

IAF SPACE SYSTEMS SYMPOSIUM (D1)

Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards. (5)

Author: Dr. Francesco Bordi

The Aerospace Corporation, United States, francesco.bordi@aero.org

Dr. Debra Emmons

The Aerospace Corporation, United States, debra.l.emmons@aero.org

Mr. Steven Shinn

NASA, United States, steven.a.shinn@nasa.gov

Mr. ROBERT BITTEN

The Aerospace Corporation, United States, robert.e.bitten@aero.org

HOW TO SET REQUIREMENTS AND MANAGE TO THEM

Abstract

The portfolio of space flight science missions at NASA is divided into various classes, ranging from large and complex flagship missions to small responsive missions.

We discuss in this paper a scheme to rationally decide to which class a proposed mission should be assigned, how to define the requirements for that mission, and how to manage to those requirements.

The decision criteria include: expected development time; whether technology development is required prior to mission initiation; the life-cycle budget; the difficulty of the measurement and/or the operational requirements; the flexibility of the funding and performance requirements (to achieve Level 1 science), and the design lifetime.

In our scheme, the requirements definition phase and management to those requirements will differ based on the class of the mission.

This paper seeks to reduce the perceived ambiguity around mission class designation, and the resulting requirements definition and mission implementation processes.