Undet for Ares Commander
User Manual
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Overview

Undet with Ares Commander - The n°1 alternative for CAD, with a high-performance point cloud engine. Intuitive CAD User Interface and native DWG support.

Solution powered by Graebert GmbH & Undet point cloud software

Graebert GmbH is recognized for its more than 40 years in the CAD industry.

Millions of professionals use CAD solutions powered by the ARES technology, which represents the second largest installed base in the world in our industry. (Ares Commander, DraftSight, CorelCAD).

Undet, a brand owned by Terra Modus, represents point cloud processing solutions for data obtained with reality capture technologies. We create solutions to get building measurement documentation from reality capture data easier, simpler and more affordable.

The first Undet solution was presented in early 2011.

Watch software overview videos on YouTube:

Undet with Ares Commander overview video  New and enhanced Undet features 2019.09
# Main Undet for Ares Commander functionality:

<table>
<thead>
<tr>
<th>High performance with large point clouds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create point cloud projects with Undet Indexer from a wide range of scanners: airborne, mobile mapping, terrestrial or any other 3D sensors.</td>
</tr>
<tr>
<td>Limitless project size</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intuitive CAD interface and native DWG support</th>
</tr>
</thead>
<tbody>
<tr>
<td>The user interface is built on Qt technology (the same used in AutoCAD), complete with ribbon, dockable toolbars and palettes, menu bar, right-click menus, aliases, and shortcut keystrokes.</td>
</tr>
<tr>
<td>Compatible with native DWG and DXF files</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Familiar CAD tools and commands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 2D drawing and editing commands:</td>
</tr>
<tr>
<td>Line and Trim</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comprehensive point cloud data management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combine individual scan stations into groups: for each floor/level, outside or separated scans. Control visibility of created groups or individual scans stations/files.</td>
</tr>
</tbody>
</table>
Interactive coloring management

Use the different color settings to get the clearest possible view:
| RGB | Intensity | By plane or height |

- Adjust transparency
- Change point cloud point size

Interactive visibility management (clipping box navigation)

Use the clipping box to navigate between point clouds. The clipping box can be moved to any area of a point cloud to see a more detailed view by using the arrows attached to the sides of the clipping box.

Create new clipping box: By Line, By Rectangle.

Snapping to Point Cloud points

Full-fill drawing with annotations or get any point coordinate by clicking directly on points in the model space.

Automatic feature extraction

- Extract ground terrain points from unclassified point clouds and create surface mesh.
- Corner lines
- Planes
Installation and Activation

**Undet for Ares Commander** is a plug-in for Ares Commander® software that can only be installed on Windows PC’s with Ares Commander® installed.

**System requirements**

**Operating System:** Windows OS 64 bit. **MAC is not supported.**

**Supported Ares Commander versions:** ARES® Commander 2019 for Windows® 64-bit

**Technical requirements:** the [Minim technical requirements](#) are the same as for Ares Commander, but since Undet is dealing with point clouds, which is often heavy and data rich (millions of points having XYZ coordinates, Intensity and RGB values) some specs are worth upgrading.

**RAM:** The bigger the point cloud project the more RAM will be needed. Most users working with small scale point clouds will be fine with 8 GB of RAM. When dealing with tens of gigabytes of scan data 16 GB of RAM will be welcomed. Heavy duty point cloud professionals utilizing hundreds of gigabytes in a single project will appreciate 32 GB of RAM or more.

**Hard Drive:** An SSD is far faster than a HDD. If your project is located on a drive in a server machine, LAN will reduce performance considerably. Thus, copy your project to the local drive for better performance.

**CPU:** Multiple threads are not supported, therefore, you need to pay attention to single thread performance.

**GPU:** While your CPU can render graphics, it'll do so at a much slower rate than a GPU. Thus, we recommend using graphical processors like NVidia or AMD. There is no need to go for the fanciest series. A moderate gaming card should suffice.
Software installation

First, you need to create an Undet project with Undet Indexer (Undet project creator), if you don’t have any point cloud data, below you will find several already created Undet demo projects. To open an Undet project with Ares Commander, please download the Ares Commander software and Undet plug-in (Undet for Ares Commander). If you are a FARO SCENE webshare cloud user, we recommend trying the Undet Browser for new interactive features, including navigating using the point cloud Clipping Box.

