**Repast Features and Capabilities**

**December 2012**

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| Feature/Capability | Provided By |
| Discrete event scheduling and execution | Repast Simphony core |
| Simple agent creation via Flowcharts GUI | Repast Simphony core |
| Simple agent creation via ReLogo | Repast Simphony core |
| Agent watchers and event triggers | Repast Simphony core |
| Multiple scenario runs with parameter sweeps | Repast Simphony core |
| Basic data collection, logging and graphing | Repast Simphony core |
| Network graph modeling, analysis, and visualization | JUNG |
| Structured 2D zoomable user interface toolkit | Piccolo |
| General-purpose charting and graphing | JFreeChart |
| General-purpose forecasting | OpenForecast |
| High-performance scientific and technical computing | Colt and Apache Commons Math |
| High-performance embedded relational database | HSQLDB |
| Collision-detection and rigid-body dynamics | JBullet |
| Genetic algorithms and genetic programming | JGap |
| Diverse scientific computation and representation | JScience |
| Neural networks | Joone |
| CSV file parsing | OpenCSV |
| Support for manipulating various MSOffice file formats | Apache POI |
| Aspect-oriented programming extensions for Java | AspectJ |
| High-performance data logging | Log4J |
| Comprehensive Java unit testing | JUnit |
| High-speed and extended-functionality collections | Trove and Apache Commons Collections |
| Mock-based testing | JMock |
| Full-featured earth imagery and visualization toolset | NASA Worldwind |
| Logging abstraction layer | SLF4J |
| Create sparklines | Spark |
| Capability to include MATLAB engine in simulations (MATLAB not included) | JMatlink |
| Language recognition | ANTLRWorks |
| Java bytecode manipulation | Javassist, ASM and Apache BCEL |
| Rich Java Swing components | JIDE |
| Audio and video content addition | JMF |
| Parallel and distributed computing | ProActive |
| Geospatial functionality | geoapi |
| GIS functionality | Geotools |
| 2D spatial and topology functions | JTS |
| Large dataset manipulation | GridGain |
| Reliable multicast communication | JGroups |
| FTP-based file transfers | edtftpj |
| SQL treatment of Java objects | JoSQL |
| XML Manipulation, serialization, and XPath interpretation | Jaxen, JDOM, XMLPull, XStream, and SaxPath |
| External process execution | Apache Commons Exec |
| Scalable Vector Graphics (SVG) toolkit | Apache Batik |
| Groovy language | Groovy |