
**Space data and information transfer
systems — Data description language —
EAST specification**

*Systèmes de transfert des informations et données spatiales —
Langage de description de données — Spécification EAST*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15889 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 644.0-B-2, November 2000) 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*.

This second edition cancels and replaces the first edition (ISO 15889:2000), which has been technically revised.

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Space data and information transfer systems — Data description language — EAST specification

1 Scope

This International Standard specifies the requirements for the Enhanced Ada Subset (EAST) language (CCSDS 0010) used to create descriptions of data, called data description records (DDR). The use of this language ensures complete and exact understanding of space data as well as its automated transfer and interpretation on any host machine having the appropriate software tools.

The scope and field of application are furthermore detailed in subclauses 1.1 and 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 644.0-B-2, November 2000, *Recommendation for space data system standards — The data description language — EAST specification (CCSD0010)*.

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 644.0-B-2.

Pages i to v

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

Page 1-5

Update the following reference in 1.6 as follows:

- [1] ISO/IEC 8859-1:1998, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*

Reference to ISO/IEC 10646-1:1993 is informative (see reference [2]). Move reference [2] to the informative annex E on page E-1 where it should be updated to read:

- [E6] 10646-1:2000, *Information technology — Universal Multiple-Octet Coded Character Set (UCS) — Part 1: Architecture and Basic Multilingual Plane*

Page E-1

Add the following information to the references indicated in annex E:

- [E2] Document CCSDS 620.0-B-2, May 1992, is equivalent to ISO 12175:1994.

3 Revision of publication CCSDS 644.0-B-2

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 644.0-B-2. To this end, NASA will act as a liaison body between CCSDS and ISO.

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Consultative Committee for Space Data Systems

**RECOMMENDATION FOR SPACE
DATA SYSTEM STANDARDS**

THE DATA DESCRIPTION LANGUAGE EAST SPECIFICATION (CCSD0010)

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CCSDS 644.0-B-2

BLUE BOOK

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CCSDS RECOMMENDATION FOR EAST SPECIFICATION

AUTHORITY

Issue:	Blue Book, Issue 2
Date:	November 2000
Location:	Boulder, Colorado, USA

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 Recommendations is detailed in the *Procedures Manual for the Consultative Committee for Space Data Systems* (reference [E1]), and the record of Agency participation in the authorization of this document can be obtained from the CCSDS Secretariat at the address below.

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 Program Integration Division (Code MT)
 National Aeronautics and Space Administration
 Washington, DC 20546, USA

STATEMENT OF INTENT

The Consultative Committee for Space Data Systems (CCSDS) is an organization officially established by the management of member space Agencies. 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 considered binding on any Agency.

This **Recommendation** is issued by, and represents the consensus of, the CCSDS Plenary body. Agency endorsement of this **Recommendation** is entirely voluntary. Endorsement, however, indicates the following understandings:

- o Whenever an Agency establishes a CCSDS-related **standard**, this **standard** will be in accord with the relevant **Recommendation**. Establishing such a **standard** does not preclude other provisions which an Agency may develop.
- o Whenever an Agency establishes a CCSDS-related **standard**, the Agency will provide other CCSDS member Agencies with the following information:
 - The **standard** itself.
 - The anticipated date of initial operational capability.
 - The anticipated duration of operational service.
- o Specific service arrangements shall be made via memoranda of agreement. Neither this **Recommendation** nor any ensuing **standard** is a substitute for a memorandum of agreement.

No later than five years from its date of issuance, this **Recommendation** 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 canceled.

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

CCSDS RECOMMENDATION FOR EAST SPECIFICATION

FOREWORD

This Recommendation is a technical Recommendation for the standardization of a language to be used for providing syntactic and in some degree semantic information about data interchange using Standard Formatted Data Units (SFDUs).

This Recommendation provides the syntax specification of the language EAST, which is a subset of the Ada language.

Through the process of normal evolution, it is expected that expansion, deletion, or modification of this document may occur. This Recommendation is therefore subject to CCSDS document management and change control procedures which are defined in reference [E1]. Current versions of CCSDS documents are maintained at the CCSDS Web site:

<http://www.ccsds.org/ccsds/>

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

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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.
- Canadian Space Agency (CSA)/Canada.
- Centre National d'Etudes Spatiales (CNES)/France.
- Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)/Germany.
- European Space Agency (ESA)/Europe.
- Instituto Nacional de Pesquisas Espaciais (INPE)/Brazil.
- National Aeronautics and Space Administration (NASA)/USA.
- National Space Development Agency of Japan (NASDA)/Japan.
- Russian Space Agency (RSA)/Russian Federation.

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- Swedish Space Corporation (SSC)/Sweden.
- United States Geological Survey (USGS)/USA.

CCSDS RECOMMENDATION FOR EAST SPECIFICATION

DOCUMENT CONTROL

Document	Title, Issue	Date	Status/Remarks
CCSDS 644.0-B-1	Recommendation for Space Data System Standards: The Data Description Language EAST Specification (CCSD0010), Issue 1	May 1997	Original Issue: superseded.
CCSDS 644.0-B-2	Recommendation for Space Data System Standards: The Data Description Language EAST Specification (CCSD0010), Issue 2	November 2000	Current Issue: extends EAST ability to handle repeated data items where repetition is terminated by a marker.

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