1. (normative)  
   Communication system architectural design document (CSADD) - DRD
   1. DRD identification
      1. Requirement identification and source document

This DRD is called from ECSS-E-ST-50, requirements 5.2.3.3a, 5.2.4.3b and 5.2.4.3f

* + 1. Purpose and objective

The communication system architectural design document (CSADD) describes the architectural design of the communication system defined in the CSBD (see ECSS-E-ST-50 Annex B).

The CSADD describes the design to the level where its functionality and operation can be understood for the purposes of the PDR. Furthermore, the CSADD enables the requirements for the individual system components, and the interfaces to those components, to be elaborated so that detailed design of the components can proceed.

The CSADD is produced by the communication system supplier to describe the architectural design of the communication system.

The CSADD is produced for the PDR, and its acceptance at the PDR by the communication system customer implies a commitment to proceed with the detailed design consistent with the architecture described. As specified in ECSS‑E‑ST‑50, the CSADD is frozen after acceptance at the PDR.

The communication system architectural design document describes the high level architecture of the communication system and is therefore derived from the CSBD. In turn, the communication system detailed design document (CSDDD) is derived from the CSADD.

The interfaces identified within the CSADD, both between the communication system components, and to other external entities, are subject to tests defined in the CSVP. The functionality and performance of the communication system components identified in the CSADD can be the subject of specific analysis activities in the CSAD.

* 1. Expected response
     1. Scope and content

Introduction

The CSADD shall contain a description of the purpose, objective, content and the reason prompting its preparation.

Applicable and reference documents

The CSADD shall list the applicable and reference documents in support to the generation of the document.

Mission description and communication system overview

The CSADD shall briefly describe:

the main objectives and characteristics of the space mission, and

the intended communication system baseline as defined in the CSBD.

Communication system architectural design

The CSADD shall contain a description of the architectural design of the communication system in a human readable format, and include the justification of all critical architectural design decisions.

As a minimum, the architectural design of the communication system shall:

list each major component of the communication system,

describe the function and performance of each major component in terms of top level requirements,

list and broadly describe all of the internal interfaces (i.e. interfaces between components of the communication system), and

list and broadly describe all of the external interfaces (i.e. interfaces between external entities and components of the communication system).

Requirement applicability matrix

This CSADD shall provide a requirement applicability matrix, including the following information:

requirements - containing a list of all requirements in the CSRD plus any derived requirements contained in the CSBD;

applicability - indicating the applicability of each requirement to each major communication system component. Usually, this column can be subdivided into a series of columns, one for each major system component, and completed check­box style;

notes – providing any special information associated with a given requirement in respect of its allocation to a communication system component.

* + 1. Special remarks

Although this DRD imposes no constraints on the tools used to elaborate the architectural design, the architectural design shall be viewable without the use of the design tool.