

SPACE TRANSPORTATION SOLUTIONS AND INNOVATIONS SYMPOSIUM (D2)
Solutions for Human Flights in China (9-D6.2)

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IMPLEMENTATION AND RESEARCH ON THE PRINCIPLE TESTING PLATFORM BASED ON
INTELLIGENT ICD FOR BUS REDUNDANCY CONTROL SYSTEM

Abstract

With the development of information technology and computer technology, bus technology has been widely applied in the aerospace field. Compared with the traditional information transmission technology, with the characteristics of information digitization and interface standardization, bus technology can make the system design simplify. Therefore, it has recently received more and more attention and gradually becomes a topic of considerable interests over the past few years, and varied bus protocols have been proposed to deal with different problems. However, there are great differences in aspects of electrical interface and data format between various bus, and the simulation testing system designed for a certain bus is difficult to apply directly to another bus. Based on these reasons, how to construct universal testing system is still a difficult problem. Recently, the interface control document (ICD) design idea is used in simulation testing system design, which can define various bus interface in a unified form. With the ICD, a universal testing system which supports multiple bus standards can be constructed. Presently, most of the testing system design is based on ICD technology, but not intelligent ICD. A simulation testing system based on intelligent ICD has the characteristics of automatization and generalization. In this paper, the intelligent ICD design ideas and the organization characteristics of intelligent ICD simulation testing system are introduced, and the principle testing platform based on intelligent ICD for certain type rocket bus redundancy control system is built. As shown by the engineering practice, the intelligent ICD simulation testing system can realize the simulation testing functions with high efficiency and reliability, which has fairly application value and deserves to be generalized.