

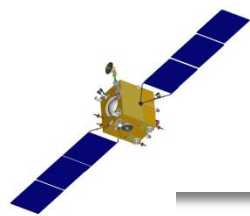


中国空间技术研究院 控制与推进系统事业部

China Academy of Space Technology, CASC

Research on One Satellite Flight Control Simulation and Support System

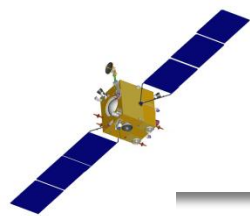
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1 Introduction

- ◆ The characteristics of the satellite
- ◆ The characteristics and effects of the system of flight control support and simulation of the satellite

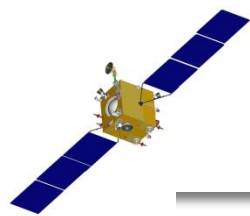




2 Major functions

- ◆ Preparation stage before the mission
- ◆ Before the major events during mission implementation
- ◆ After the major events during mission implementation
- ◆ 1: 1 Simulation flight





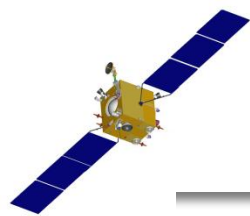
3 System configuration and working principle

The system of flight control support and simulation consists of three sub-systems:

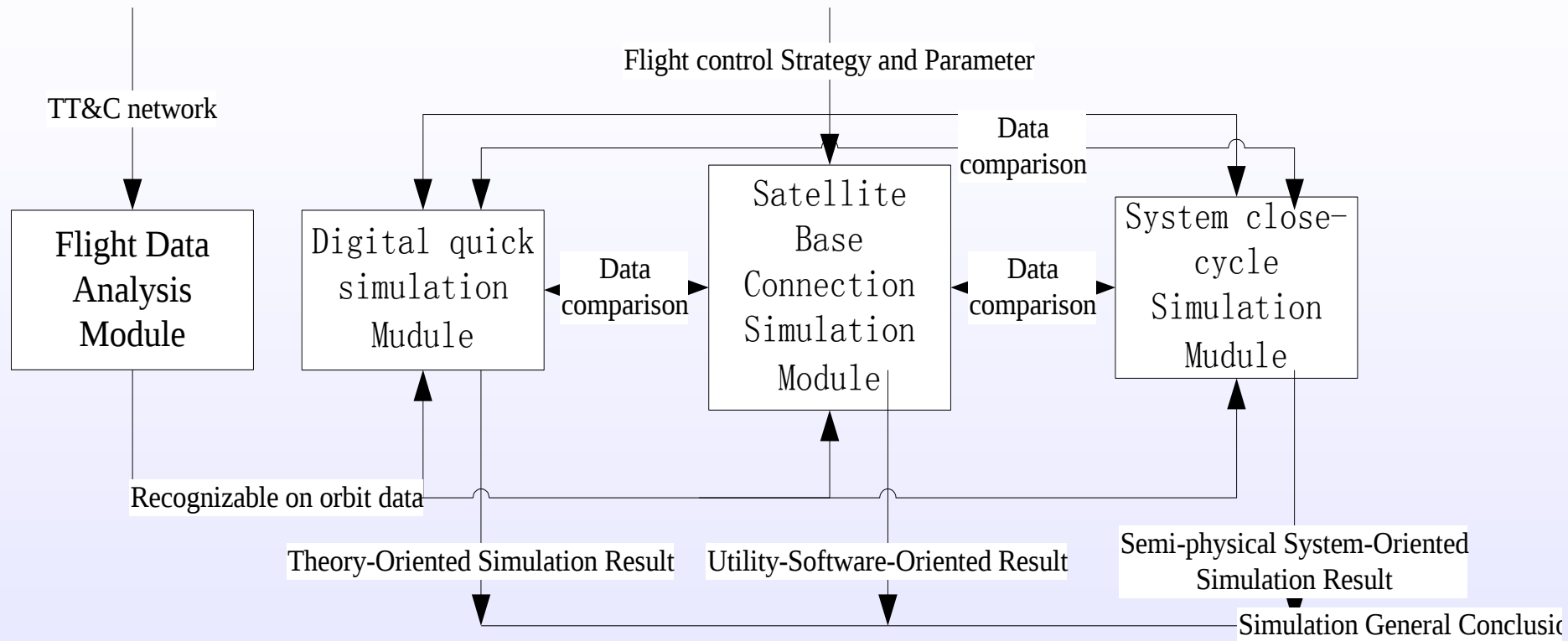
- ◆ Sub-system of digital quick simulation
- ◆ Sub-system of closed-cycle simulation
- ◆ Sub-system of satellite and base connection simulation

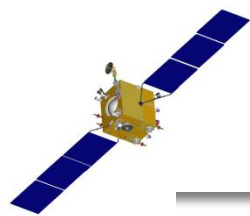
They form an interdependent organism but at the same time each one is a comparatively independent small system, and synchronizes with the satellite through TT&C network.





