What's New in FlexPro 9

The next few pages provide FlexPro users with a brief overview of the new FlexPro 9, which is expected to be released in February 2011.

FlexPro 9 solves one of the greatest problems involving the processing of physical quantity measurement data: the correct adaptation and interpretation of the units in which measurement data occur. The new SI Unit Manager is an integral part of FlexPro 9 and covers all functional areas of the software. Thanks to FlexPro 9, you no longer have to worry about error-prone issues involving conversion factors, errors due to calculating incompatible units, or having to develop additional formulas to transform units.

FlexPro Professional 9 is pursuing the trend of synchronized recording of video and audio data with physical quantities and features a new **Media** presentation object, which is used, for instance, to analyze road or crash tests.

You create an analysis in FlexPro as an object network, which covers everything from raw data to the final report. With FlexPro 9, you can store diagrams, tables or entire analyses created just once as a template to share with colleagues.

FlexPro 9 takes full advantage of latest multicore processors to calculate your analysis.

This feature as well as others make FlexPro 9 the benchmark for productivity, performance and interactivity in technical and scientific data analysis.
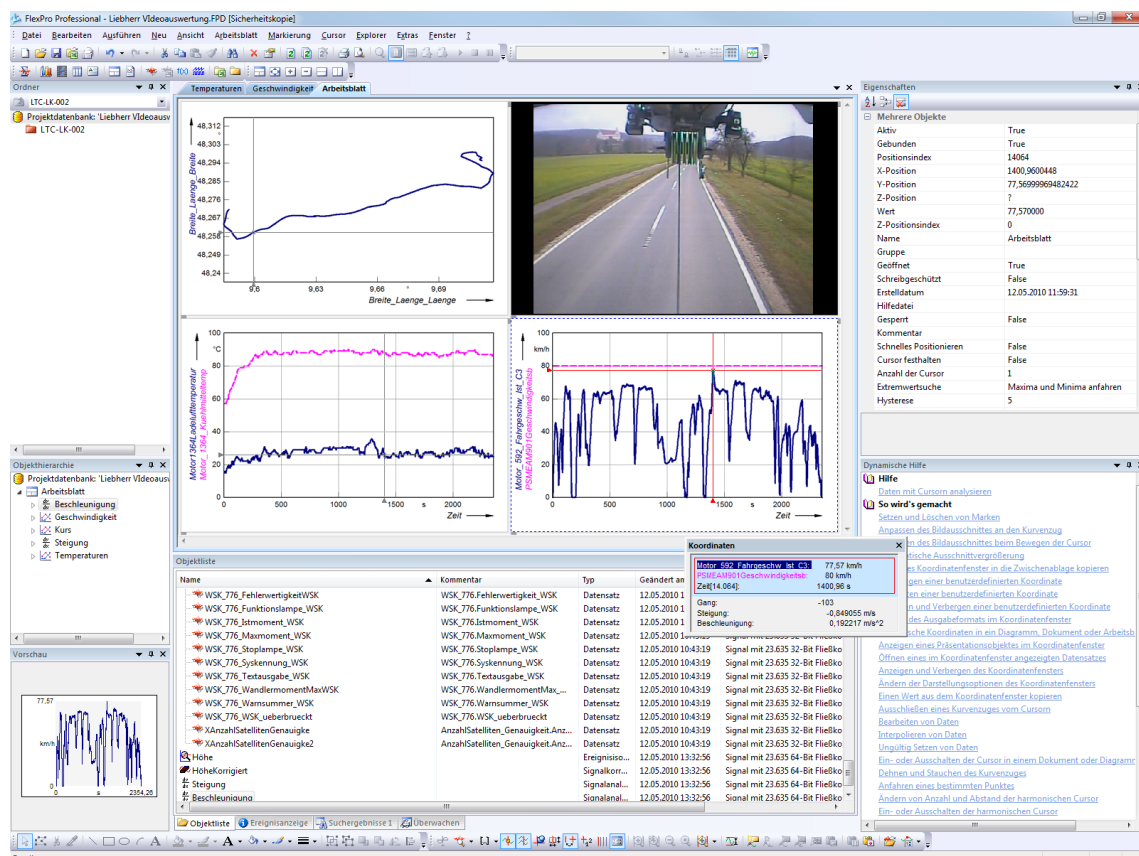
SI Unit Manager

