

31st IAA SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)  
Strategic Risk Management for successful space & defence programmes (6)

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DEVELOPMENT OF QUANTITATIVE RISK MANAGEMENT METHOD FOR DECISION MAKING

**Abstract**

Aerospace technology is often difficult to quantitatively determine because of the high uncertainty and the small amount of data accumulated. So in many cases, the risks have been evaluated qualitatively by experienced engineers, practitioners and managers. If an organization performs multiple projects, it may result in differences in risk identification and evaluation for each project, making it impossible to control the risks or to collectively determine the risks at the institutional level. This study proposes a simple method to monitor the Agency's risk situation by objectively quantifying the risks of different projects at the agency level. For each project, a risk index is calculated by quantitative analysis of each risk and identification of the risks, taking into account such as duration of performance, budget and technical issues. Specifically, project risk indexes are calculated for each project by considering risk indexes for each risk item and risk indexes for each project schedule. PRA(Probabilistic Risk Analysis) was used to assess technical risks of projects with little or no development data initially accumulated in the process, and existing quantitative methods were used when other development data are available. In the following steps, project risk indices are derived by adding together all of the risk indices in the project, identifying the actual performance status and steps relative to the overall project schedule, and applying the weights to the schedule. By monitoring the trend of this integrated risk index, we can identify trends that are experiencing drastic changes or increasing risks. These results can help determine the projects that affect the overall risk management and the major risk factors within the project, and then use them to make decisions related to risk.