



# ZWCAD 2022

## Official

PRODUCT RELEASE NOTES

THE ZWSOFT TEAM

ZWSOFT | 2021/7/15

---

## **Thank you for downloading ZWCAD 2022!**

Dear friends,

We are delighted to tell you that ZWCAD 2022 is available now! After a long time of devoted preparation and development, and thanks to your valuable feedback for the Beta version, this Official version comes with impressive new features and improvements, such as Flatshot, IFC Import, Data Link, etc. What's more, compared with the previous version, its efficiency and stability has been further enhanced. Now, let's take a look at it.

Yours sincerely,

The ZWSOFT Team

July 2021

---

# Content

<b>Overview</b> .....	<b>3</b>
<b>Efficiency</b> .....	<b>5</b>
<b>Stability</b> .....	<b>8</b>
<b>New Features</b> .....	<b>9</b>
Flatshot .....	9
IFC Import.....	10
Adjustable Viewport .....	11
Coexisting Ribbon & Classic Menus .....	12
SAVEALL Command .....	13
MEASUREGEOM Command.....	13
Anti-Aliasing Switch.....	14
<b>Improvements</b> .....	<b>16</b>
Plot Transparency.....	16
Enhanced Data Extraction .....	16
Optimized Right-Click Menu of Mleader .....	17
Movable Columns in Layer Properties Manager .....	18
<b>New Commands &amp; System Variables</b> .....	<b>19</b>
<b>APIs</b> .....	<b>19</b>
ZRX.....	20
.NET .....	21
VBA .....	22
LISP .....	22
<b>Bug Fixes</b> .....	<b>23</b>
<b>Limitations and Notes</b> .....	<b>24</b>

---

# ZWCAD 2022 Official Release Notes

---

*VERNUM= 22.00\_2021.07.07(251ad3fce2f)*

## Overview

ZWCAD 2022 Official has the following new features and improvements:

New Features	Description
<a href="#">Flatshot</a>	Create a planar projection of the 2D contour of a 3D entity.
<a href="#">IFC Import</a>	Import .ifc files.
<a href="#">Coexisting Ribbon &amp; Classic Menus</a>	Ribbon and Classic menus are displayed at the same time.
<a href="#">Adjustable Viewport</a>	The size and quantity of viewports become adjustable.
<a href="#">SAVEALL Command</a>	Save all the opened drawings at once.
<a href="#">MEASUREGEOM Command</a>	Measure the distance, radius, diameter, angle, area and mass properties of objects.
<a href="#">Anti-Aliasing Switch</a>	Turn on to smooth jagged objects.

Improvements	Description
<a href="#">Plot Transparency</a>	Objects, layers, etc. with transparency effects can be plotted.
<a href="#">Enhanced Data Extraction</a>	Extract text objects and sort properties according to the column order.
<a href="#">Optimized Right-Click Menu of Mleader</a>	Add or remove leaders from the right-click menu of Mleader.
<a href="#">Movable Columns in Layer Properties</a>	Drag to move the column in the Layer Properties Manager.

---

<a href="#">Manager</a>	
-------------------------	--

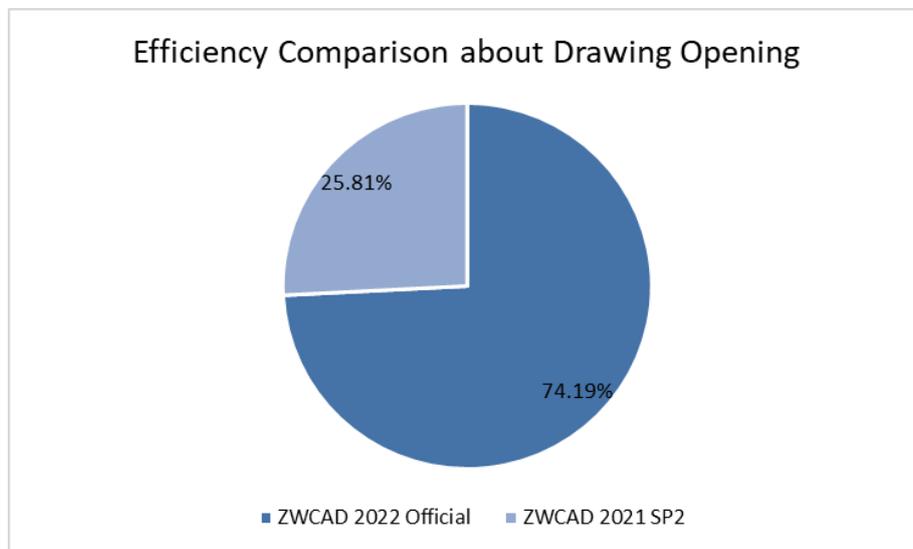
---

## Efficiency

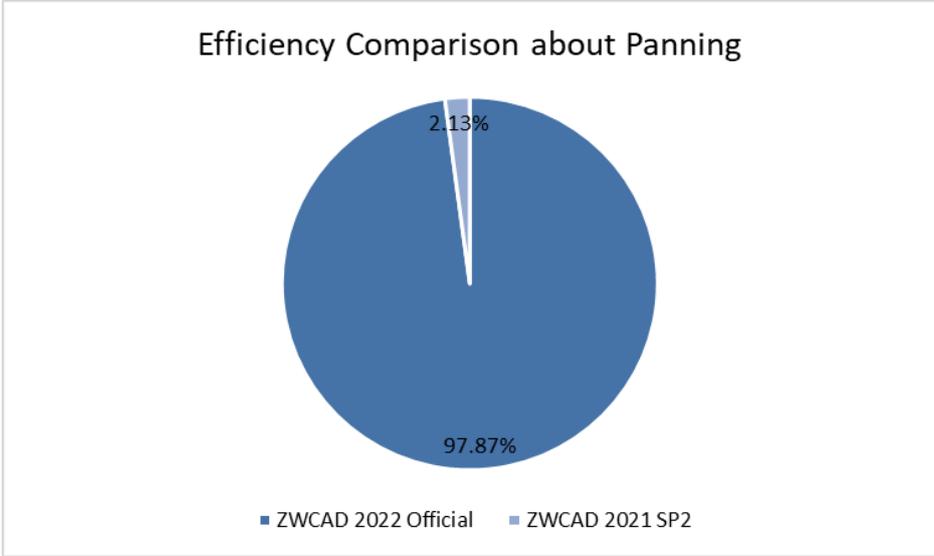
The following section describes the efficiency tests in this release.

Comparisons between ZWCAD 2022 Official and ZWCAD 2021 SP2 show that the time needed for drawing opening in ZWCAD 2022 is dramatically reduced, not to mention panning and zooming which are silky smooth without lagging and pause.

