

# Efficiently viewing and reporting test and simulation data

Solution brief

Siemens Digital Industries Software

## Enabling engineers to efficiently leverage the value of simulation and test data with Simcenter Testlab Desktop Neo

The product development process has evolved significantly over the past decades from a test-centric to a model-based development process in which the role of simulation has become mainstream. At the same time, the complexity of the systems to be engineered has increased tremendously, pushing the amount of data generated to unimaginable quantities.

But the need to maximize the value of the engineering data that is produced has remained unchanged. It is essential for everyone in the organization – management, engineers and technicians – to be able to access this data, draw the right conclusions from it and share these conclusions.

Simcenter™ Testlab™ Neo software for the desktop is not just the launch platform of all other Simcenter Testlab Neo

applications; it provides all the tools you need to cope with the growing importance of simulation, the growing volume of data and to be even more efficient at maximizing the value of the data.

### Leveraging data navigator

The Simcenter Testlab data explorer allows you to navigate through hierarchically structured data sets and the file system using a familiar interface. It can be used to select data for displaying, manipulating and organizing data sets. Important data can be bookmarked so you can easily find it anytime. Simcenter Testlab Desktop Neo works transparently with data from any source: there is no need to copy, convert or even know where the data is located. Being able to access all this data in a transparent way means you can be more efficient, adding value to this data. With the support of the Association for Standardization of Automation and Measuring Systems Open Data Service (ASAM/ODS) standard, Simcenter Testlab Desktop Neo makes it possible to access and exchange data across platforms without losing vital descriptive information.

### Challenges

- Evaluate large data volumes in industry-conforming formats
- Use test and simulation data seamlessly
- Analyze and annotate complex data
- Transfer acquired insights/results

### Solutions

- Efficiently visualize large data volumes
- Simcenter 3D driver/Simcenter Amesim sketch viewer
- Engineering displays with embedded data analysis
- Provide on-the-fly to in-depth analysis
- Fully annotated and active reports

### Results

- Maximize focus on data evaluation
- Test and simulation data synergy
- Clear and intuitive data visualization
- Interactive reports formatted to company standards

# Solution focus

## Transparent access to Simcenter 1D and 3D data

Using Simcenter Testlab Desktop Neo enables transparent access to Simcenter 1D and 3D data, models and geometries. The Simcenter Amesim™ software sketch viewer immediately displays the Simcenter Amesim model when selecting an .ame file and offers a model-driven way to select the embedded simulation results as if you were using the native Simcenter Amesim authoring application.

Similarly, you can browse Nastran® software, Abaqus software or ANSYS files and directly access its data and geometry without any additional import or conversion step.

If necessary, an alias mapping table can be defined to create a link between the data to be explored and a reference point identification set to overcome differences in naming conventions or local axis orientation between the multiple data sets.

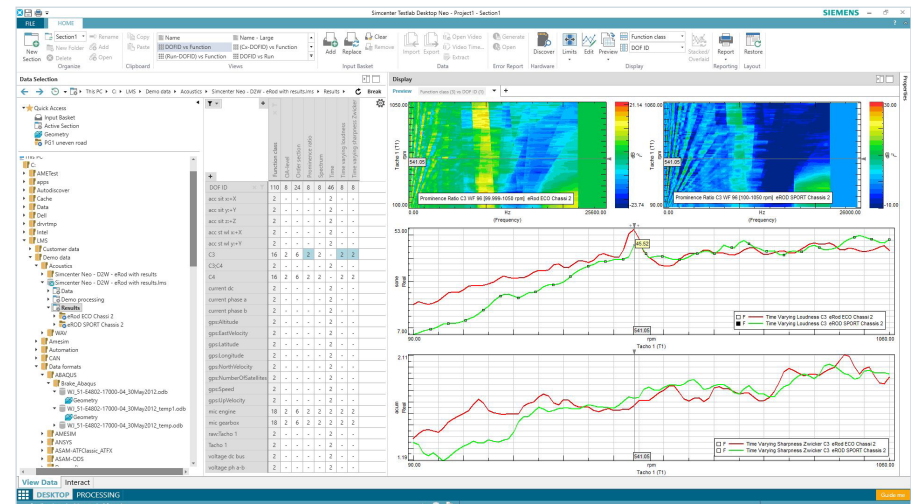
The transparent bridge to simulation makes the model-validation process easier for the test engineer and enables the simulation engineer to exploit the powerful engineering displays and the flexible processing offered by Simcenter Testlab Neo.

## Tailored user-experience with use of favorites for personalization

Simcenter Testlab Desktop Neo provides you with a tailored user experience. These views enable you to define preferred sorting, filtering and grouping with a single click at any time. When exploring your data, all the settings and history of the data are immediately available to you. The integrated favorite mechanism enables you to only see the data attributes that are of interest to you. When selecting data items, they will be



Model-driven data selection with the Simcenter Amesim sketch viewer.



The pivot table provides an overview of large data sets with a single mouse click.

displayed according to the settings you configured. No need to change anything anymore.

