
**Space data and information transfer
systems — Space link extension
(SLE) — Forward communications
link transmission unit (CLTU) service
specification**

*Systèmes de transfert des informations et données spatiales —
Extension de liaisons spatiales (SLE) — Service de l'unité de
transmission pour la liaison d'envoi de télécommande (CLTU)*

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This document was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 912.1-B-4, August 2016) and was adopted (without modifications) by Technical Committee ISO/TC 20, *Space vehicles*, Subcommittee SC 13, *Space data and information transfer systems*.

This fourth edition cancels and replaces the third edition (ISO 22671:2011), which has been technically revised.

The main changes compared to the previous edition are as follows:

- adds clarifications and corrections.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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CCSDS RECOMMENDED STANDARD FOR SLE FCLTU SERVICE

1 INTRODUCTION

1.1 PURPOSE OF THIS RECOMMENDED STANDARD

This Recommended Standard defines the Communications Link Transmission Unit (CLTU) service in conformance with the transfer services specified in reference [1], *Cross Support Reference Model—Part 1: SLE Services*. The Forward CLTU service is a Space Link Extension (SLE) transfer service that enables a mission to send Communications Link Transmission Units (CLTUs) to a spacecraft.

1.2 SCOPE

This Recommended Standard defines, in an abstract manner, the Forward CLTU service in terms of:

- a) the operations necessary to provide the transfer service;
- b) the parameter data associated with each operation;
- c) the behaviors that result from the invocation of each operation; and
- d) the relationship between, and the valid sequence of, the operations and resulting behaviors.

It does not specify:

- a) individual implementations or products;
- b) the implementation of entities or interfaces within real systems;
- c) the methods or technologies required to radiate data to a spacecraft and to acquire telemetry frames from the signals received from that spacecraft for extraction of the Operational Control Field;
- d) the methods or technologies required for communications; or
- e) the management activities necessary to schedule, configure, and control the Forward CLTU service.

1.3 APPLICABILITY

1.3.1 APPLICABILITY OF THIS RECOMMENDED STANDARD

This Recommended Standard provides a basis for the development of real systems that implement the Forward CLTU service. Implementation of the Forward CLTU service in a real system additionally requires the availability of a communications service to convey invocations and returns of Forward CLTU service operations between service users and