The Unit Manager **is based on the International System of Units (SI) and the International System of Quantities (ISQ) in accordance with ISO 80000**. In FPScript you can now perform **calculations directly using quantities**, which are composed of a value and unit. FPScript can compare different units before making the calculation, convert units into other units, and recognize physically incorrect operations with quantities.

This convenient feature not only covers arithmetic FPScript operations, but also includes over 200 integrated FlexPro analysis functions and thus all of the analysis objects. The unit is now an integral part of the result of a formula or analysis object.

The **Unit Manager is expandable** and supports the Gaussian system of units and the US unit system in addition to the SI unit system. You can therefore work on data accurately from different domains.

From the moment you begin importing data, you can **check the imported units**, thus ensuring that you will be working only with recognized and correctly identified units within FlexPro. You can store corrections made just once in correction tables to automate them.

To display data and results in diagrams and tables, just choose the **output unit** separately from the unit in which the data occur.

Use the Media Object for Video Analysis

State-of-the-art measurement applications capture video and audio signals along with physical quantities. The new FlexPro 9 **Media object** offers you a powerful tool for analyzing these types of measurements. You can use Media objects together with diagrams in a worksheet or document.

The current video playback position can be **synchronized** with the X position of the cursor in diagrams. When you move the cursor in a diagram, the corresponding frame in the video is displayed. When you play back the video, the cursors follow along in the diagram.

FlexPro makes it possible to synchronize videos with different starting times and frame rates accurately with the measurement data. You can either enter the video frame rate or a data series, which assigns the correct time to each frame.

The Media object saves the last position reached as a **still image**, which you can select with arrows and print out, for instance.

Crash test videos, images and data are often stored in the **Multimedia Data Exchange Format for Impact Tests ISO®-TS 13499**. FlexPro can import the data directly in this format.