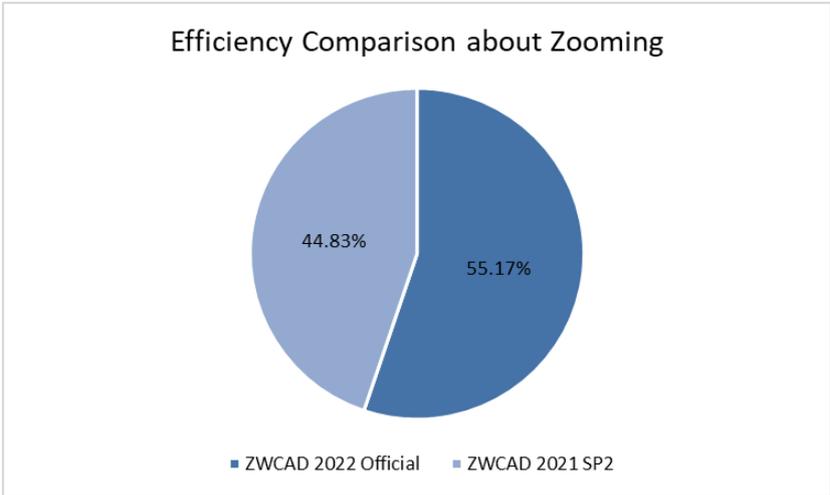
Compared with ZWCAD 2021 SP2, in ZWCAD 2022, 74.19% of sample drawings can be opened faster, 97.87% panned faster, and 55.17% zoomed faster.



*Figure 1. 74.19% of sample drawings can be opened faster*



*Figure 2. 97.87% of sample drawings can be panned faster*



*Figure 3. 55.17% of sample drawings can be zoomed faster*

Also, performing most commonly used basic operations like copyclip, continuous drawing, and layer editing in ZWCAD 2022 Official takes less time than its previous version does. This means that ZWCAD 2022 can free you from waiting for simple operations to be done.

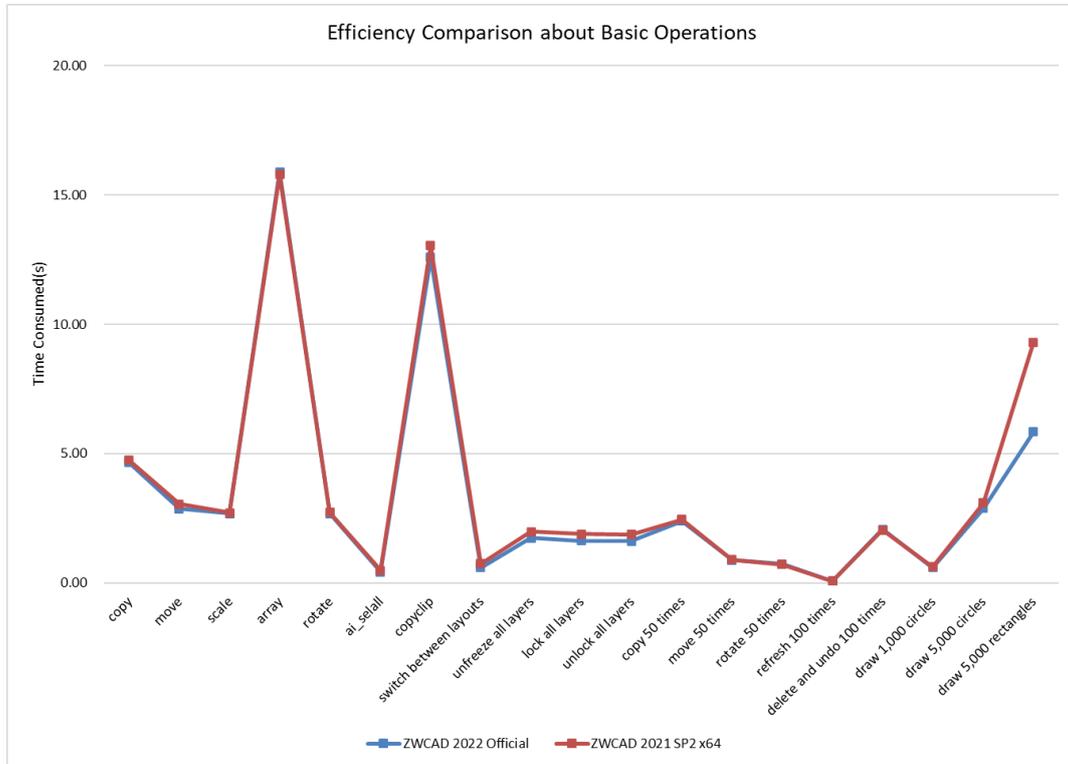


Figure 4. Efficiency comparison about basic operations

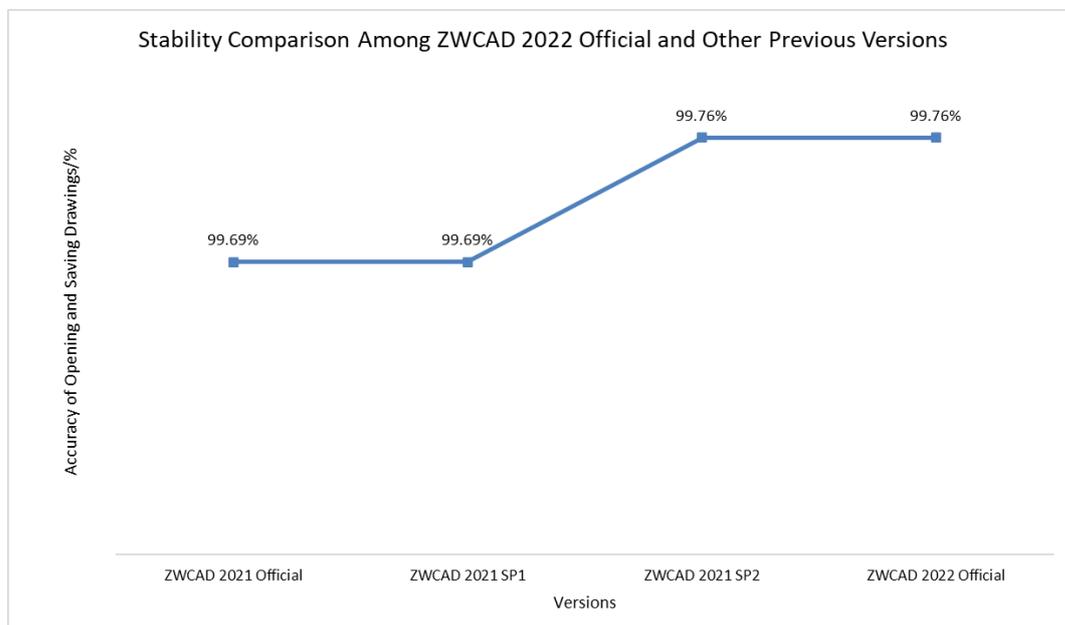
---

## Stability

The following section describes the stability tests in this release.

