DIGITAL INDUSTRIES SOFTWARE

Simcenter Testlab Desktop - Advanced

Simcenter/TL-DTP.21.1/2406/20240415

Product Information Sheet

Summary

The Simcenter Testlab family consists of a complete suite of integrated solutions for test-based Noise & Vibration and Durability engineering. It comprises modules for structural testing, rotating machinery testing, acoustic testing, environmental testing, durability, data management and e-collaboration.

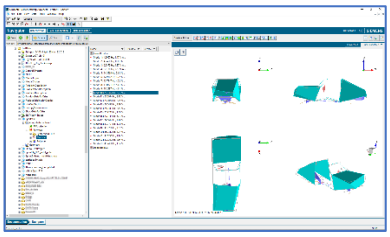
Simcenter Testlab enables new standards for productivity and quality and envisions optimized cost of ownership in function of your NVH and durability needs, your budget, the size of your company and the number of people working in your extended department. Designed for ease-of-use and laboratory automation, Simcenter Testlab focuses on performing specific measurements quickly and accurately.

BENEFITS

- Experience the same Simcenter Testlab Desktop - Advanced features and look and feel through all Simcenter Testlab applications for consistent and intuitive data handling, visualization and reporting
- Keep your project information, documentation, measured and processed data together
- Import to the Simcenter LDSF format and annotation of Simcenter SCADAS Recorder and XS setup files

FEATURES

- In addition to the Simcenter Testlab Desktop - Standard features (TL-DTP.20.1), Simcenter Testlab Desktop – Advanced brings the following features:
- Merge different modules/application into advanced workflow
- Format based printing
- Data calculator
- Data block editor
- Cursor driven processing
- Audio replay



Various applications can be rescheduled into a new dedicated measurement workflow. Templates launched from your desktop describe complete testing procedures including measurement setup, layouts with reference curves and operator directives. Within a few hours, an untrained technician or engineer will run the most advanced tests, compare meticulously the acquired data and publish reports sharing engineering insight through Active Pictures.
Available on Microsoft® supported Windows® operating systems, Simcenter Testlab Desktop facilitates easy file management and flexible reporting.

The Simcenter Testlab Desktop – Advanced
The Simcenter Testlab Desktop - Advanced is the advanced version of Simcenter Testlab Desktop - Standard (TL-DTP.20.1). For a detailed description of the Simcenter Testlab Desktop - Standard features, refer to the Product Information Sheet of Simcenter Testlab Desktop - Standard (TL-DTP.20.1).

Simcenter Testlab Desktop - Advanced allows advanced functionality such as windows automation, schedule various modules/applications into a new dedicated measurement and analysis workflow and other advanced tools to increase efficiency for analyzing and reporting data.

Advanced workflow
Advanced workflow allows you to merge acquisition applications and analysis applications into an advanced workflow. For example, the advanced workflow allows users to perform impact testing and immediately perform modal analysis (load as Add-ins) without leaving the Testlab application. Various applications can be rescheduled into a new dedicated measurement workflow (loaded as Add-ins) in order to increase time efficiency.

Format based printing
Printing using formats is possible in 2 different ways.

Pictures that have been added in the Navigator by selecting layouts for viewing and interpreting data, can be combined with predefined formats. Every layout has an associated format, but it is also possible to combine pictures with any other compatible format.

The second mode of operation starts from a format that is selected from the list of all available formats. The software analyses the format and creates all the pictures that are part of the format. The user can then fill the pictures with data and print the whole format by pushing the print icon in the toolbar. In this way, any format can be used: single page as well as complete report formats.

The formats are defined in Microsoft® Word or Microsoft® PowerPoint, by means of all standard available functions in those products, completed with a simple add-in from Simcenter Testlab.
Printing based on formats can produce output on the default printer as well as to an electronic document or presentation. The settings for the displays can be defined upfront in the format because of the use of Active Pictures for defining the graphics in the formats. It is also possible to overrule these settings by the actual settings in the Testlab software.

When printing to an electronic document, the graphics can be included as Enhanced Metafiles or as Active Pictures with embedded data, allowing for interactive documents. Using Enhanced Metafiles also allows to specify absolute scaling for the graphics. (fixed number of units per unit of length)

Data calculator
The Data calculator allows to post-process previously measured or processed data blocks. Interactive single or looped calculations with user-definable increment are possible. Defined formulas can be saved and reloaded. A formula validity flag will verify on the fly if the formula can be processed on the selected data. Formulas can manually be entered or selected from an extensive list.

Data block editor
The Data block editor allows to create multiple types of data blocks (Spectrum, Autopower, Crosspower, Order sections, ...), starting from scratch over a user-definable X-axis range and increment, or starting from already acquired or processed blocks. Y-axis data values can be entered as amplitude, amplitude/phase or real/imaginary values, while multiple interpolation methods are possible (LinXLinY, LinXLogY, LogXLinY, LogXLogY). The most important data properties can be defined (PointId, Direction, unit, weighting). Created blocks can be used online or offline as reference curves or as input for further calculations.

Cursor driven processing
In a waterfall display, adding a processing cursor with arrowhead handles allows analyzing and viewing Simcenter Testlab data in an interactive way. By moving the processing cursor, function such as OA-level, order section is updated instantaneously on a linked 2D display. This cursor driven processing can be combined with the coupled cursor functionality.

