INTERNATIONAL STANDARD ISO 1155

Information processing — Use of longitudinal parity to detect errors in information messages

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up 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.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 97, *Computers and information processing,* has reviewed ISO Recommendation R 1155-1969 and found it technically suitable for transformation. International Standard ISO 1155 therefore replaces ISO Recommendation R 1155-1969, which was approved by the Member Bodies of the following countries :

Australia	Germany	Romania
Belgium	Greece	Spain
Brazil	Israel	Sweden
Canada	Italy	Switzerland
Czechoslovakia	Japan	Thailand
Denmark	New Zealand	United Kingdom
Egypt, Arab Rep. of	Peru	U.S.A.
France	Poland	U.S.S.R.

No Member Body expressed disapproval of the Recommendation.

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0 INTRODUCTION

In data communication systems the information formats and the redundancy in the data to be transmitted differ widely from one application to another. It is therefore clear that a number of classes of error protection systems may be required.

This International Standard defines one method of error detection which satisfies a wide range of applications. It consists of accompanying the data block or text by one checking character (in addition to character parity) and it is often referred to as the "Longitudinal Parity Method".

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies a method for detecting errors in information messages by attaching one block check character to the transmitted information block (or text) and checking this character when it is received. The method of correcting errors when they are detected is specified in ISO...[1]

The method is applicable to systems which use the 7-bit coded character set which is the subject of ISO 646, *7-bit coded character set for information processing interchange,* and the basic mode of implementing this 7-bit code in data communication systems, which is the subject of ISO 1745, *Information processing — Basic mode control procedures for data communication systems[2].*

The rules for generating the character parity bits, according to ISO 1177, *Information processing — Character structure for start/stop and synchronous transmission,* are that the character parity sense shall be odd in synchronous systems and even in asynchronous systems.

2 RULES FOR GENERATING THE LONGITUDINAL PARITY BLOCK CHECK CHARACTER

2.1 Block check character

2.1.1 The block check character shall be composed of 7 bits plus a parity bit.

2.1.2 Each of the first 7 bits of the block check character shall be the modulo 2 binary sum of every element in the same bit 1 to bit 7 column of the successive characters of the transmitted block.

2.1.3 The longitudinal parity of each column of the block, including the block check character, shall be even.

2.1.4 The sense of the parity bit of the block check character shall be the same as for the information characters (odd for synchronous transmission, even for asynchronous transmission).

2.2 Summation

2.2.1 The summation to obtain the block check character shall be started by the first appearance of either SOH (Start of Heading) or STX (Start of Text).

2.2.2 The starting character shall not be included in the summation.

2.2.3 If an STX character appears after the summation has been started by SOH, then the STX character shall be included in the summation as if it were a text character.

2.3 With the exception of SYN (Synchronous Idle), all the characters which are transmitted after the start of the block check summation shall be included in the summation, including the ETB (End of Transmission/Block) or ETX (End of Text) control character which signals that the next following character is the block check character.

2.4 No character, SYN or otherwise, shall be inserted between the ETB or ETX character and the block check character.

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1) At present at the stage of draft proposal.

2) At present at the stage of draft. (Revision of ISO/R 1745.)