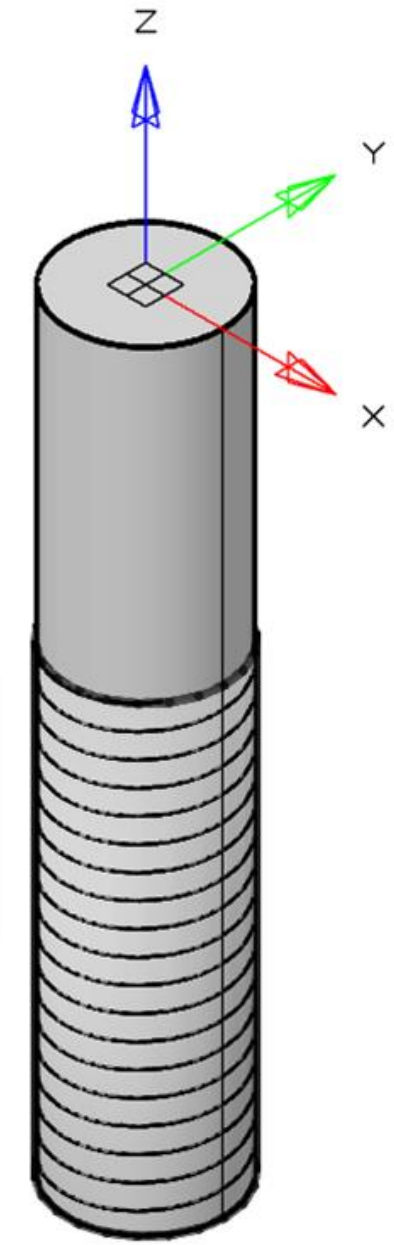
New Standards of 3D Tread

Nine new items have been added to the **Standard** drop-down list in the **3D Thread** dialog:

- Metric ISO 261;
- Metric ISO DIN 13;
- Metric ISO DIN 14;
- Round DIN 405;
- Round DIN 20400;
- Buttress DIN 513;
- Buttress DIN 2781;
- Trapezoidal DIN 103;
- British BS 93.

If the diameter of the outer cylindrical surface complies with the thread standard, an external 3D thread can be installed on that cylindrical surface. The thread pitch can be selected (if required by the standard). Internal 3D threads are applied to an internal cylindrical surface of the corresponding diameter.

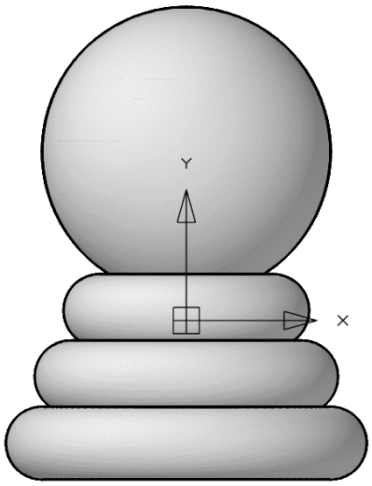


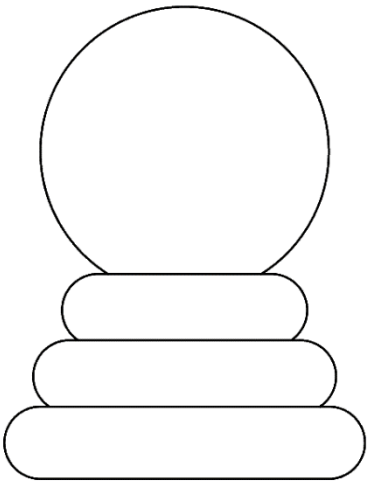


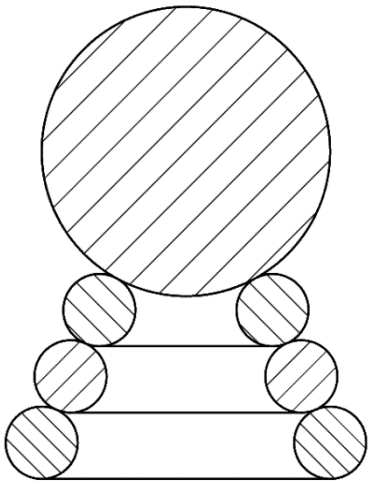
Assembly 3D constraints for torus-torus and torus-sphere contact

Assembly 3D constraints have been implemented for two tori and for contact between a torus surface and a spherical surface.

The contact can be either external or internal.