The line chart below indicates that almost 100% of 1,270 comprehensive drawings selected for testing can be opened and saved successfully in previous ZWCAD versions as well as ZWCAD 2022 Official.

Moreover, far fewer crashes have been reported since the release of ZWCAD 2021 SP2. Most of the typical crashes, including the ones that occur when zooming or executing 3DOrbit, have been fixed in 2022 Official.



*Figure 5. Stability comparison with previous versions*

Besides improved accuracy and less crashes, in ZWCAD 2022 Official, there is an optimized crash report mechanism to secure your drawings.

Simply put, you can choose whether to save the opened drawings or not when there is a crash, which could prevent unexpected data loss. Moreover, the crash report ZIP file contains more useful information for our further analysis and better locating the root issues.

---

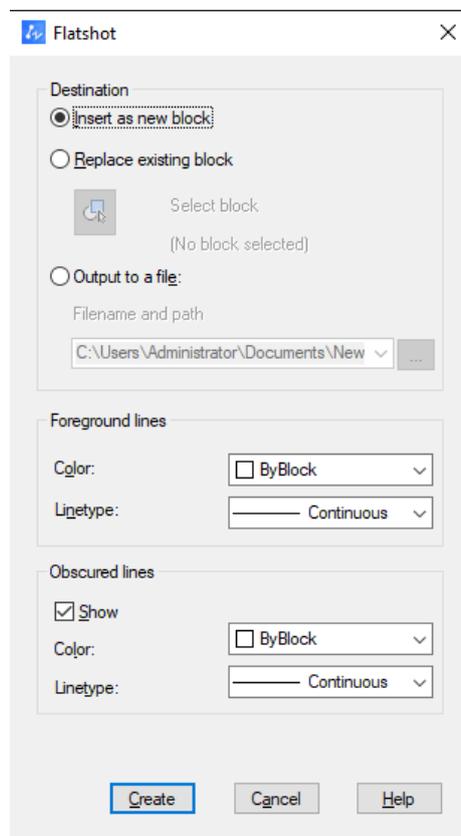
## New Features

This section expounds the new features in this release.

### Flatshot

Create a planar projection of the 2D contour of a 3D entity without drawing conversion, just like taking a photo of the visible edges of a 3D entity in the drawing and then inserting this “photo” as a block on the XY plane of the UCS.

Flatshot can be applied to various industries, especially the mechanical industry where designers could use this feature to create three-view drawings and then plot quickly.



*Figure 6. The Flatshot dialog*

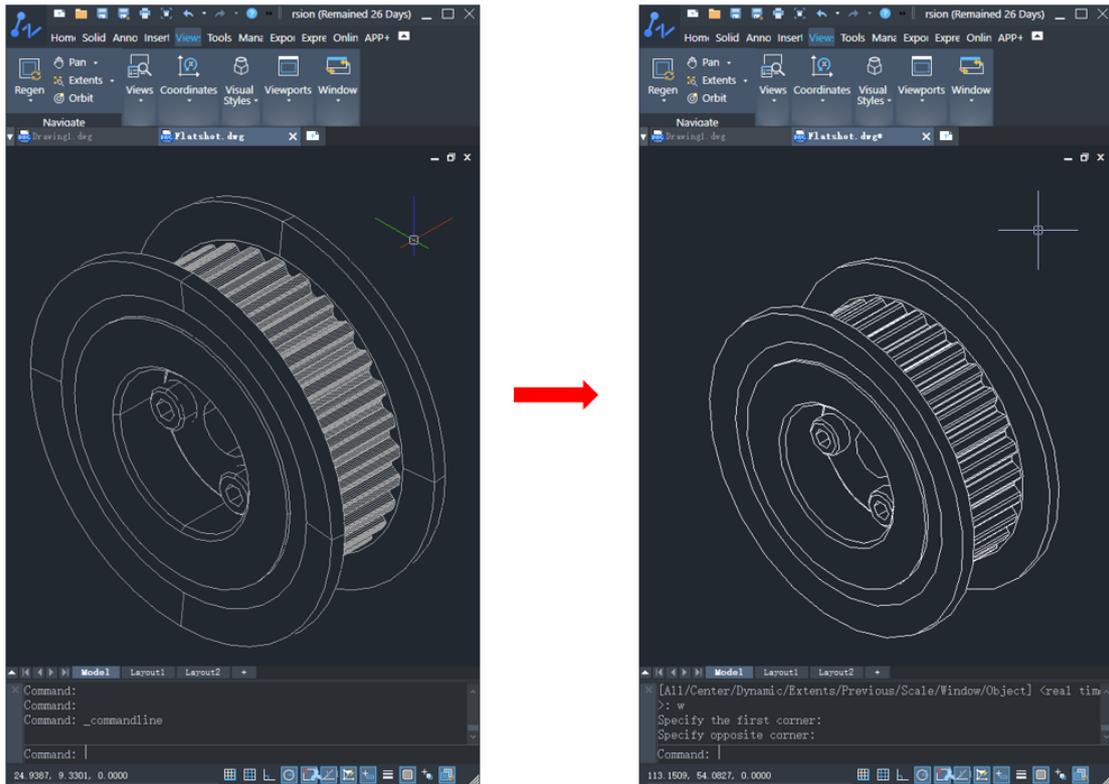


Figure 7. Displaying the effect of the 3D entity in the 2D plane

## IFC Import

You could import mainstream .ifc files using the IFCIMPORT command and view such 3D drawings by 3D Orbit and panning.

Besides, with the structure tree in the IFC Structure Panel, you could quickly check the details of different parts which can be extracted and exported using DATAEXTRACTION.

