SMALL SATELLITE MISSIONS SYMPOSIUM (B4)
Small Space Science Missions (2)

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FOCUSING ON SCIENTIFIC RETURNS THROUGH RESULT-BASED MANAGEMENT OF SMALL SPACE SCIENCE MISSIONS

Abstract

Satellite missions are complex project that require careful planning and diligent control in order to be successful. However, success can be defined differently depending on perspective. The project manager will reach its objective by delivering a functional satellite at the end of the implementation phase, with compromise on schedule, cost and scope if necessary. The mission manager will focus on the science achievements resulting of the mission as a measure of success. Although not necessarily opposed, program success is most often based on short-term technical delivery while mission success relies on mid to long-term science return.

Results-based management paradigm focuses on performance and achievement of outputs, outcomes and impacts. The specified results should be measurable and relevant. Although the delivery of technical product could be seen as an appropriate result, it is not the intent of such management strategy. The targeted results should be those emanating from the delivery of the technical product.

The Government of Canada uses contribution agreements inside the framework of the Policy on Transfer Payments to further government policies and department's objectives. Projects implemented through such agreements have to be results-based managed. To date, the Canadian Space Agency (CSA) has implemented one science mission (e-POP on CASSIOPE) using such strategy. Also, the CSA has recently obtained approval for a new Grants and Contributions program, where small space science missions (under CAD$ 5M) would be potentially funded. The CSA ORBITALS small satellite mission, currently in phase A, could also be a potential candidate for such funding mechanism.

This paper first analyses the conditions for using contribution agreements for science missions. It also details the impact for the program management and for the science output of using result-based management for science missions. Using the two classes of missions (below and above CAD$ 5M) and case studies, the benefits of using such approach are demonstrated. In fact, using the results-based management approach for science missions, with proper science outcome as measure of success for the program, the responsibility of mission success will shift from the mission manager to the project manager. As the project manager would be accountable for schedule, cost, technical scope and scientific returns, the latter should then be at least as important as the others when compromises are needed. Using this results-based management scheme, it is believe that the scientific outcome will be the focus of science missions, what actually common sense would naturally dictates.