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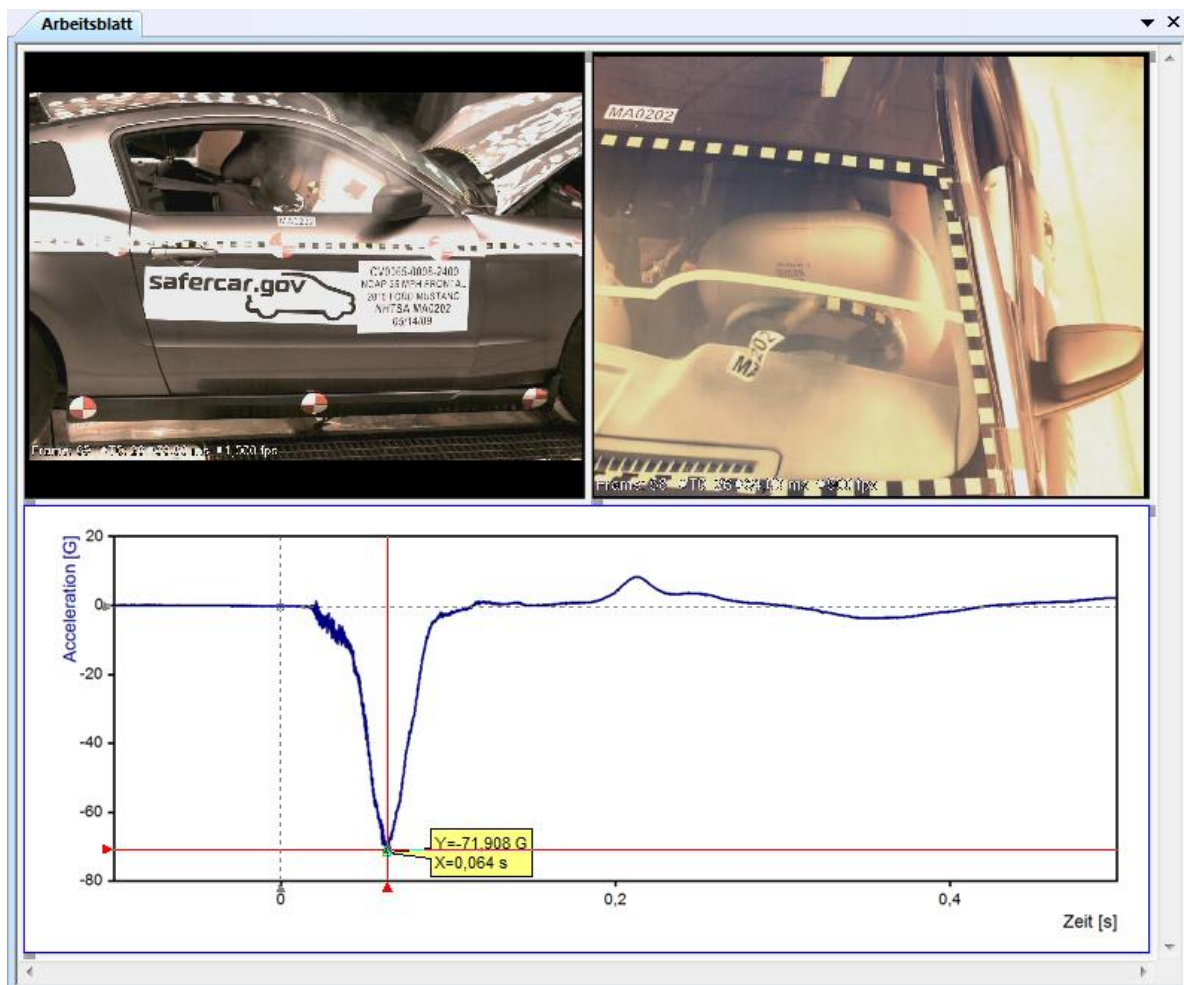
# New Presentation, Document and Analysis Templates

You can use presentation and document templates to expand the wizard to include **custom objects** for creating diagrams, tables, text and documents that you can then create as easily as you would using the built-in FlexPro objects. For tables and diagrams, FlexPro also supports **dynamic templates** in which the number of curves or table columns or cells is adapted to the particular number of selected data sets.

You can also use your custom document templates on the last screen of the diagram, table, text or analysis wizard to embed the newly created object into a document of your choice.

You can save complete object networks as an **analysis object**. When subsequently selecting this type of analysis template in the Analysis Wizard, the objects at the lowest hierarchical level, i.e., objects that do not refer to other objects, are replaced by the selected objects.

You can now use your own **libraries**, which you program in FPScript VBA or as a COM add-in, to expand on the set of available FPScript functions for data analysis.

