SLOVENSKI STANDARD
SIST EN 61866:1999

01-april-1999

Audiovisual systems - Interactive text transmission system (ITTS) (IEC 61866:1997)

Audiovisual systems - Interactive text transmission system (ITTS)

Audiovisuelle Systeme - Interaktives Textübertragungssystem (ITTS)

Systèmes audiovisuels - Système de transmission de textes interactifs (ITTS)

Ta slovenski standard je istoveten z: **EN 61866:1997**

ICS:

33.160.99	Druga avdio, video in avdiovizuelna oprema	Other audio, video and audiovisual equipment

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English version

Audiovisual systems
Interactive text transmission system (ITTS)
(IEC 61866:1997)

Systèmes audiovisuels - Système de transmission de textes interactifs (ITTS)
(CEI 61866:1997)

Audiovisuelle Systeme - Interaktives Textübertragungssystem (ITTS)
(IEC 61866:1997)

This European Standard was approved by CENELEC on 1997-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 100C/114/FDIS, future edition 1 of IEC 61866, prepared by SC 100C, Audio, video and multimedia subsystems and equipment, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61866 on 1997-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-07-01

Endorsement notice

The text of the International Standard IEC 61866:1997 was approved by CENELEC as a European Standard without any modification.

In the official version, for annex D, Bibliography, the following notes have to be added for the standards indicated:

IEC 60958 + A2 NOTE: Harmonized as EN 60958:1990 (not modified) + A2:1995 (not modified).

NORME INTERNATIONALE

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Systèmes audiovisuels – Système de transmission de textes interactifs (ITTS)

Audiovisual systems – Interactive text transmission system (ITTS)

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AUDIOVISUAL SYSTEMS – INTERACTIVE TEXT TRANSMISSION SYSTEM (ITTS)

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

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6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61866 has been prepared by subcommittee 100C: Equipment and systems in the field of audio, video and audiovisual engineering, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard is based on the following documents:

FDIS	Report on voting
100C/114/FDIS	100C/132/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annexes A, B, C and D are for information only.

INTRODUCTION

Distribution and reproduction of digital sound recordings can be accompanied by text associated with the sound track. Such data can be, for instance, album and track titles, lyrics or information about artists and performers.

ITTS covers application requirements for pre-recorded media, digital broadcasting and remote controls. Several display options are supported for information readout: 21-, 2- and 1-line displays of 40 characters each, as well as a 12-character display window.

The user interface consists of displayed text and provision for direct access to information by means of related function control keys or a cursor positioned over a menu item and a SELECT function key.

Various character sets can be used in the system. Up to 40 (horizontal) × 21 (vertical) alphanumerical characters can be presented on a screen. For other fonts, like Kanji, the number of fonts that can be presented on a screen depends on the font size which is defined together with the font table.

ITTS uses the Latin-based alphanumeric character set based on ISO 8859-1 and the repertoire described in EBU Tech. 3232. Further, a font set containing graphical elements and font sets providing Japanese fonts are presently defined.

NOTE – User-defined 12 horizontal × 10 vertical pixel graphics may be included as well.

Information may be presented in monochrome or in up to 15 colours. These colours are defined in a colour look up table (CLUT) and may be redefined from a palette of 4 096 colours.

Information can be accessed without delay if the ITTS decoder provides a cache memory in which the data from the medium is captured before it is needed for display. An index is applied to each transmission packet to serve this and several other functions.

AUDIOVISUAL SYSTEMS – INTERACTIVE TEXT TRANSMISSION SYSTEM (ITTS)

1 General

1.1 *Scope*

The interactive text transmission system (ITTS) provides the mechanism for encoding sound associated data on prerecorded media and for the transport of such data across equipment interfaces. This International Standard defines the higher layers of ITTS, i.e. those system characteristics which are independent of the recording or interconnection medium.

1.2 *Definitions and abbreviations*

1.2.1 *Definitions*

For the purpose of this International Standard the following definitions apply:

1.2.1.1 **ITTS**: Interactive text transmission system

1.2.1.2 **ITTS packet**: A data structure comprising header information plus either coded text and graphics or control and presentation commands. ITTS packets have a fixed length of 48 bytes.

1.2.2 *Abbreviations*

The following abbreviations are introduced in the main text:

AI: application item;
IC: interactive command;
ICP: interactive command present;
TCI: text continuity index;
ICI: instruction continuity index;
CDS: category data start;
CDE: category data end;
CI: command index;
PI: packet index;
MMC: main message channel;
SMC: submessage channel;
CLUT: colour look up table;
DRCS: dynamic redefinable character set.

1.3 *Presentation conventions*

The following conventions are used in this standard to specify binary and hexadecimal numbers.

Where a hexadecimal code or binary code occurs in tables

– the hexadecimal code is followed by a lower case h; for example, the hexadecimal presentation for a byte containing all binary values 1 is written as FFh,

– the binary code is represented by a string of 1s and 0s. A string of 8 bits, comprised in one byte, is written in two groups of 4 bits; for example the binary presentation of a byte containing the binary equivalent of decimal 255 is written as 1111 1111.

