What's New in FlexPro 2017

Completely redesigned user interface with the familiar Microsoft Office-like ribbon, shared access to data archives through client/server-based indexing, diagrams and tables with a dynamic number of curves or columns, and improved diagram and table styling options. These and other new features in FlexPro 2017 are described in more detail below.

New User Interface and FlexPro Project Database Features

- Ribbon

  The new ribbon makes FlexPro 2017 extremely easy to use. It highlights important commands and provides the ability to dynamically insert optional tools improve the software's layout and ease of use.

- File Indexing in Client/Server Mode

  Set up a FlexPro instance on a server, which indexes data for shared access by your team (requires FlexPro Professional or higher combined with the **Data Explorer** option). See also: Setting Up File Indexing in Client/Server Mode

- File Indexing Enhancements
  - FlexPro now removes files from the index that you delete from your hard disk in real time.
  - The data query can now output results bundled as a data series or data matrix.
  - You can now limit a data query to specific folders.
  - FlexPro can carry out calculations and assign them to indexed data during indexing. These calculation results can then also be used as a search criterion for subsequent data queries.
  - Now you can run data queries that "Search for data sets that match criterion A in folders that contain other data sets that match criterion B".
  - As a result, long-term measurements are often stored as files that each contain a small time segment of the measured data. When querying this type of data, you can now also request time ranges that cover multiple files. FlexPro then concatenates the data automatically and provides the complete time range as a single data set.
  - For the data query you can now select which attribute to use when naming the list items of the result. For example, if all found data sets have the same name but come from different folders, it makes sense to use the folder names when naming them.
- New Import and Export Options
  - FlexPro's import filter for text files has been completely redesigned. The new Import Wizard now recognizes most file formats automatically and features additional settings that you can use to import complex data formats. The following is a list of new key features:
    - Improved automatic data format recognition.

    - Easy to use interface with found elements highlighted in color.
    - Support for different character encodings.
    - Import data arranged in rows.
    - Support for time zones and languages when decoding date values.
    - Filtering of headers from the data stream.
    - Recalculation of imported data.
    - XML-based Import Schemas.
    - Share import schemas with colleagues.
  - FlexPro now also supports the HDF5 data export format.
  - For a large number of data formats you can now specify a time segment during data import if you do not want to import all of the data.
  - FlexPro can now also export lists.
- Controlling the use of the thousands separator

  Now you can determine whether to output numbers with or without the thousands separator on the **General** tab of the project database's **Properties** dialog box. You can set the default setting for newly created project databases on the **Project Database** tab of the **Options** dialog box.
- Improved ability to insert text from the clipboard into the Object List or Data View
  - The list separator and decimal separator are recognized automatically whenever possible, but they can still be corrected.
  - Date and time values are now recognized automatically in a variety of formats.

New Presentation Features

- Column table with many new options

  The column table has been completely redesigned. Here are the most important new features:
  - Dynamic display of lists containing several data sets.
  - Display of aggregate data structures with X, Y and Z components in a single column.
  - Improved horizontal and vertical text placement with adjustable inner padding to the cell borders.
  - Optional text wrapping of the column titles.
  - Exact replication of the table design when exported to HTML.
  - Text wrapping in table title.
  - Improved design features with over 20 table styles. You can change the table style and color of individual tables any time. You can set many design attributes to **Automatic**. These settings will then be controlled by the table style you select.
  - Conditional formatting of table cells, i.e. depending on the data value displayed, controls the color of the cell background or text or displays a bar behind the number which visualizes its relative size.
- Cell table with improved formatting
  - Improved horizontal and vertical text placement with adjustable inner padding to the cell borders.
  - Optional text wrapping of the cell text.
  - Exact replication of the table design when exported to HTML.
  - Text wrapping in table title.
  - Similarly to column tables, style and color can be applied to cell tables.

