Program Facilitates CMMI Appraisals

A computer program has been written to facilitate appraisals according to the methodology of Capability Maturity Model Integration (CMMI). [CMMI is a government/industry standard, maintained by the Software Engineering Institute at Carnegie Mellon University, for objectively assessing the engineering capability and maturity of an organization (especially, an organization that produces software)]. The program assists in preparation for a CMMI appraisal by providing drop-down lists suggesting required artifacts or evidence. It identifies process areas for which similar evidence is required and includes a copy feature that reduces or eliminates repetitive data entry. It generates reports to show the entire framework for reference, the appraisal artifacts to determine readiness for an appraisal, and lists of interviewees and questions to ask them during the appraisal. During an appraisal, the program provides screens for entering observations and ratings, and reviewing evidence provided thus far. Findings concerning strengths and weaknesses can be exported for use in a report or a graphical presentation. The program generates a chart showing capability level ratings of the organization. A context-sensitive Windows help system enables a novice to use the program and learn about the CMMI appraisal process.

This program was written by Wesley Sweetser of Goddard Space Flight Center. Further information is contained in a TSP (see page 1).

GSC-14782-1

Grid Visualization Tool

The Grid Visualization Tool (GVT) is a computer program for displaying the path of a mobile robotic explorer (rover) on a terrain map. The GVT reads a map-data file in either portable graymap (PGM) or portable pixmap (PPM) format, representing a gray-scale or color map image, respectively. The GVT also accepts input from path-planning and activity-planning software. From these inputs, the GVT generates a map overlaid with one or more rover path(s), waypoints, locations of targets to be explored, and/or target-status information (indicating success or failure in exploring each target). The display can also indicate different types of paths or path segments, such as the path actually traveled versus a planned path or the path traveled to the present position versus planned future movement along a path. The program provides for updating of the display in real time to facilitate visualization of progress. The size of the display and the map scale can be changed as desired by the user. The GVT was written in the C++ language using the Open Graphics Library (OpenGL) software. It has been compiled for both Sun Solaris and Linux operating systems.

This program was written by Rodrick V. China and Meng-Sing Liu of Glenn Research Center. Further information is contained in a TSP (see page 1).

GSC-14782-1

Solar-System Ephemeris Toolbox

NASA's Jet Propulsion Laboratory (JPL) generates planetary and lunar ephemeris data and FORTRAN routines that allow users to obtain state data for the Sun, the moon, and the planets. The JPL Solar System Ephemeris Toolbox, developed at Kennedy Space Center, is a set of functions that provides the same functionality in the MATLAB computing environment along with some additional capabilities. The toolbox can be used interactively via a graphical user interface (GUI), or individual functions can be called from the MATLAB command prompt or other MATLAB scripts and functions. The toolbox also includes utility functions to define and perform coordinate transformation (e.g., mean-of-date, true-of-date, J2000) that are common in the use of these ephemerides. An attached README file guides the user through the process of constructing binary ephemeris files, verifying correct installation, and using functions to extract state data. This process also can be performed using the GUI. Help from each toolbox function is available through MATLAB's “help” function. Many of the functions in the toolbox are MATLAB equivalents of the JPL-written FORTRAN programs and subroutines used for the same purposes. A novice can use the GUI to extract state data, while a more experienced user can use the functions directly, as needed, in his/her applications. The toolbox has been tested using MATLAB Releases 13 and 14.

This program was written by Charles F. Walker of Kennedy Space Center. For further information, access www.openchannelsoftware.org. KSC-12544

Data-Acquisition Software for PSP/TSP Wind-Tunnel Cameras

Wing-Viewer is a computer program for acquisition and reduction of image data acquired by any of five different scientific-grade commercial electronic cameras used at Langley Research center to observe wind-tunnel models coated with pressure-
or temperature-sensitive paints (PSP/TSP). Wing-Viewer provides full automation of camera operation and acquisition of image data, and has limited data-preprocessing capability for quick viewing of the results of PSP/TSP test images. Wing-Viewer satisfies a requirement for a standard interface between all the cameras and a single personal computer. Written by use of Microsoft Visual C++ and the Microsoft Foundation Class Library as a framework, Wing-Viewer has the ability to communicate with the C/C++ software libraries that run on the controller circuit cards of all five cameras. Wing-Viewer saves image data in tagged image file (TIF) version 6.0 format. Wing-Viewer can function on computers that run any of the several Windows operating systems, including Windows 95, 98, 2000, and NT.

This program was written by Tahani R. Amer and William K. Goad of Langley Research Center. Further information is contained in a TSP (see page 1). LAR-16474-1