



## GLobal Integrated Design Environment

*John H. Glenn Research Center, Cleveland, Ohio*

The GLobal Integrated Design Environment (GLIDE) is a collaborative engineering application built to resolve the design session issues of real-time passing of data between multiple discipline experts in a collaborative environment. Utilizing Web protocols and multiple programming languages, GLIDE allows engineers to use the applications to which they are accustomed — in this case, Excel — to send and receive datasets via the Internet to a database-driven Web server.

Traditionally, a collaborative design session consists of one or more engineers representing each discipline meeting together in a single location. The discipline leads exchange parameters and iterate through their respective processes to converge on an acceptable

dataset. In cases in which the engineers are unable to meet, their parameters are passed via e-mail, telephone, facsimile, or even postal mail. The result of this slow process of data exchange would elongate a design session to weeks or even months. While the iterative process remains in place, software can now exchange parameters securely and efficiently, while at the same time allowing for much more information about a design session to be made available.

GLIDE is written in a compilation of several programming languages, including REALbasic, PHP, and Microsoft Visual Basic. GLIDE client installers are available to download for both Microsoft Windows and Macintosh systems. The GLIDE client software is compatible with Microsoft Excel 2000

or later on Windows systems, and with Microsoft Excel X or later on Macintosh systems.

GLIDE follows the Client-Server paradigm, transferring encrypted and compressed data via standard Web protocols. Currently, the engineers use Excel as a front end to the GLIDE Client, as many of their custom tools run in Excel.

*This work was done by Matthew Kunkel, Melissa McGuire, David A. Smith, and Leon P. Gefert of Glenn Research Center. Further information is contained in a TSP (see page 1).*

*Inquiries concerning rights for the commercial use of this invention should be addressed to NASA Glenn Research Center, Innovative Partnerships Office, Attn: Steven Fedor, Mail Stop 4-8, 21000 Brookpark Road, Cleveland, Ohio 44135. Refer to LEW-18591-1.*

## SSC Engineering Analysis

*Stennis Space Center, Mississippi*

A package for the automation of the Engineering Analysis (EA) process at the Stennis Space Center has been customized. It provides the ability to assign and track analysis tasks electronically, and electronically route a task for approval. It now provides a mechanism to keep these analyses under configuration management. It also allows the analysis to be stored and linked to the engineering data that is needed to perform the analysis (drawings, etc.). PTC's (Parametric Technology Corporation) Windchill product was customized to allow the EA to be created, routed, and maintained under con-

figuration management. Using Info-engine Tasks, JSP (JavaServer Pages), Javascript, a user interface was created within the Windchill product that allows users to create EAs. Not only does this interface allow users to create and track EAs, but it plugs directly into the out-of-the-box ability to associate these analyses with other relevant engineering data such as drawings. Also, using the Windchill workflow tool, the Design and Data Management System (DDMS) team created an electronic routing process based on the manual/informal approval process. The team also added the ability

for users to notify and track notifications to individuals about the EA.

Prior to the Engineering Analysis creation, there was no electronic way of creating and tracking these analyses. There was also a feature that was added that would allow users to track/log e-mail notifications of the EA.

*This work was done by Harry Ryan and Justin Junell of Stennis Space Center; Colby Albasini of Computer Sciences Corporation; and William O'Rourke, Thang Le, Ted Strain, and Tim Stiglets of SaiTech. For more information call the SSC Center Chief Technologist at (228) 688-1929. Refer to SSC-00340.*

## Automated Cryocooler Monitor and Control System Software

*NASA's Jet Propulsion Laboratory, Pasadena, California*

This software is used in an automated cryogenic control system developed to monitor and control the operation of small-scale cryocoolers. The system was designed to automate the cryogenically

cooled low-noise amplifier system described in "Automated Cryocooler Monitor and Control System" (NPO-47246), *NASA Tech Briefs*, Vol. 35, No. 5 (May 2011), page 7a.

The software contains algorithms necessary to convert non-linear output voltages from the cryogenic diode-type thermometers and vacuum pressure and helium pressure sensors, to temperature