UPLINK PROCESS FOR THE TOPEX/POSEIDON EARTH ORBITER

Abstract
--- Poster Paper --

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The historical JPL space flight missions have been focused on interplanetary exploration, characterized by long cruise periods ending with a unique, intense flyby of a planetary body. In contrast, the TOPEX/POSEIDON mission requires sustaining a daily, high level of activity for multiple years; thus, a basic realignment of the traditional planetary uplink approach was needed. Severe limits were placed on the size of the allowable team and process length, while requiring risk to be minimized. The result is a process that, while tailored to a repetitive mission, is also safe and responsive to last minute changes in the scheduled activities brought about by shuttle activities, instrument SEU's, ground system problems, and requests from international partners. This process has been a major contributor to the ability of the TOPEX/POSEIDON Project to capture over 99.9% of all science data, and the subsequent unprecedented insight into oceanic currents.

The proposed paper would cover:

Uplink Process	JPL's experience in designing and operating an uplink process for an earth orbiter with fixed ground track and repetitive activities, while retaining the ability to respond quickly to requests from local and international partners.
TDRSS	JPL's experience as the first remote POCC for TDRSS.
Software Design and Implementation	Design and implementation of uplink software in a minicomputer Unix environment, and its contribution to flexible automation of the uplink processes
Management	Empowerment of the uplink personnel to make and implement sequence process and design decisions.
Spacecraft Operability	Contribution of spacecraft design to flexibility in the uplink process.