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Space systems — Guidelines for the management of systems engineering

Systèmes spatiaux — Lignes directrices pour le management de l'ingénierie système



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Foreword

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Introduction

There is general consensus that to accomplish space programme/project requirements, it is mandatory to manage the systems engineering activities. The main role of systems engineering management is to ensure system performance conforms with expressed need, and to control the technical risks involved in development. Also, cost and schedule parameters are taken into account in space systems engineering in the search of optimal performance.

Thus, this document provides guidelines for managing the systems engineering activities related to planning, assessment and control of space programmes/projects.

These guidelines are intended to identify a set of recommendations to help customers and space system organizations to establish management requirements for systems engineering activities and help the organization to construct the elements of the systems engineering management plan (SEMP).

Given the need for systems engineering management, the overall systems engineering activities can be divided into two types:

- systems engineering management activities related to programme management which comprise planning, assessing, controlling, trade-off studies and decision making;
- the technical activities themselves, linked to the technical processes (stakeholder requirements analysis, system requirements analysis, system architectural design, system detailed design and assembly, integration, and verification and validation) applied to the system.

Therefore, systems engineering management reinforces the technical viewpoint within programme management.

In these guidelines, a set of leading indicators are suggested as measures for evaluating the effectiveness of each space systems engineering activity. Leading indicators are important tools for project management to make interventions and actions to avoid rework and wasted effort during the whole system engineering life cycle.