

# ONBOARD CHECKOUT COMPUTER SOFTWARE - CHALLENGES IN VERIFICATION AND VALIDATION

B. Anupama, P.K. Abraham, T. Gopalakrishnan, B. Valsa  
Vikram Sarabhai Space Centre (VSSC)  
Department of Space, ISRO Post  
Thiruvananthapuram-695 022, India  
Email : [b\\_anupama@vssc.gov.in](mailto:b_anupama@vssc.gov.in)

## Abstract

OnBoard Checkout Computer (OBCC) is a new concept introduced in RLV-TD. Conventional checkout systems are ground based systems, and are used to ensure the health of the vehicle, during checkout phase. These systems communicate with the vehicle, for commanding and data acquisition, through umbilical lines, 1553 coaxial cables. OBCC resides onboard of RLV, thereby reducing the connection complexities between vehicle and ground. The OBCC software execute command from ground checkout systems, acquire and process the analog and digital data, and telemeters selected parameters to ground. In this paper we provide an overview of the OnBoard Checkout Computer, the OBCC software and, and discuss in detail, the various verification and validation activities carried out for clearing OBCC software for RLV-TD.

**Keywords:** Checkout, Verification, Module Testing, Software Life Cycle, Regression Testing