1. (normative)  
   Mission description document (MDD) - DRD
   1. DRD identification
      1. Requirement identification and source document

This DRD is called from ECSS-E-ST-10, requirement 5.3.1a.

* + 1. Purpose and objective

The objective of the mission description document (MDD) is to provide input for the later selection of the best concept meeting the mission statement (MS) in iteration with the preparation of the preliminary technical requirements specification (TS) (as defined in ECSS-E-ST-10-06 Annex A).

It is prepared in Phase 0 and Phase A for each possible concept, as indicated in requirement 5.3.1a.

Links and chronology amongst the MS, TS, MDD, system engineering plan, project management plan and system concept report are provided on the Figure B-1.

The MDD is produced by the top-level customer (as described in ECSS-S-ST-00 clause 6.1 and figure 6-1) (typically an Agency or other institutional actors) and defines a concept that aims at satisfying the preliminary technical requirements specification, and presents how the objectives, operation profile, major system events and capabilities, contingencies and performance standards are expected to be achieved.

For each mission concept, the MDD is a complete description of that concept. And to each MDD a SEP evaluating the related system engineering effort and a report evaluating the related programmatic aspect are associated.

The system concept report assesses the different concepts from a technical, programmatic and risk point of view, includes a trade-off including weighting factors which bears some management aspects, followed by a system concept selection.



: Relationship between documents

* 1. Expected response
     1. Scope and content

Introduction

The MDD shall contain a description of the purpose, objective, content and the reason prompting its preparation (e.g. logic, organization, process or procedure).

Applicable and reference documents

The MDD shall list the applicable and reference documents in support to the generation of the document, and include, as a minimum, the current preliminary technical requirements specification.

Preliminary technical requirements specification summary

The MDD shall provide a summary of the preliminary technical requirements specification objectives and list the design driving requirements, derived from the current initial specification.

Concept description

The MDD shall provide:

Overview of the concept

Mission analysis

System description, element by element

Description of how the system works in each mission phase

Performance drivers

Constraints

Main events

Operations scenarios

* 1. 1 to item 3: For example: For a spacecraft, its ground control segment, and a user segment, e.g.
     + 1. Space Segment
     + Payload
     + Platform
     + Launch Vehicle
     + Orbit related aspects
     + On-Board Data Handling
     + Reference Operation Scenarios / Observation characteristics
     + Operability / Autonomy Requirements
       1. Ground Segment
     + Functional Requirements and Major Elements
     + Monitoring and Control Segment
     + Data Processing Segment
       1. User segment
     + Functional Requirements and Major Elements
     + Monitoring requirements
  2. 2 to item 4: For example: For a spacecraft, the following phase:
     + Launch preparation
     + Launch and Early Orbit Phase
     + In Orbit Commissioning
     + Nominal Operations
     + Spacecraft Disposal

<<deleted and moved as item 4 into requirement B.2.1<4>a>>

Assessment of the performance

The MDD shall provide the

assessment against the current preliminary technical requirements specification requirements, and

identification of non-compliances, and their impact on the current preliminary technical requirements specification.

Identification of risk areas

The MDD shall provide the list of identified risk related to the concept, including as a minimum technology, contingencies handling, and programmatic aspects.

Conclusion

The MDD shall summarize the strengths and weaknesses of the concept.

* + 1. Special remarks

None.