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BS ISO 15887:2013



BSI Standards Publication

Space data and information transfer systems — Lossless data compression

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This British Standard is the UK implementation of ISO 15887:2013. It supersedes BS Z 17:2000 which is withdrawn.

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.

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Second edition
2013-06-01

Space data and information transfer systems — Lossless data compression

*Systèmes de transfert des informations et données spatiales —
Compression de données sans perte*



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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 15887 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 121.0-B-2, May 2012) 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 15887:2000) and ISO 15887:2000/Cor.1:2009, which have been technically revised.

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Space data and information transfer systems — Lossless data compression

1 Scope

This International Standard establishes a source-coding data-compression algorithm applied to digital data and specifies how these compressed data shall be inserted into source packets for retrieval and decoding.

Source coding for data compression is a method utilized in data systems to reduce the volume of digital data to achieve benefits in areas including, but not limited to,

- a) reduction of transmission channel bandwidth;
- b) reduction of the buffering and storage requirement;
- c) reduction of data-transmission time at a given rate.

The characteristics of source codes are specified only to the extent necessary to ensure multi-mission support capabilities. This International Standard does not attempt to quantify the relative bandwidth reduction, the merits of each approach discussed, or the design requirements for coders and associated decoders. Some performance information is included in *Lossless Data Compression*, CCSDS 120.0-G-2.

This International Standard addresses only Lossless source coding, which is applicable to a wide range of digital data, both imaging and non-imaging, where the requirement is for a moderate data-rate reduction constrained to allow no distortion to be added in the data compression/decompression process. The decompression process is not addressed.

The scope and field of application are furthermore detailed in subclause 1.3 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 121.0-B-2, May 2012, Data systems — Lossless data compression.

For the purposes of international standardization, the modifications outlined below shall apply to the specific clauses and paragraphs of publication CCSDS 121.0-B-2.

Pages i to vi

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

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Add the following information to the reference indicated:

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