ronment, and facilitating transfer of plots and printed results for inclusion in design reports. Additional features include roller-edge stress prediction and influence of shaft and housing distortion on bearing performance.

This program was written by J. V. Poplawski, J. H. Rumbarger, S. M. Peters, H. Galatis, and R. Flower of J. V. Poplawski & Associates for **Glenn Research Center**. *For further information, access www.bearingspecialists.com.*

Inquiries concerning rights for the commercial use of this invention should be addressed to NASA Glenn Research Center, Commercial Technology Office, Attn: Steve Fedor, Mail Stop 4-8, 21000 Brookpark Road, Cleveland Ohio 44135. Refer to LEW-17390.

Web Program for Development of GUIs for Cluster Computers

WIGLAF (a Web Interface Generator and Legacy Application Façade) is a computer program that provides a Web-based, distributed, graphical-user-interface (GUI) framework that can be adapted to any of a broad range of application programs, written in any programming language, that are executed remotely on any cluster computer system. WIGLAF enables the rapid development of a GUI for controlling and monitoring a specific application program running on the cluster and for transferring data to and from the application program. The only prerequisite for the execution of WIGLAF is a Web-browser program on a user's personal computer connected with the cluster via the Internet. WIGLAF has a client/server architecture: The server component is executed on the cluster system, where it controls the application program and serves data to the client component. The client component is an applet that runs in the Web browser. WIGLAF utilizes the Extensible Markup Language to hold all data associated with the application software, Java to enable platform-independent execution on the cluster system and the display of a GUI generator through the browser, and the Java Remote Method Invocation software package to provide simple, effective client/server networking.

This program was written by Akos Czikmantory, Thomas Cwik, Gerhard Klimeck, Hook Hua, Fabiano Oyafuso, and Edward Vinyard of Caltech for **NASA's Jet Propulsion Laboratory**. *Further information is contained in a TSP (see page 1).*

This software is available for commercial licensing. Please contact Don Hart of the California Institute of Technology at (818) 393-3425. Refer to NPO-30842.

XML-Based Generator of C++ Code for Integration With GUIs

An open source computer program has been developed to satisfy a need for simplified organization of structured input data for scientific simulation programs. Typically, such input data are parsed in from a flat American Standard Code for Information Interchange (ASCII) text file into computational data structures. Also typically, when a graphical user interface (GUI) is used, there is a need to completely duplicate the input information while providing it to a user in a more structured form. Heretofore, the duplication of the input information has entailed duplication of software efforts and increases in susceptibility to software errors because of the concomitant need to maintain two independent input-handling mechanisms. The present program implements a method in which the input data for a simulation program are completely specified in an Extensible Markup Language (XML)-based text file. The key benefit for XML is storing input data in a structured manner. More importantly, XML allows not just storing of data but also describing what each of the data items are. That XML file contains information useful for rendering the data by other applications. It also then generates data structures in the C++ language that are to be used in the simulation program. In this method, all input data are specified in one place only, and it is easy to integrate the data structures into both the simulation program and the GUI. XML-to-C is useful in two ways:

1. As an executable, it generates the corresponding C++ classes and
2. As a library, it automatically fills the objects with the input data values.

This program was written by Hook Hua, Fabiano Oyafuso, and Gerhard Klimeck of Caltech for **NASA's Jet Propulsion Laboratory**. *Further information is contained in a TSP (see page 1).*

This software is available for commercial licensing. Please contact Don Hart of the California Institute of Technology at (818) 393-3425. Refer to NPO-30844.