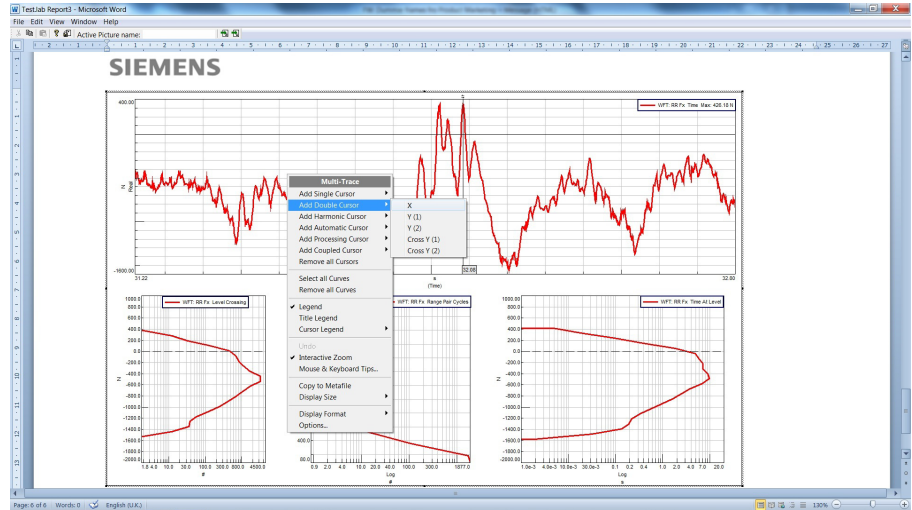
Simcenter Testlab Desktop Neo maximizes your focus on the data.

### Sorting, filtering, pivot table and direct data visualization

Data measured or processed with Simcenter Testlab will be indexed on-the-fly, enabling a fast overview of vast amounts of data. Using the grid, data can be filtered and sorted on different header fields like in Excel spreadsheet software. The pivot table instantaneously organizes any amount of selected data according to user-definable criteria, making sure comparable data will be funneled to the same pivot cell so you can efficiently and conveniently validate and compare data. When clicking on a data cell in the pivot, the selected content can be instantaneously visualized according to a series of basic embedded format rules, while semi-automatic layouts enable you to easily create a matrix of displays that are organized according to user-definable, row-column criteria. If needed, user-defined layouts allow you to visualize your data according to company standards. The content of the displays is changed when scrolling through the different runs. Specific curves can be locked to serve as a reference while scrolling or reference curves can be defined for each display to support the data validation process.

### Engineering displays with embedded data analysis

It often requires more than just displaying the data in the right format to gain engineering insights. For example, noise and vibration problems are often caused by subtle events: the troublesome third order that is almost masked by background noise, the local mode just at the point where you need to connect a sensitive component, or the annoying rattle that develops over time. To discern intricate details, you need powerful graphical displays with flexible limit settings, a choice of viewing angles, color scales, line formats and more. Simcenter

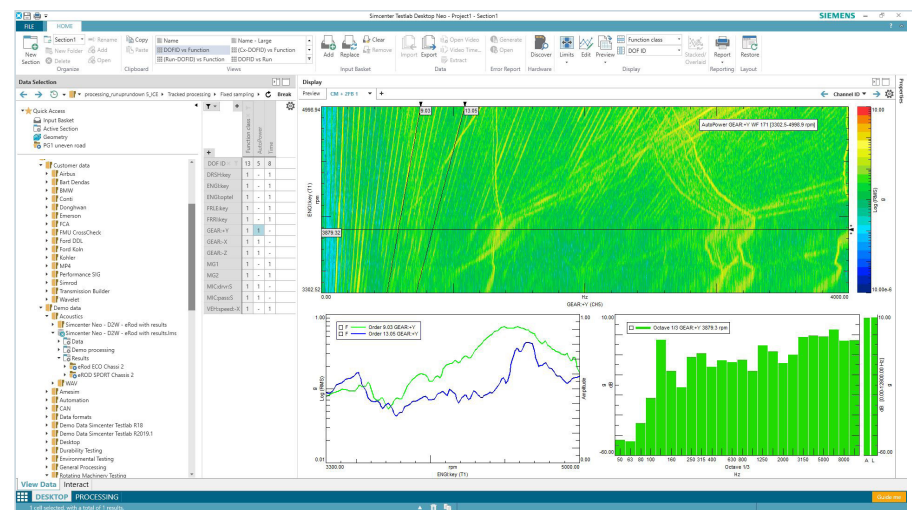


Active reports enable consumers to manipulate the reported data.

Testlab Neo displays have been tuned during decades by the expertise of thousands of users from various industries. Units from any industry, company or measurement application are transparently supported and converted so displayed data can be evaluated without format-concerns. But gaining insights may also require coupling the content of multiple displays to explore the possible correlation of data with the evolution of operational parameters, or a combination of these activities. Simcenter Testlab Desktop Neo displays make all this, and much more, possible with just a few mouse clicks.