1. Download Indexer (project creator): Undet Indexer.exe
2. Download Ares Commander: ARES Commander 2019 for Windows 64-bit.exe
3. Download Undet plug-in: Undet for Ares Commander.exe
4. Download Undet Browser: Undet Browser.exe

Additional useful information:

Video tutorial on how to create an Undet project: Video how to create Undet project
PDF Tutorial on how to create an Undet project: Undet indexer User Manual
Undet for Ares Commander help: Undet for Ares Commander User Manual
2D drafting tutorial video: Tutorial on How to draw a building elevation from point clouds
2D drafting tutorial video: Tutorial on How to draw a floor plan drawing from point clouds
2D drafting tutorial video: Tutorial on How to draw a building section drawing from point clouds

Undet demo project (point cloud): Small Chapel DEMO 463 Mb
Undet demo project (point cloud): Wooden Church (Internal & external) DEMO 1.2 GB
Undet demo project (point cloud): UAV City Area DEMO 385 Mb
Undet demo project (point cloud): Simply Building including 1st floor DEMO 1.3 GB
Undet demo project (point cloud): Railway Bridge DEMO 660 Mb

Notes:

Some antivirus software may disturb the installation process. If installation was blocked by your antivirus software, we recommend that you temporarily disable your antivirus software during the Undet for Ares Commander installation process.

Undet requires the latest Microsoft Framework, which is a heavy update that might take some time to install. But if your PC is up to date it should take just a couple minutes.
License activation procedure

After installing **Undet with Ares Commander**, you will, by default, begin a **31**-day free trial.

**Undet with Ares Commander license options:**


**Annual license** can be bought from our sales team info@undet.com.
Flexible licensing allows users to work from multiple computers. You can use the same annual license on two work machines (your home and work computers). You can manage your license in the start drawing pop-up - by selecting “manage account”, which is appears each time you open Ares Commander with Undet.

All software licenses are managed through the Ares Commander customer portal.
Graphical user interface and control

Undet tools and functions are placed in the toolbars and in the Ares Commander ribbon (top) menu.

- Undet tools and functions ribbon menu
- Undet toolbars

The Undet Ribbon menu is expanded with the main tools for drawing, editing and all functions for point cloud and UCS / view management.

- Undet tools and functions ribbon menu
- Undet toolbars

Undet toolbars can be opened by a “left mouse click” on any empty area in the Ares Commander ribbon (top) menu and selecting Undet -> UNDET_ required toolbar. Open toolbars can be moved to meet your needs.
Undet project creation with Undet Indexer

First, to import point cloud data into Ares Commander you need to create an Undet project with Undet Indexer.

Undet Indexer is standalone software to create an Undet project file from a wide range of scanners or scan data files. An Undet project database is created to handle massive point clouds and allow efficient management.


Link to download Undet Indexer >>>> Download <<<<

Link to Undet Indexer (project creator) User Manual >>>> Read PDF <<<<

To open Undet Indexer in Undet Project Management toolbar click

The indexer window will appear before importing scan data, first you must select the project type based on your scan data set:

- **LiDAR data management and analysis** *(The most common choice for large airborne LiDAR projects)*
- **Topography, Corridor mapping, 3D city modeling** *(The most common choice for infrastructure projects)*
- **Buildings, Infrastructure objects, Plants** *(The most common choice for terrestrial scanners)*
- **Detailed scanned objects** *(The most common choice for small detailed objects such as monuments, parts of buildings or areas with a footprint up to 100m²)*
The Undet database has a double-file structure - Preview points and Full points. Selecting the right project type speeds up the indexing process, without losing full point cloud points and affects only the preview view. Preview points are created from all imported scan data by using GRID, its size depends on the selected project type. The default GRID size for each project is chosen for optimal indexing speed and faster preview navigation to find a place to load all points using the "clipping box".

Undet loads all points in the "clipping box" when the point count is less than the maximum point count. The maximum point count can be set manually in the Undet Density settings according to your system hardware parameters. If your clipping box is too big to load all points you will only see the preview points.

Default "max point count" settings:

<table>
<thead>
<tr>
<th>Undet for Ares Commander</th>
<th>Interval from 8 – 24 million points [can be tuned with performance slider]</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiDAR data management and analysis (The most common choice for large airborne LiDAR projects)</td>
<td>Preview points grid – 100 x 100 cm</td>
</tr>
<tr>
<td>Topography, corridor mapping, 3D city modeling (The most common choice for infrastructure projects)</td>
<td>Preview points grid – 30 x 30 cm</td>
</tr>
<tr>
<td>Buildings, Infrastructure objects, Plants (The most common choice for terrestrial scanners)</td>
<td>Preview points grid – 3 x 3 cm</td>
</tr>
<tr>
<td>Detailed scanned objects (The most common choice for small detailed objects such as monuments, parts of buildings or areas with a footprint up to 100m²)</td>
<td>Preview points grid – 1 x 1 cm</td>
</tr>
</tbody>
</table>

Note regarding Undet project creation:

Selecting the right project type speeds up the indexing process, without losing full point cloud points and affects only the preview view.

