

## **JPL Deep Space Network – Telemetry Processors**

RT Logic announces that NASA's Jet Propulsion Laboratory (JPL) has installed its Telemetrix™ 505 product to serve as part of the downlink telemetry processing for the Deep Space Network. Known as the Telemetry Processor (TLP), the Telemetrix505 (T505) processes a wide array of downlink signals from a variety of interplanetary and earth orbiting satellites. The Deep Space Network is NASA's international network of antennas located at Goldstone, California; Madrid, Spain; and near Canberra in Australia.

The T505-based TPL performs digital signal processing and data routing. Signal processing includes Viterbi Decoding, Time Tagging, Frame Synchronization and Reed/Solomon Decoding. The TLP routes data to and from external data decoders and enables archival of acquired telemetry. The TLP includes a processor that hosts JPL-developed software for further mission-specific data processing.



**Goldstone Antenna (Courtesy of JPL)**

RT Logic was awarded an initial contract from JPL in October 1999 with requirements for a prototype TLP and three production TLPs. The delivery of the prototype TLP occurred in December 1999. Delivery of the three production TLPs occurred in October 2000. JPL also exercised the 28 unit production option with RT Logic for upgrades of the ground systems at Goldstone, Madrid and Canberra.

Hardware for the T505 based TLP includes a 12 Slot VME chassis, two PowerPC processors running VxWorks operating system, a 9GB Hard Disk Drive, a VME Viterbi Decoder/Data Multiplexer Card, and a PMC module for Frame Synchronization with Reed/Solomon decoding. RT Logic developed the device drivers for the VME Viterbi Decoder Card and the PMC Frame Synchronizer, configured all of the hardware within the VME chassis, integrated the software and hardware, created system documentation, and conducted acceptance testing.

Sean J. Conway, RT Logic's Vice President and Project Manager for the effort, said, "We are extremely pleased to have been selected by JPL for this important upgrade. Our blend of COTS technology with limited new development, allowed us to meet the aggressive schedule and provide JPL with a flexible system for future enhancement." He also stated, "JPL's desire to integrate the T505 into an existing software control environment was made easy with the use of our open software architecture."

Using a standards based, open architecture, the Telemetrix 505 employs the "best of breed" commercial-off-the-shelf (COTS) telemetry processing products to meet program requirements. The Telemetrix 505 is used for digital telemetry data processing in a satellite control center to perform satellite PCM telemetry monitoring (Including both IRIG and CCSDS formats), PCM simulation, encryption/decryption device interfacing, and commanding.

RT Logic is a leading provider of open architecture systems and products for satellite ground operations, satellite test activities, and launch vehicle/range telemetry acquisition. RT Logic's Telemetrix 70/70 and Telemetrix 508+ complement the Telemetrix 505. For more information, please call (719) 598-2801, email: [sales@rtlogic.com](mailto:sales@rtlogic.com), or check out [www.rtlogic.com](http://www.rtlogic.com).