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# Space data and information transfer systems — Telemetry (TM) channel coding profiles

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## National foreword

This British Standard is the UK implementation of ISO 17808:2014.

The UK participation in its preparation was entrusted to Technical Committee ACE/68/-/7, Space systems and operations - Space data and information transfer systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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# INTERNATIONAL STANDARD

# ISO 17808

First edition
2014-07-01

## Space data and information transfer systems — Telemetry (TM) channel coding profiles

*Systèmes de transfert des données et informations spatiales — Profils de codage de canal pour télémesure (TM)*

Reference number
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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 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

ISO 17808 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 131.4-M-1, July 2011) 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*.



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INTERNATIONAL STANDARD ISO 17808:2014(E)

# Space data and information transfer systems — Telemetry (TM) channel coding profiles

## 1 Scope

This International Standard presents recommendations regarding the usage of coding schemes described in references [1]-[2] in the various mission profiles that are encountered in space research, space operations, and Earth exploration.

Within this document, it is assumed that at the sending end the Synchronization and Channel Coding sublayer

— accepts at a constant rate transfer frames of fixed length from the Data Link protocol sublayer;

— performs the encoding and synchronization functions selected for the mission; and

— delivers a continuous and contiguous stream of channel symbols to the Physical layer.

At the receiving end, the Synchronization and Channel Coding sublayer:

— accepts a continuous and contiguous stream of channel symbols from the Physical layer;

— performs the synchronization and decoding functions selected for the mission;

NOTE The decoding functions include validation of frames to determine their quality with respect to the possible presence of undetected errors.

— delivers transfer frames to the Data Link protocol sublayer.

Profiles for Earth-to-space and Proximity links are out of scope and are not addressed in this document. Communication profiles for space-to-Earth links that are currently not supported by CCSDS, e.g. via data relay satellites, are not addressed in this document.

## 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 131.4-M-1, July 2011, TM Channel Coding Profiles

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 131.4-M-1.

*Pages i to vi*

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

*Pages 1-2*

Add the following information to the reference indicated:

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[1] Document CCSDS 131.0-B-2, August 2011, is equivalent to ISO 22641:2012.

## 3 Revision of publication CCSDS 131.4-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 131.4-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

# TM CHANNEL CODING PROFILES

RECOMMENDED PRACTICE

CCSDS 131.4-M-1

MAGENTA BOOK
July 2011

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# AUTHORITY

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| Issue: | Recommended Practice, Issue 1 |
| Date: | July 2011 |
| 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 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.

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