

# FRAD - Fast Results Analysis and Display

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Paper presents approach for statistical data visualization and analysis. For this purposes the template based on *R* package were created. The FRAD - Fast Results Analysis and Display template provides possibility to make fast data analysis even for inexperienced user without the need of programming. It is ready for processing ASCII input files (e.g. CSV) and producing timeline, histogram and summary plots as well as summary table in .csv format. Possible application areas: data quick overview, visual comparison of data (timeline, histogram), big datasets analysis and results publishing.

FRAD template is not limited to specific task. It's designed to provide the power of *R* language for broad range of users, which are dealing with data analysis. The template contains many features, which are aimed to reduce time that is needed to get the first data analysis results. Some examples of features: automatic range selection accordingly to minimal and maximal values in all analyzed files, skipping corrupted data, automatic axis labeling. One more valuable feature is that proposed approach prevents "human made mistakes" in analysis, specifically in result files naming. In FRAD result files are named automatically using input file name and analyzed data type.

User of FRAD template is able to choose from three levels of control according to his needs and available time. After analyzing big group of user needs, the default parameters were chosen for the first level of control, which is fully automatic. If user needs more freedom, there is the parameters file that gives ability to select analysis features and tune visual look of the output plots. And finally user is able to change template's *R* code, to adjust anything.

FRAD template proved itself as valuable tool in research work of the "ifak"[1] institute, specifically in ZESAN[2] project. Previously used Origin[3] software could not satisfy demands in fast test case data analysis. Since Origin does not support automated analysis of multiple files, it could be effectively used for test case data analysis, where number of files per test case is more than ten. For one test case analysis (consisting of four files) user previously should spend around an hour, with FRAD template it takes just two minutes (at 1 million records per file). Advantage is huge!

## References

- [1] Ifak - Institut für Automation und Kommunikation e.V. Magdeburg, [www.ifak.eu](http://www.ifak.eu)
- [2] ZESAN project - Reliable, energy-efficient wireless sensor/actor networks for building automation, supervision and process control, <http://www.ifak.eu/index.php?id=651&L=3>
- [3] Origin software, <http://www.originlab.com/>