

such as automated variable scaling and implicit integration grid refinement, support the integration methods.

OTIS4 is also significantly more user friendly than previous versions. The installation process is nearly identical on various platforms, including Microsoft Windows, Apple OS X, and Linux operating systems. Cross-platform scripts also help make the execution of OTIS and post-processing of data easier.

OTIS4 is supplied free by NASA and is subject to ITAR (International Traffic in Arms Regulations) restrictions. Users must have a Fortran compiler, and a Python interpreter is highly recommended.

*This work was done by John P. Riehl, Waldy K. Sjauw, and Robert D. Falck of Glenn Research Center and Stephen W. Paris of Boeing Phantom Works. 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: Steve Fedor, Mail Stop 4-8, 21000 Brookpark Road, Cleveland, Ohio 44135. Refer to LEW-18319-1.*

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### **Computer Software Configuration Item-Specific Flight Software Image Transfer Script Generator**

A K-shell UNIX script enables the International Space Station (ISS) Flight Control Team (FCT) operators in NASA's Mission Control Center (MCC) in Houston to transfer an entire or partial computer software configuration item (CSCI) from a flight software compact disk (CD) to the onboard Portable Computer System (PCS). The tool is designed to read the content stored on a flight software CD and generate individual CSCI transfer scripts that are capable of transferring the flight software

content in a given subdirectory on the CD to the scratch directory on the PCS. The flight control team can then transfer the flight software from the PCS scratch directory to the Electronically Erasable Programmable Read Only Memory (EEPROM) of an ISS Multiplexer/Demultiplexer (MDM) via the Indirect File Transfer capability.

The individual CSCI scripts and the CSCI Specific Flight Software Image Transfer Script Generator (CFITSG), when executed a second time, will remove all components from their original execution. The tool will identify errors in the transfer process and create logs of the transferred software for the purposes of configuration management.

*This work was done by Kenny Bolen and Ronald Greenlaw of The Boeing Company for Johnson Space Center. For further information, contact the JSC Innovation Partnerships Office at (281) 483-3809. MSC-23631-1*