

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
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A INTEGRATED AVIONICS SYSTEM ARCHITECTURE FOR FUTURE REUSABLE LAUNCH
VEHICLE BASED ON TIME-TRIGGER

Abstract

Reusable launch vehicle is an important development direction of future space transportation system, which presents an opportunity to reduce the cost of launching and time of preparation while improving the reliability and safety compared with launch vehicle in service. The integrated avionics system on reusable launch vehicle provide functions such as guidance, navigation and control, TTC and communication, the vehicle management, etc. In term of the mission, Reusable launch vehicle will suffer launching, entry and landing time after time. This challenge the present integrated electronics information system, which requires that the system must be resource efficiency/reliability/realtime/isolation and easy to maintain. This paper presents a kind of system architecture based on time-trigger, and also analyzes the kernel process unit, communication network, integrated navigation system.