In addition to the personal and global template databases, the Professional version of FlexPro 9 also supports **shared template databases** in which you can store presentation templates, analysis templates, FPScript functions and units to share with your colleagues.
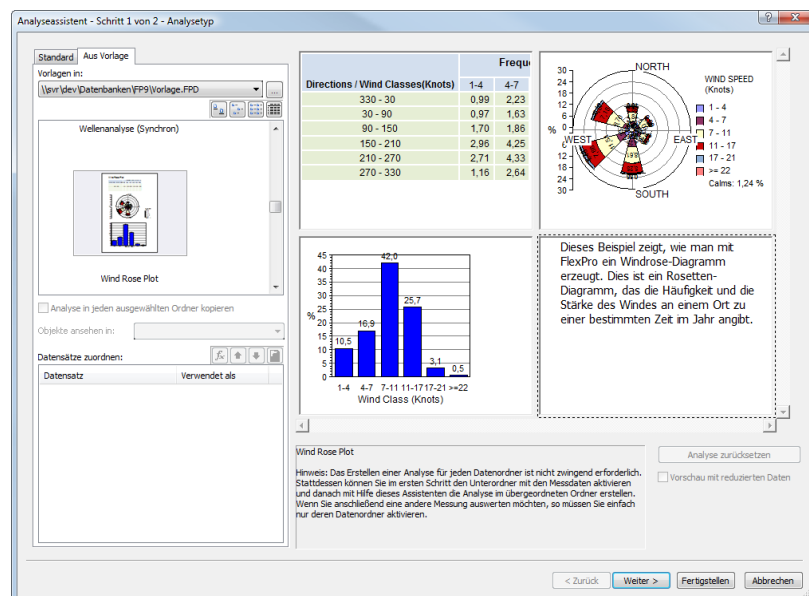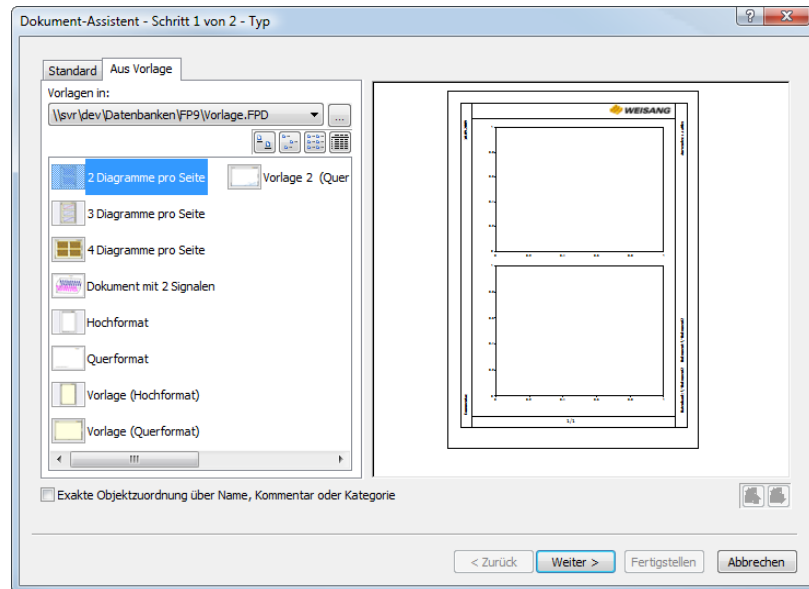
Higher Performance on Multicore Processors

A state-of-the-art six-core processor processes a purely sequential calculation using less than 20% of its power. The remaining 80% is left unused. FlexPro 9 Professional lets you unleash these reserves, considerably speeding up your analyses.

Parallel processing presents a serious problem when programming with traditional analysis tools. FlexPro solves this problem for you by autonomously breaking down processes into parts that can run simultaneously on different CPU cores. This is possible because FlexPro manages your analyses and presentations as a network of interlinked objects. FlexPro therefore makes the determination regarding which objects and in which order the particular objects are to be recalculated during the update process.

Other Features and Enhancements

- Undo/redo edits without opening an object

- Output of complex numbers in a+bi format

- Improved project database searches

- Display the purpose of the objects in the Hierarchy View

- Digitization changes when exporting to audio format (.wav)

- Export an entire folder of data

- Display a signal series/data matrix as concatenated

- Add new curves to a diagram showing X/Y data

- Output complex numbers in tables with real and imaginary parts

- Zoom and scroll all curves in diagrams with multiple axes

- New **Keep Cursor Visible** option

- New attributes for saving the description of the physical quantity

- Constants without a decimal point are interpreted in FPScript as floating point values

- The For loop in FPScript can now be carried out in reverse and with the increment not equal to 1

- The FPScript Value Index Operator supports space curves and signal series with two-dimensional X components

- New Environment...Do...End statement for compiling and executing FPScript code within the context of particular environmental variables

- New FPScript operators for bit shifting of integers

- New FPScript properties for accessing the description of the physical quantity

- New FPScript functions for managing and converting units, formatting data, and interpreting strings as FPScript code