



# UCA QUICKGUIDE

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Version: 4.1



# 1 Overview

The screenshot displays the EIVA software interface for a project named 'BucketExcavator.uca'. The interface is divided into several key sections:

- Menu bar:** Located at the top, containing 'File', 'View', 'Tools', and 'Help' menus.
- Project Tree:** A hierarchical view on the left showing the project structure, including 'Actual surface.db', 'Toppings', 'Waypoints', and 'Points'.
- Properties:** A panel on the left showing details for the selected 'Actual surface.db' object, such as 'Name', 'Path', 'Cell size', and 'Appearance' settings.
- Data view:** A panel on the left displaying 'Bucket tip: Depth' as **-32.831**.
- Log window:** A panel at the bottom left showing 'Volume [m³]' as 7155.009 and 'Average Height' as 35.168.
- 3D Map View:** The central 3D visualization of the excavator site, showing depth contours and an excavator model. A depth of **-32.03 m** is highlighted.
- Boom- and Bucket profile:** A 2D profile view at the bottom right showing the excavator's boom and bucket relative to the ground surface, with a depth of **-31.93 m** indicated.

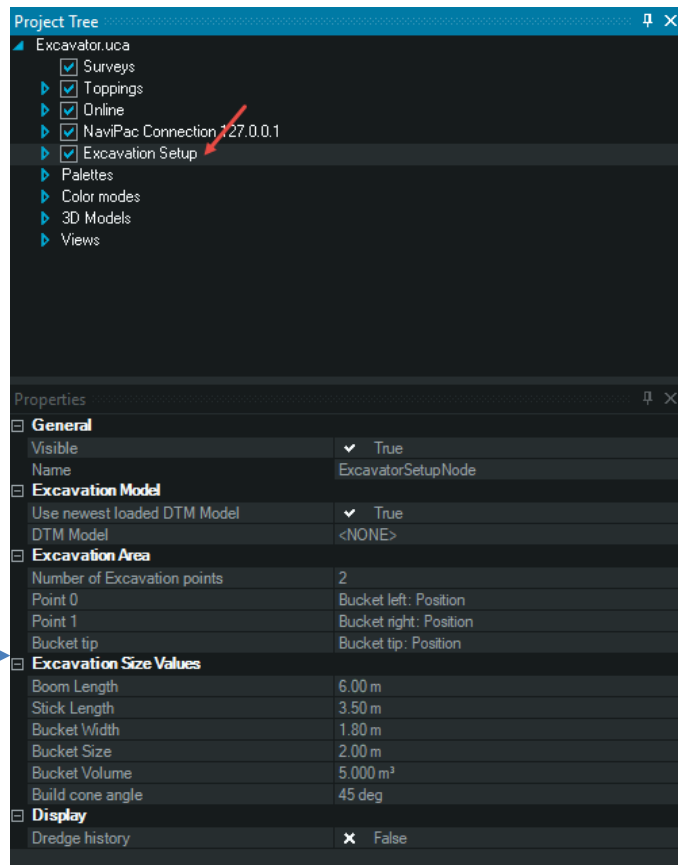
## 2 Start UCA setup

From the menu bar select File/New Setup and choose an excavation setup.

Save your project via the menu option File/Save Project As...  
UCA project files have the extension \*.uca



Select the excavation setup from the project tree and configure your excavator dimensions in the Properties window.



### 3 Add Survey content

Add content by either

1. Drag and drop file to the 3D Map View
2. Via the menu bar File/Import...

Supported file formats:

- Target surface (\*.tin)
- Actual surface (\*.xyz, \*.db)

Optional:

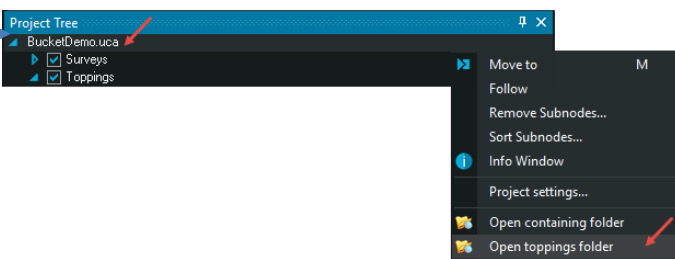
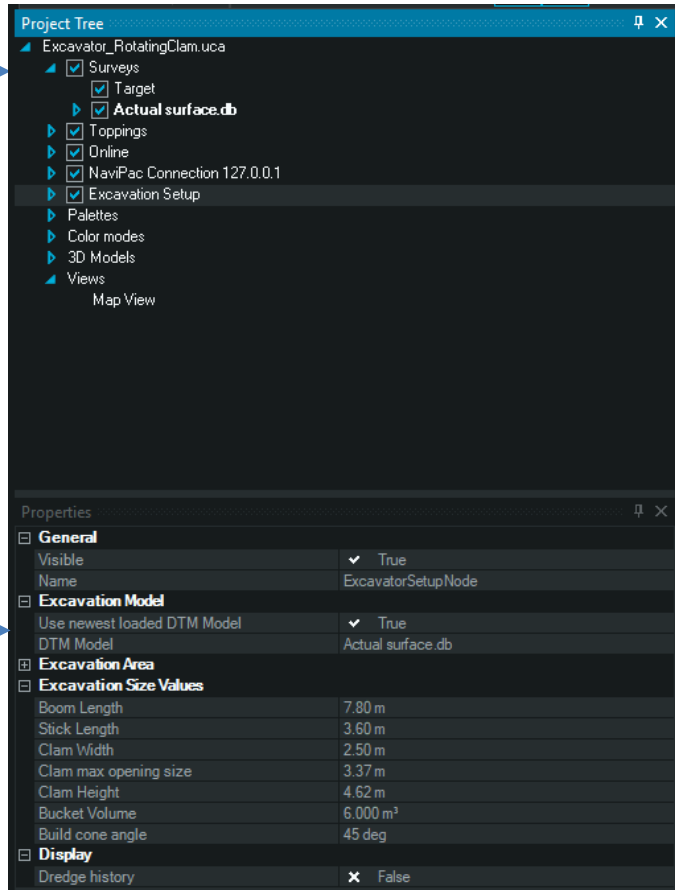
- Runline file (\*.rlx, \*.rln)
- Background file (\*.dxf)
- Waypoint file (\*.wpt)

You will see the content added in the project tree.

Go to the Excavation Setup in the project tree and make sure to select the surface. Whilst dredging, this surface is updated in real-time.

Right-click on the project name and select the option Open toppings folder to open the location where the database is saved.

Make a backup from the databases here.



## 4 Configure content files

Click on a file in the project tree. The active file is shown in bold letters.

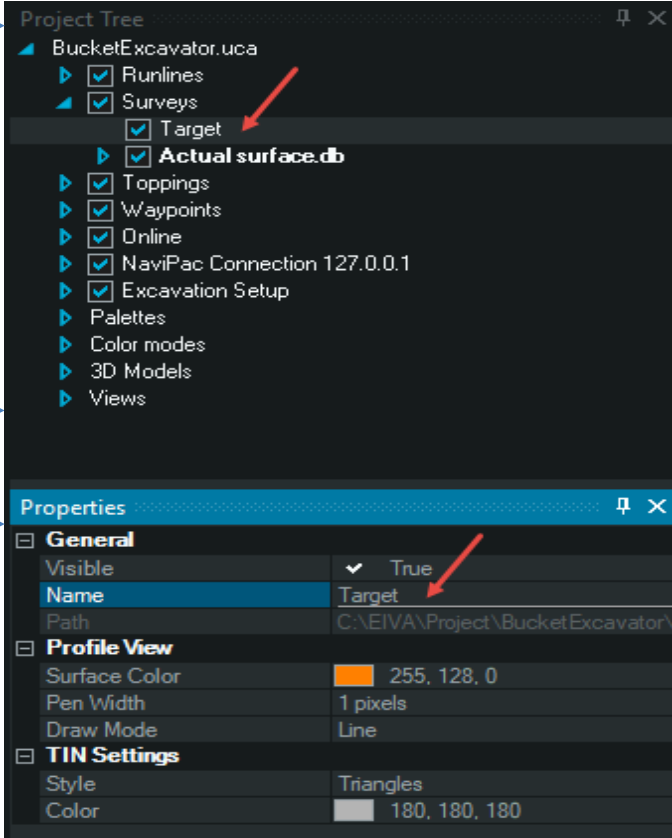
**Properties** of the Target surface.