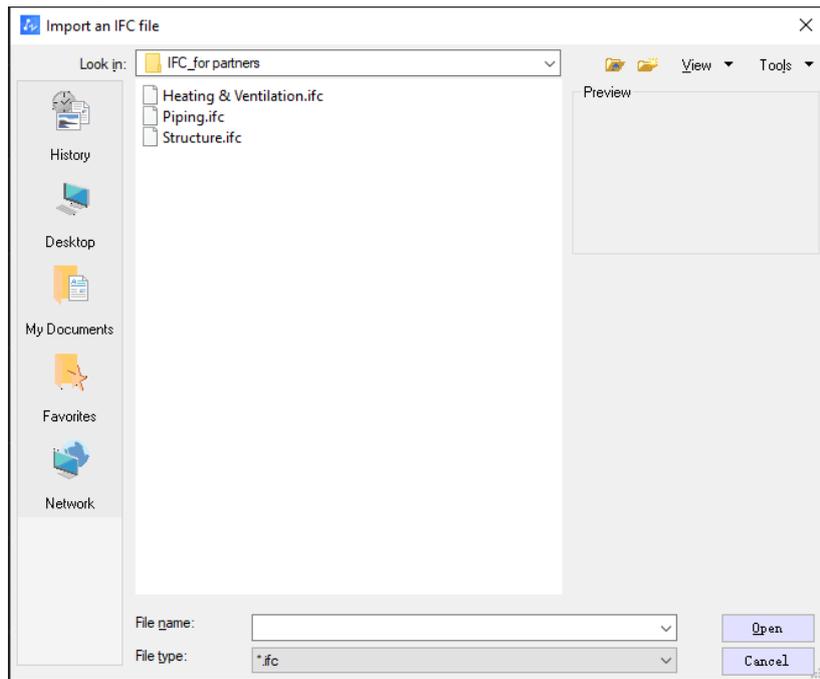


Figure 8. Importing .ifc files

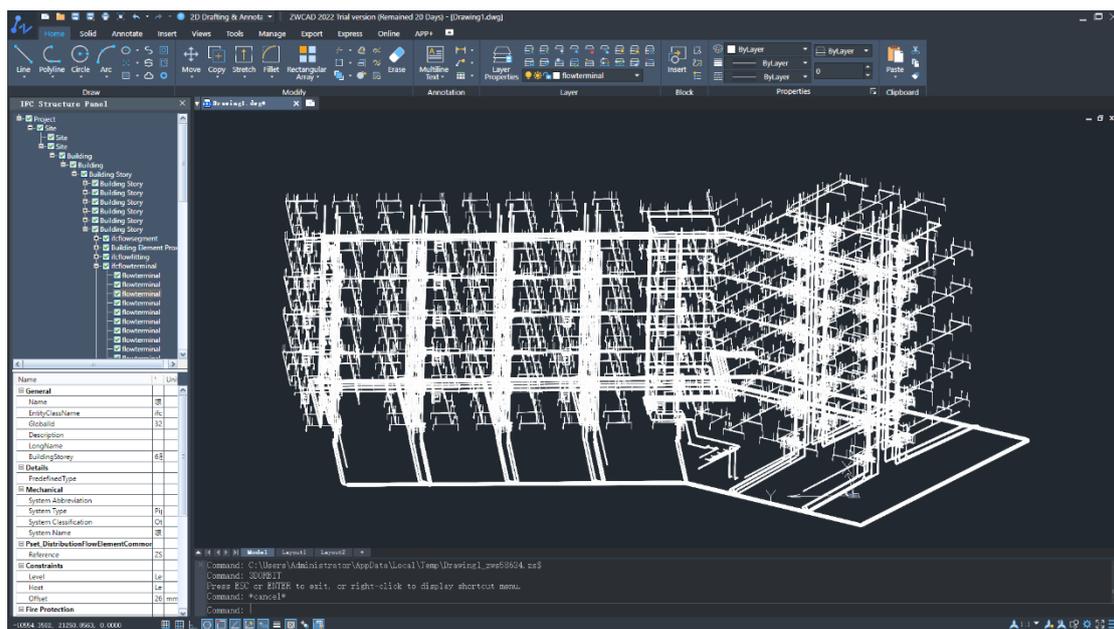


Figure 9. Checking the details of parts by the structure tree

## Adjustable Viewport

When there is more than 1 viewport in the model space, the size of viewports can be changed by dragging the edges of them.

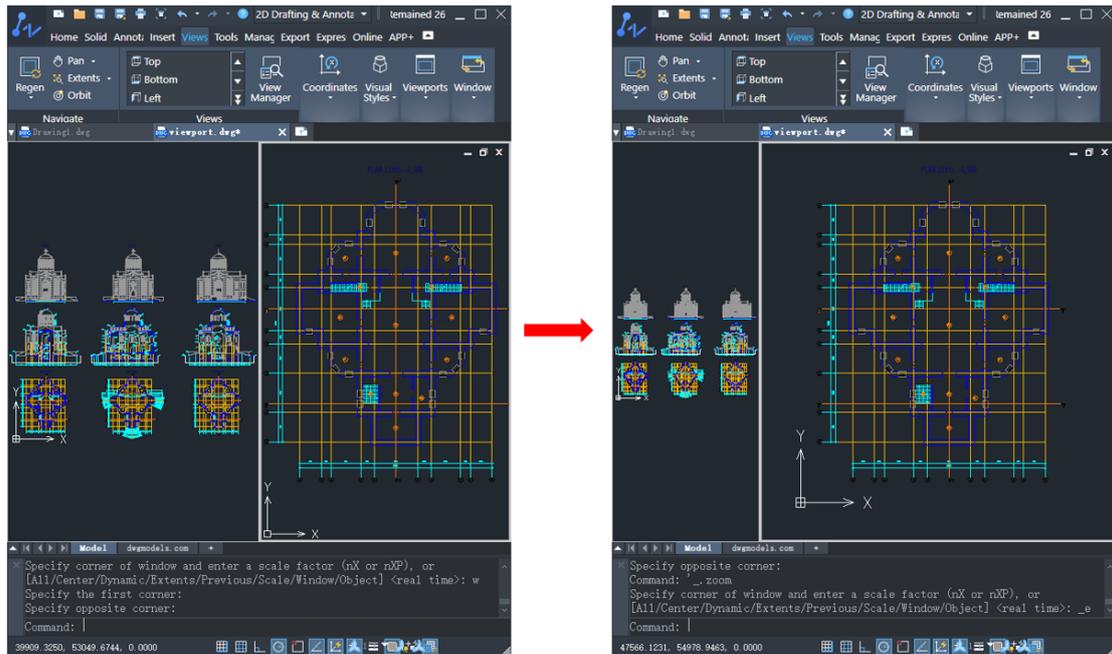


Figure 10. Changing the size of viewports by dragging the edges

Similarly, new viewport can be created by dragging the edges which are close to the frame of the interface.