Link to Undet Indexer (project creator) User Manual >>>> Read PDF <<<<
Undet for Ares Commander ribbon menu

The main Undet tools are placed in the toolbars and in the Ares Commander ribbon (top) menu.

The ribbon menu is divided into the following blocks:

- Project Management
- Clipping Box
- Coloring
- Density
- Draw
- Modify
- CCS and View Control
- Layers
- Feature Extraction
- Browser
- Help
Undet Project Management block

- **Open** Undet point cloud project
- **Opens** Undet project creator (Undet Indexer)
- **Close** active Undet point cloud project
- **Opens** Undet project coordinate transformation settings
- **Opens** Undet project scan data visibility management settings

**Undet project coordinate transformation settings**

Note: If you close an Undet project, the manually inserted coordinate transformation values will be lost. Please save them manually in a text file or take a screenshot of your transformation parameters.

- **System name**: Here you can choose different coordinate systems. You can change your project coordinate system at any time.

- **Shift from start and rotation angles**: You can manually insert these values to shift and rotate your project.

- Manually move point cloud

- Manually rotate point cloud

- Restore original coordinate values
In the Scan data management settings, a user can manage visibility and group scan data files into chunks.

*Note: Use „Ctrl“ and „Shift“ for multiple selections from the scan list in order to group Data.*

- **Create** group of selected scan data files
- **Remove created group** (note: scan data inside group will not be deleted)
- **Indicator showing the amount of individual scan data points** in your clipping box
- **Check / uncheck to show / hide points** from selected scan data file
- **Enable / disable selected scan station position center symbol**
Undet Clipping Box block

Use the **Clipping Box** to navigate between point clouds. Undet loads all points in the **Clipping Box** when the point count is less than the maximum point count. The maximum point count can be set manually in the Undet Density toolbar according to your system hardware parameters. If your clipping box is too big to load all points you will only see the preview points.

- **Enabled / disabled** Undet Clipping Box
- Creates **new Clipping Box** by defining a **rectangle** *(note: use top or side view, to create a new clipping box)*
- Creates **new Clipping Box** by defining a **line** and its thickness
- **Resets Clipping Box** to the full extent of the project
- **Activates** Clipping Box grips to resize and change the orientation of grips.

*(Tips & Tricks: use CTRL+SHIFT+1 shortcut to activate tools to move an active Clipping Box using grips.)*

The **clipping box** can be moved to any area of a point cloud to see a more detailed view by using the arrows attached to the sides of the **clipping box**.

**Full extent** of Undet project point cloud, without Clipping box.

Clipping Box is created, but currently **disabled**.

**Enabled** Clipping Box
When choosing Clip by Line in the command line you will have several options: Select start point [Thickness/Ucs/View/ucs And view/None] None:

- **Thickness** - enter the line thickness for a new “Clipping Box” by typing “T” into the command line
- **Ucs** - with this option, the UCS plane will be set to the center of the new “Clipping box” center, by typing “U” into the command line
- **View** - with this option, the view of a new “Clipping box” will be rotated to the section line profile, by typing “V” into the command line
- **ucs And view** - with this option, the view of the new “Clipping box” will be rotated to the section line profile and UCS adjusted to the center of the new “Clipping box”, by typing “A” into the command line
- **None** - new “Clipping box” will be created without changing of View or UCS, by typing “N” into the command line

**Examples:**

Creating a new “Clipping Box” with a thickness of 0.1 meters with the “ucs And view” option selected.

Creating a new “Clipping Box” with a thickness of 1 meter with the “ucs And view” option selected.

You will get a slice view and UCS plane on the section center, ready to draw the section view.

You will get a slice view and UCS plane on the section center, ready to draw the elevation view.
**Examples with a different project GRID (enabled / disabled clipping box)**

**LiDAR data management and analysis (UAV data)**

<table>
<thead>
<tr>
<th>Preview points</th>
<th>All points loaded with clipping box (view section)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Buildings, Infrastructure objects, Plants**

<table>
<thead>
<tr>
<th>Preview points</th>
<th>All points loaded with clipping box (view section)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>
Undet Coloring block

Using this block, you will be able to change the coloring of your point cloud data.