Configure its properties:

**Visible:**  
Enable visibility here.

**Name:**  
Set the model name here.

**Surface Color:**  
Set the color in 3D map view and Profile view.



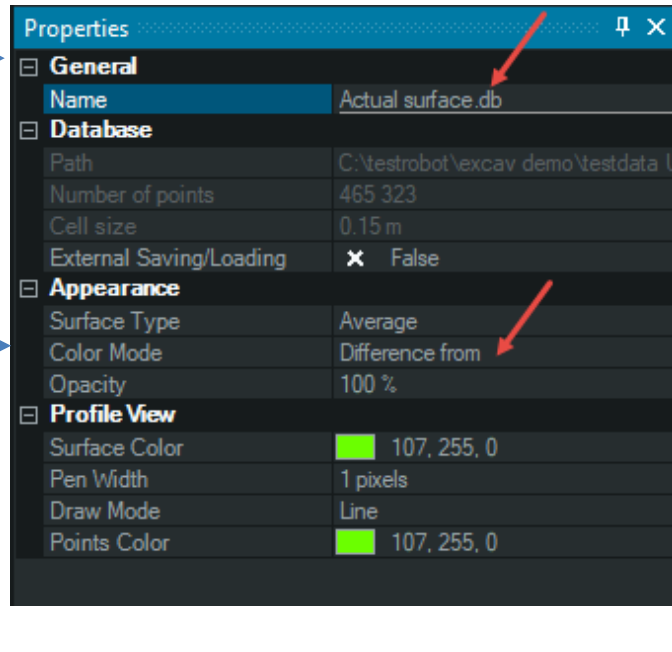
**Properties** of the Actual surface.

Configure its properties:

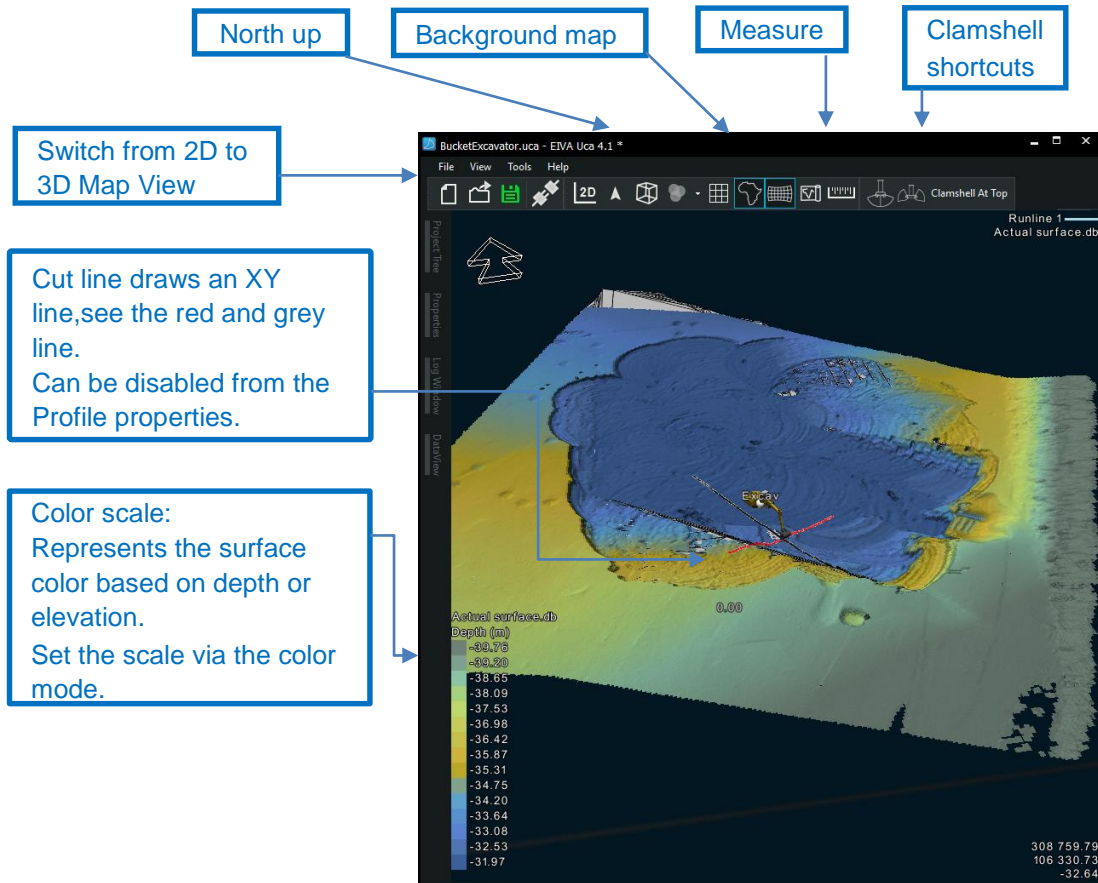
**Color mode:**  
Use Difference from or Depth for visualisation.