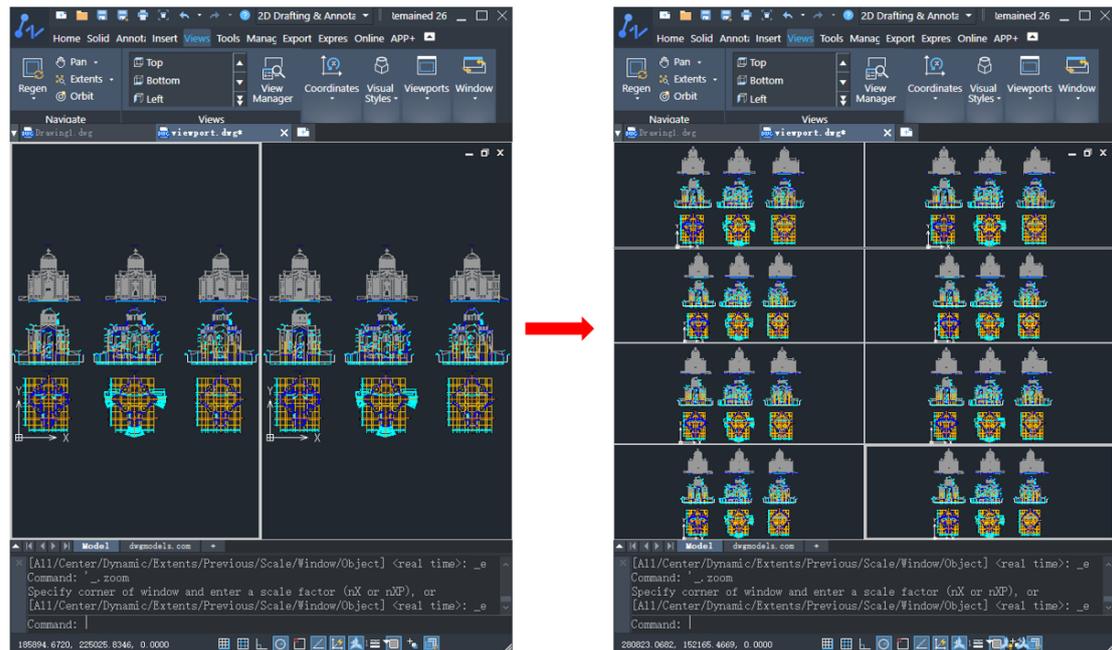


Figure 11. Creating multiple viewports by dragging specific edges

## Coexisting Ribbon & Classic Menus

Ribbon and Classic menus can be displayed at the same time now, despite the workspace you choose. You could customize the menu type in the Settings menu

which appears by clicking the button on the bottom right corner.

In this way, the layout of the user interface becomes friendlier for users who have different interface preferences.

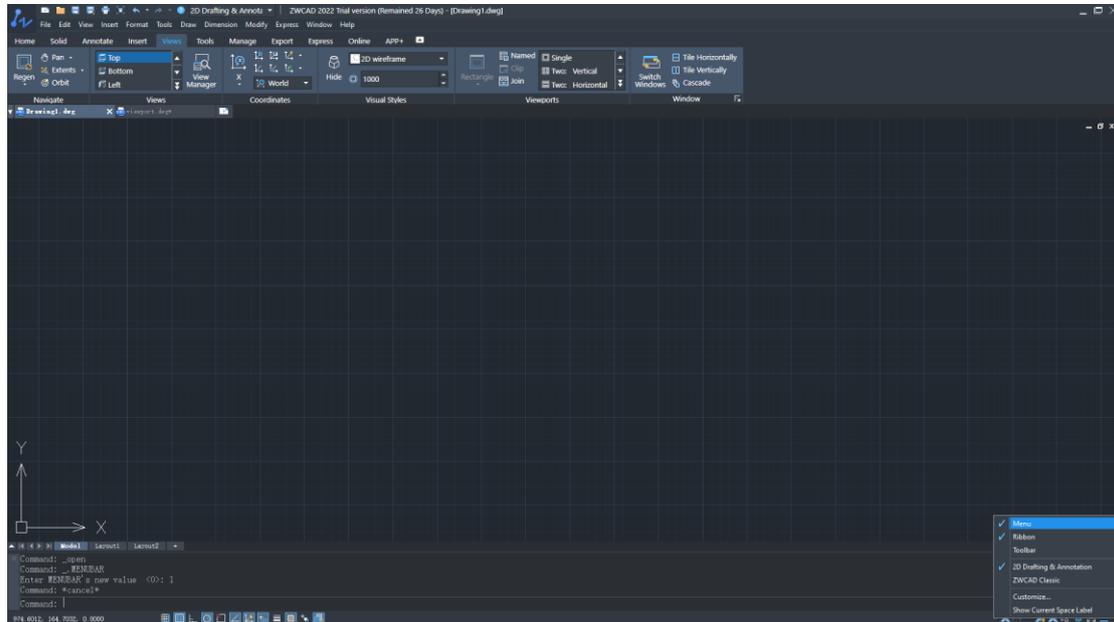


Figure 12. Customizing the menu type in the current workspace

## SAVEALL Command

With this command, you can save the opened drawings all at once. If some of the drawings are not named, you will be prompted to name and then save them.

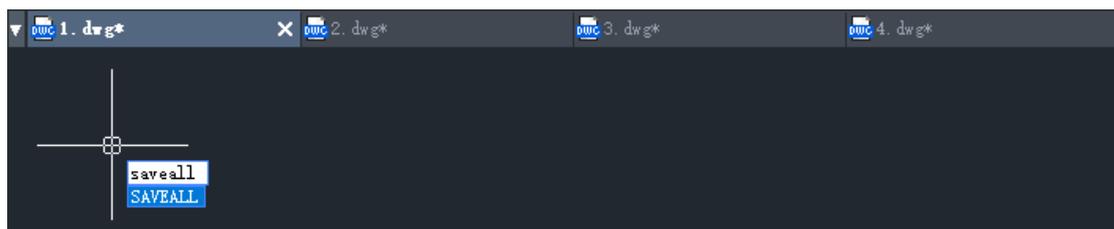


Figure 13. Saving the opened drawings all at once using SAVEALL

## MEASUREGEOM Command

The MEASUREGEOM command allows you to measure the distance, radius, diameter, angle, area, and mass properties of objects. The measured data will be displayed in the command line.