- Expands **coloring selection list**
- Colors point cloud **by RGB**
- Colors point cloud **by Intensity**
- Colors point cloud in **Black/white**
- Colors point cloud **by plane**. Define clipping box plane in Settings.
- Colors point cloud **by Height (Z value)**
- Opens **Coloring Settings**

**Coloring examples:**

- Points colored by RGB
- Points colored by Intensity
- Points colored in Black/white
- Points colored by Height (Z value)
**Coloring Settings**

**Point Cloud point size:** 1 – 25 pixels

**Transparency settings** 0 – 100%

**Shading:** intervals depend on gradient pallet

**Color Palette (Gradient):** various color bands

**Auto Contrast** adjusts Point Cloud contrast

**Plane:** Setting to define Plane coloring

**Plane depth slider:** Moving from left to right increases the depth by plane.

- **Select** for reference plane

- **Flips** reference plane

**Set fixed size interval to** Color point cloud by plane mode according to chosen gradient.

**Coloring by plane examples:**

Selecting coloring by plane  
Selecting reference “Clipping Box” plane to start coloring.  
Colored view by reference plane with fixed step 5cm
Coloring example with plane depth slider:

Plane depth slider set to maximum value to increase coloring by plane depth. (placed on the “Right” side).

Plane depth slider moved to the “Left” side decreases the coloring by plane depth.
Undet Density block

Using this block, you will be able to change the density of your point cloud data.

- Opens manual point cloud density settings
- Optimizes point cloud density settings for higher performance
- Optimizes point cloud density settings for higher visibility
- Hide / show point cloud
Optimized higher performance / higher-visibility settings:

Point cloud density settings after clicking:

- Optimizes point cloud density settings for higher performance

Point cloud density settings after clicking:

- Optimizes point cloud density settings for higher visibility
Manual control of point cloud density

Undet loads all points in the Clipping Box when the point count inside the clipping box is less than the maximum point count. The maximum point count can be set manually in the Undet Density toolbar according to your system hardware parameters. If your clipping box is too big to load all points you will only see the preview points. Once the Clipping box is smaller Undet switches to All points automatically.

Density slider: controls the density of preview points.

Full Points slider: controls the maximum point count in the Clipping Box.

- Placing the visibility slider on the left side, means you are not be able to see All points, you will only see Preview points regardless of the Clipping Box size and project total point count (maximum default preview point count 8 million, Good performance)

- Placing the visibility slider in the middle, means that Undet will load all points if the active Clipping Box area is less than 50% of maximum point count (by default 12 million points)

- Placing the visibility slider on the right side, means that Undet will load all points if the active Clipping Box area is less than 100% of the maximum point count (by default 24 million points)

Density bar (slider) Controls the density of preview points. To increase/decrease preview points (GRID), possible only during the Project creation step.
Example: with different DENSITY slider settings

Loaded All points. When the density bar becomes inactive, this means you see All points from the original data in the active Clipping Box area. No missing points!
Undet Draw block:

These are standard Ares Commander CAD tools to draw CAD objects.

- Creates **line** segment
- Creates **rectangular** polyline
- Creates **arc** using three points
- Creates multiple **point** entities
- Creates **2D polyline**
- Creates **circle** using a specified radius
- Create **ellipse** using a specified center point
- Converts an entity that encloses an area into a **region entity**
- Creates **parallel constraint**
- Creates **perpendicular constraint**
- Fills an enclosed area or selected entities with a **hatch pattern**
- Creates **solid-filled polygons**
Undet Modify block:

These are standard Ares Commander CAD tools to modify created CAD objects.

- **Duplicates** selected entities
- Creates multiple copies of entities in a pattern
- **Removes** entities from a drawing
- **Trims or extends** multiple entities by dragging the pointer across them
- **Creates concentric circles**, parallel lines, and parallel curves
- **Breaks** a compound entity into its component entities
- **Rounds and fillets** the edges of entities
- **Joins** entities
- **Edits polylines** and three-dimensional polygon meshes
Undet CCS and View Control block:

Using this block, you will be able to control the CCS and View of your model space.

