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Space data and information transfer systems — Spacecraft Onboard Interface Services — Subnetwork Test Service

Systèmes de transfert des informations et données spatiales — Services d'interfaces à bord des véhicules spatiaux — Service d'essais par sous-réseau

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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ISO 18438 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 855.0-M-1, December 2009) and was adopted (without modifications except those stated in Clause 2 of this International Standard) by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 13, *Space data and information transfer systems*.

Space data and information transfer systems — Spacecraft Onboard Interface Services — Subnetwork Test Service

1 Scope

This International Standard is one of a family of documents specifying the SOIS-compliant services to be provided by onboard subnetworks.

This International Standard defines services and service interfaces provided by the SOIS Subnetwork Test Service. Its scope is to specify the service only and not to specify methods of providing the service over a variety of onboard data links.

This International Standard conforms to the principles set out in the Spacecraft Onboard Interface Services Green Book and is intended to be applied together with it. The protocols which provide this service are to be documented for individual links, and this may be in the purview of individual missions, agencies, or CCSDS, depending on future circumstance.

The scope and field of application are furthermore detailed in subclause 1.2 of the enclosed CCSDS publication.

2 Requirements

Requirements are the technical recommendations made in the following publication (reproduced on the following pages), which is adopted as an International Standard:

CCSDS 855.0-M-1, December 2009, Spacecraft Onboard Interface Services — Subnetwork Test Service.

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 855.0-M-1.

Pages i to v

This part is information which is relevant to the CCSDS publication only.

3 Revision of publication CCSDS 855.0-M-1

It has been agreed with the Consultative Committee for Space Data Systems that Subcommittee ISO/TC 20/SC 13 will be consulted in the event of any revision or amendment of publication CCSDS 855.0-M-1. To this end, NASA will act as a liaison body between CCSDS and ISO.

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The Consultative Committee for Space Data Systems

Recommendation for Space Data System Practices

SPACECRAFT ONBOARD INTERFACE SERVICES—SUBNETWORK TEST SERVICE

RECOMMENDED PRACTICE

CCSDS 855.0-M-1

MAGENTA BOOK

December 2009

AUTHORITY

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This document has been approved for publication by the Management Council of the Consultative Committee for Space Data Systems (CCSDS) and represents the consensus technical agreement of the participating CCSDS Member Agencies. The procedure for review and authorization of CCSDS documents is detailed in the *Procedures Manual for the Consultative Committee for Space Data Systems*, and the record of Agency participation in the authorization of this document can be obtained from the CCSDS Secretariat at the address below.

This document is published and maintained by:

CCSDS Secretariat
Space Communications and Navigation Office, 7L70
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NASA Headquarters
Washington, DC 20546-0001, USA

STATEMENT OF INTENT

The Consultative Committee for Space Data Systems (CCSDS) is an organization officially established by the management of its members. The Committee meets periodically to address data systems problems that are common to all participants, and to formulate sound technical solutions to these problems. Inasmuch as participation in the CCSDS is completely voluntary, the results of Committee actions are termed **Recommendations** and are not in themselves considered binding on any Agency.

CCSDS Recommendations take two forms: **Recommended Standards** that are prescriptive and are the formal vehicles by which CCSDS Agencies create the standards that specify how elements of their space mission support infrastructure shall operate and interoperate with others; and **Recommended Practices** that are more descriptive in nature and are intended to provide general guidance about how to approach a particular problem associated with space mission support. This **Recommended Practice** is issued by, and represents the consensus of, the CCSDS members. Endorsement of this **Recommended Practice** is entirely voluntary and does not imply a commitment by any Agency or organization to implement its recommendations in a prescriptive sense.

No later than five years from its date of issuance, this **Recommended Practice** will be reviewed by the CCSDS to determine whether it should: (1) remain in effect without change; (2) be changed to reflect the impact of new technologies, new requirements, or new directions; or (3) be retired or cancelled.

In those instances when a new version of a **Recommended Practice** is issued, existing CCSDS-related member Practices and implementations are not negated or deemed to be non-CCSDS compatible. It is the responsibility of each member to determine when such Practices or implementations are to be modified. Each member is, however, strongly encouraged to direct planning for its new Practices and implementations towards the later version of the Recommended Practice.

FOREWORD

This document is a technical **Recommended Practice** for use in developing flight and ground systems for space missions and has been prepared by the **Consultative Committee for Space Data Systems** (CCSDS). The *Subnetwork Test Service* described herein is intended for missions that are cross-supported between Agencies of the CCSDS, in the framework of the Spacecraft Onboard Interface Services (SOIS) CCSDS area.

This **Recommended Practice** specifies a service to be used by space missions to test communications functionality of the node subnetwork interface and to test connectivity within the subnetwork. The SOIS Subnetwork Test Service is a simple service which is provided by data link-specific mechanisms within the subnetwork layers. The service interface is only present in the data system invoking the service. The SOIS Subnetwork Test Service provides a common service interface regardless of the particular type of data link being used for communication.

Through the process of normal evolution, it is expected that expansion, deletion, or modification of this document may occur. This Recommended Practice is therefore subject to CCSDS document management and change control procedures, which are defined in the *Procedures Manual for the Consultative Committee for Space Data Systems*. Current versions of CCSDS documents are maintained at the CCSDS Web site:

http://www.ccsds.org/

Questions relating to the contents or status of this document should be addressed to the CCSDS Secretariat at the address indicated on page i.

At time of publication, the active Member and Observer Agencies of the CCSDS were:

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- Agenzia Spaziale Italiana (ASI)/Italy.
- British National Space Centre (BNSC)/United Kingdom.
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