2 **Ensemble Eclipse: A Process for Prefab Development Environment for the Ensemble Project**

This software simplifies the process of having to set up an Eclipse IDE programming environment for the members of the cross-NASA project, Ensemble. It achieves this by assembling all the necessary add-ons and custom tools/preferences. This software is unique in that it allows developers in the Ensemble Project (approximately 20 to 40 at any time) across multiple NASA centers to set up a development environment almost instantly and work on Ensemble software. The software automatically has the source code repositories and other vital information and settings included.

The Eclipse IDE is an open-source development framework. The NASA (Ensemble-specific) version of the software includes Ensemble-specific plug-ins as well as settings for the Ensemble project. This software saves developers the time and hassle of setting up a programming environment, making sure that everything is set up in the correct manner for Ensemble development.

Existing software (i.e., standard Eclipse) requires an intensive setup process that is both time-consuming and error prone. This software is built once by a single user and tested, allowing other developers to simply download and use the software.

*This work was done by Michael N. Wallick, David S. Mittman, and Khawaja S. Shams of Caltech; and Andrew G. Bachmann and Melissa Ludowise of NASA Ames Research Center for NASA’s Jet Propulsion Laboratory. For more information, contact iaoffice@jpl.nasa.gov. This software is available for commercial licensing. Please contact Dan Broderick at Daniel.F.Broderick@jpl.nasa.gov. Refer to NPO-47677.*

2 **ISS Live!**

International Space Station Live! (ISSLive!) is a Web application that uses a proprietary commercial technology called Lightstreamer to push data across the Internet using the standard http port (port 80). ISSLive! uses the push technology to display real-time telemetry and mission timeline data from the space station in any common Web browser or Internet-enabled mobile device.

ISSLive! is designed to fill a unique niche in the education and outreach areas by providing access to real-time space station data without a physical presence in the mission control center. The technology conforms to Internet standards, supports the throughput needed for real-time space station data, and is flexible enough to work on a large number of Internet-enabled devices.

ISSLive! consists of two custom components: (1) a series of data adapters that resides server-side in the mission control center at Johnson Space Center, and (2) a set of public html that renders the data pushed from the data adapters. A third component, the Lightstreamer server, is commercially available from a third party and acts as an intermediary between custom components (1) and (2). Lightstreamer also provides proprietary software libraries that are required to use the custom components.

At the time of this reporting, this is the first usage of Web-based, push streaming technology in any common Web browser or Internet-enabled mobile device.

*This software was developed for the NPOESS (National Polar-orbiting Operational Environmental Satellite System) Preparatory Project (NPP) Science Data Segment. The purpose of this software is to compare HDF5 (Hierarchical Data Format) files specific to NPP and report whether the HDF5 files are identical. If the HDF5 files are different, users have the option of printing out the list of differences in the HDF5 data files. The user provides paths to two directories containing a list of HDF5 files to compare. The tool would select matching HDF5 file names from the two directories and run the comparison on each file. The user can also select from three levels of detail. Level 0 is the basic level, which simply states whether the files*