

RELIABILITY AND MAINTAINABILITY STANDARD FOR SPACEFLIGHT AND SUPPORT SYSTEMS

1. SCOPE

1.1 Purpose

1.1.1 This document specifies technical objectives and related strategies for NASA programs and projects to be used in planning, executing and evaluating Reliability and Maintainability (R&M). These objectives include a comprehensive set of considerations for projects and programs utilized as specified that impact reliability, as well as the specific activities for the R&M technical discipline. These considerations relate to R&M during the design, evaluation, and operation of spaceflight systems, and establish guidelines for the planning and review of related engineering and assurance activities across the lifecycle. This set of objectives, strategies and implementation guidelines are intended to promote a high level technical excellence in achieving R&M goals for all programs and projects.

1.1.2 Mandatory elements of this Standard require programs and projects to use these objectives and strategies during the planning of activities and formulation of requirements, and establish and justify to what extent and in what way they are addressed, commensurate with the accepted level of risk to safety and mission success. Upon agreement by the stakeholders and Safety and Mission Assurance (SMA) Technical Authority, the program or project is required to act in accordance with their plan. The program is expected to demonstrate that the various objectives identified in the plan are satisfied to an acceptable level during the review process. This Standard recognizes that meeting R&M objectives in a comprehensive endeavor that is achieved in an interdisciplinary manner in the execution of program and project activities over the lifecycle in cooperation with the Systems Engineering of the program and project.

1.1.3 While this document may give guidance with processes associated with the objectives, it is generally not the intent of this Standard to prescribe particular processes, rather to allow programs and projects to select effective means of incorporating R&M considerations into their activities and to enable innovation. Guidance is provided to help programs, projects, contractors, and providers select appropriate processes and methods. Additional guidance may be issued in the form of handbooks or technical bulletins.

1.2 Applicability

1.2.1 This Standard is approved for use by NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers, and may be cited in contract, program, and other Agency documents as a technical requirement. This Standard may also apply to the Jet Propulsion Laboratory (JPL) or to other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in their contracts, grants, or agreements.

1.2.2 This Standard does not apply to facility projects except for critical technical facilities specifically developed or significantly modified for Space Flight Systems as identified in NPR