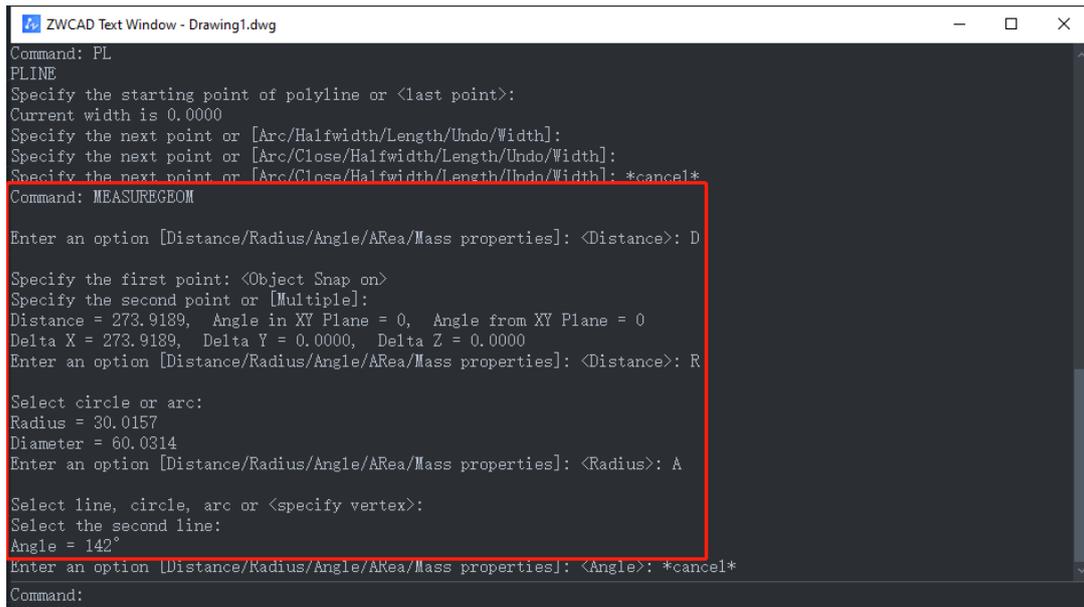


Figure 14. Data measured by MEASUREGEOM are displayed in the command line

## Anti-Aliasing Switch

To improve the display effect, an anti-aliasing switch has been added. By turning it on, jagged objects will look much smoother.

There are 2 ways to turn the switch on: a) invoke the Options dialog, click the Display tab, and check the “Smooth line display” option; b) input LINESMOOTHING in the command line and set the value to 1 (1 means turning on while 0 means turning off).

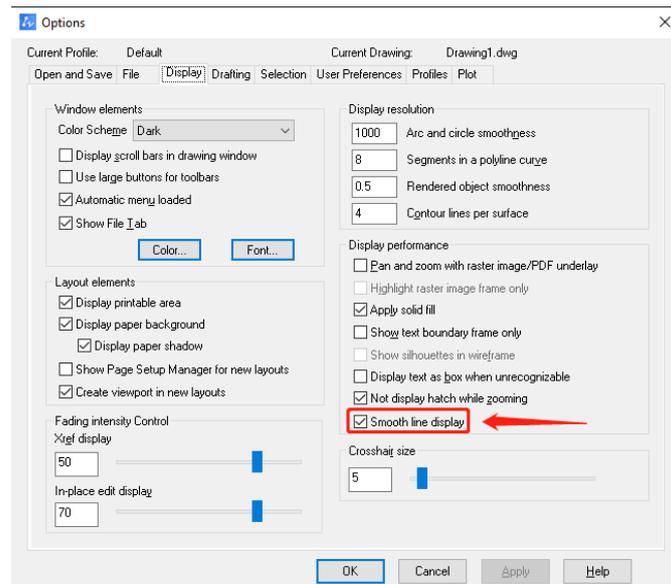


Figure 15. Checking the “Smooth line display” option in the Options dialog

```
× Command: _commandline
Command: LINESMOOTHING
Enter LINESMOOTHING's new value <0>: 1
Command: LINESMOOTHING
Enter LINESMOOTHING's new value <1>:
427.3262, 714.3681, 0.0000
```

Figure 16. Inputting LINESMOOTHING in the command line to set the value

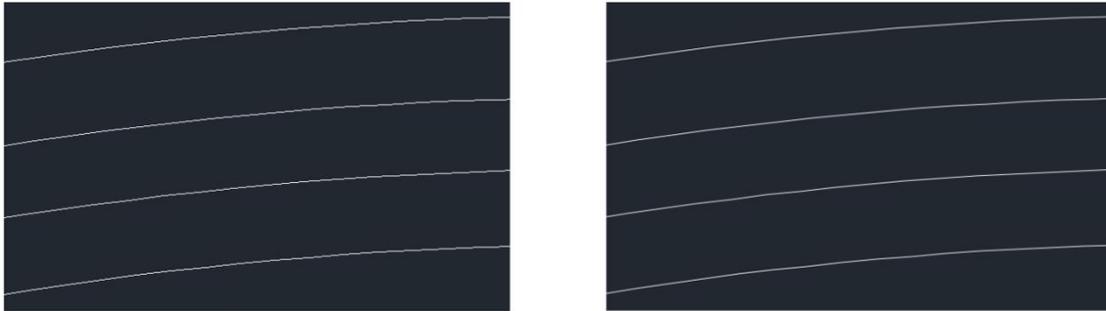


Figure 17. Before & after turning on the switch

# Improvements

## Plot Transparency

The “Plot transparency” option has been added in the Plot dialog, meaning that transparency effects in the drawing can be shown in the exported file.

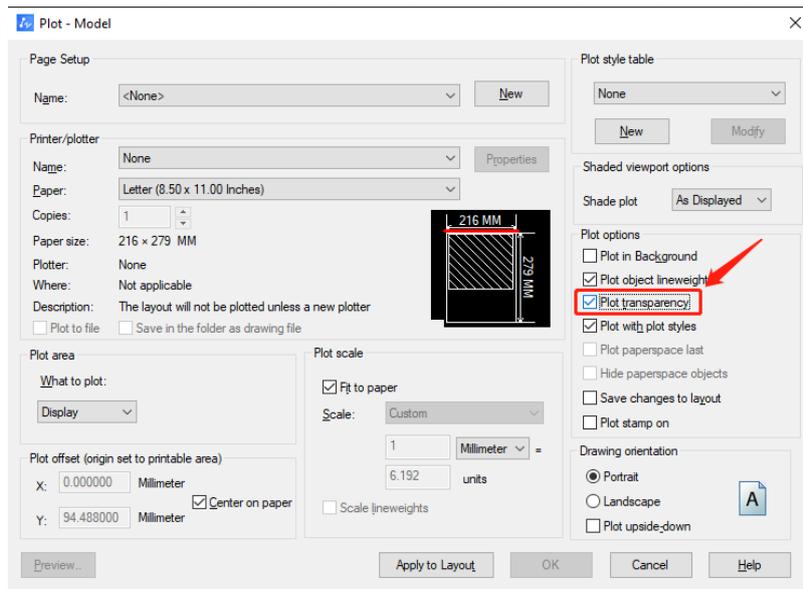


Figure 18. The “Plot transparency” option



Figure 19. Comparing plotted objects with and without transparency effects

## Enhanced Data Extraction

The properties of “Text” objects can be extracted by Data Extraction now.