**Opacity:**  
To adjust the transparency in the 3D Map view.

**Surface Color:**  
Set the color in 3D map view and Profile view.



## 5 3D Map View



North up

Background map

Measure

Clamshell shortcuts

Switch from 2D to 3D Map View

Cut line draws an XY line, see the red and grey line.  
Can be disabled from the Profile properties.

Color scale:  
Represents the surface color based on depth or elevation.  
Set the scale via the color mode.

BucketExcavator.uca - EIVA Uca 4.1 \*

File View Tools Help

2D

Runline 1  
Actual surface.db

Actual surface.db

Depth (m)

-39.76
-39.20
-38.65
-38.09
-37.53
-36.98
-36.42
-35.87
-35.31
-34.75
-34.20
-33.64
-33.08
-32.53
-31.97

308 759.79  
106 330.73  
-32.64

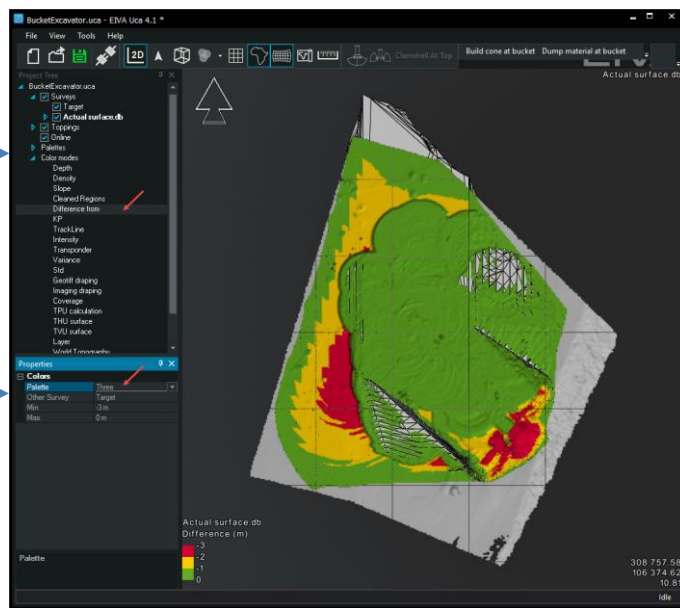
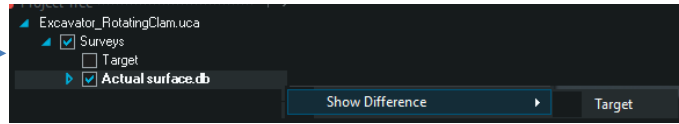
## 6 Visualise dredge area

Show difference between two surfaces.

Choose the color mode Difference from and the palette Three or Depth. In the properties you can set the interval of the palette.

The example shows:

- Green: target reached.
- Yellow: 1m above target.
- Red: 2m and more above target.

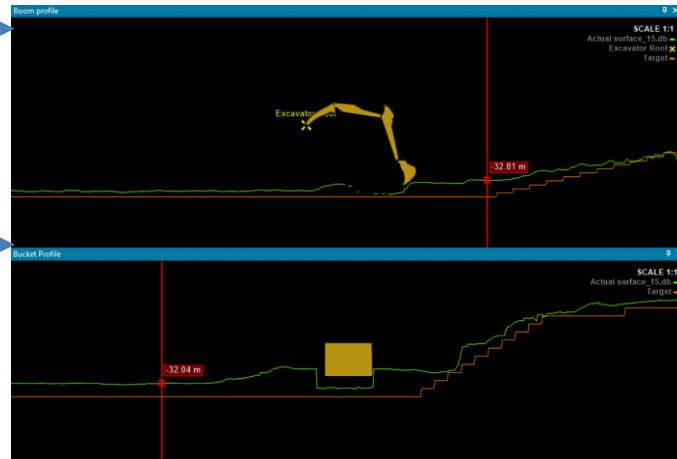


## 7 Profile Views

**Boom Profile:**  
Shows view from right.

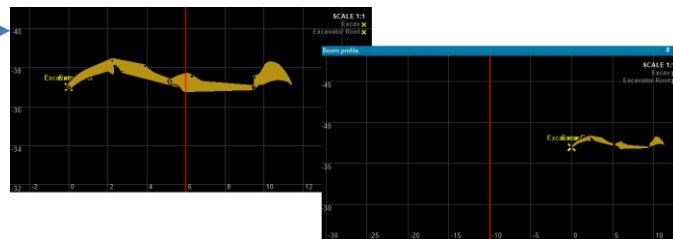
Right-Click on the profile view opens its context menu where you can configure its display.