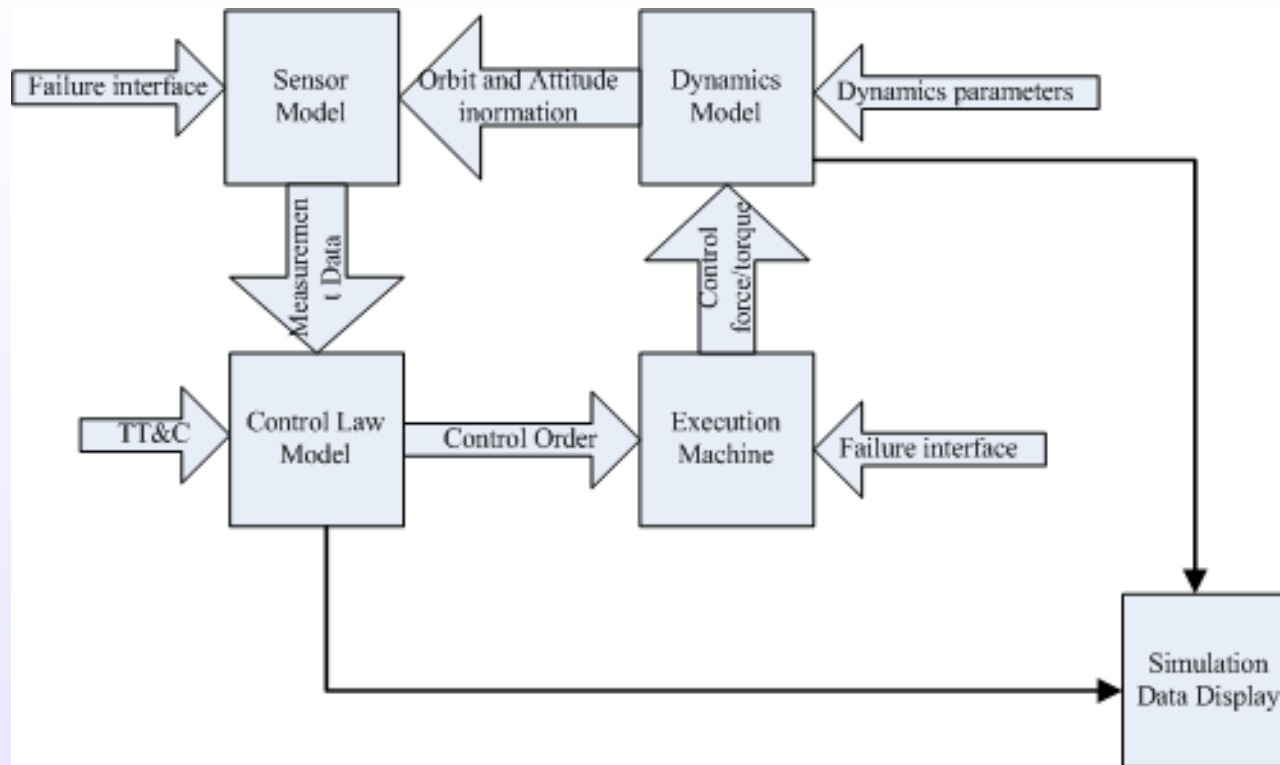
3 System configuration and working principle