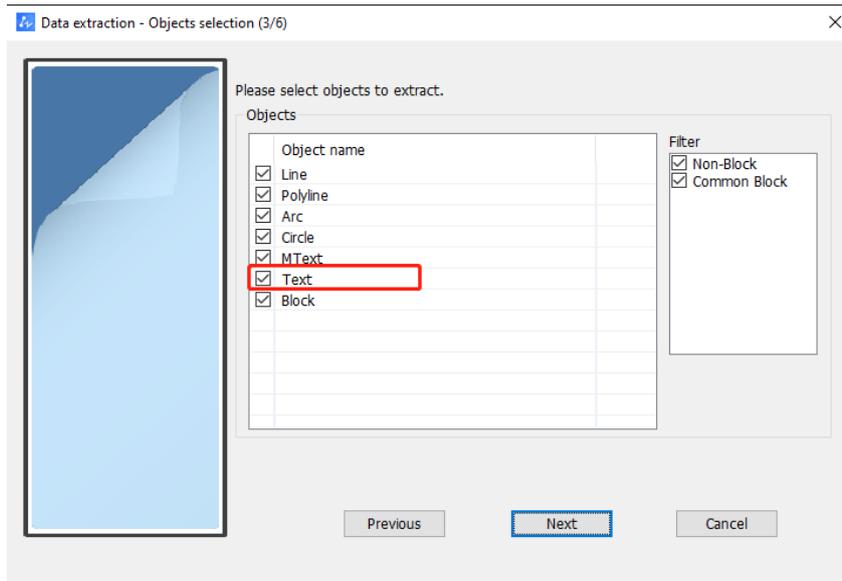


Figure 20. Choosing "Text" in the Objects selection dialog

Plus, a new method of sorting properties has been added for users to rearrange columns or properties in ascending or descending order.

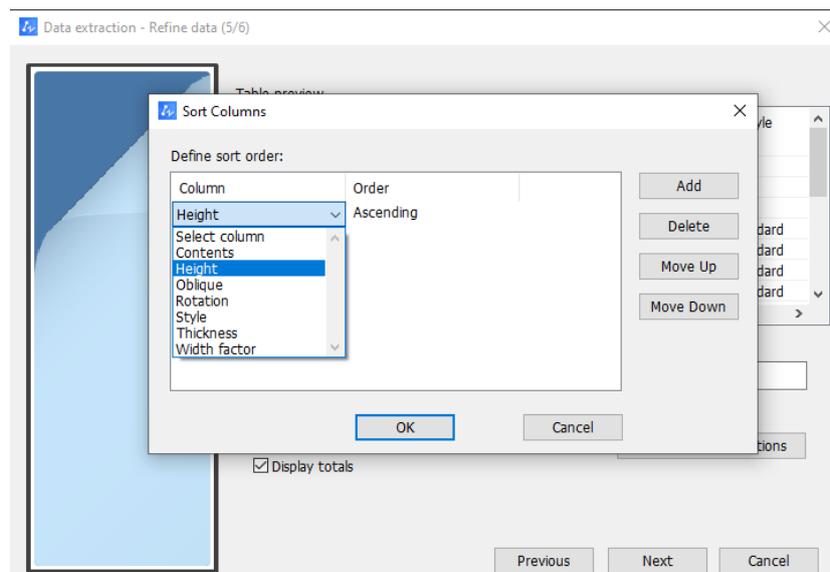


Figure 21. Rearranging the extracted properties according to the column order

## Optimized Right-Click Menu of Mleader

2 new options -- "Add Leader" and "Remove Leader" have been added to the right-click menu of Mleader.

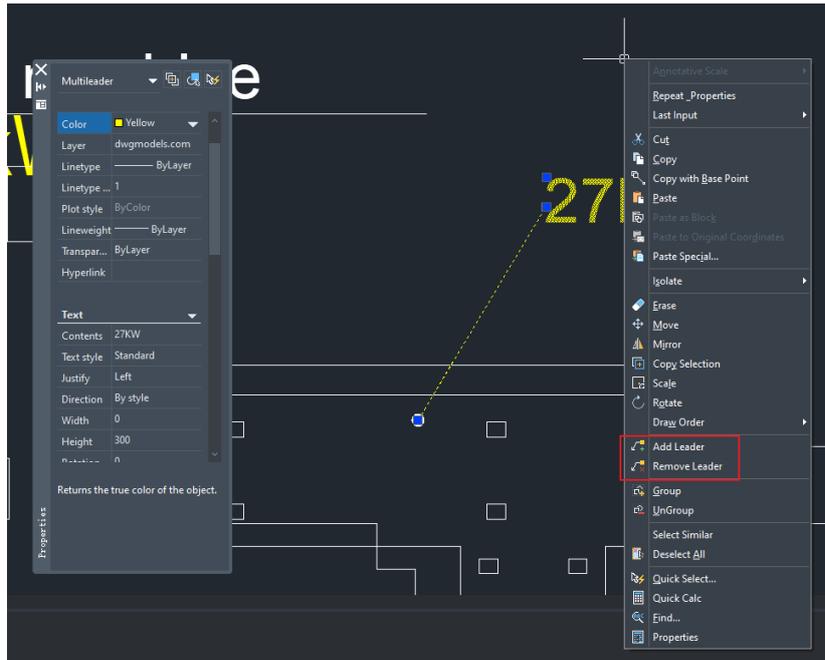


Figure 22. Adding or removing leaders from the right-click menu of Mleader

## Movable Columns in Layer Properties Manager

You could drag to customize the column order in the Layer Properties Manager.

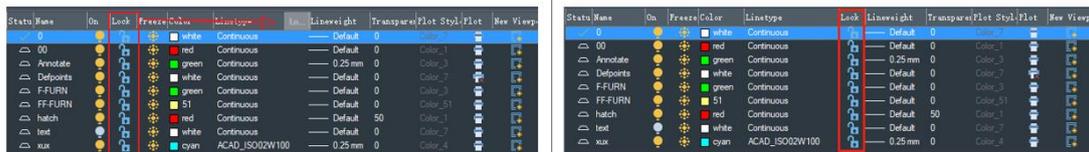


Figure 23. Changing column order in the Layer Properties Manager by dragging

---

## New Commands & System Variables

New Commands	Description
RIBBON	Display the Ribbon panel.
RIBBONCLOSE	Close the Ribbon panel.
FLATSHOT	Create projected 2D profile lines of all 3D solid models in the model space.
SAVEALL	Save all currently opened drawing files.
MEASUREGEOM	Measure distance, radius, angle, area and mass properties of objects.
IFCIMPORT	Import IFC files.
IFCSTRUCTUREPANEL	Open the IFC Structure Panel.
IFCSTRUCTUREPANELUPDATE	Refresh the IFC Structure Panel to its initial state.
IFCSTRUCTUREPANELCLOSE	Close the IFC Structure Panel.