Parameter locking and access control
During the workbook preparation, the test setup can be configured to the specific needs:

- Fix measurement parameters to the right value
- Change fonts and colors of user interface fields
- Make parameter definition fields insensitive or even invisible if they are critical
- Prepare display layouts

In order to guarantee data consistency, it might be crucial that certain parameters in the test set-up cannot be changed such as:

- the frequency ranges
- rpm increment for engine run-up
- trigger conditions
- etc.

The parameter locking and access control provides test responsible to create a measurement set-up in which the crucial measurement parameters are not accessible by test engineer who retrieves the provided set-up. In this way, guaranteeing data consistency of all data taken with the same set-up configuration.

Batch reporting – organizer
The batch reporting - organizer enables the reporting of large quantities of data, making use of standard layouts. It supports 2D data, time recordings and waterfall data types.

- Load the data from the Input Basket or the Active Projects
- Columns with attributes can be added to view more details and sort the data
- Data can be sorted by simple double click on the column headers or via a special sorting definition popup dialog

You can load a print format, set the column visibility in the data panel, define some sorting criteria, set the group size and define the data teaching with respect to the print format. All these settings can now be saved in a template. Loading a template again will make sure all these actions are automatically applied on the available data set.

All Testlab print formats, based on Microsoft Office Word and PowerPoint can be used

- Print formats can contain multiple pictures
- Pictures can contain any amount of 2D displays and Waterfall displays.
- Standard Testlab printing options apply to this worksheet (print to default printer or electronic document, use settings from format or Testlab, use Active pictures or Metafiles)

The data are combined in the displays by considering the sorting order in the data list and the parameter "number of 2D curves per window". The printing process can be interrupted by pushing the break button.

Time Data Selection and Validation
The Time Data Selection and Validation worksheet provides a optimized environment for organizing the work on time data, using an organization of the time data in a channel list with capability of adding, removing, duplicating channels and a pivot table view for efficient data selection. Strip chart display and quick spectral & order maps provide efficient tools for data validation.
Additionally, a wide range of single value statistics can be quickly calculated and displayed in tabular form for the selected set of data.

Audio replay
The audio replay enables user-intuitive audio replay using the available PC audio facilities.

Replay sessions can conveniently be initialized from multiple Testlab displays, whereby the original time traces will automatically be retrieved. Extensive replay controls allow single shot or looped playback over a user-definable list of recordings. While

replaying, the user can toggle between multiple recordings, allowing easy comparison of multiple recordings.

Special replay techniques are provided to help compare runups of different speed or duration. Twining control is supported for replay of stereo data (recorded via Simcenter SCADASIII QDA-interface towards digital binaural heads).

Recording

Recording is acquired through one of the many Testlab acquisition workbooks with throughput in parallel.

- Transparent time data recording parallel to online processed spectral data via powerful Simcenter SCADASIII front-end (24-bit ADC on SP92-processing modules)
- Recording of Stereo data via Simcenter SCADASIII QDA interface. Binary audio data interface via AES-EBU format (XLR) or SPDIF (cinch)
- Support of HMSIII 16 or 24-bit binary data
- Full synchronization of vibration and acoustical data

Replay

- Use of available PC Audio hardware guaranteeing minimal setup effort
- Convenient replay of Testlab measured time data, support of Simcenter CADA-X TDF data, SDF, Pimento and Testxpress time data
- Direct replay from Colormap, Front/Back or Stripchart over user-definable range (graphical segment selection on Front-Back and Stripchart-display)
- Replay from online processed spectral maps or sections
- (e.g. from Articulation Index, OA Level, ...)
- Automatic retrieval of corresponding time data
- Replay of any SCADASIII, SCADAS Mobile and SACADAS Recorder supported Sampling Frequency
- Unlimited number of active time records retrieved from one or multiple projects
- Cyclic and single shot replay
- Any item in the play-list can be immediately activated at random during replay
- Switching procedure between entries: based upon equal tracking position (e.g. rpm), or start at beginning of selected play-list entry
- Automatic online muting
- Easy retrieval of maximum recording level for optimized playback
- Related levels of different recordings respected

External data support

Simcenter Testlab Desktop – Advanced supports the same read and export capabilities as the Simcenter Testlab Desktop - Standard. Please refer to the Product Information Sheet of Simcenter Testlab Desktop - Standard (TL-DTP.20.1) for the detailed description.

Options

Configurability & Customization

- TL-DTP.30.3 Simcenter Testlab Windows Automation Support

Analysis

- TL-SIG.54.3 Simcenter Testlab Run Data Averaging & Comparison Organizer
- TL-GEO.03.2 Simcenter Testlab Geometry workbook
- TL-ODS.52.2 Simcenter Testlab Operational Deflection Shape and Time Animation
- TL-ACT.57.3 Simcenter Testlab Audio Replay & Filtering
- TL-GPR.59.3 Simcenter Testlab Interactive Time Data Editing Add-in
- TL-ENV.26.3 Shock Response Processing (Offline SRA)

Product status

- Available on PC running Microsoft Window OS:
  - 64-bit Windows® 10 and Windows® 11 (Please check installation Manual for detailed versions)
  - Limited support (non-acquisition products) for Windows Server® 2016, 2019 and 2022, excluding the CAD display.
- Support of Microsoft Office®, 2016, 2019, 2021 and 365 ProPlus except online office (Office365 online is not supported). Please check installation Manual for details on supported versions
- Available license configuration: Node-locked, Floating, upgrade to floating or tokens