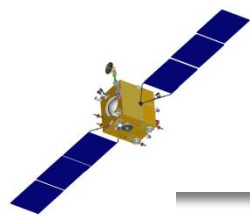




3 System configuration and working principle

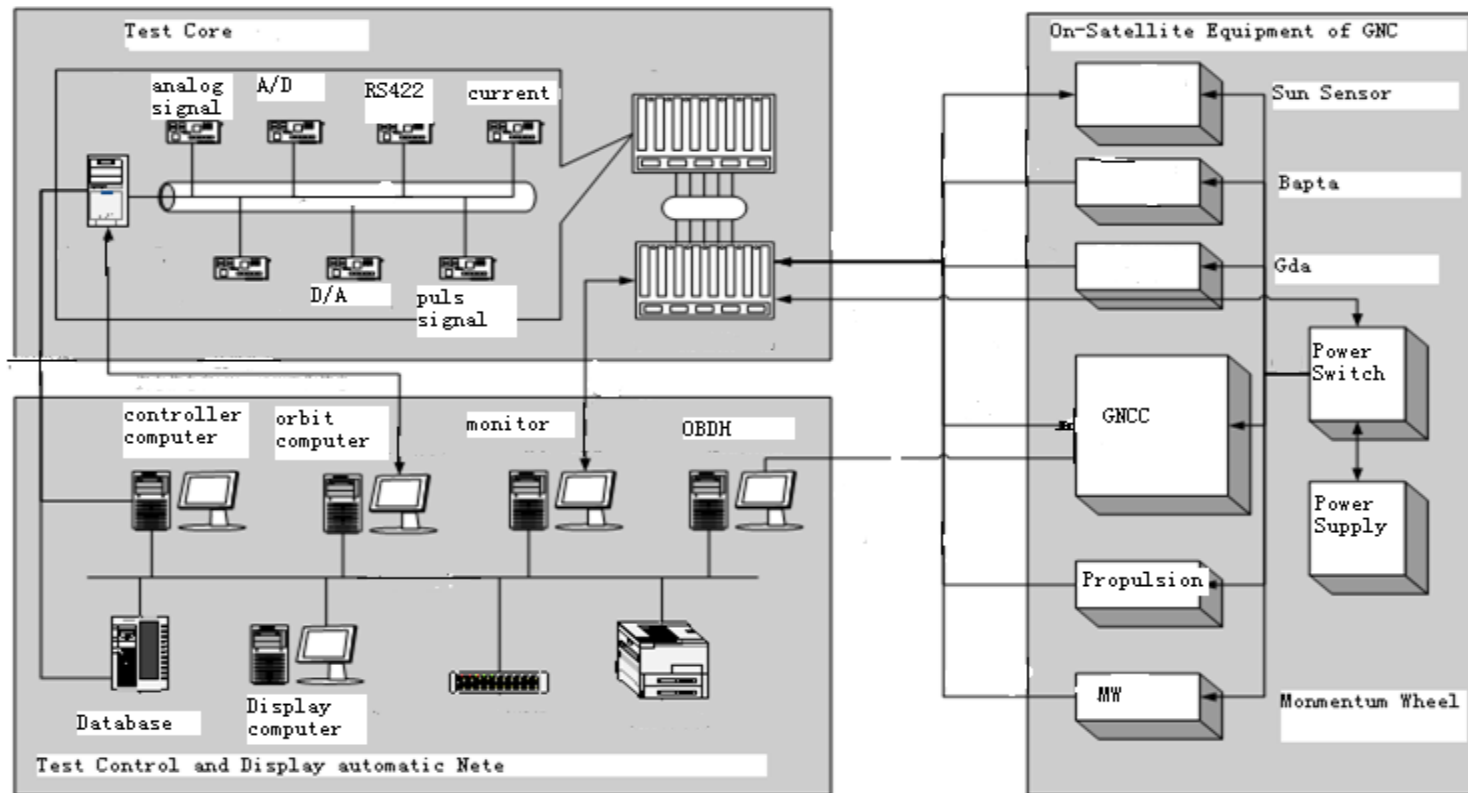
Sub-system of digital quick simulation

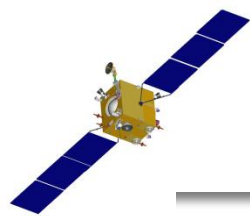




3 System configuration and working principle

Sub-system of Closed-cycle Simulation Test

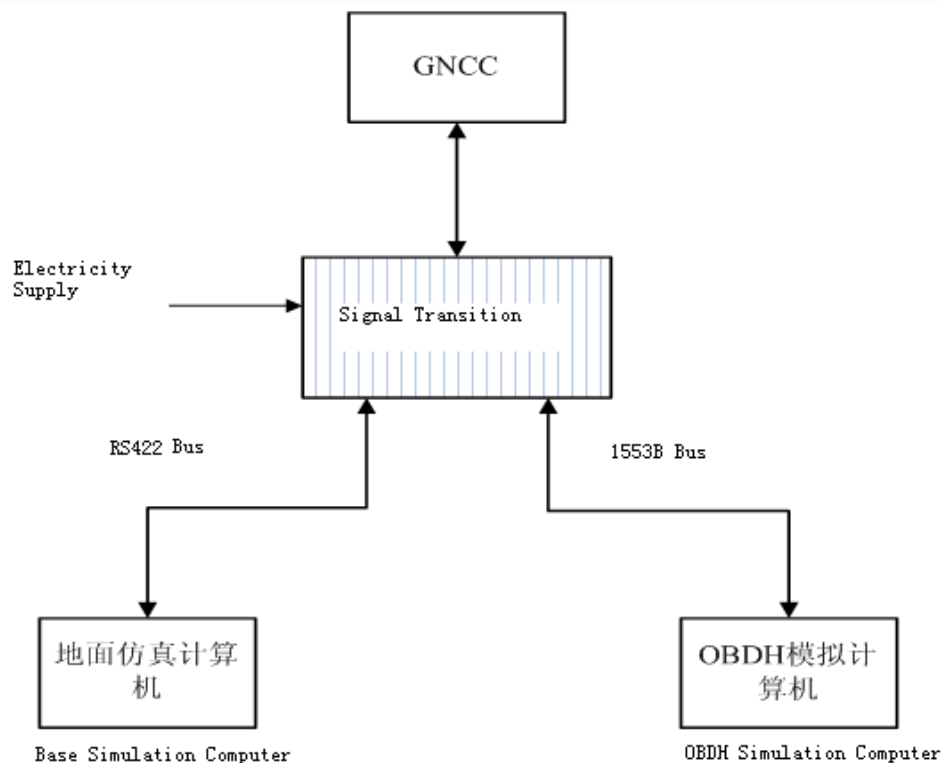


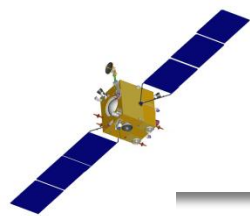


3 System configuration and working principle



Sub-system of Satellite and Base Connection Simulation

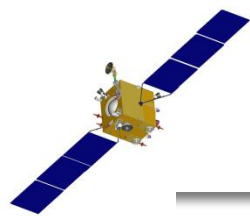




4 Aspects of Technology Improvement

- ◆ The general frame and design idea of the practical and multi-function system of satellite flight control support and simulation
- ◆ Test equipment with high quality
