



Rep Plus

Conceptual Representation Software

License and Release Notes

May 2021

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<http://cpsc.ucalgary.ca/~gaines/repplus/>

1 License

Rep Plus is freely available subject to the terms of the standard *MIT license*:-

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2 Academic Citation

The appropriate citation is one that references the Rep Plus and WebGrid site since this provides others with up to date information on the tools, their applications, and related publications:-

“Brian R Gaines and Mildred L G Shaw (2021), Rep Plus & WebGrid Plus,
<http://cpsc.ucalgary.ca/~gaines/repplus/>”

3 Release Notes

Rep Plus is the latest version of the conceptual modelling tools originally developed by Mildred Shaw in 1975, ported by Shaw and Gaines to a range of platforms and languages, enhanced as knowledge-based system development tools in the 1980s, extended with the WebGrid HTTP protocol in 1994 to operate through the Internet, and issued under various names over the years, RepGrid, PLANET, KSS, Nextra, KITTEN, Rep IV and Rep 5.

Rep Plus is backwards compatible with all these previous versions and will read data files created by them, as well as those of many other grid packages developed by others.

3.1 Enhancements V2

The most significant enhancements available in Rep Plus V2.0 are that:

- *Rep Plus* is now compiled as a 64-bit application under both Windows and OS X. On the Mac it will run under the latest operating systems and is notarized by Apple so that installs readily.
- *PrinGrid* provides the option to superimpose a *Voronoi diagram* to cluster the elements in a principal components analysis. A Voronoi diagram divides a space of plotted locations into polygons enclosing each location such that each point within the polygon is closer to that location than to any other location. This provides a visual clustering on a principal components analysis that does not interfere with the original plot, is easy to understand, and provides new insights into the relations between the elements. In recent years Voronoi diagrams have become popular in the *conceptual spaces* research community, and provide further support for studies of Kelly's notion of *psychological space*.
- Classes in *RepGrid* can be exported not only as textual descriptions, but also as logical expressions and as graphical conceptual networks in RepNet that can be run in the *CNet* software to exhibit anticipatory behaviour. This provides further support for research involving Kelly's theories of anticipation, predication and action, and their links to studies of *artificial intelligence*.
- All textual analyses are presented as styled text and tables in *RepDoc* which is a new document processing application that is part of Rep Plus. RepDoc is similar to standard word processors in supporting pagination, typographic styling, tabs and soft returns, tables and embedded figures. It stores documents in a human-readable XML format, and exports them through copy/paste and drag/drop in RTF that can be read by most document processors such as Microsoft Word. Both textual and graphic analyses can be pasted or dragged to a RepDoc document used, for example, as a research notebook.
- *WebGrid* also supports new RepGrid analyses such as *Synopsis* and *Voronoi diagrams*.
- The RepGrid, RepGrids, RepNet, and RepServe manuals have been updated, and a new manual issued for RepDoc. The RepGrid and RepGrids manuals have been greatly expanded to be more tutorial and incorporate additional research material and citations. The RepServe manual describes how to offer WebGrid securely over the Internet.

Further manuals and enhancements are planned. Most of those already made have been developed to support specific users who have worked with us to extend the applications and capabilities of our conceptual modeling tools. We welcome suggestions from any users who are innovating in this way, attempting to analyze difficult data sets, or exploring new experimental designs.

3.2 Previous Releases V1

- **RepGrid** has been enhanced with new tools and library functions. It supports *category* labels for rating scale intervals, and *classes* representing Kelly's anticipatory *intersections* specified through properties which can be either construct categories or other classes. The new **Synopsis** analysis provides a graphic overview of a grid through *histograms* of the ratings of elements on constructs and a *scree plot* of the variance accounted for by the principal components with an estimate of the number of *significant dimensions* as an indicator of the *complexity* of the grid.
- **RepGrids** (previously RepSocio) has been substantially enhanced to support the management and analysis of large collections of conceptual grid data, *segmentation* by user-defined categories (defined in a grid), comparison of categories, and *content analysis*, all providing additional features supporting a SocioGrids analysis. RepGrids is now fully *scriptable* through scripts having full access to the contents of grids facilitating the development of new forms of multiple grid analysis and batch processing.
- **WebGrid Plus** supports *file uploads* in order to facilitate moving data between the increasing number of public WebGrid servers freely available world-wide, and allows users to switch between dialog scripts typically supporting different natural languages.
- There is close integration between Rep Plus and WebGrid running on the same computer so that users may easily switch back and forth between stand-alone elicitation, editing and analysis and that through a web browser.
- **RepNet** graphic capabilities have been substantially enhanced to support a range of *semantic networks* and associated *inference engines*, advanced concept mapping techniques, and other visual languages.
- **RepScript** has been enhanced with a number of new functions.