New System Variables	Description
MENUBAR	Control whether to display the classic menu.
RIBBONSTATE	Show the state of the Ribbon: open or closed (Read-only).
PLOTTRANSPARENCYOVERRIDE	Control whether to plot object transparency.
LINESMOOTHING	Control whether to turn on the anti-aliasing switch.

## APIs

The following section describes the condition of APIs in this release.

## ZRX

7 were added and 18 were fixed:

State	Interface
Added	void ZcGsContextImp::pushDatabase(ZcGiDrawable* pDrawable);
Added	void ZcGsContextImp::popDatabase();
Added	void AcDbExtents2d::addPoint(const AcGePoint2d& pt);
Added	Acad::ErrorStatus AcDbSubDMesh::getVertices(AcGePoint3dArray& vertexArray) const;
Added	Acad::ErrorStatus AcDbSubDMesh::getFaceArray(AcArray<Adesk::Int32> & faceArray) const;
Added	Acad::ErrorStatus AcDbSubDMesh::subdLevel(Adesk::Int32& result) const;
Added	Virtual AcDbRasterImageDef::wblockClone(AcRxObject* pOwnerObject, AcDbObject*& pClonedObject, AcDbIdMapping&, Adesk::Boolean isPrimary = Adesk::kTrue) const;
Fixed	Acad::ErrorStatus AcEdInputPointMonitor::monitorInputPoint(const AcEdInputPoint& input, AcEdInputPointMonitorResult& output);
Fixed	virtual Acad::ErrorStatus AcDb3dSolid::shellBody(const AcArray<AcDbSubentId *> & faceSubentIds, double offsetDistance);
Fixed	virtual void AcGsDevice::getSnapShot(Atil::Image * pOutput, AcGsDCPoint const & offset) = 0;
Fixed	virtual void AcGsView::getSnapShot(Atil::Image * pOutput, AcGsDCPoint const & offset) = 0;
Fixed	Acad::ErrorStatus AcDbPolyline::getBulgeAt(unsigned int index, double& bulge) const;
Fixed	virtual ACDBCORE2D_PORT Acad::ErrorStatus AcDbObjectOverrule::wblockClone(const AcDbObject* pSubject,

	AcRxObject* pOwnerObject, AcDbObject*& pClonedObject, AcDbIdMapping& idMap, Adesk::Boolean isPrimary = true);
Fixed	static Acad::ErrorStatus AcDbRegion::createFromCurves(const AcDbVoidPtrArray& curveSegments, AcDbVoidPtrArray& regions);
Fixed	void CvDbSecondEnt::subViewportDraw(AcGiViewportDraw* mode) override;
Fixed	Acad::ErrorStatus AcDbMLeaderStyle::postMLeaderStyleToDb(AcDbDatabase* pDb, const ACHAR* styleName, AcDbObjectId & mleaderStyleId);
Fixed	virtual int AcDbTransactionManager::numOpenedObjects() = 0;
Fixed	virtual ADESK_DEPRECATED Acad::ErrorStatus processInputPoint();
Fixed	int acedSetFunHelp(const ACHAR* pszFunctionName, const ACHAR* pszHelpfile, const ACHAR* pszTopic, int iCmd);
Fixed	virtual Acad::ErrorStatus AcDbDataTable::dxfOutFields(AcDbDxfFiler* filer) const;
Fixed	virtual Acad::ErrorStatus AcDbRasterImageDef::wblockClone(AcRxObject* pOwnerObject, AcDbObject*& pClonedObject, AcDbIdMapping&, Adesk::Boolean isPrimary = Adesk::kTrue) const;
Fixed	int acedDragGen(const ads_name ss, const ACHAR * pmt, int cursor, int (*scnf) (ads_point pt, ads_matrix mt), ads_point p);
Fixed	Acad::ErrorStatus AcDbBlockTableRecord::getBlockReferenceIds(AcDbObjectIdArray& ids, bool bDirectOnly = true, bool bForceValidity = false) const;
Fixed	virtual ACPOLYGON_PORT Acad::ErrorStatus AcDbMPolygon::appendLoopFromBoundary(const AcDb2dPolyline* pPoly, bool excludeCrossing = true, double tol = AcDbMPolygonCrossingFuzz);

## .NET

1 was fixed:

State	Interface
-------	-----------

Fixed	PlotSettingsValidator Methods
-------	-------------------------------

## VBA

3 were fixed:

State	Interface
Fixed	getExtents Methods
Fixed	PlotToFile Methods
Fixed	DrawJig Methods

## LISP

10 were fixed:

State	Interface
Fixed	entmake
Fixed	ssget
Fixed	vla-setcellbackgroundcolornone
Fixed	gread
Fixed	princ
Fixed	Vla-put-fontfile
Fixed	load_dialog

Fixed	done_dialog
Fixed	vl-arx-import
Fixed	load

## Bug Fixes

Below are some important fixed bugs. For the complete list, please refer to:

[https://www.eteams.cn/documents/f/4532663428056270008/5932605512565256682/?view\\_info|id\\_5932605569370960640](https://www.eteams.cn/documents/f/4532663428056270008/5932605512565256682/?view_info|id_5932605569370960640)

SUP ID	Description
SUP-21094	Viewport: Unable to adjust the size of viewports by dragging the edge.
SUP-31144	Find: Unable to select or replace multiple results.
SUP-18026	Join: Unable to join 2D and 3D polylines.
SUP-34667	Data Extraction: A list of blocks and previews was lost in ZWCAD 2021.
SUP-34602	Digital Signature: Failed to choose and sign a second certification with non-administrator permission.

---

## Limitations and Notes

SUP ID	Description
SUP-36646/36821	Menu: The Classic menu would not display on specific monitors.
ZWCAD-24782	Plot: The thickness of entities can be lost when plotting.
ZWCAD-24772	MEASUREGEOM: The direction of drawn lines affects the calculated angle.
ZWCAD-24810	Xref/Block: When the attached Xref includes block references, the color can be displayed incorrectly.