PLOTXY HISTORY AND ROAD-MAP

January 2020

PlotXY was created initially in 1998 as an answer to the need of the community that used the well-known electromagnetic transients program EMPT/ATP to have a Windows-based fast and practical program to make plots. The programs available at those times were mainly based on old Microsoft DOS and were, in the opinion of the writer, either too slow or a bit tricky to use.

Since then PlorXY has grown steadily over the years, up to 2011.

During 2013, after 15 years from the first version, the program showed its age. The compiler (Borland's C'' Builder 1.0) with which it was written no longer existed, and newer versions of that compiler were not compatible with one key component that PlotXY internally used, that was taken from the Internet. Any new feature had to be implemented using that very old compiler. Otherwise very large programming efforts were required.

Moreover the whole scenario of ITC had changed with many more operating systems in the arena: Mac computers had become common, and other such as Linux were increasingly popular.

Finally, it was decided that time had come to make a large effort of rewriting the program, using a compiler that would reduce future needs of rewrite, especially in case new platforms had to be supported. A compiler allowing this indeed existed, it is the Qt compiler that is distributed in both commercially and open source versions.

It was decided to use the open source Qt. In the beginning Microsoft Windows and Apple Macintosh versions were created using Qt 5.7 and distributed. During December 2017 and January 2018 Perry Clements from Canada has produced a Linux version, starting from Ceraolo's source code, and made it available for distribution. So now we have three versions, with nearly exactly the same functionality.

This new version (i.e. the version from 2013 created using Qt) has important enhancements over the old one:

- Now it is input compatible with Modelica output files (from Dymola and OpenModelica) Specific Modelica-related functions added
- Now it is input compatible with National Instrument's lab-view files. Compatibility is partial but easily expandable
- Now it is able to create copies of the plots it makes in SVG, PNG and PDF formats
- It is much faster. In particular, the old version was dramatically slow when resizing complex plots (since it redrew them continuously during resizing). This does not happen anymore.
- Now you have much more freedom in post-processing data: you can create rather arbitrary algebraic combinations of the data plots (earlier you could just sum, subtract or multiply two plots).

- The program comes with a tutorial that explains all its features with examples that the user can reproduce since the corresponding data files are provided

There are plans to further enhance the program.

Between April 2014 and March 2018 enhancements have been made mainly on:

- Modelica compatibility and special Modelica-related functions added
- the "function plots"
- the automatic determination of axis scales
- the flexibility of user-defined units of measure

Furthermore, all known issues affecting stability have been corrected, so the program is much more stable now.

The document "Tutorial.pdf" has been continuously kept updated.

From November 2018 PlotXY has become Open-source, and anyone can have a look at the source code from GitHub, under Max-Privato/PlotXY.

Note that the Open source code does not include the code to interpret the pl4 file format, since this is still an Atp secret.

During 2019, ore flexibility has been added in the choice of curve colours and line style; the maximum number of plotting windows has been raised to 8.

Moreover, Fourier analysis has been enhanced:
- corrected a bug in the computation of THD
- changed algorithm from uniform to non-uniform DFT
- added possibility to have one Fourier windows per plot window, i.e. up to a maximum of 8 simultaneous Fourier charts can be displayed.