New Automated Expert System and Development Tool

NASA offers companies the opportunity to license this user-friendly monitoring and control tool.

Developed at NASA Goddard Space Flight Center, the Generic Spacecraft Analyst Assistant (GenSAA) can be used to rapidly program real-time data monitoring and control systems. These "expert" systems automatically perform routine tasks, such as fault detection, isolation, and correction, with data. By automating many tedious tasks, GenSAA allows users to focus on other important responsibilities. Although developed for aerospace use, this proven technology is ideal for numerous commercial applications.

Benefits

- ***Real time:*** Produces nearly instantaneous responses
- ***Easy to program:*** Offers drag-and-drop templates for programming
- ***Reduced cost:*** Eliminates the need for outsourced programming experts
- ***Versatile:*** Can be used in any monitoring and control system
- ***Common operating systems:*** Runs on Windows or UNIX
- ***Reliable memory:*** Retains data between sessions
- ***User friendly:*** Provides programmers and users with a graphical user interface

National Aeronautics and Space Administration

Commercial Applications

This technology can benefit any routinely monitored data source:

- Spacecraft or airplane operations
- Automobile systems
- Industrial process control
- Power plant operations
- Biomedical monitoring of life support and diagnostic equipment
- Security systems

The Technology

NASA Goddard Space Flight Center's GenSAA software was originally developed for real-time operations in spacecraft control centers. During routine satellite-ground contacts, the flight operations team monitors the downloading of scientific data and/or the uploading of onboard stored commands. This process is simple and repetitive, which made it ideal for automation. NASA Goddard developed GenSAA to meet these needs.

A GenSAA expert system can be programmed to constantly search for faults in the data, take corrective actions, and notify the user of any serious problems. GenSAA's three integrated utilities facilitate this programming: the data manager, the rule builder, and the user interface display builder. The programmer uses the data manager to select the data to be monitored. The rule builder is used to define fault detection and isolation capabilities. It also is used to define any desired notification, response, or control actions desired for specific situations (e.g., an anomalous or critical situation). The programmer then lays out a graphical representation of the subsystem or process being monitored with the user interface display builder. All programming can be completed manually or by using simple "drag-and-drop" templates.

GenSAA can be combined easily with any existing data monitoring system by creating a bridge program to retrieve and send the data to GenSAA's data server.

Commercial Opportunities

This technology is part of NASA's technology transfer program. This program seeks to stimulate commercial use of NASA-developed technologies. A patent application has been filed for this technology, and numerous commercial applications exist. NASA invites companies to consider partnering with Goddard Space Flight Center to license the GenSAA technology for use in commercial applications.

For More Information

If you are interested in pursuing commercialization of this technology or if you would like more information, please contact:

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GSC-13672-1
11.8.00