- Displays the **plan view of the World Coordinate system**
- Establishes a **new coordinate system** with the **XY plane parallel to the screen**
- **Rotates the view** on the defined line
- **Sets, saves and restores** custom coordinate systems
- Rotates to **back view** by active UCS
- Rotates to **left view** by active UCS
- Rotates to **top view** by active UCS
- Rotates to **right view** by active UCS
- Rotates to **front view** by active UCS
- Set **multiple view ports**
- Sets display style (**2D, 3D wireframe....**)  
- **Activates selected UCS** (WCS or user created)
Undet Layers block:

These are standard Ares Commander CAD tools to manage layers:

- **Shows all layers**
- **Frozen** layers of a selected entity/entities will be **frozen**
- Layer of a selected entity will be **locked**
- **Isolates** entity's layer
- **Manage layers** and layer properties
- **Displays entities** on selected layers and hides entities on all other layers
- **Creates, restores** and **manages** layer states
- **Changes** the current layer **to the entity’s layer**
- Expands list to set active layer
Undet Feature Extraction block:

Using this block, you will be able to change the density of your point cloud data.

- Opens automatic feature extraction settings
- Extracts a corner line between point cloud planes, by selecting click1 and click2
Automatic feature extraction settings

Step size value should be **3-5x bigger** than point cloud density (distance between neighboring points).

A **Bigger step** means, a bigger distance between point cloud points for plane extraction. By selecting a bigger value, you will be able to **extract large planes** (for example: walls, columns, roof plane windows frames)

A **Smaller step** means, a smaller distance between point cloud points for plane extraction. By selecting a small value, you will be able to **extract smaller planes** (for example: windows frames, door frames)

- **Curvature Tolerance.** If the surface is bumpy or curvy by increasing tolerance you will be able to create a detailed mesh and capture small bumps and curves.

- **Keep Vertical** means that the **extracted plane will stay in the vertical position.**

- **Reset Values** - Resets step size to default

- Select **initial point location** to extract plane

- Extracted plane **scale** function

- Extracted plane **rotate** function

- Extracted plane **press&pull** function

- Finds and creates surface mesh according to extracted plane or full extent of the Clipping Box
Example: Plane Recognition settings

Well recognized plane (Step size 0.04 m)  
Badly recognized plane (Step size 0.06 m)

Example: Surface creation with small step size

(Step size 0.34 m)  
Curvature Tolerance

Detailed ground mesh created until first bigger bump

(Step size 0.34 m)  
Curvature Tolerance

Detailed ground mesh created in all areas
Example: Surface creation with bigger step size. A **bigger step means a more decimated mesh without small bumps and curves.**

(Step size 1.34 m)

Detailed ground mesh created until first bigger bump

(Step size 1.34 m) increased “Curve Tolerance”

Detailed ground mesh created in all areas

A ground surface mesh can be created from an unclassified point cloud
Undet Browser block:

Using this block, you will be able to locate Scan station view in the SCENE WebShare cloud.

To locate panoramic Scan station view in the Undet Browser, click the WS (view sync) icon and pick a point from a point cloud.

The Undet browser can be used **exclusively by FARO SCENE Webshare Cloud users**, who have published point cloud projects in the FARO SCENE Webshare Cloud service.

[https://websharecloud.com/](https://websharecloud.com/)

To download the Undet Browser [click here](https://websharecloud.com/).

To connect to the Undet Browser, the Webshare Cloud service needs your server and login info:

- Server name („Server“); | (for example: https://yourserver. websharecloud.com)
- User login („Login“); | (for example: your loginID)
- User password („Password“); | (for example: your password)

**Main Undet Browser functionality:**

1. **Shift Cut plane (view) location**

Shift Cutting Box location by clicking in the Undet Browser view.

Shift can be in a Z direction or in the 3D space (XYZ).

2. **Locate SCENE WebShare view by picking a point**

Locate Scan station view from the SCENE WebShare cloud:

- By picking a point from a point cloud

- By clicking on the Scan station center in the model space

3. **Place point in the Ares Commander model by click in browser**

Place new annotation block object by clicking the Scan station view in the Undet browser.
Graphical Undet Browser user interface and control

Open Undet Browser dialog

The Undet Browser is standalone software. After installation you will find the Undet browser launching file.