- ◆ Simulation technique of the combination of normal mode and failure mode
- ◆ Strong real time and highly dependable flight control support technique aiming at deep space exploration

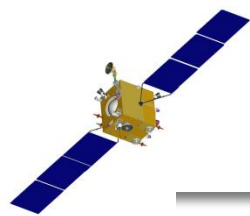




5 Application Result

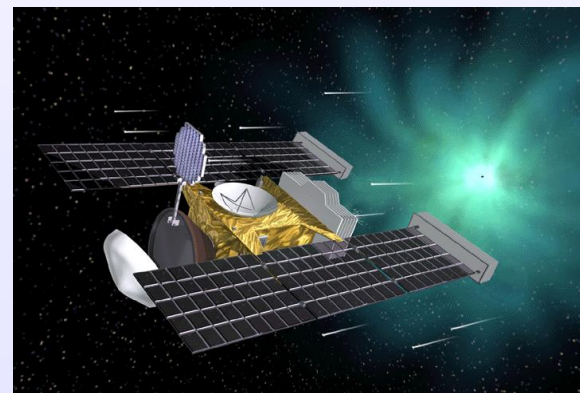
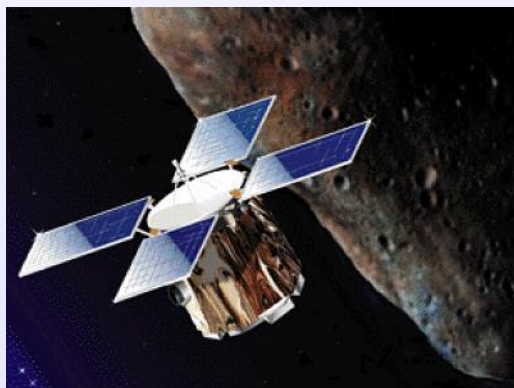
- ◆ Advance verification of flight control events
- ◆ Checking of orbit control strategy
- ◆ Test of flight control implementation order and parameter
- ◆ Management and analysis of flight remote test data
- ◆ Base test of flight parameter at stage of on-orbit test

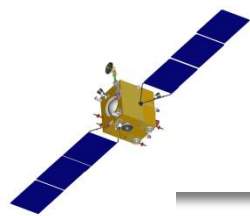




6 Conclusion

Conclusion and Prospect





Thanks !

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