(NOTE: This does not need to be forecast as foreign conference travel since it came in through the Speakers' Bureau and I will be giving this talk on my own time. However, since it reports on work related to JPL I need to have clearance for this abstract. There will not be a paper out of this; I will be giving a 90-minute lecture only, which will be translated into Spanish in real time.)

Abstract

For International Electronics and Computing Congress
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Instituto Tecnologico y de Estudios Superiores de Monterrey
(ITESM)

Software Re-Engineering: A Case Study

Thomas W. Starbird

A case study will be presented, illustrating issues and solutions related to software re-engineering.

Object-oriented design and coding were used in re-engineering a program called SQ GEN. Earlier versions of the program were hosted on a mainframe computer, and were each specific to a particular flight project. The new version is multimission, and is hosted on a workstation. The talk will describe the design process used, the style of documenting the design, the management of the design and coding, and some lessons learned concerning C++ coding.

SQ GEN is a category A program used in planning the sequence of activities requested to be done by the spacecraft. The program displays a sequence in graphical timeline format on a workstation's screen. When the user changes details of a requested activity in the sequence, the new version is expanded into the implied spacecraft commands, and the timeline is updated.

The work described in this abstract was performed by the Jet Propulsion Laboratory, California Institute of Technology, under contract to the National Aeronautics and Space Administration.