Y
X





Mechanica

New Features

Reworking of sheet metal

For sheet metal, the ability to create plates with specified dimensions has been added. These plates can be used to create 3D models of parts without drawings. Plate names are correctly included in the specification.

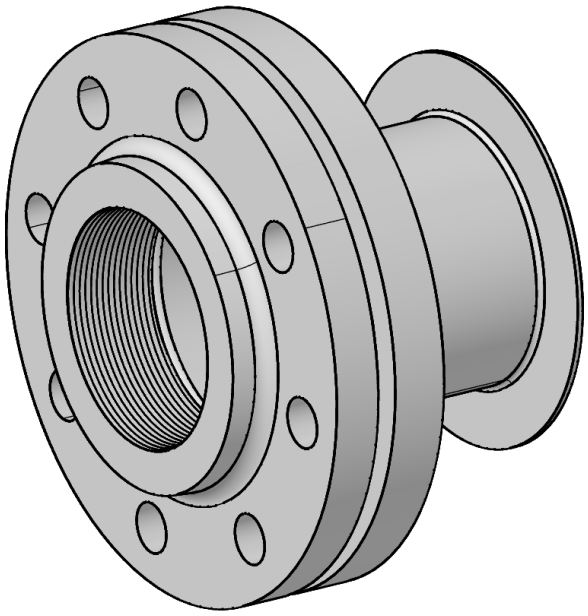
DIN Flanges

Flanges according to DIN 1092-1 and DIN 1092-2, and flange gaskets according to DIN EN 1514 have been added to the element database.

2D and 3D versions are available.

Additional parameters can be added to the end of the specification name.

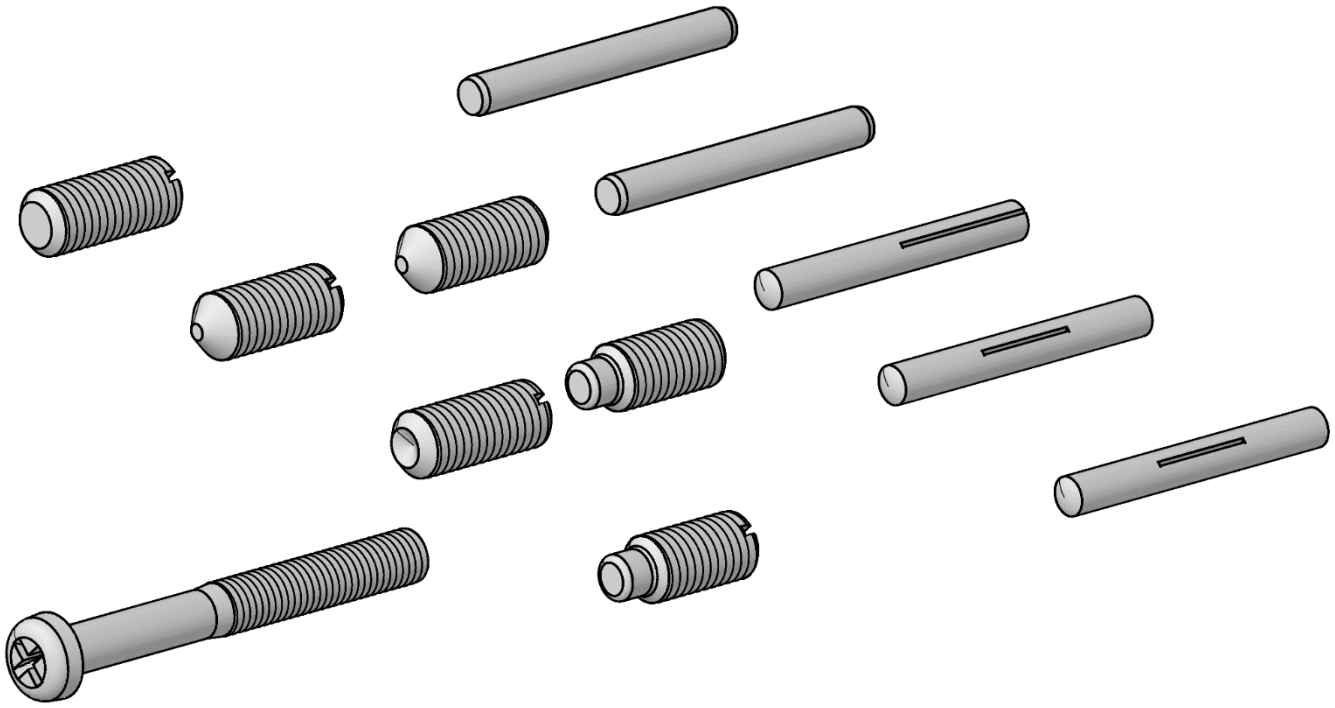
Flange connections to welded pipelines and universal pipes have been implemented. Correct gasket attachment to flanges and mating flanges are now ensured, and the sealing surface of the flanges is aligned. Changes in diameter, pressure, or sealing surface cause the entire flange connection to be rebuilt accordingly.