### Fully annotated and active reports formatted to company standards

Using Simcenter Testlab Desktop Neo helps document the huge amount of data that is generated daily. You can add key information to raw data, such as operator details, test object descriptions and testing conditions for data traceability, as well as digital images showing the test setup. Better documentation means your data will retain its value long after the current development phase has been completed. As the amount of data grows, it is crucial to organize and keep track of it. Data needs to be annotated consistently – measurement results need to be related to product structure, speeding up data search and retrieval.



Embedded processing cursors take data exploration to the next level.

Using Simcenter Testlab Desktop Neo makes it easy to share your results throughout the organization. You can combine trace, waterfall and surface-shaded animations along with labels, lines and logos to conform to corporate standards. All Microsoft Office software features are available to highlight crucial elements.

Once you have a template, Simcenter Testlab Desktop Neo automatically fills in data-specific details – such as channel number, axis limits and cursor read-outs – as the report is being produced. Copy-and-paste work is eliminated, facilitating consistency throughout the company. Reports can be made in Microsoft Word software and PowerPoint presentation software and saved in PDF and HTML. With object linking and embedding (OLE)/ActiveX technologies, your documents are not static reports, but dynamic entities so other readers can manipulate data formats and animation viewpoints to suit their requirements.

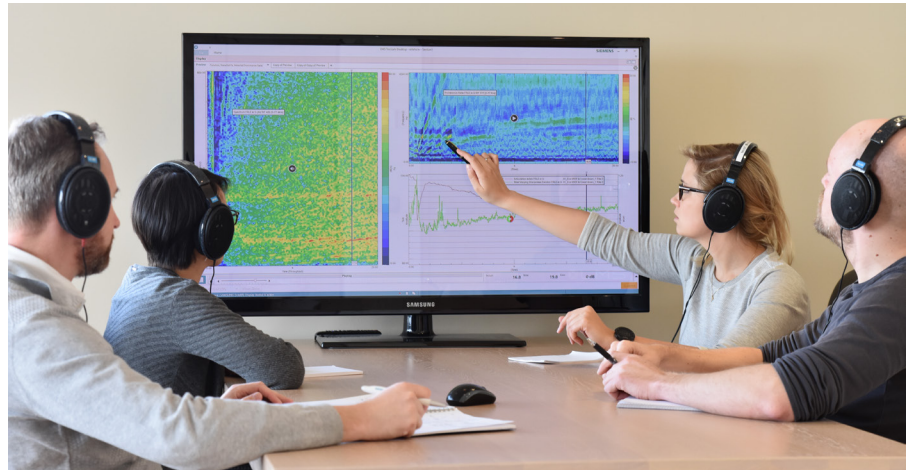
### Add-in mechanism for advanced data evaluation tools and attribute analysis

Simcenter Testlab Desktop Neo is the gateway to advanced postprocessing options, such as acoustic processing, durability processing, rotating machinery processing and more.

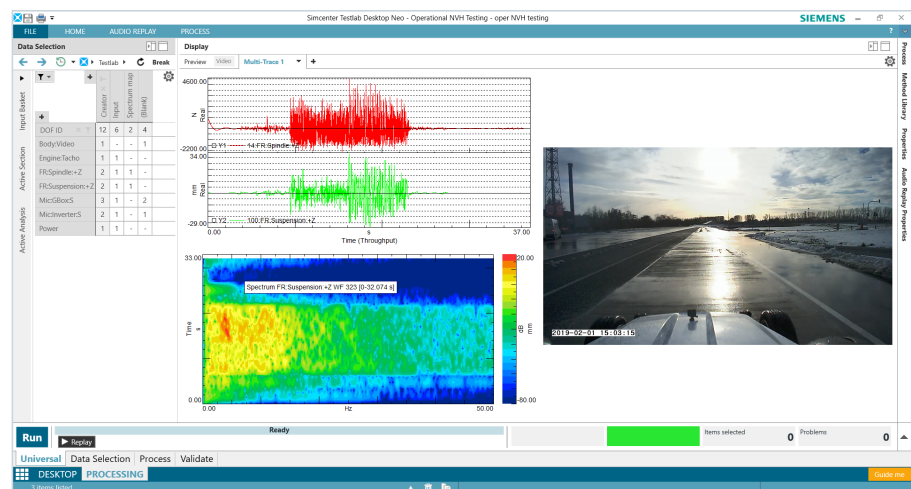
Simcenter Testlab Desktop Neo can be extended with functionality that supports in-depth data evaluation. The Interactive Analysis add-in enables you to interactively slice-and-dice data based on a fingerprint overview or execute predefined processes.

The Advanced Audio Replay add-in enables a user-intuitive sound assessment within a mouse click from visualizing data in a display.

The Video Replay add-in adds an extra dimension to your validation phase: you can monitor simultaneously measured time data, the position and the driving environment, allowing you to link a measurement characteristic to a physical phenomenon on the test track or a steering maneuver by the driver.



The Advanced Audio Replay add-in enables interactive replay and filtering from Simcenter Testlab Desktop.



The Video Replay add-in enables synchronized replay of the data and video.

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