sons for the activities. Each such document is highly parseable and can be validated easily. Another subcomponent of the uplink-planning component is the Activity Dictionary Markup Language (ADML), which eliminates the need for two mission activity dictionaries — one in a human-readable format and one in a machine-readable format. Style sheets that have been developed along with the ADML format enable users to edit one dictionary in a user-friendly environment without compromising the machine-readability of the format.

This program was written by Jeffrey Norris, Paul Backes, Mark Powell, Marsette Vona, and Robert Steinke 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-30676.

Tools for Administration of a UNIX-Based Network

Several computer programs have been developed to enable efficient administration of a large, heterogeneous, UNIX-based computing and communication network that includes a variety of computers connected to a variety of subnetworks. One program provides secure software tools for administrators to create, modify, lock, and delete accounts of specific users. This program also provides tools for users to change their UNIX passwords and log-in shells. These tools check for errors. Another program comprises a client and a server component that, together, provide a secure mechanism to create, modify, and query quota levels on a network file system (NFS) mounted by use of the VERITAS File SystemJ software. The client software resides on an internal secure computer with a secure Web interface; one can gain access to the client software from any authorized computer capable of running web-browser software. The

server software resides on a UNIX computer configured with the VERITAS software system. Directories where VERITAS quotas are applied are NFS-mounted. Another program is a Web-based, client/server Internet Protocol (IP) address tool that facilitates maintenance lookup of information about IP addresses for a network of computers.

These programs were written by Stephen LeClaire and Edward Farrar of Netlander, Inc., for **Kennedy Space Center**. *For further information, contact the Kennedy Commercial Technology Office at (321) 867-1463. KSC-12269/68/71*

Preparing and Analyzing Iced Airfoils

SmaggIce version 1.2 is a computer program for preparing and analyzing iced airfoils. It includes interactive tools for (1) measuring ice-shape characteristics, (2) controlled smoothing of ice shapes, (3) curve discretization, (4) generation of artificial ice shapes, and (5) detection and correction of input errors. Measurements of ice shapes are essential for establishing relationships between characteristics of ice and effects of ice on airfoil performance. The shape-smoothing tool helps prepare ice shapes for use with already available grid-generation and computational-fluid-dynamics software for studying the aerodynamic effects of smoothed ice on airfoils. The artificial ice-shape generation tool supports parametric studies since ice-shape parameters can easily be controlled with the artificial ice. In such studies, artificial shapes generated by this program can supplement simulated ice obtained from icing research tunnels and real ice obtained from flight test under icing weather condition. SmaggIce also automatically detects geometry errors such as tangles or duplicate points in the boundary which may be introduced by digitization and provides tools to correct these. By use of interactive tools included in SmaggIce version 1.2, one can easily characterize ice shapes

and prepare iced airfoils for grid generation and flow simulations.

This program was written by Mary B. Vickerman, Marivell Baez, Donald C. Braun, Barbara J. Cotton, Yung K. Choo, Rula M. Coroneos, James A. Pennline, Anthony W. Hackenberg, and Herbert W. Schilling of **Glenn Research Center**. *John W. Slater with Yung K. Choo contributed to the conception of the code. In addition, Kevin M. Burke, Gerald J. Nolan, and Dennis Brown of InDyne, Inc., contributed to developing training material. For further information, access http://icebox-esn.grc.nasa.gov/ext/design/smaggice.html.*

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-17399.

Evaluating Performance of Components

Parallel Component Performance Benchmarks is a computer program developed to aid the evaluation of the Common Component Architecture (CCA) — a software architecture, based on a component model, that was conceived to foster high-performance computing, including parallel computing. More specifically, this program compares the performances (principally by measuring computing times) of componentized versus conventional versions of the Parallel Pyramid 2D Adaptive Mesh Refinement library — a software library that is used to generate computational meshes for solving physical problems and that is typical of software libraries in use at NASA's Jet Propulsion Laboratory.

This program was written by Daniel Katz, Edwin Tisdale, and Charles Norton 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-30693.