

49th IAA SYMPOSIUM ON SAFETY, QUALITY AND KNOWLEDGE MANAGEMENT IN SPACE  
ACTIVITIES (D5)

## Risk Management for Safety and Quality in Space Programs (1)

Author: Mr. Haiguang Liu

China Academy of Launch Vehicle Technology(CALT), China, lhg82@163.com

Ms. Keqin Li

China Academy of Launch Vehicle Technology(CALT), China, celia13celia@163.com

STUDY ON LIFE CYCLE QUALITY MANAGEMENT OF THE AEROSPACE ADVANCED  
DEVELOPMENT FLIGHT DEMONSTRATION PROJECT**Abstract**

The development of aerospace pre research flight demonstration project is conforms to the current trend of space equipment, and it provides technical reserves for the future development of space equipment. The development process of aerospace pre research project is similar to the traditional space project. But the aerospace pre research project has its own characteristics of tight schedule, less fund, great technical uncertainty and diversity suppliers. In order to achieve the flight demonstration test of aerospace pre research project fast, the quality management in the whole life cycle of the project needs to explore an innovation road which is suitable for the project features and guides the quality management work of high efficiency. The development process of aerospace pre research project is divided into three stages: concept design, prototype and flight demonstration. At the beginning of the project, tailor-made quality management regulations are defined. The "Quality Assurance Program" is established, and each development stage has focused on the quality work of his own, for instance, the concept design stage pays close attention to the correctness and feasibility of the principle, the prototype stage is focused on the ground test results and the realization of the design and production, the flight demonstration stage focus on the impact of changes in the state of technology, and concerns about whether the reliability and manufacturing process of products meet the requirements. During the developing course, we work in an innovative manner. A number of new fine quality management methods are widely used, such as "quality tips everyday" ,"quality regulations release to the final suppliers" ,"experts ' comments Itemization" ,"Quality supervisor Tracking production and test" ,"field investigation and scientific supplier management". We, meanwhile, make full use of the information and network technology to make the quality management becomes more efficient. Through developing and implicating of the electronic network quality board, the quality consciousness of whole staff is improved. By establishing and operating the quality information management and assistant decision system, the leaders of the project can grasp the dynamic quality information quickly, and the assistance decisions are also provided to them. Through the implementation of the whole life cycle quality control methods, the flight test of the aerospace pre research project achieves a complete success. It also provides a useful reference for the quality management of future aerospace pre research project.