

Leica Infinity

Training materials - GNSS
Processing

How to process GNSS
Baselines



Version 1.0
English

- when it has to be **right**

Leica
Geosystems

Introduction

This is a step-by-step tutorial in which you learn how to import GNSS raw data, create and process the baselines and finally print a report and store the results.

Data from six receivers have been collected in one session and are processed with respect to a reference station to create six independent baselines.

The functionality discussed in this guide requires the GNSS Processing license.

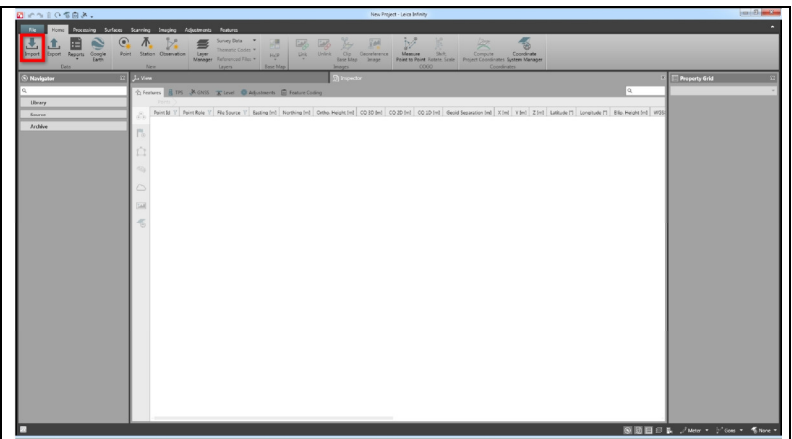
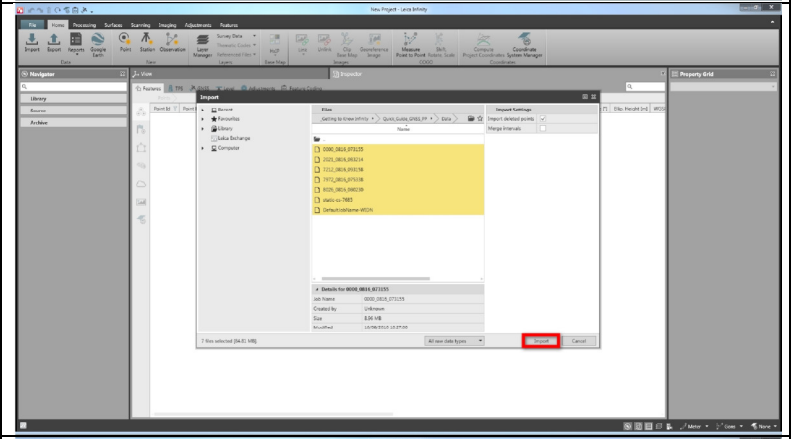
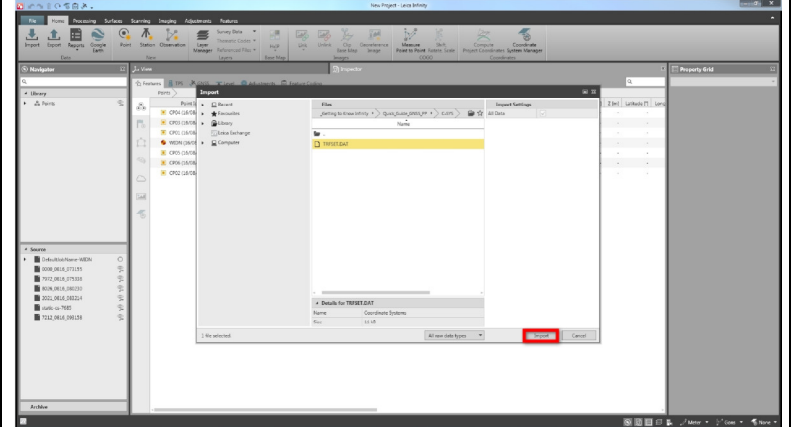
The data from the following folders will be used in this tutorial:


- Data all GNSS raw data
- C-SYS contains the coordinate system and the geoid files.

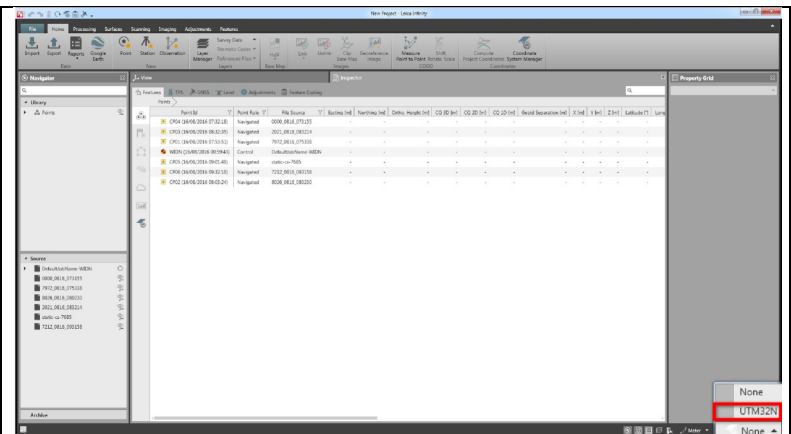
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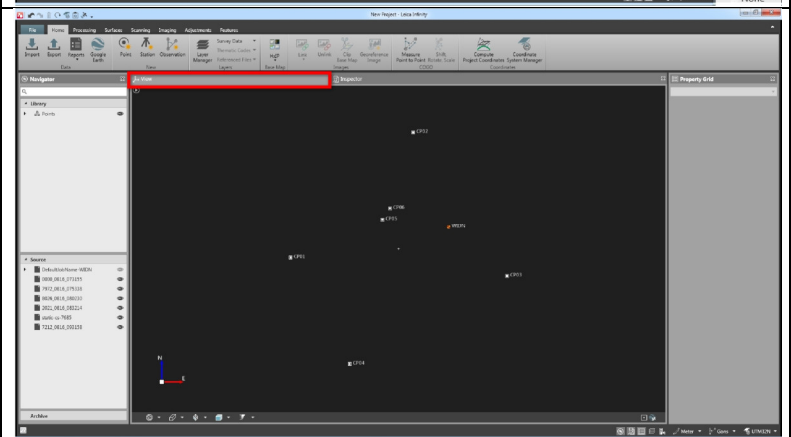
1. Import data

<p>1.1 Start Infinity and create a new project. To import the data, select Import from the Home ribbon bar.</p>	
<p>1.2 In the Import dialog navigate to the GNSS data folder, select all the files and select Import to import the data using the default settings.</p> <p>☞ Use Control+“A” to select all files.</p>	
<p>1.3 To import the coordinate system, select Import from the ribbon bar and in the Import dialog navigate to directory C-SYS, select file TRFSET.DAT and select Import.</p>	

1.4 Assign the imported Coordinate System to the project by clicking on the icon  on the right side of the Status bar, then select **UTM32N**.





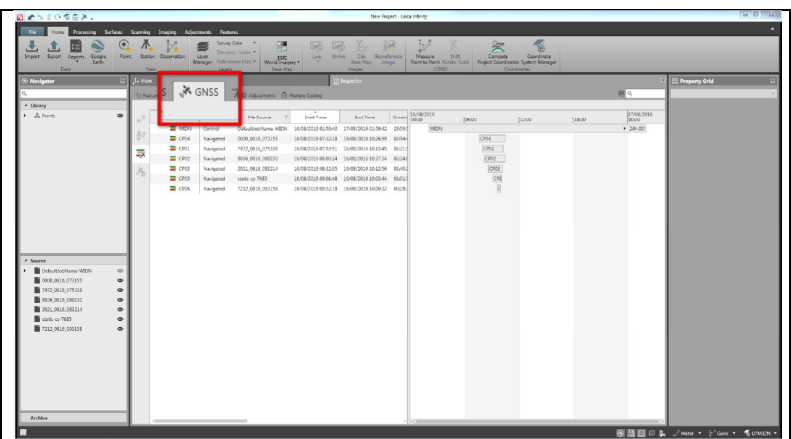
1.5 To view the imported points, click on the **View** tab.



2. Process baselines


2.1 Switch back to the data **Inspector** and select the **GNSS** tab.

 If the GNSS Intervals view is not available, you can display it by selecting the toggle button  in the top right corner of the Inspector.

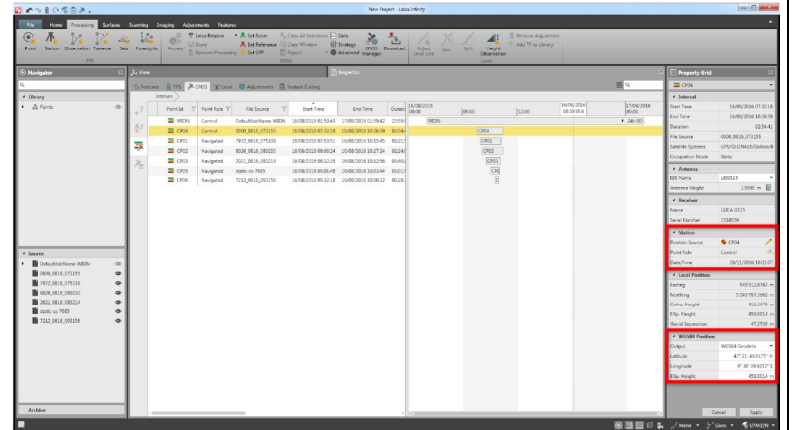
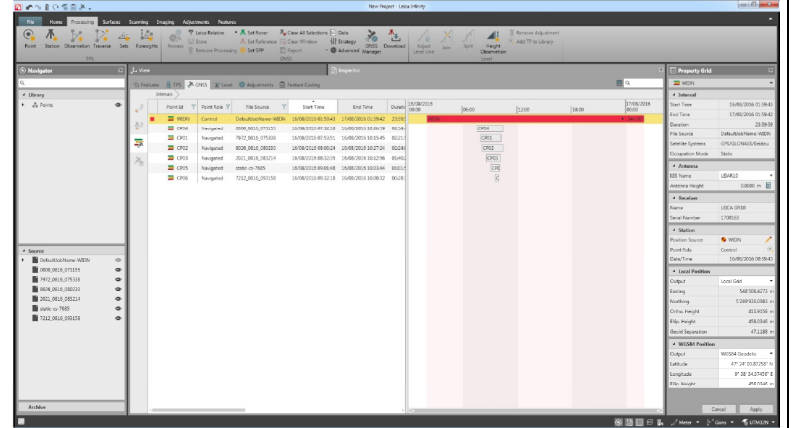
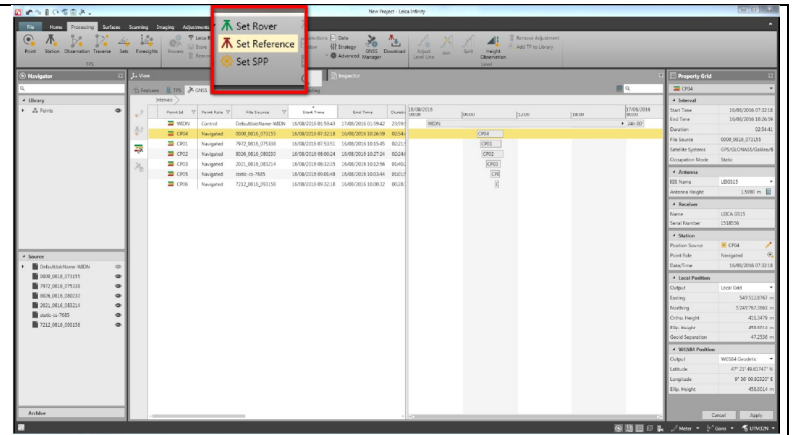


2.2 To set WIDN as a reference, highlight interval WIDN in the **Inspector** and select **Set Reference** from the **Processing** tab in the ribbon bar or right-click for context menu.

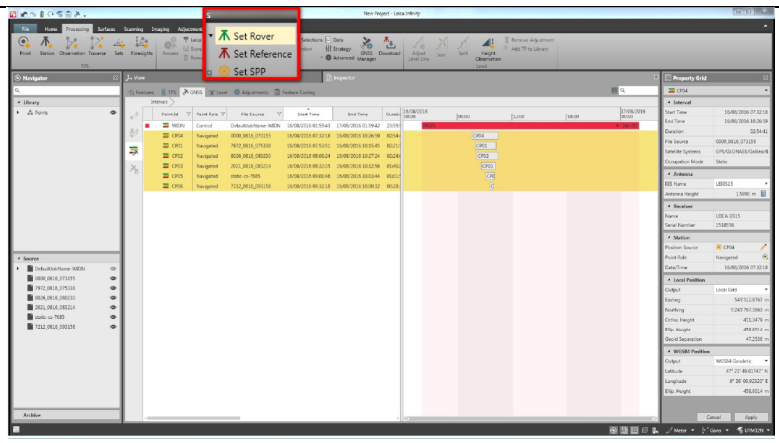
- The interval for point **WIDN** is now marked in **red**.

👉 To assign a control point to an interval and edit its coordinates before using it for processing, highlight the respective interval and change the **Point Role** field in the **Property Grid** to **Control**, by selecting the **Assign Control Point** button . The **WGS84 Position** fields will then become editable prompting for data input.

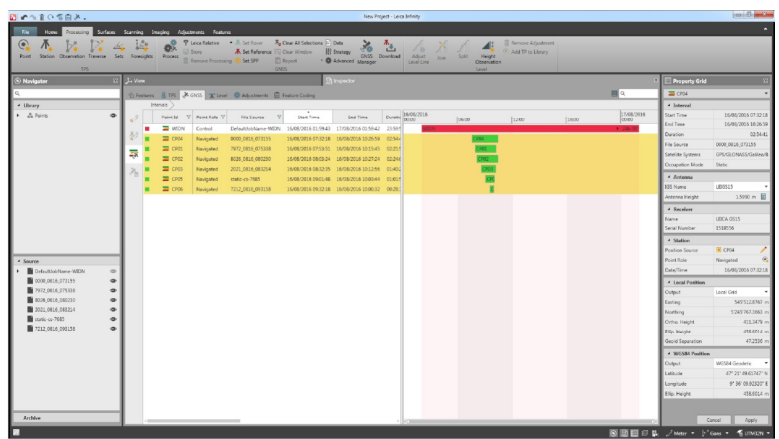
👉 In this tutorial, WIDN is used as control point, as it was imported from a file that included reference station information. In such cases, the control point role is automatically assigned to the interval on import.



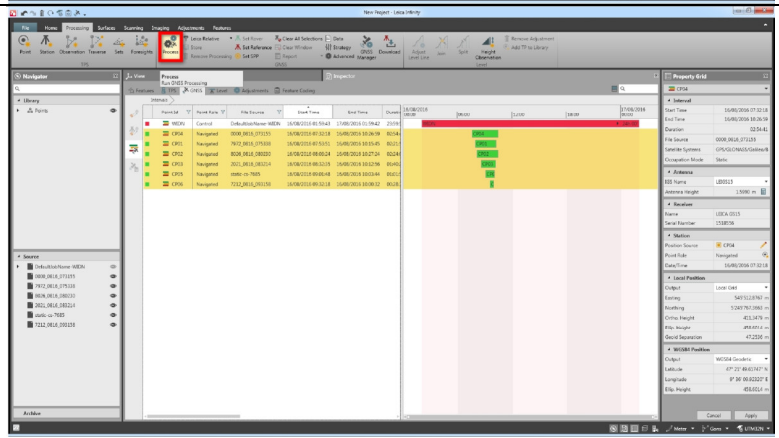
2.3 Select the rest of the intervals by using **CTRL+left mouse click** or **SHIFT+left mouse click**. Select **Set Rover** from the **Processing** ribbon bar to set points CP04, CP01, CP02, CP03, CP05 and CP06 as rover points for baseline processing or right-click for context menu.



- The intervals for these points are now marked in **green**.

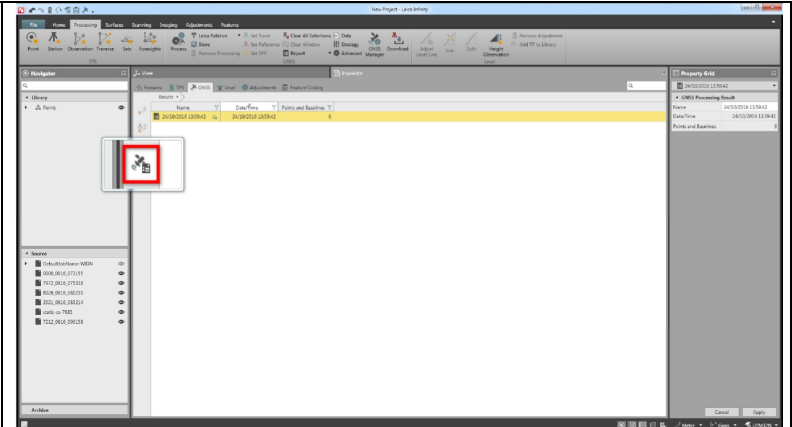


2.4 To process the baselines using the default settings, select the **Process** button from the **Processing** ribbon bar or right-click for context menu.

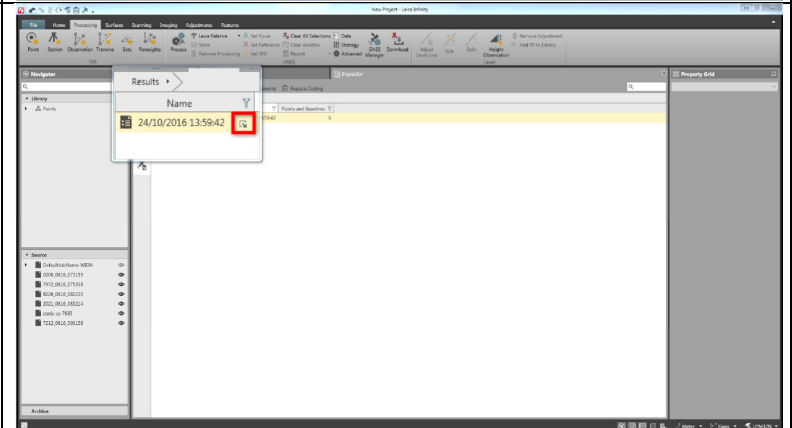


3. View the results

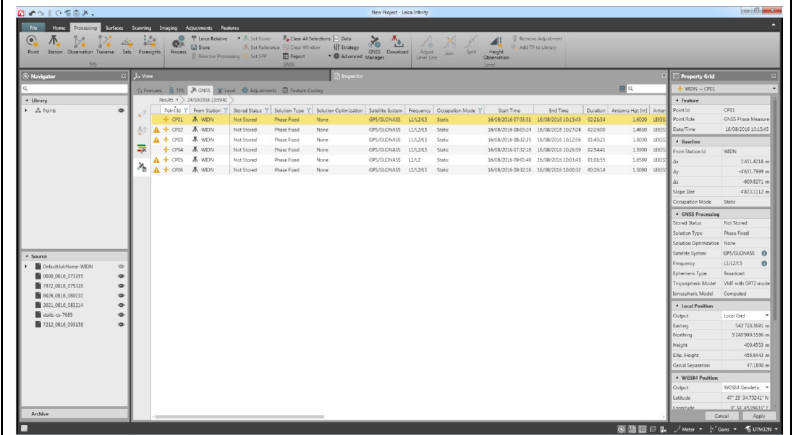
3.1 After processing is complete, the **Results** page in the **GNSS** tab of the **Inspector** opens automatically.



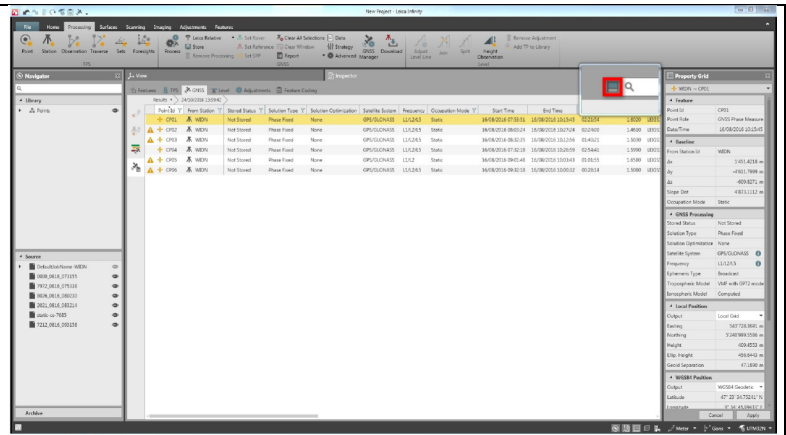
3.2 To drill in the results and view information on baseline processing, select the button that is on the right side of the **Name** column in the **GNSS** tab of the **Inspector**.



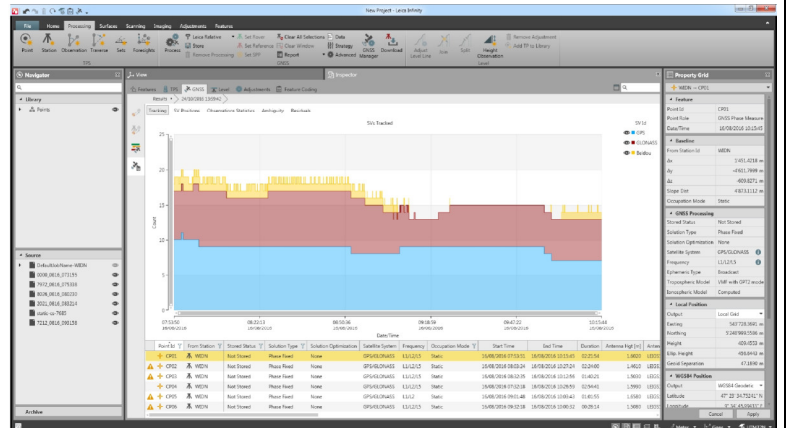
Information on processing results can be seen here: Stored Status, Solution Type, Frequencies, Duration, etc.



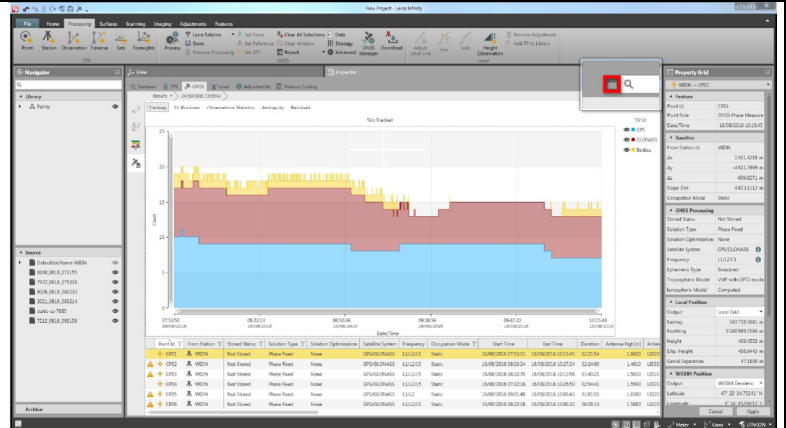
3.3 To view details and graphs for each processed baseline, select the **Results Analysis Viewer** that is on the right side of the **Inspector**.



- Each tab (**Tracking, SV Position, Observation Statistics, Ambiguity, Residuals**) provides information that can help analyse the processing result.
- Graphs and tables are resizable.
- You can also use the mouse wheel to zoom in the graphs.



3.4 To close this view and return to the main results, select the **Results Analysis Viewer** button again.

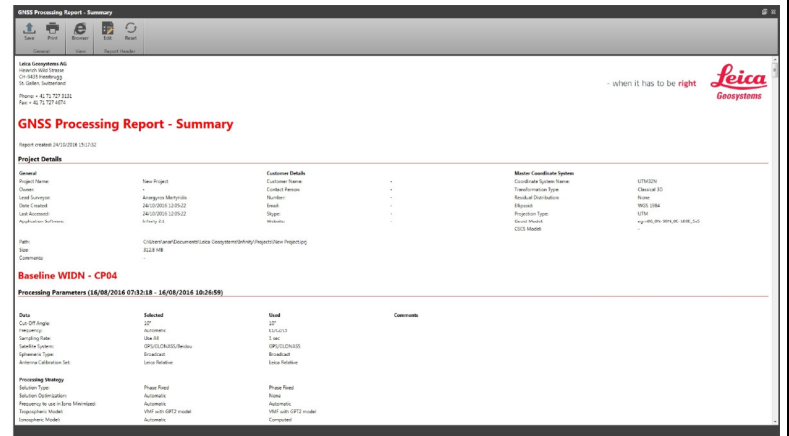
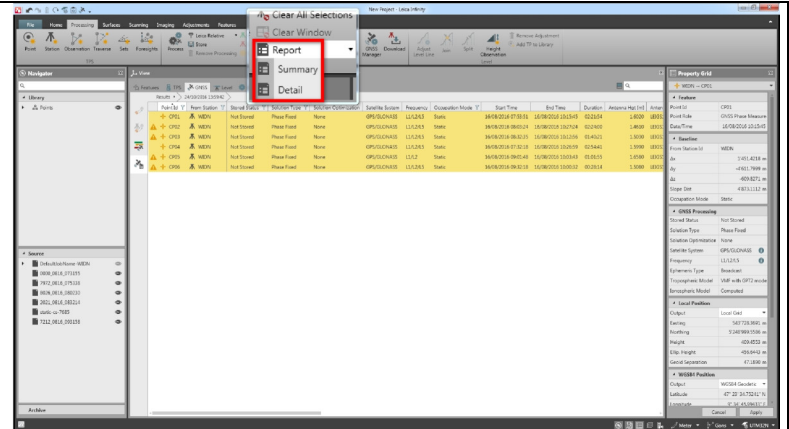


4. Create a report

4.1 To create a report, select one or more baselines and choose **Report** from the **Processing** ribbon bar or right-click for context menu.

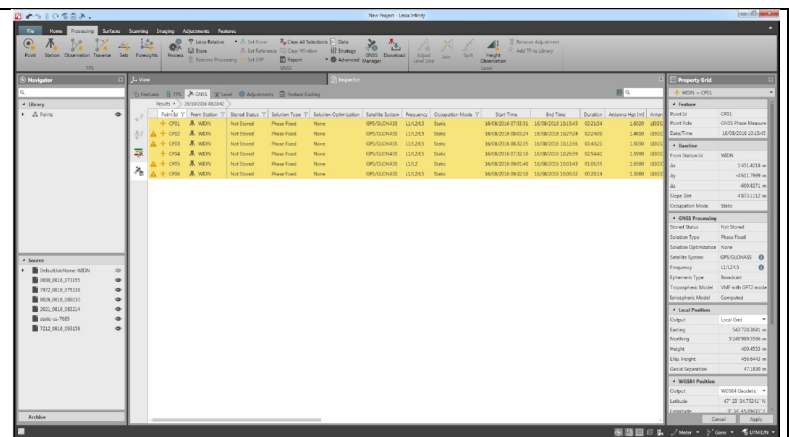
There are two kinds of Reports: **Summary** and **Detail**.

- ☞ In case you need to change the Report Header, select **Edit** and follow the instructions on the screen.
- ☞ The **Detail** report includes the contents of the **Summary** report as well as additional graphs for signals tracked, satellite azimuth and elevation, and also observation statistics and information on ionospheric model, observation residuals and tracking status.
- ☞ In case you need to reset the Report Header to the default one, select **Reset**.



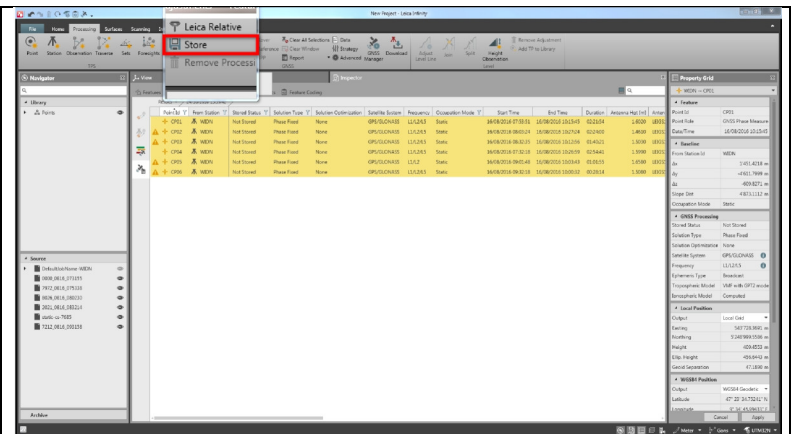
5. Store the results

5.1 To return to the **GNSS Results** view, save the Report and close the Report window.



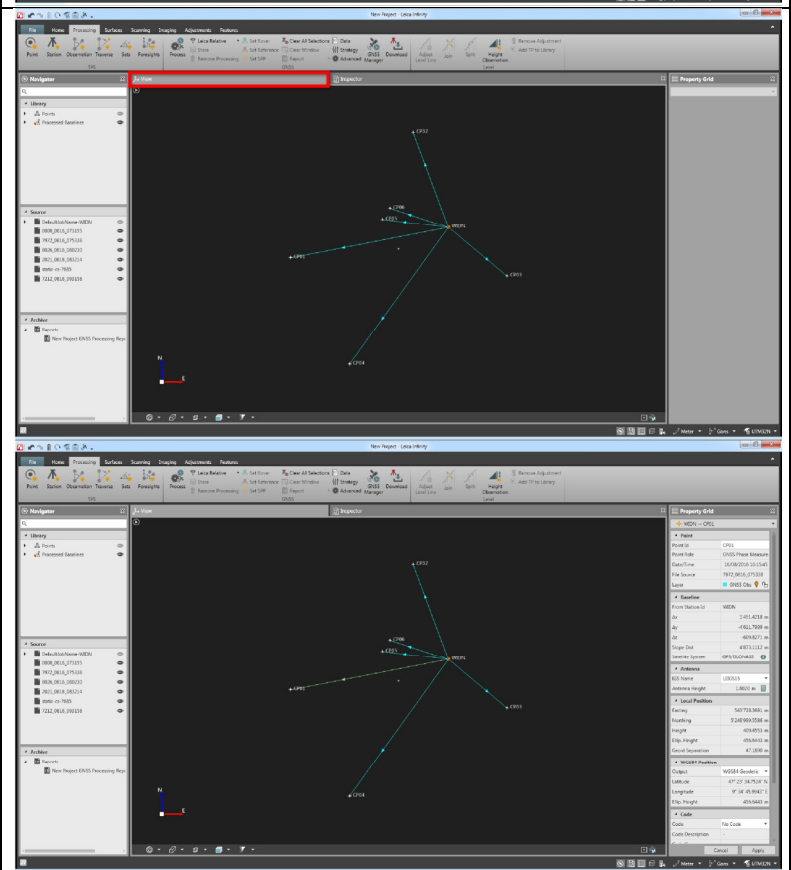
5.2 To store the results, select them using **SHIFT+Left mouse click** and select **Store** from the **Processing** ribbon bar, or right-click for context menu.

☞ To remove processing from one or more baselines, select them and select **Remove Processing** from the **Processing** ribbon bar, or right-click for context menu.



5.3 From the **View** tab you will see the processed baselines.

☞ Upon selecting a baseline, you can view the baseline properties including the baseline quality and GNSS satellite information.



Original text
Published in Switzerland
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