Paper ID: 31773
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14TH IAA SYMPOSIUM ON BUILDING BLOCKS FOR FUTURE SPACE EXPLORATION AND DEVELOPMENT (D3)
Space Technology and System Management Practices and Tools (4)

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SCHEDULING AND BUDGETING OF THE METOP SATELLITES WITH COMBINED ESTIMATE TECHNIQUE

Abstract

According the project management literature, only approximately one third of the projects are concluded conform to the baseline of schedule and budget, unfortunately, the series of three polar orbiting meteorological satellites of the MetOp programme are included into the cases of projects that were not concluded conform to the planned schedule and budget. The Meteorological Operational satellite programme (MetOp) is a European undertaking providing weather data services to monitor the climate and improve weather forecasts. Between the challenges found in project management, this paper deal of the scheduling and budgeting processes which considering the aleatory uncertainties (duration and cost) of the projects, with the implementation of the combined estimative technique for the scheduling and budgeting of the MetOp satellites. Combined estimate technique provides analytical and graphical tools for project planning, given that the modeled duration depends on the planned duration and on the cost aleatory uncertainty (variability), as well as the modeled cost depends on the planned cost and on the duration aleatory uncertainty (variability), and the durations and costs of the project are represented in the bidimensional and trade-off graphics (time versus cost). Combined estimate technique was implemented and validated through analysis of scheduling and budgeting of MetOp-A, B and C satellites. With inverse kinematic of the combined estimate technique was possible to model the durations and costs variabilities of MEtOp-A and B. These modeled variabilities of MEtOp-A and B was utilized through direct kinematic of the combined estimate technique to model the durations and costs of MetOp-C. The modeled durations and costs of MetOp-C were compared and validated with expected durations and costs of MetOp-C. Therefore, it is concluded that the combined estimate technique may be applied widely to support the scheduling and budgeting as well as the Enterprise Risk Management processes of the projects of different types of industries and sectors, including the space projects.