INTERNATIONAL STANDARD

ISO
15889

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

Systèmes de transfert des informations et données spatiales — Spécification du langage de description de données 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.

This third edition cancels and replaces the second edition (ISO 15889:2003), which has been technically revised.

ISO 15889 was prepared by the Consultative Committee for Space Data Systems (CCSDS) as CCSDS 644.0-B-3, June 2010 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*.

ISO 15889:2011
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8f82a35951de/iso-15889-2011

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

1 Scope

This International Standard defines the Enhanced Ada SubseT (EAST) language used to create descriptions of data called Data Description Records (DDRs). Such DDRs ensure a complete and exact understanding of the data and allow it to be interpreted in an automated fashion. This means that a software tool is able to analyse a DDR and interpret the format of the associated data. This allows the software to extract values from the data on any host machine (i.e. on a different machine from the one that produced the data).

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-3, June 2010, *The data description language EAST specification.*

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 644.0-B-3.

Pages i to vi

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

Page 1-5

Add the following information to the reference indicated:

[1]   ISO 8859-1:1987 has been withdrawn and replaced by ISO/IEC 8859-1:1998.

[2]   ISO/IEC 10646-1:1993 has been withdrawn and has been replaced by ISO/IEC 10646:2011.

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Add the following information to the reference indicated:

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

3 Revision of publication CCSDS 644.0-B-3

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-3. To this end, NASA will act as a liaison body between CCSDS and ISO.

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CCSDS

The Consultative Committee for Space Data Systems

Recommendation for Space Data System Standards

THE DATA DESCRIPTION LANGUAGE EAST SPECIFICATION (CCSD0010)

RECOMMENDED STANDARD

CCSDS 644.0-B-3

BLUE BOOK
June 2010

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CCSDS RECOMMENDED STANDARD FOR EAST SPECIFICATION

AUTHORITY

Issue:	Recommended Standard, Issue 3
Date:	June 2010
Location:	Washington, DC, 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*, 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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CCSDS Secretariat
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Space Operations Mission Directorate
NASA Headquarters
Washington, DC 20546-0001, USA

CCSDS RECOMMENDED STANDARD FOR EAST SPECIFICATION

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 **Recommended Standards** and are not considered binding on any Agency.

This **Recommended Standard** is issued by, and represents the consensus of, the CCSDS members. Endorsement of this **Recommendation** is entirely voluntary. Endorsement, however, indicates the following understandings:

o   Whenever a member establishes a CCSDS-related **standard**, this **standard** will be in accord with the relevant **Recommended Standard**. Establishing such a **standard** does not preclude other provisions which a member may develop.

o   Whenever a member establishes a CCSDS-related **standard**, that member will provide other CCSDS members 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 **Recommended Standard** nor any ensuing **standard** is a substitute for a memorandum of agreement.

No later than five years from its date of issuance, this **Recommended Standard** 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 **Recommended Standard** is issued, existing CCSDS-related member standards and implementations are not negated or deemed to be non-CCSDS compatible. It is the responsibility of each member to determine when such standards or implementations are to be modified. Each member is, however, strongly encouraged to direct planning for its new standards and implementations towards the later version of the Recommended Standard.

CCSDS RECOMMENDED STANDARD FOR EAST SPECIFICATION

FOREWORD

Through the process of normal evolution, it is expected that expansion, deletion, or modification of this document may occur. This Recommended Standard 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.

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

Member Agencies

– Agenzia Spaziale Italiana (ASI)/Italy.
– Canadian Space Agency (CSA)/Canada.
– Centre National d'Etudes Spatiales (CNES)/France.
– China National Space Administration (CNSA)/People's Republic of China.
– Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR)/Germany.
– European Space Agency (ESA)/Europe.
– Instituto Nacional de Pesquisas Espaciais (INPE)/Brazil.
– Japan Aerospace Exploration Agency (JAXA)/Japan.
– National Aeronautics and Space Administration (NASA)/USA.
– Russian Federal Space Agency (RFSA)/Russian Federation.
– UK Space Agency/United Kingdom.

Observer Agencies

– Austrian Space Agency (ASA)/Austria.
– Belgian Federal Science Policy Office (BFSPO)/Belgium.
– Central Research Institute of Machine Building (TsNIIMash)/Russian Federation.
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– European Telecommunications Satellite Organization (EUTELSAT)/Europe.
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– Swedish Space Corporation (SSC)/Sweden.

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– United States Geological Survey (USGS)/USA.

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CCSDS RECOMMENDED STANDARD FOR EAST SPECIFICATION

DOCUMENT CONTROL

Document	Title and Issue	Date	Status
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	Issue 2, superseded: – extends EAST ability to handle repeated data items where repetition is terminated by a marker.
CCSDS 644.0-B-3	The Data Description Language EAST Specification (CCSD0010), Recommended Standard, Issue 3	June 2010	Current issue: – adds requirement to specify EAST version.

NOTE – Substantive changes from the previous issue are indicated by change bars in the inside margin.

CCSDS RECOMMENDED STANDARD FOR EAST SPECIFICATION

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