

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

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

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## STUDY OF RELIABILITY IMPROVEMENT USING SYSTEM MODELS

**Abstract**

There were problems that developing and practical use cost was increased due to occur nonconformity in development testing and practical use as the former rocket development. This cause was analyzed as the required specifications by system design phase and subsystem design phase was not enough thought. And the reliability design by the design phase was not enough thought too. In this study, we tried system design using system model about a rocket system (vehicle). We analyzed requirement from basic requests of a rocket, and did reliability analyses (Failure Mode and Effect Analysis: FMEA). In the result, we could relate a specification request to basic requests by assembling system configuration from requirement analysis. We think it was possible to become clear about subsystem requirements also. It's possible to prevent to miss considerations, overlap considerations and misunderstanding requirement between the engineers in the system design phase. By the method stated above, we can expect to be able to reduce the nonconformity by the development testing and practical use.