- Diagrams
  - You can now add a title to every diagram.
  - Now you can give each diagram a unique style, color palette, background color any time. You can set many design attributes to **Automatic**. These settings will then be controlled by the diagram style you select.
  - 2D diagrams can now also display signal series.
  - You can also display lists with multiple data sets in 2D and 3D diagrams.
  - Now you can easily change the arrangement of 2D diagram axes with your mouse.
  - You can easily assign curves to another axis with your mouse.
  - Adjustable inner padding for legend title and legend entries.
  - You can configure the axis division type using **Drawing Tools[Position]**. The **Divisions** menu on the former **Position** toolbar has become obsolete.
- Text
  - The background color can now be set for text objects as it is for other presentation objects.
- General Enhancements
  - Additional shapes are available for drawing diagrams and documents.
  - Now you can also flip selected shapes.
  - You can apply your presentation templates to lists, i.e. they support data with varying numbers of channels.

New Analysis Features

- Formula templates

  When creating a formula, you can now choose templates from a gallery. For instance, you can easily create a formula that consolidates or concatenates selected data sets into a list or signal series.

- Enhanced Time Filter Analysis Object

  With the **TimeFilter** analysis object you can also set data set values to void that do not pass through the filter.

- Enhanced Shock Response Spectrum Analysis Object

  The **Shock Response Spectrum** analysis object can now process lists with multiple data sets.

- New Instantaneous Quantity Analysis Object

  With the Instantaneous Quantity analysis object, you can determine the instantaneous amplitude, instantaneous phase and instantaneous frequency of single-component signals. Signals can also be demodulated (amplitude demodulation, phase demodulation and frequency demodulation).

- General Enhancements
  - The FlexPro analysis templates and your customized analysis templates can now be applied to lists.
  - When you apply an analysis template to several folders, you can now give the data sets in the separate folders different names.

Data Cursors

- Display data set name in cursor markers
  Additional fields are available in cursor markers which represent the names of the individual data set components.

- Changing the Coordinates Window font size
  You can now adjust the font size of a Coordinates Window that you have added to a diagram, document or worksheet.
- Activating a cursor in the Coordinates Window
  You can now activate the leading or origin cursor by clicking on the relevant area in the Coordinates Window.
- Improved labeling of dimension lines

  If you use the **Dimension Curve** command to add a dimension line to a diagram, the dimension value will be output with the correct sign, depending on the arrow direction.
- Easier copying of markers, values and ranges

  The commands for copying markers, values and areas no longer place the generated shapes and data sets in the clipboard. They are now placed directly in the Object List.

FPScript Programming Language

- New FPScript Functions

Function	Description
AnalyticSignal	Transforms a real signal into an analytic signal whose imaginary part results in the Hilbert transform. Frequently used for calculating instantaneous amplitude or instantaneous frequency as well as for the demodulation of signals.
ArcTan2	Calculates the arctangent with two arguments.
ConcatenateList	Links all elements of a list to a data series or signal.
Hilbert	Calculates the Hilbert transform. Frequently used for calculating instantaneous amplitude or instantaneous frequency as well as for the demodulation of signals.
MeshGrid	Generates a two-dimensional grid for evaluating functions with two variables or functions with complex-valued arguments.
PhaseUnwrap	Unwraps phase angles for producing smoother phase responses.
SignalToSeries	Transforms a signal into a signal series or a data series into a data matrix whose number of columns corresponds to the number of values in the data set.
StringConcat	Appends multiple strings to each other.

- Enhancements to existing FPScript functions and operators

The FPScript function **TimeFilter** has been expanded to include the **EVENT_SETVOID** result type and can now also process data series.

The FPScript function **Sort** can now also sort strings alphabetically and alphanumerically.

The FPScript **Index** Operation performance has been improved for cases in which a data series is used as an index.

The FPScript **Index** Operation, **Indexed Assignment**, **Unit** operator and **Component** operator can now be applied to a list.

The following FPScript functions for editing and formatting strings **Format**, **StringConcat**, **StringFind**, **StringLeft**, **StringLength**, **StringLowerCase**, **StringMid**, **StringReplace**, **StringRight**, **StringSet**, **StringUpperCase** now also support vector arguments.

The function **AssignHeader** is no longer required in FPScript code in order to assign header information to a results list. For more information, refer to **Lists** in Accessing Header Information.