**Bucket Profile:**  
Shows view from the front.



To move the origin, hold the mouse wheel and move the mouse e.g. to the right.

To zoom in/out, scroll with the mouse wheel.



Go to the excavation setup/Profiles in the project tree to set displaying the plane in the map view.

Set displaying the cut line here too.

**Project Tree**

- Excavator.uca
  - Surveys
  - Toppings
  - Online
  - NavIPac Connection 127.0.0.1
  - Excavation Setup
    - Waypoints
    - Vector Hierarchies
    - Live Data
    - Profiles
      - Bucket Profile
      - Boom profile
  - Palettes
  - Color modes
  - 3D Models
  - Views

**Properties**

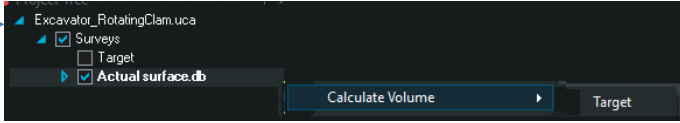
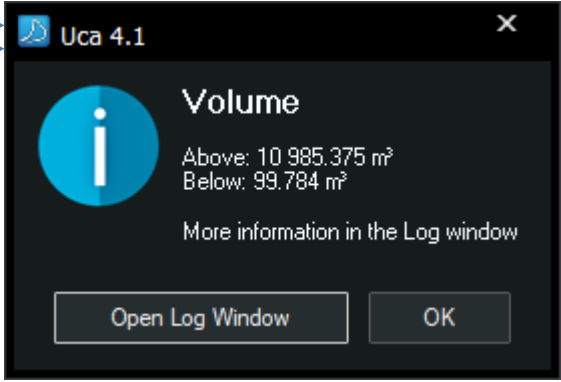
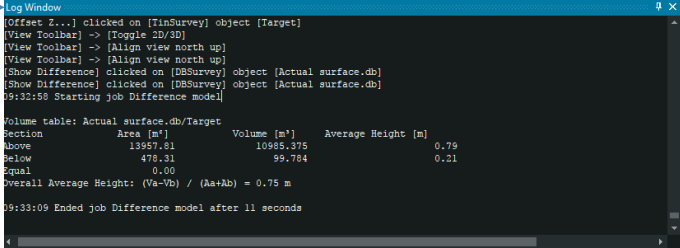
General	
Visible	True
Name	Bucket Profile
Width	31.5 m
Z Scale	1
Thickness	0.1 m
Map View	
Plane	True
Cut Line	True
Label	False
Position	Bucket tip: Position
Heading	Bucket Profile Heading: Bucket Profile Heading - Dout
Show Hidden Objects	False



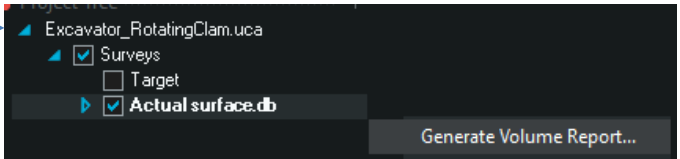
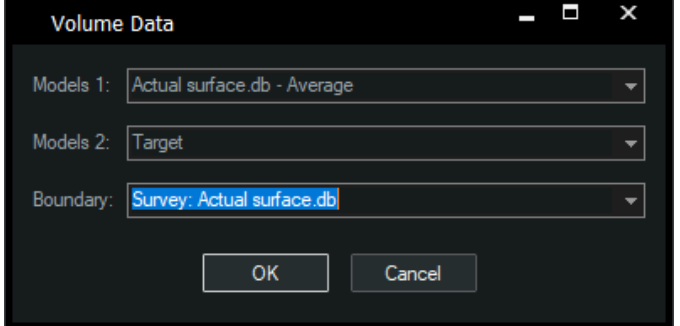
## 8 Calculate volume and create reports

**Calculate the volume:**  
Select the reference surface here.

Check the volume in the  
1. Volume info window  
2. Log window

**Generate volume report**

## 9 Version descriptions

Version	Date	Author	Description
4.1	17-12-2017	ANS	Reviewed Quickguide from LDA, and moved to word.