

A PACKET TELEMETRY AND COMMAND PROCESSING SYSTEM FOR SMEX SPACECRAFT AND INTEGRATION TESTING

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ABSTRACT

To meet the new demands of higher data transmission rates, data networking, and data processing, the Consultative Committee for Space Data Systems (CCSDS) has recommended a new telemetry format, namely packet telemetry. The packet telemetry format is considered as a future data format for the Flight and Ground Data System of various NASA programs from the Small Class Explorer (SMEX) to the Space Station Freedom.

By utilizing experience already gained in the use and application of VLSI technology developed in packetized data processing at Goddard Space Flight Center, the Telemetry and Command Processing System (TCPS), a front-end processing system, is being built in-house to support the SMEX Spacecraft Integration and Test. This paper describes the architecture, components and technical approach for the TCPS.