

# STEPS TOWARDS A NOMADIC POST FLIGHT ANALYSIS

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The CTTM (which stands for “Centre de Traitement des TéléMesures lanceurs”) is responsible for archiving and dispatching post flight data recorded on the launch base or by telemetry ground stations for launchers operated from French Guyana (CSG). It also offers nomadic means to process those data:

- **PrestoPlot** is a proven portable freeware provided by CNES to display in a user-friendly way any type of timed data, such as telemetry parameters and recordings from ground control benches, radars and ground stations (<https://timeloop.fr/prestotools/prestoplot.php>). This COTS, developed by SPACEBEL France, has accompanied for nearly 20 years the positioning and station keeping phases of all spacecraft operated by CNES: it is based on a strong operational experience et has logged up to now more than one million hours of use. Looking beyond the numerous graphical functionalities, PrestoPlot offers great automation opportunities that can easily lead to automatic generation of operational reports.
- **FlightExplorer** is a multi-launcher software (also portable and developed by SPACEBEL) which helps to easily navigate in a launcher measurement plan and export to PrestoPlot post flight data produced by the CTTM. For each flight, the launcher manufacturer usually exports from its database a set of ASCII files that describe the measurement plan and that FlightExplorer imports directly to feed its various tabs. The search and display capabilities are highly valued by users since they do not spend time looking for the characteristics of any telemetry parameter among the numerous ASCII files.
- A rich “full web” server called **WebSEA** gives a secure access to the CSG flight database since Ariane 5 maiden flight. This server enables any user, not only to display very quickly parameters from a flight, but also to retrieve the corresponding timed data files on its laptop in case additional analysis with PrestoPlot, Excel or Matlab/Scilab is required. Those data are supplied from now on in a PrestoPlot format (tab-separated values) in order to allow their display with a few mouse clicks and help to analyse very quickly both nominal and degraded behaviours in flight: forget sampling problems, limited number of Y-axes and enjoy labelled data display. WebSEA software is currently under development by CS GROUP. The first phase was concentrating to secure access to the flight database hosted by the CTTM. The second phase (ongoing) is focussing on advanced functions, such as the multi-flight display and data export.

The successful outcome of those pieces of software lies in the fact that they result from Agile developments and fully meet the users’ needs very quickly. Their portability and their online use from a simple web browser make them the perfect companions for industrial and CNES teams who are involved in post flight analysis.

This paper shall focus on the benefits of this new way of nomadic working and the growing interest of such products among people working on data analysis on a wider scale.