Fasteners according to standards

The database of elements has been supplemented with set screws DIN EN 24766, 27434, 27435, 27436, DIN EN ISO 4027, 4028, pins DIN EN ISO 2338, 8734, 8741, 8742, 8744, ISO 8735, 8739, 8740, 8750, 8752, 13337, screws ISO 7048.

The objects have 2D and 3D versions.



Fixes

Beam calculations now take into account internal holes in profiles.

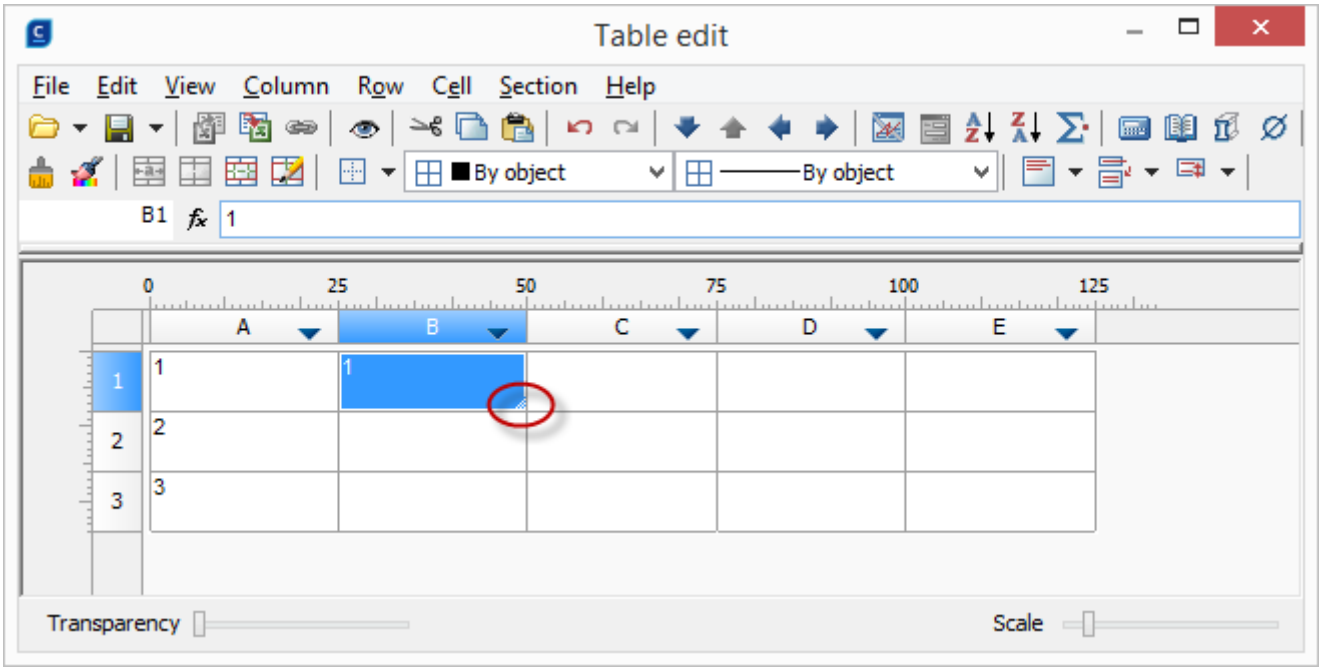
Corrected 3D pin representations.

Construction

New Features

Implemented in tables:

- A new command for splitting a single table into multiple tables by page (**SPTBLSPLIT**), taking headers and footers into account.
- Displaying properties with categories in the context menu when generating reports.
- Fixed incorrect display of formats after inserting a large table into them.
- The **Increase Row Height** option is set by default when creating a custom table.
- Double-clicking a cell corner can now stretch a value across the entire range:



Implemented conversion of multileaders to nanoCAD leaders (the  **SPCONVMLEADERTOUNIVERSAL** command).

Added the ability to clear the list of room finishes.

When using the **Pick from Drawing** command, properties can now be read through the viewport: