

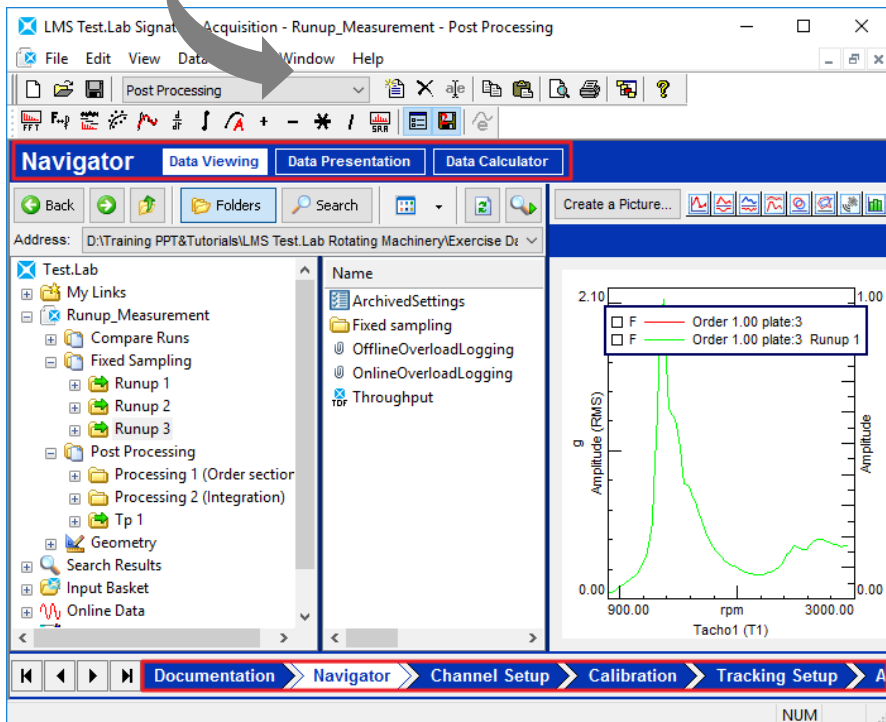
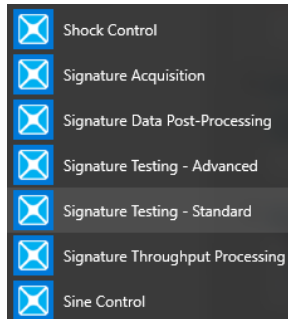
LMS Test.Lab Desktop

Agenda



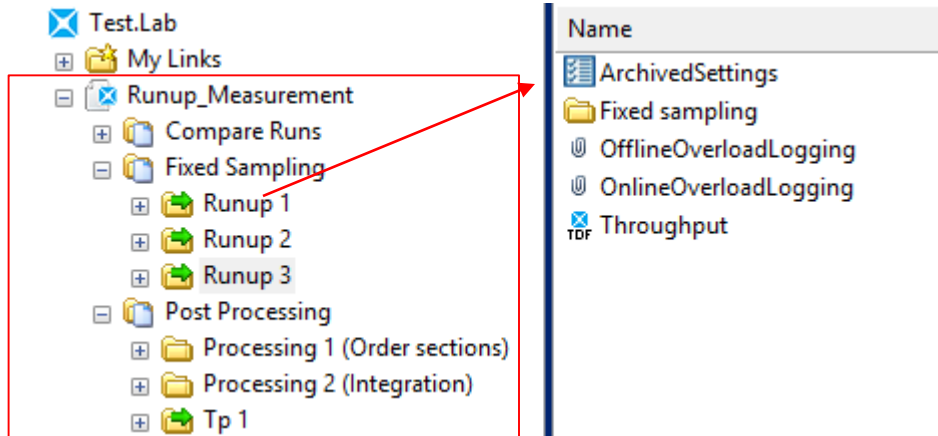
- **Testlab projects & data**
- Documentation
- Navigator
 - Finding data
 - Viewing data
 - Processing data
 - Reporting

LMS Test.Lab workbook



- Follow the workflow of the different worksheet to complete a specific measurement/processing
- Each **workbook** has a specific selection of **worksheets**
- Each **worksheet** performs a certain functionality
 - Setting measurement Channels
 - Post process time data
 - ...
- Extra functionalities can be added using the Add-ins

LMS Test.Lab project structure



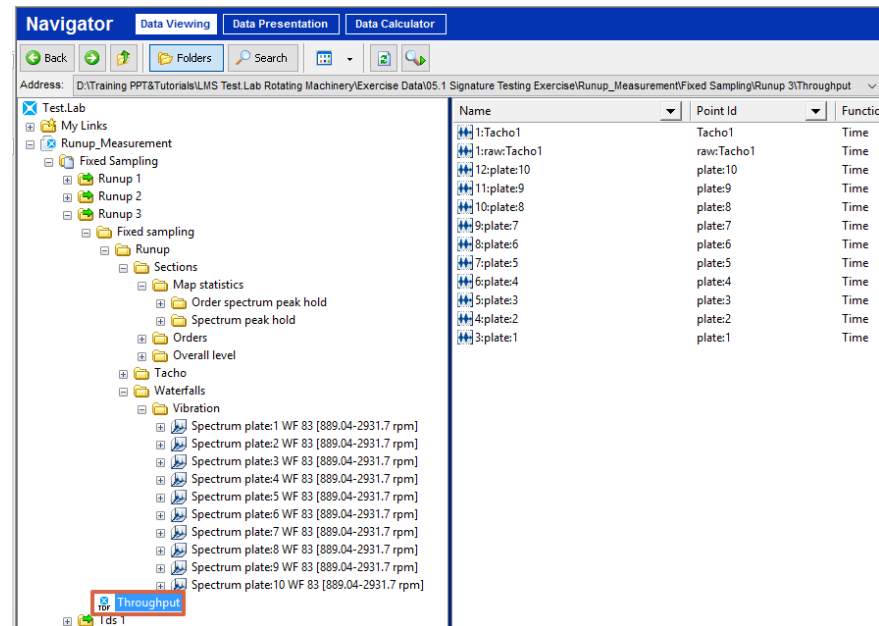
- LMS Test.Lab project collects (meta)data from:
 - Measurements
 - Block data
 - Throughput Data
 - Processings
 - Import from other software
- Data can be organized in multiple Sections
- Browse through the Active project, other projects or the C:/ disk in the Navigator

Throughput & Block data

Both Throughput and Block data can be displayed in the Navigator

Throughput Data	Block Data
Recorded time data	Processed data
Time domain	Both in Time, Frequency, Angle domain
Stored in a separate file (.lds)	Embedded in the project

Throughput



The screenshot shows the Siemens Navigator interface with the following data table displayed in the right pane:

Name	Point Id	Function
1:Tacho1	Tacho1	Time
1:raw:Tacho1	raw:Tacho1	Time
12:plate:10	plate:10	Time
11:plate:9	plate:9	Time
10:plate:8	plate:8	Time
9:plate:7	plate:7	Time
8:plate:6	plate:6	Time
7:plate:5	plate:5	Time
6:plate:4	plate:4	Time
5:plate:3	plate:3	Time
4:plate:2	plate:2	Time
3:plate:1	plate:1	Time

The left pane shows a tree view with the following structure:

- Test.Lab
 - My Links
 - Runup_Measurement
 - Fixed Sampling
 - Runup 1
 - Runup 2
 - Runup 3
 - Fixed sampling
 - Runup
 - Sections
 - Map statistics
 - Order spectrum peak hold
 - Spectrum peak hold
 - Orders
 - Overall level
 - Tacho
 - Waterfalls
 - Vibration
 - Spectrum plate:1 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:2 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:3 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:4 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:5 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:6 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:7 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:8 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:9 WF 83 [889.04-2931.7 rpm]
 - Spectrum plate:10 WF 83 [889.04-2931.7 rpm]

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Documentation Worksheet

Attach to Project
///
Attach to Section

The screenshot shows the LMS Test.Lab Desktop application interface. The title bar reads "LMS Test.Lab Desktop Advanced - Project1 - Section1". The menu bar includes File, Edit, View, Data, Tools, Window, and Help. The breadcrumb navigation shows "Documentation" > "Project Info" > "Section Info" > "Project1".

Key components and their labels:

- Attributes grid:** A table with columns "Name", "Value", and "Edit...". It contains four rows of data: "car number" (275189), "operator", "date" (Wed Sep 16 2015 14:59:39), and "type".
- Attachments List:** A list box containing "P_20150709_155807.jpg" and "Project Memo".
- Text Field:** A notepad area with the text "This is a text field".
- Attachment Preview:** A section titled "Project Memo" with a table for metadata (User, Location, Date, Date, Comments) and a preview area for the selected attachment. A hand cursor icon is shown over the preview area.

Buttons for "Import...", "New from Template", and "Delete" are visible next to the Attachments List. A "Print Screen" button is in the top right. The status bar at the bottom shows "Documentation" > "Navigator" and "LMS Test.Lab NUM".

Double click to
open the
attachment
externally

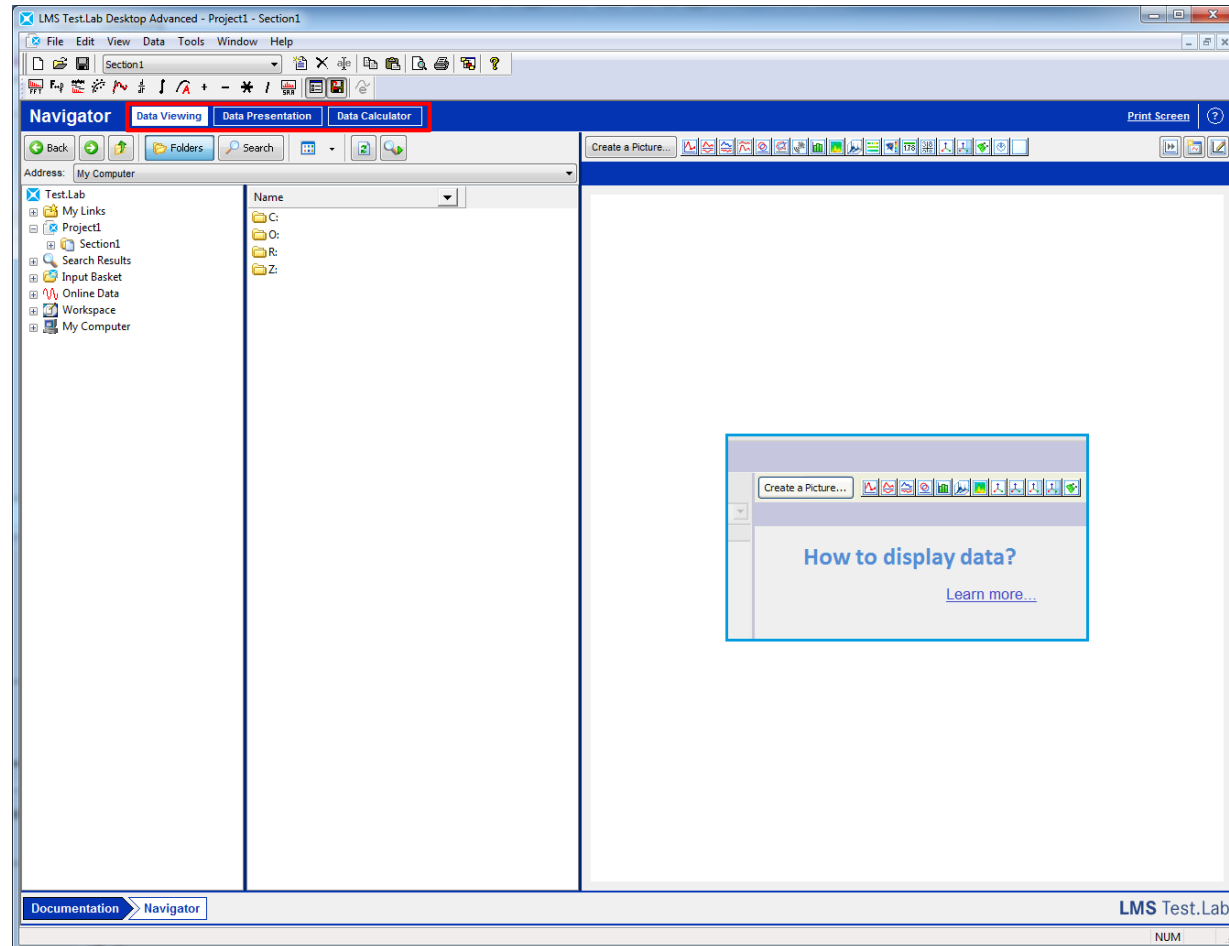
Agenda



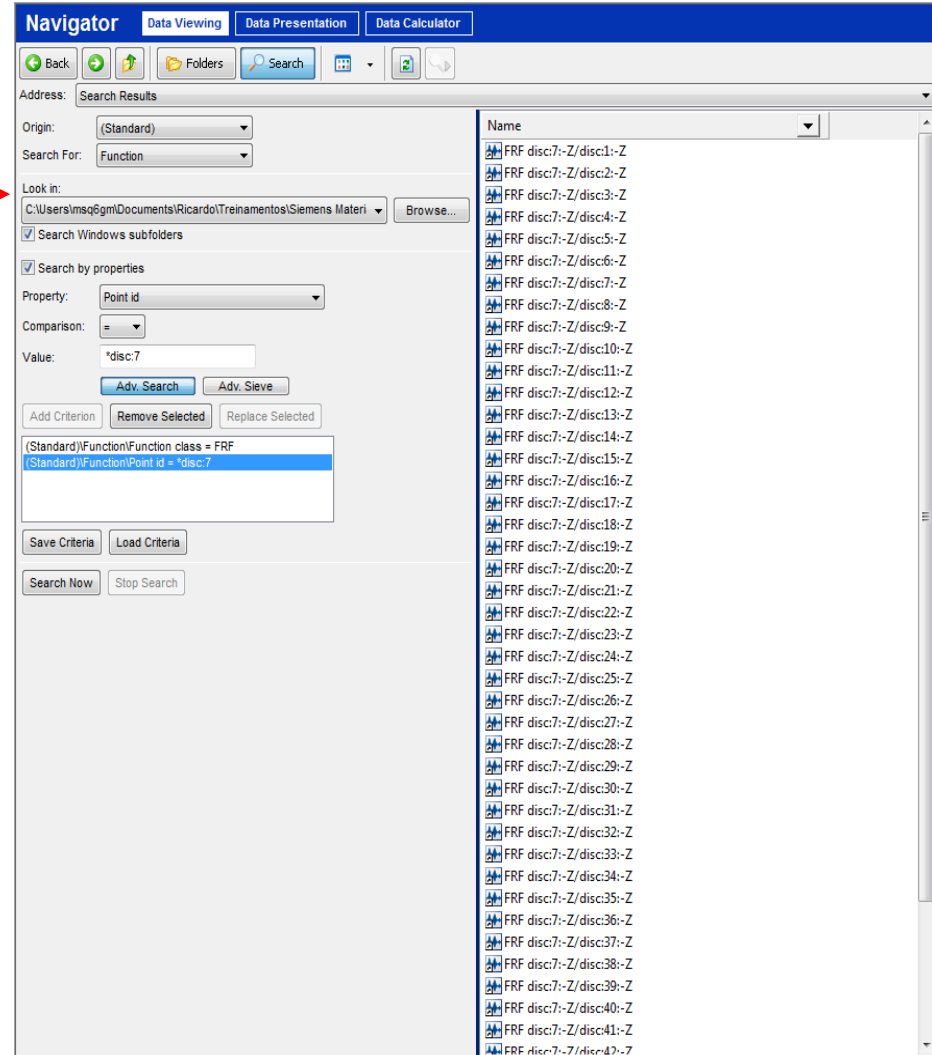
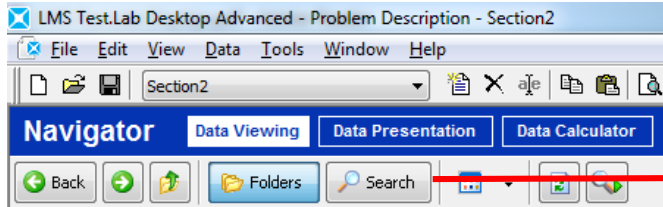
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Navigator Worksheet

- 3 minor worksheets:
 - Data Viewing
 - Data Presentation
 - Data Calculator



Data Viewing: Search

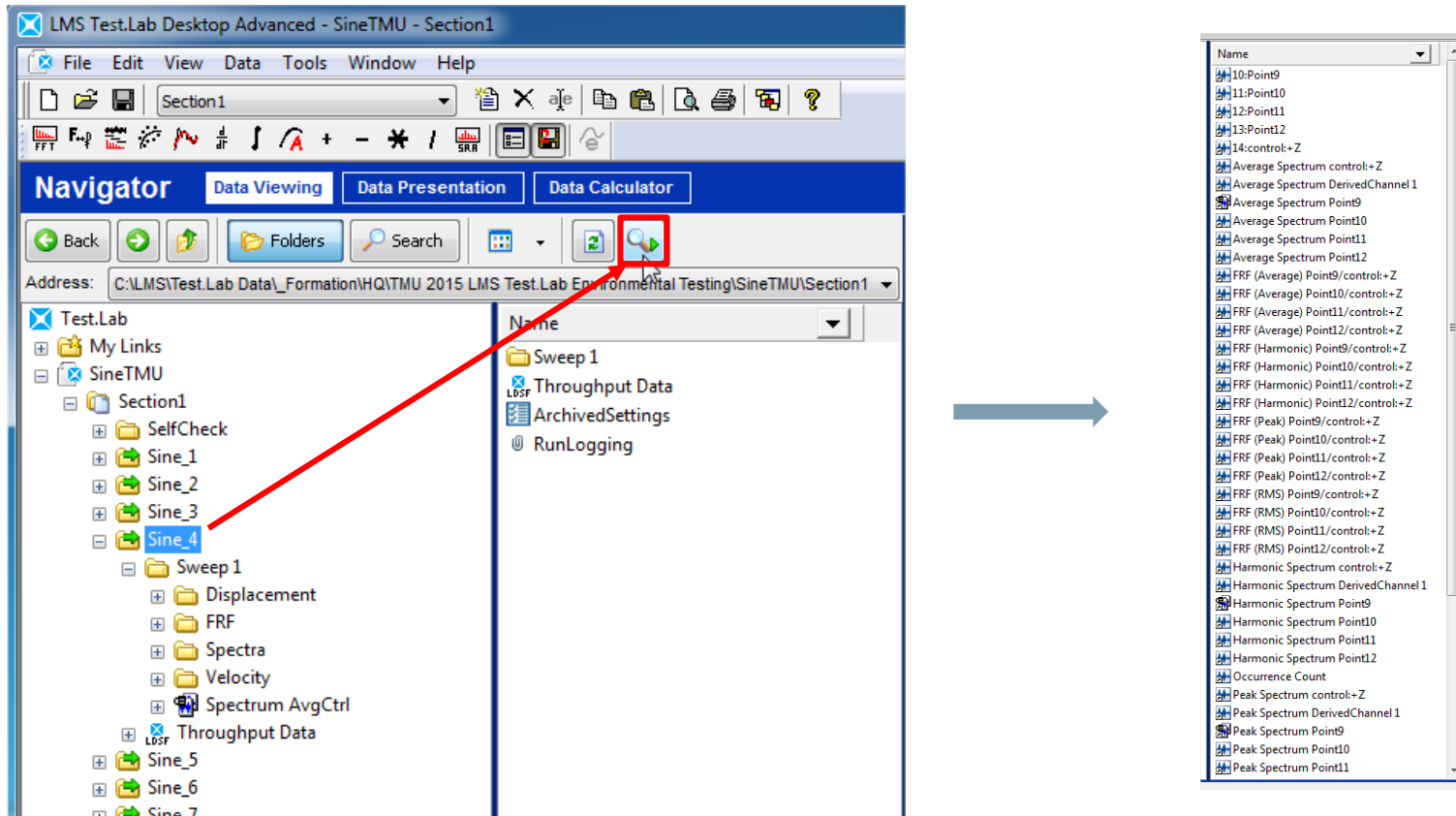


- Adv. Search: standard search by properties
- Adv. Sieve: advanced search with manual include/exclude selection

Search Criteria

Data Viewing: List All Blocks

All blocks in the selected directory are listed



Data Viewing: Auto Filter and sorting

Starting from the 'List all blocks' operation, you can now sort and filter this list on the desired properties of the blocks

Sorting

The screenshot shows the Navigator context menu with 'Sort...' selected. Below it, a table displays the sorted data. A red bracket highlights the 'Name' column header in the table.

Name	DOF id	Function class	Point direction	Point id
10:Point9	Point9	Time	None	Point9
11:Point10	Point10	Time	None	Point10
12:Point11	Point11	Time	None	Point11
13:Point12	Point12	Time	None	Point12
14:control+Z	control+Z	Time	+Z	control
Average Spectrum control+Z	control+Z	Spectrum	+Z	control
Average Spectrum DerivedChannel 1	DerivedChannel 1	Spectrum	None	DerivedChannel 1
Average Spectrum Point9	Point9	Spectrum	None	Point9

Filtering

The screenshot shows the Navigator context menu with 'Auto Filter' selected. A dialog box is open, allowing the user to filter the data. The 'Time' checkbox is checked.

Name	DOF id	Function class	Point direction
10:Point9	Point9	Time	None
11:Point10	Point10	Time	None
12:Point11	Point11	Time	None
13:Point12	Point12	Time	None
14:control+Z	control+Z	Time	+Z
Average Spectrum control+Z	control+Z	Spectrum	+Z
Average Spectrum DerivedChannel 1	DerivedChannel 1	Spectrum	None
Average Spectrum Point9	Point9	Spectrum	None
Average Spectrum Point10	Point10	Spectrum	None
Average Spectrum Point11	Point11	Spectrum	None
Average Spectrum Point12	Point12	Spectrum	None
FRF (Average) Point9/control+Z	Point9	FRF	control+Z
FRF (Average) Point10/control+Z	Point10	FRF	control+Z
FRF (Average) Point11/control+Z	Point11	FRF	control+Z

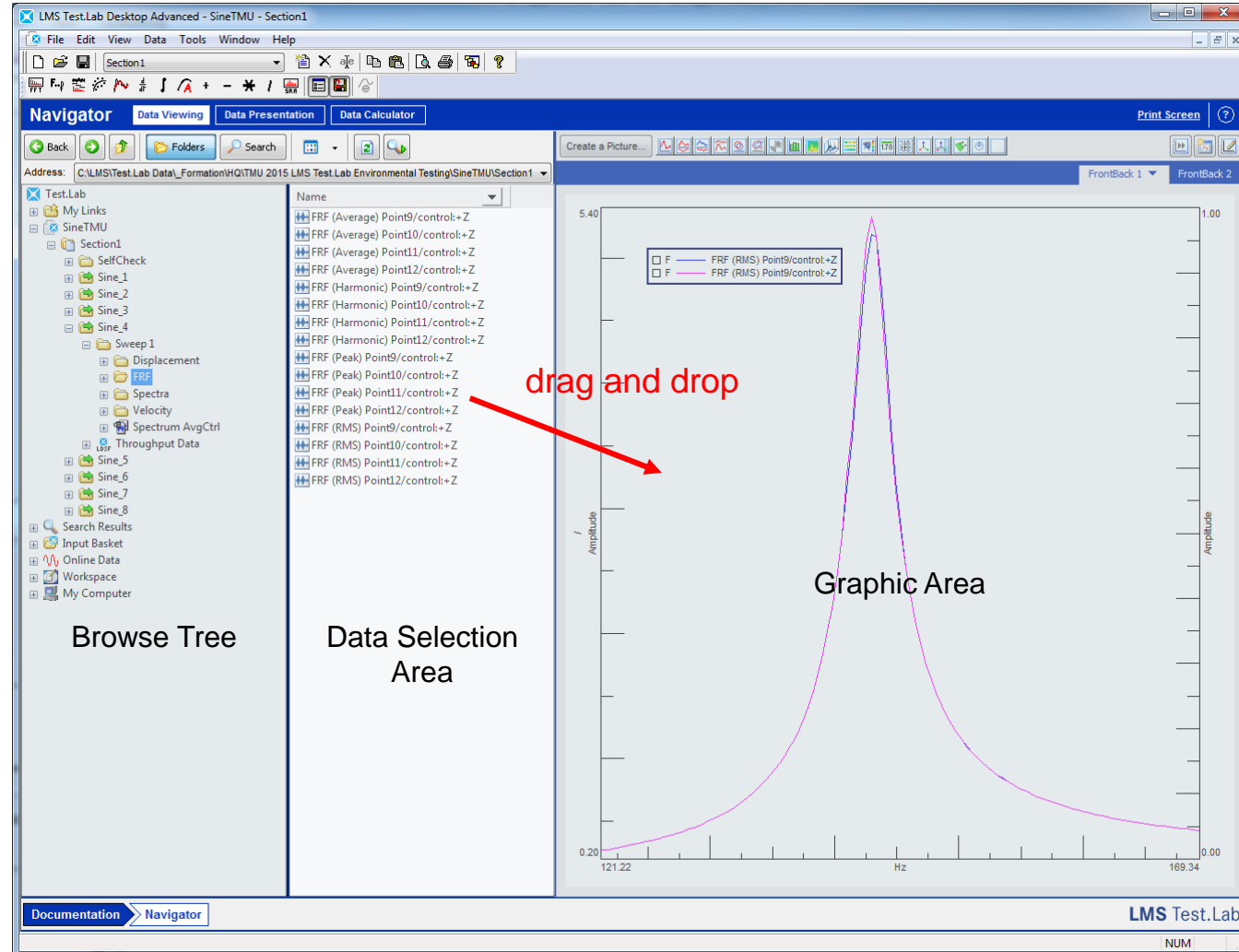
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Data Viewing

- Browse tree:
 - My Links
 - Active Project
 - Search Results
 - Input Basket
 - Online Data
 - Workspace
 - My Computer

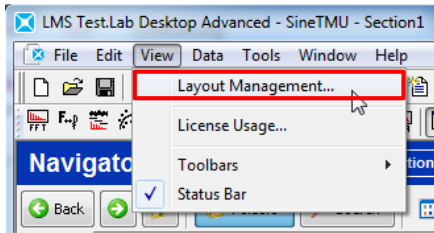


Create a Picture

The image shows a software interface for data plotting. On the left, a 'Create a Picture' dialog box is open, displaying a list of data series. The dialog has a 'Quick filter' field and 'Import...', 'OK', and 'Cancel' buttons. The main window shows a plot of Amplitude vs. Hz. The plot has a legend with two entries: 'FRF (RMS) Point9/control:+Z' (blue line) and 'FRF (RMS) Point9/control:+Z' (magenta line). The plot shows a sharp peak at approximately 121.22 Hz. The y-axis ranges from 0.00 to 5.40, and the x-axis ranges from 121.22 to 169.34 Hz. Red arrows point to the 'Create a Picture...' button in the top toolbar, the plot window, and the 'Layout Management' and 'Detached Picture' icons in the top right corner.

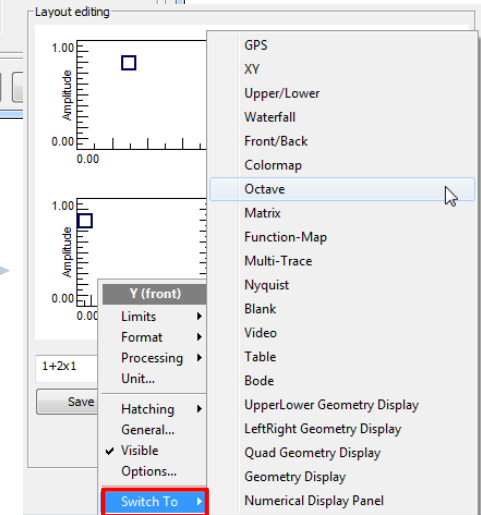
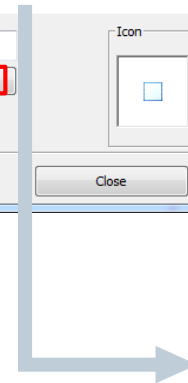
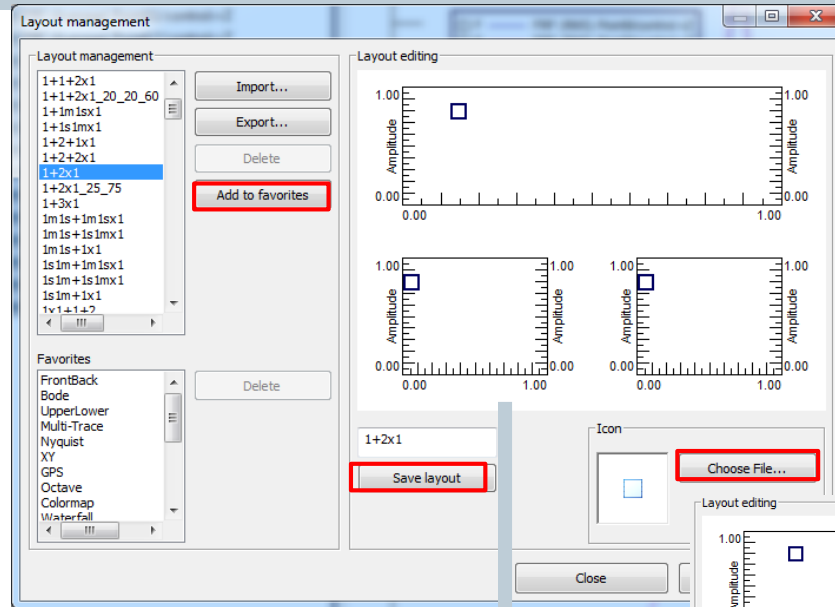
Name	Level
1x2CM	user
1+1+2x1	central
1+1+2x1_20_20_60	central
1+1m1sx1	central
1+1s1mx1	central
1+2+1x1	central
1+2+2x1	central
1+2x1	central
1+2x1_25_75	central
1+3x1	central
1m1s+1m1sx1	central
1m1s+1s1mx1	central
1m1s+1x1	central
1s1m+1m1sx1	central
1s1m+1s1mx1	central
1s1m+1x1	central
1x1	central
1x1+1+2	central
1x1+1m1s	central

Layout Management



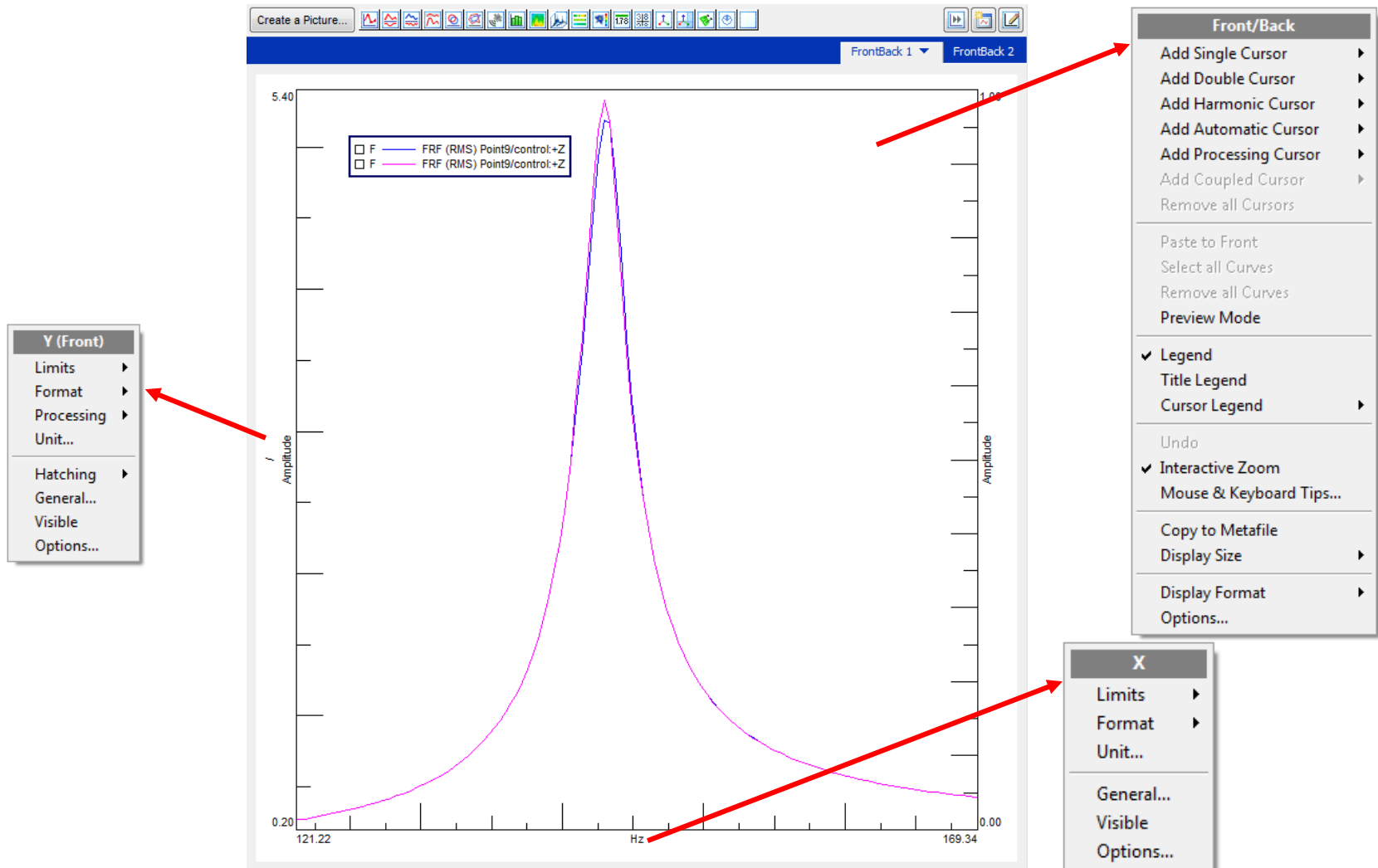
1. Select Layout
2. Adjust type of display
3. Define a name for the new layout
4. Save the layout

Optionally, you can add a icon to the layout and add it to your favorites



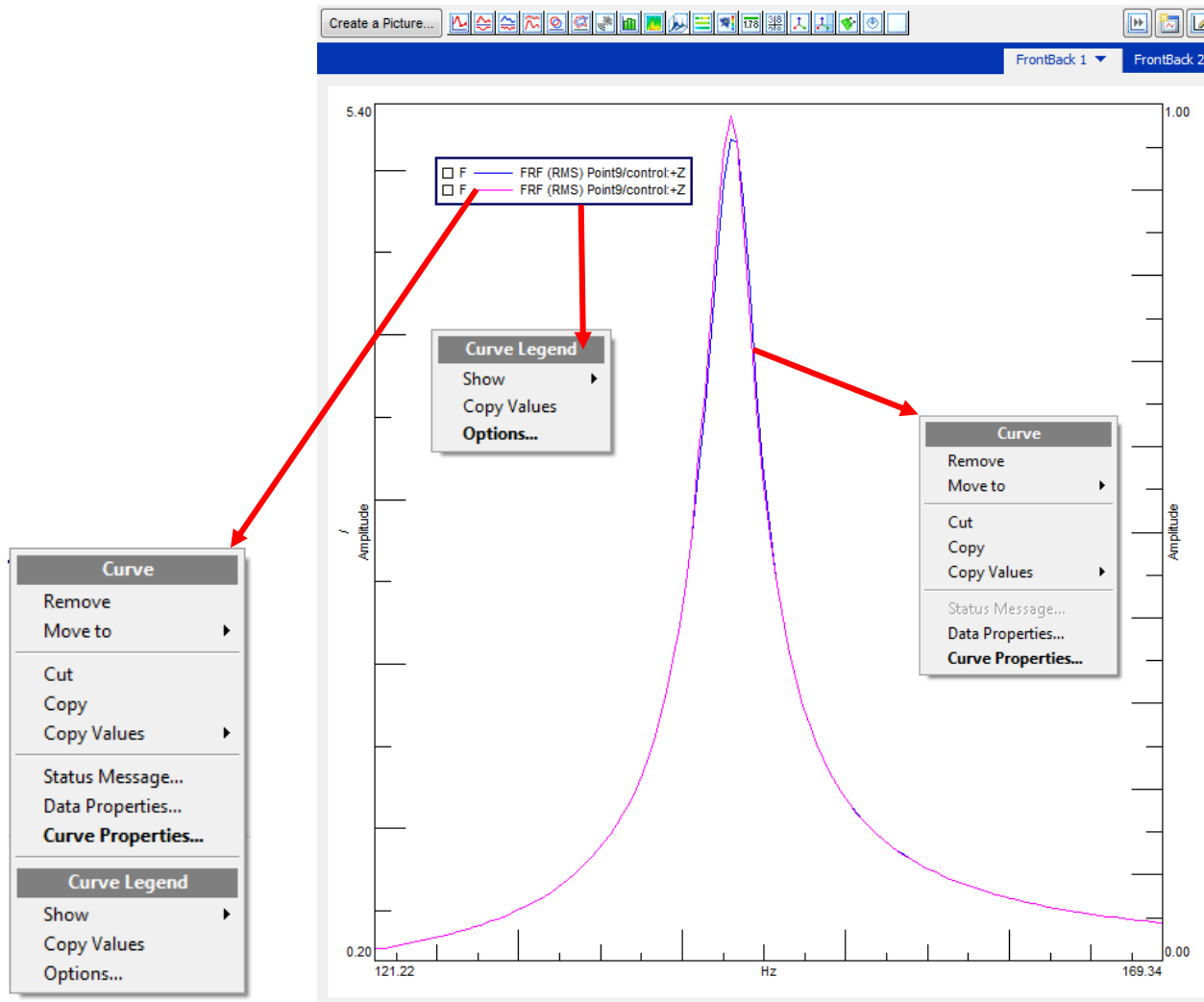
Display options

Right-Clicking on one of the elements, shows the following menu

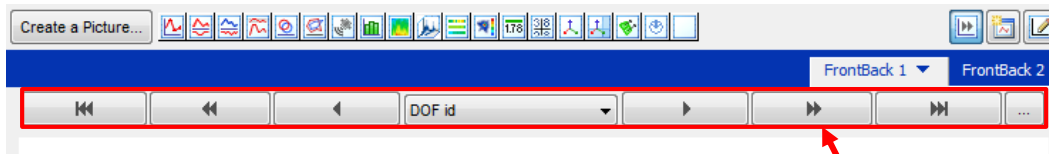


Display options (2)

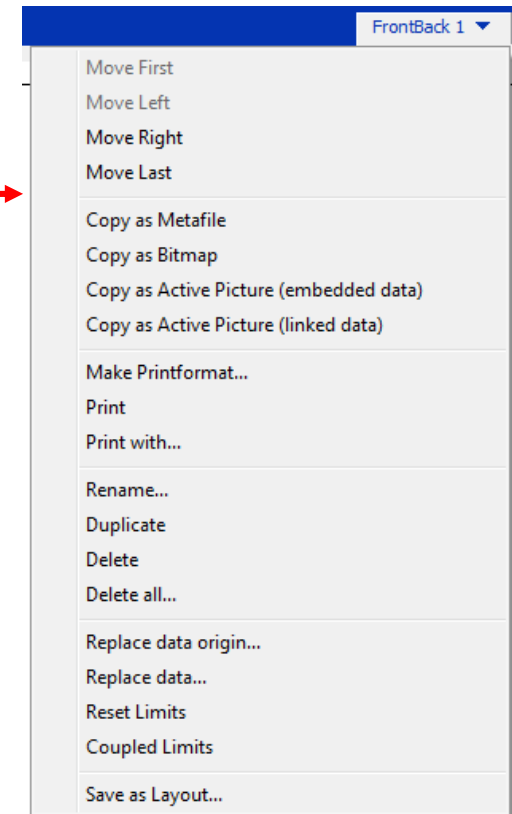
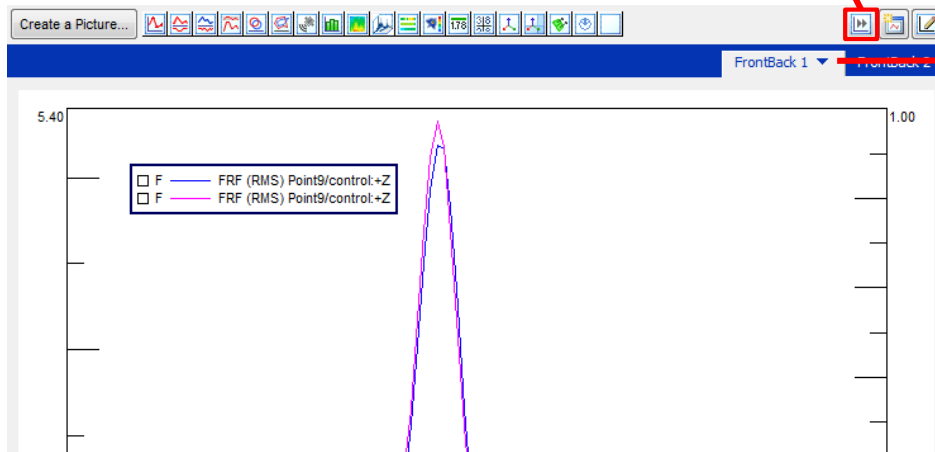
Right-Clicking on one of the elements, shows the following menu



Display options & Curve Scrolling



Show or hide
curve scrolling

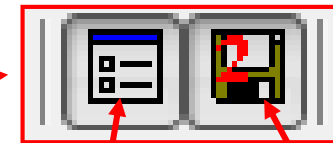
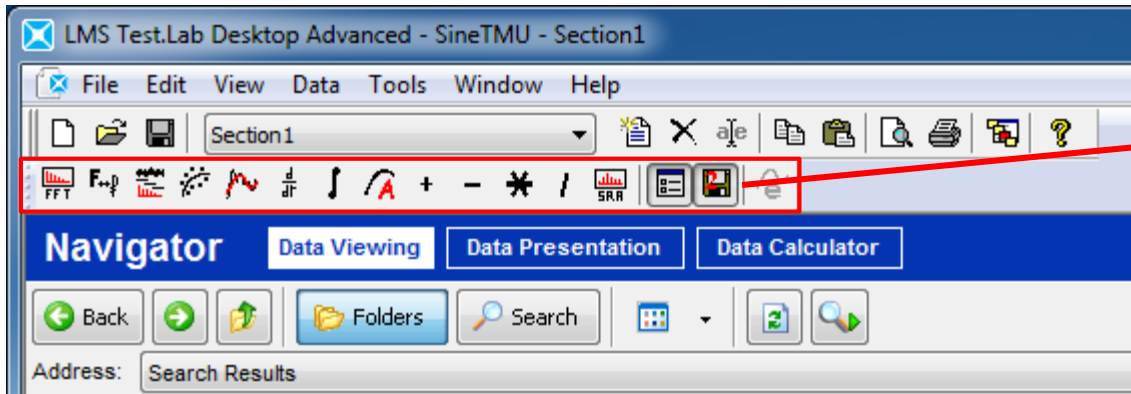


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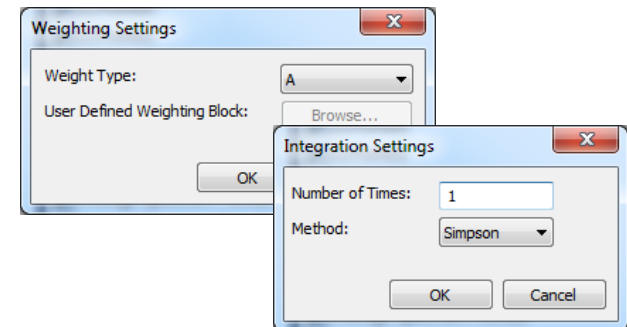
Data Viewing: Conditioning Toolbar



Settings dialog

Overwrite source data

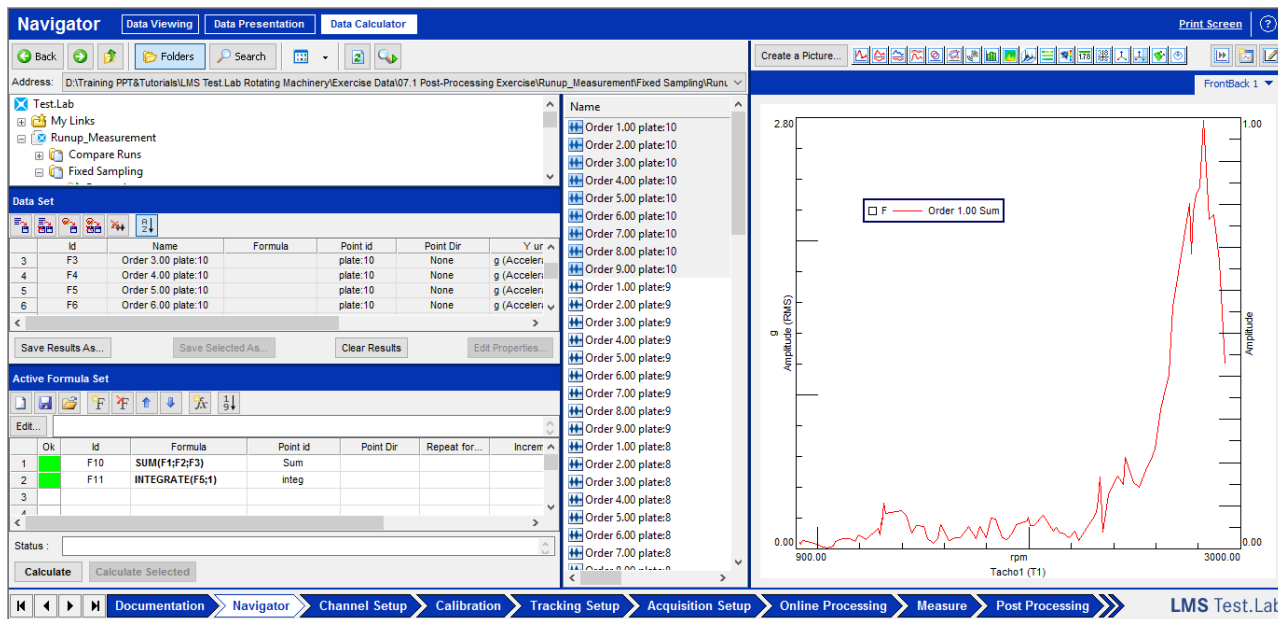
- Functions that can be applied to data directly on a display
 - FFT operations
 - Smoothing and Curve fitting
 - Integration and differentiation
 - Acoustic weighting
 - Basic math operations



- After conditioning the selected curve(s), a conditioning folder is automatically created

Data Calculator

- Allows to perform further processing on measured data blocks
- In the Data Calculator minor worksheet:
 - An extensive list of operations is available
 - Also possible to perform an operation on a range of data blocks at once



Data Calculator

Address: C:\LMS\Test.Lab Data_Formation\HQ\TMU 2015 LMS Test.Lab Environmental Testing\SineTMU\Section1\Sine_1\Sweep 1\FRF

Test.Lab
 My Links
 SineTMU
 Section1
 SelfCheck
 Sine_1
 Sweep 1
 Displacement
 FRF

Data Set

	Id	Name	Formula	Point id
1	F1	FRF (Average) Point9/control:+Z		Point9
2	F2	FRF (Average) Point10/control:+Z		Point10
3	F3	FRF (Average) Point11/control:+Z		Point11
4	F4	FRF (Average) result/control:+Z	SUM(Point9;Point10;Point11)	result

Save Results As... Save Selected As... Clear Results Edit Properties...

Active Formula Set

Edit... SUM(F1;F2)

Ok	Id	Formula	Point id	Point Dir
1	F4	SUM(F1;F2)	result	
2				
3				
4				

Status : Calculate Calculate Selected

- Name
- FRF (Average) Point9/control:+Z
 - FRF (Average) Point10/control:+Z
 - FRF (Average) Point11/control:+Z
 - FRF (Average) Point12/control:+Z
 - FRF (Harmonic) Point9/control:+Z
 - FRF (Harmonic) Point10/control:+Z
 - FRF (Harmonic) Point11/control:+Z
 - FRF (Harmonic) Point12/control:+Z
 - FRF (Peak) Point9/control:+Z
 - FRF (Peak) Point10/control:+Z
 - FRF (Peak) Point11/control:+Z
 - FRF (Peak) Point12/control:+Z
 - FRF (RMS) Point9/control:+Z
 - FRF (RMS) Point10/control:+Z
 - FRF (RMS) Point11/control:+Z
 - FRF (RMS) Point12/control:+Z

- Add data from Input Basket or selected location
- Calculated functions are added to the dataset

Select Function

- All
- Conditioning
- Math
- Metrics
- Signal
- MAX
- MEAN
- MERGE_FUNCTIONS
- MERGE_SPECTRA
- MIN
- OCTAVE**
- POWER
- PRODUCT
- RECIPROCAL_SWITCH
- RMS
- SCALE
- SETXSTART
- SIN
- SINX

OCTAVE(function ; type ; lines)

Conversion of spectra (and autopowers) to octave.
 Type = 1: 1/1 octave.
 Type = 2: 1/2 octave.
 Type = 3: 1/3 octave.
 Type = 6: 1/6 octave.
 Type = 12: 1/12 octave.
 Lines is the minimum number of lines that have to be in a frequency band in the original data to make it a band in the octave block.

OK Cancel

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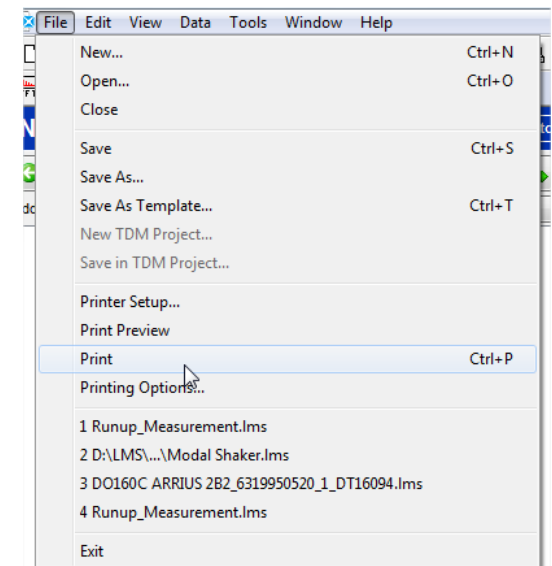
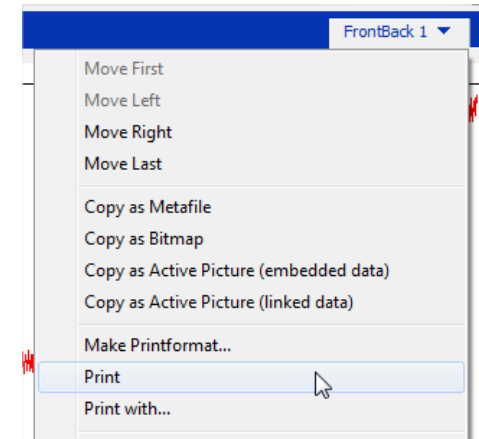
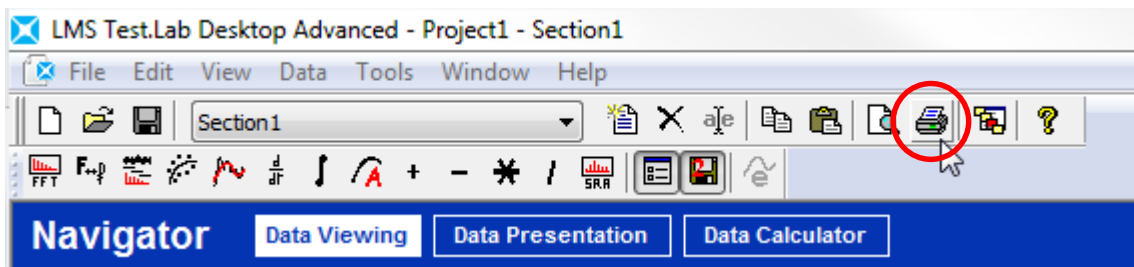
Simple printing

Single display printing

- Will print the display alone, depending on the printing properties.

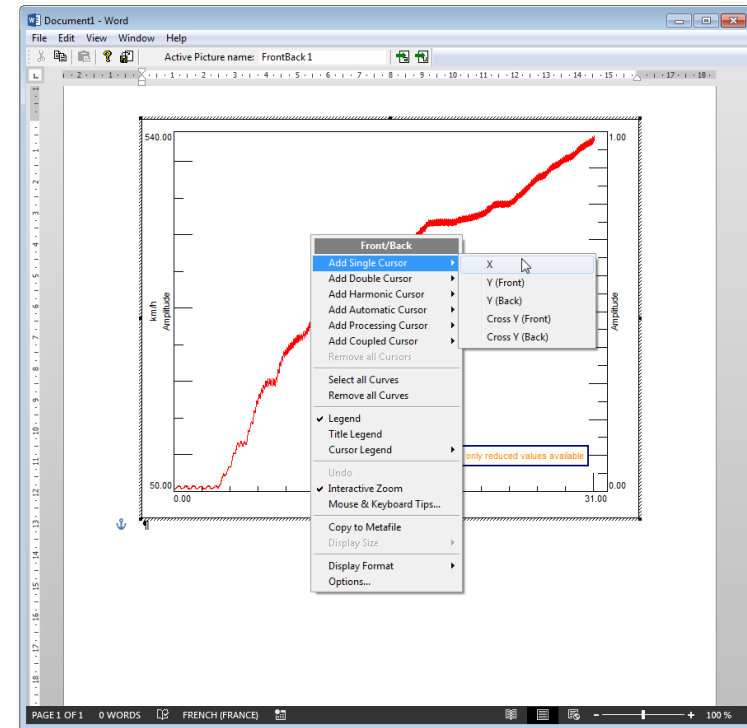
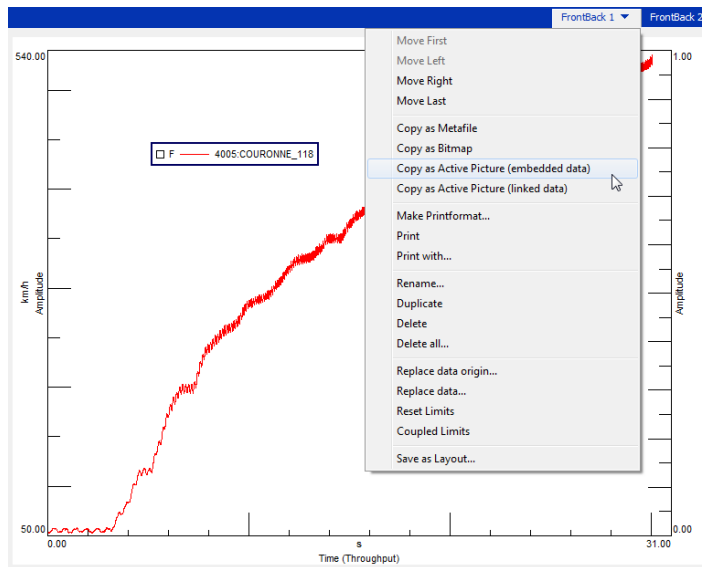
Multiple display printing

- Will print all the active displays at once, depending on your printing properties.



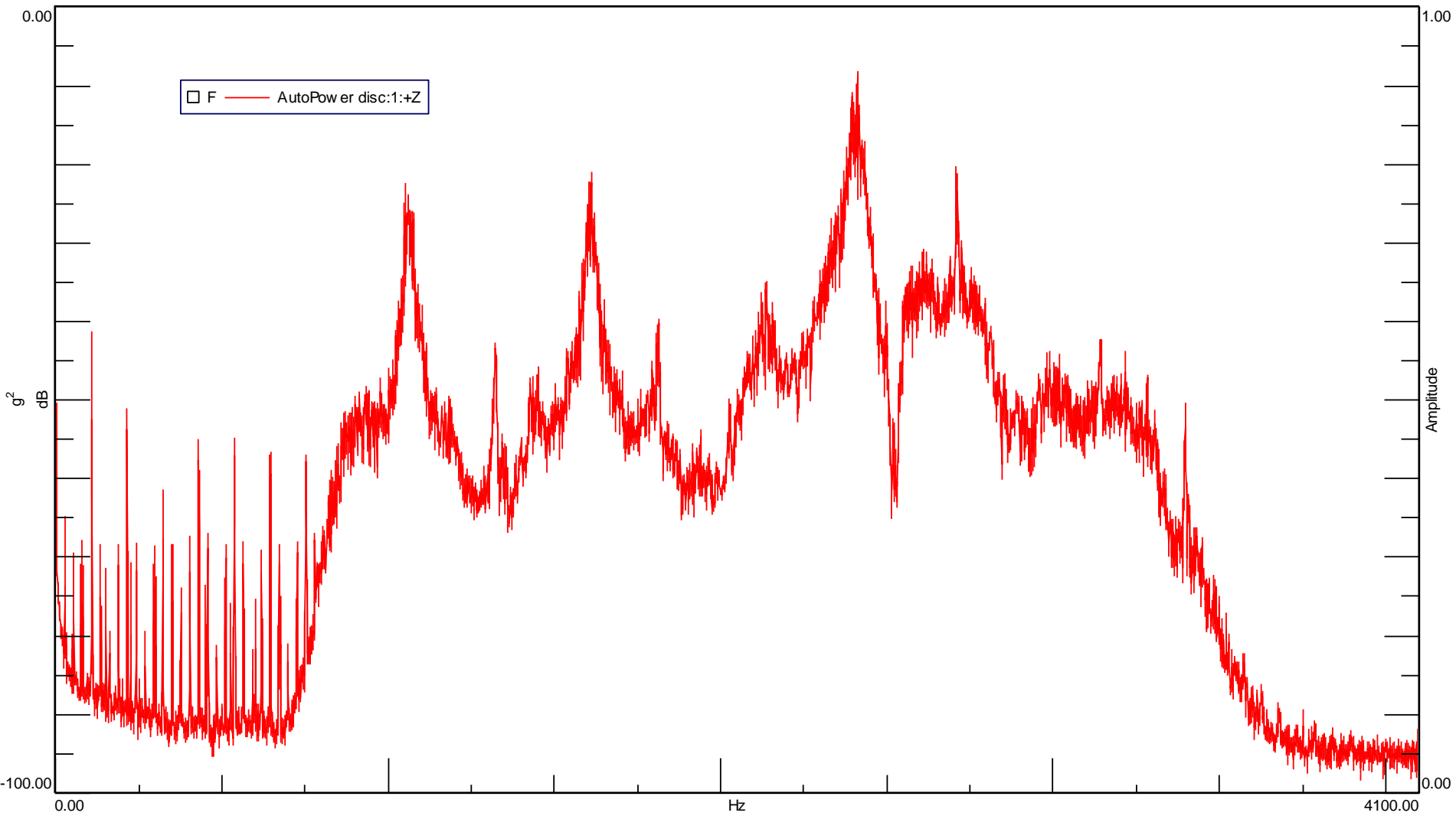
Active Pictures

- All the LMS Test.Lab display functionalities can be used in MS Office Word or PowerPoint



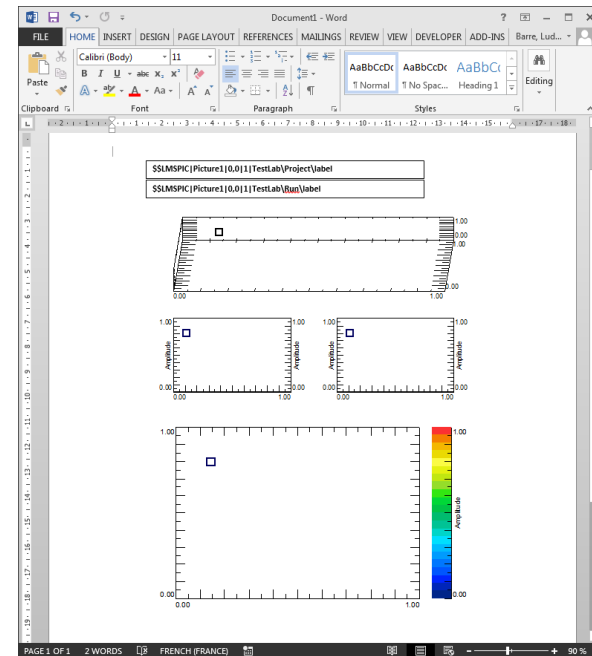
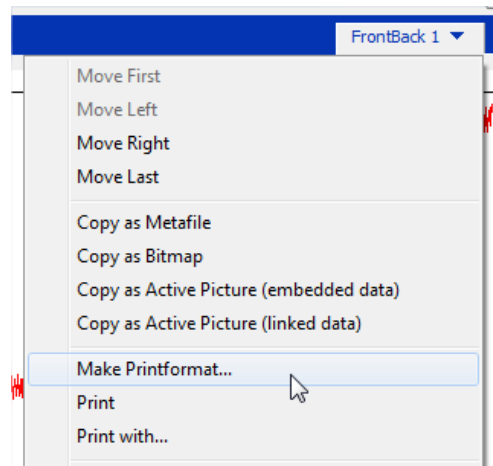
- Available with LMS Test.Lab installation, but also available for free for pc's without LMS Test.Lab installed

Active Pictures – Example



Printformat

- Report template can be created in LMS Test.Lab or directly with Word or PowerPoint using the LMS Printing Add-In

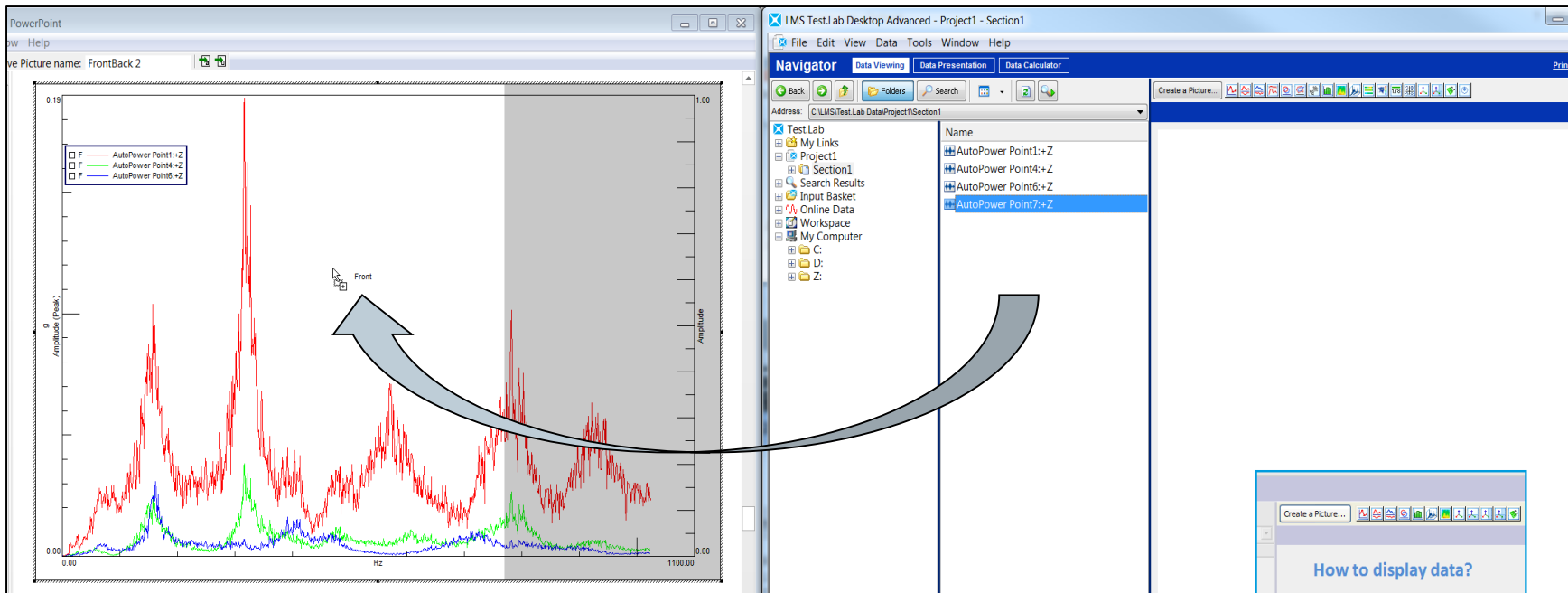


- Possibility to add fields like user attributes, run name... That will be automatically printed during the report

Drag data into Report template

Since LMS Test.lab 17, it is possible to drag data blocks (2D and 2.5D data) into a report template

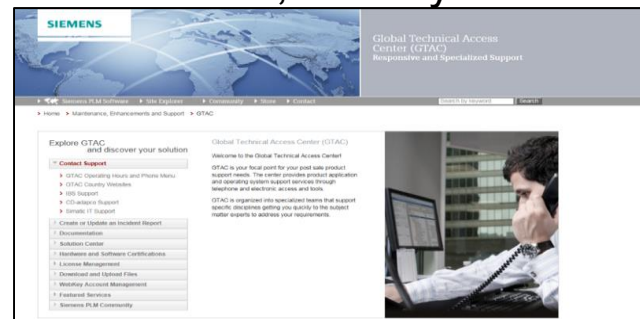
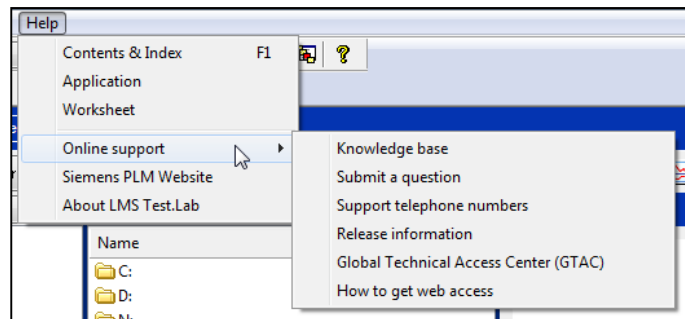
Quick way to create reports from small report template



Help menu and Documentation

- Manual for each application available and Theory via Help or the Documentation folder
- Shortcut to the topic of the manual of the current open worksheet
- Selection of offline available knowledge articles
- Search tool available for Documentation, Theory and Knowledge articles
Via LMS Test.Lab xx -> Tools -> Search Manual, Theory and FAQ's

Print Screen



- Link to Support platform:
 - Contact the response line
 - Search for knowledge articles, release information
 - Login required

Thank you