Once you open the Undet Browser program, you will see a login screen:

To connect to the Undet Browser, the Webshare Cloud service needs your server and login info:

- Server name ("Server"); (for example: https://yourserver.websharecloud.com)
- User login ("Login"); (for example: your loginID)
- User password ("Password"); (for example: your password)

After successfully connecting, select the same project you were working on in Undet for Ares Commander

After project selection, the familiar FARO SCENE Webshare Cloud view will open:
Undet browser interface

<table>
<thead>
<tr>
<th>Browser window management tools</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Moves between action history (Back / Forward)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refresh browser view</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enables “Always on top” windows mode</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Log out to select new project</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Undet Browser info</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Under browser functions</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Draw Points</td>
<td>Enables / disables function to place point in Ares Commander model by clicking in Panoramic Scan View</td>
<td></td>
</tr>
<tr>
<td>Add Annotations</td>
<td>Enables / disables function to add annotation in Panoramic Scan View</td>
<td></td>
</tr>
<tr>
<td>Add Hrefs</td>
<td>Enables / disables function to add hyperlink to Panoramic Scan View screenshot when selecting 3D point in CAD model</td>
<td></td>
</tr>
<tr>
<td>Translate View Section</td>
<td>Enables / disables function to auto update Undet Clipping Box location</td>
<td></td>
</tr>
<tr>
<td>Change Elevation</td>
<td>Enables / disables function to assign Z value to draw new CAD object (line, polyline)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scripting and Settings</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Script</td>
<td>Enables / disables manually written script</td>
<td></td>
</tr>
<tr>
<td>Settings</td>
<td>Script settings dialog to write own script</td>
<td></td>
</tr>
</tbody>
</table>

Several functions can be enabled at the same time.
Undet Browser functionality with Undet for Ares Commander:

Locates Scan station view from the SCENE WebShare cloud:

– By picking a point cloud point
– By clicking on the Scan station center in the model space

If there is more than one scan station data set at the selected location, you will be able to select the best station view in the Undet Browser by pressing “Accept”.
Translate Clipping Box location

The Undet Browser function auto Translates Clipping Box location by clicking a point in the panoramic scan station view in SCENE WebShare Cloud

**Example.** Result after picking a point in the panoramic scan view to get a wall line above the furniture.

The Clipping Box slice is located on the closet, to get the wall position we need to shift the Clipping Box up.

The Clipping Box view after clicking a point in the scan station panoramic view to see the wall above the closet.
Place 3D point in model space by clicking in browser

The Undet Browser function **Draw Points** places the point (annotation symbol) in the Ares Commander model by clicking in Panoramic Scan View.

This function allows you to easily mark any objects or places clearly visible in scan station panoramic views.
Undet for Ares Commander toolbar interface

Undet toolbars can be opened by a “left mouse click” on any empty area in the Ares Commander ribbon (top) menu and by selecting Undet -> UNDET_required toolbar. Open toolbars can be moved to suit your needs.

**Undet toolbars:**
- Undet project management toolbar
- Undet clipping box toolbar
- Undet coloring toolbar
- Undet density toolbar
- Undet feature extraction toolbar
- Undet user manual toolbar
Menu on Right Mouse Click on scan station center “BB”

By clicking the right mouse button on a selected scan station marker (white spheres in picture below), you will see an additional Undet menu.

- Shows selected scan station point cloud data
- Hides selected scan station point cloud data
- Hides selected scan station markers
- Isolates selected scan stations point cloud data
- Isolates selected scan station markers
- Group or Ungroup selected scan station
FAQ

1. Do Undet projects support large coordinate systems (State, airborne LiDAR)?

Yes, if you have scan data files in large / state coordinate systems (for example UAV, Airborne LiDAR, etc.) you can create an Undet project.

In all Undet plugins, there are "coordinate system transformation" tools.

*For example: if you try to open the Undet project in a large coordinate system, Undet will suggest shifting point cloud data to coordinates (0,0,0). At any time, you will be able to change the coordinate system for the project (0,0,0) to the original with large numbers.*

![Undet point cloud coordinates notice](image)

We do not recommend creating deliverables using the point cloud in large coordinate systems. This is because it may cause errors when using modeling tools and start screen view glitching while zooming.

2. Can I scale / resize point clouds with Undet for Ares Commander?

Undet keeps initial file structure and scale. By using the "coordinate system transformation" tools you can shift and rotate the Undet project, **but scaling is disabled.**

All scan data files should be registered and on the same scale and coordinate system.
3. Can I snap to point cloud points?

Yes, you can snap to any point of the point cloud. Just make sure that the “ESnap” tool is enabled with the snapping option “Node”.

Notes. We always recommend keep the snapping Node option switched off. It is better to use “CTRL + Right mouse click” and select “Node” snapping for a single time. It will be one-time snapping, but if you need to snap lots of points to a point cloud please use ESnap with “Node” option enabled.