Where a hexadecimal code or binary code occurs in running text, the code values as described above are enclosed in double quotes.

2 ITTS packet structure

2.1 *Introductory remark*

Text information arranged in packets according to the ITTS format can be carried by a subchannel along with audio data. ITTS packets have a length of 48 bytes: an 8 byte header and a 40 byte TEXT or DATA string.

Details on how ITTS packets are carried in the subchannel of transmission media is given in the following standards:

– amendment 2 to IEC 60908[1)];

– amendment 2 to IEC 60958;

– ETS 300 401.

2.2 *ITTS packet format*

The 48 bytes of an ITTS packet are grouped into the

– packet-header field: bytes 0 – 7,

– data field: bytes 8 – 47.

The packet content differs according to the application item code in bits 3-0 of the first packet byte. The following five packet types are defined:

– TEXT packet;

– RUNTIME MENU packet;

– GRAPHICS TEXT packet;

– GRAPHICS RUNTIME MENU packet;

– DATA packet.

[1)] To be published.

Figures 1 to 5 specify the content lay-out of the packet header for each of these packet types.

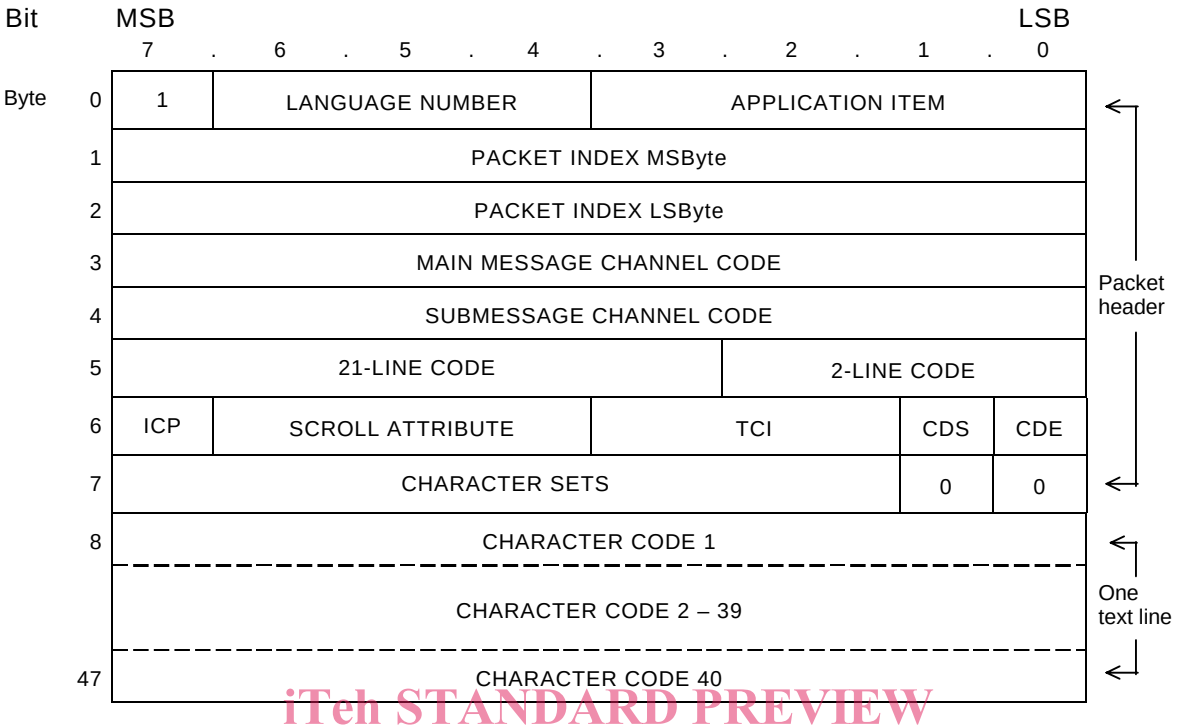

Figure 1 – TEXT packet content

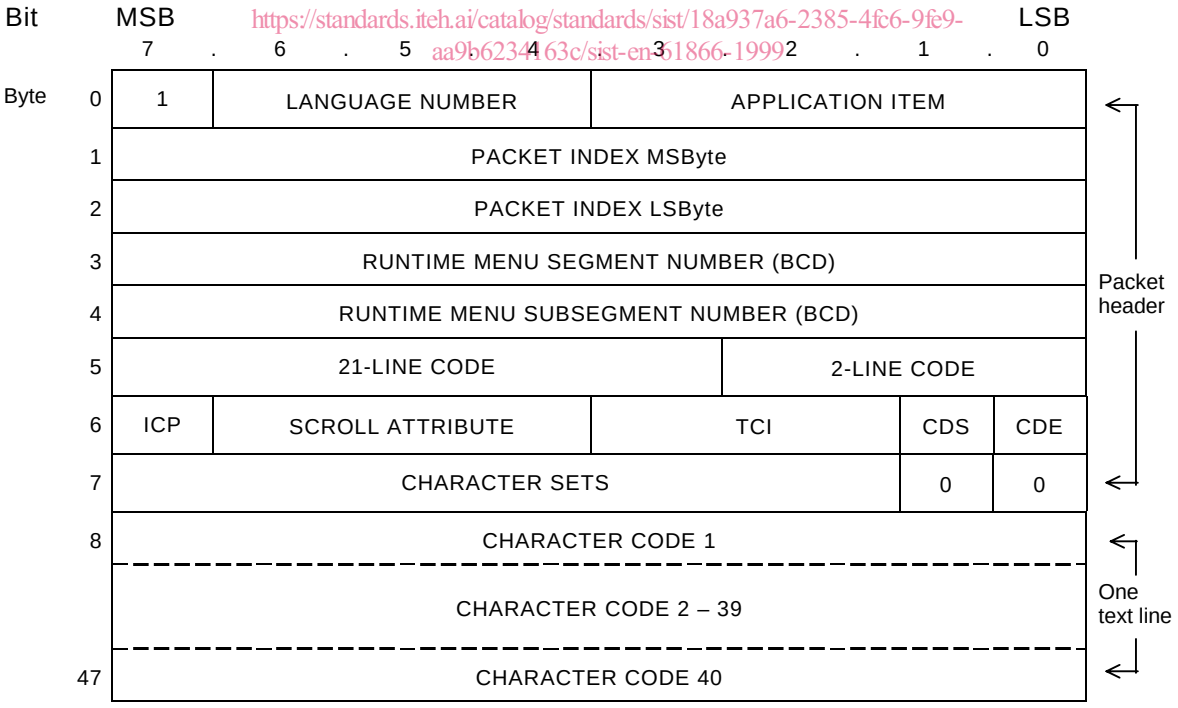

Figure 2 – RUNTIME MENU packet content

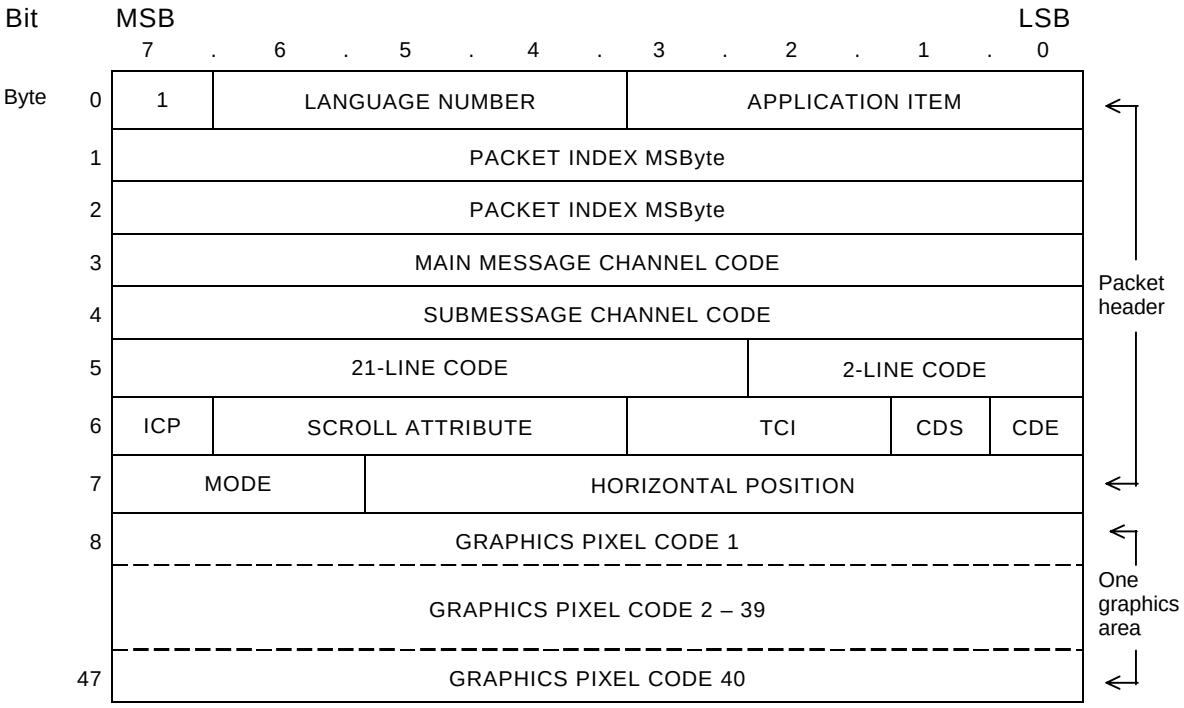

Figure 3 – GRAPHICS TEXT packet content

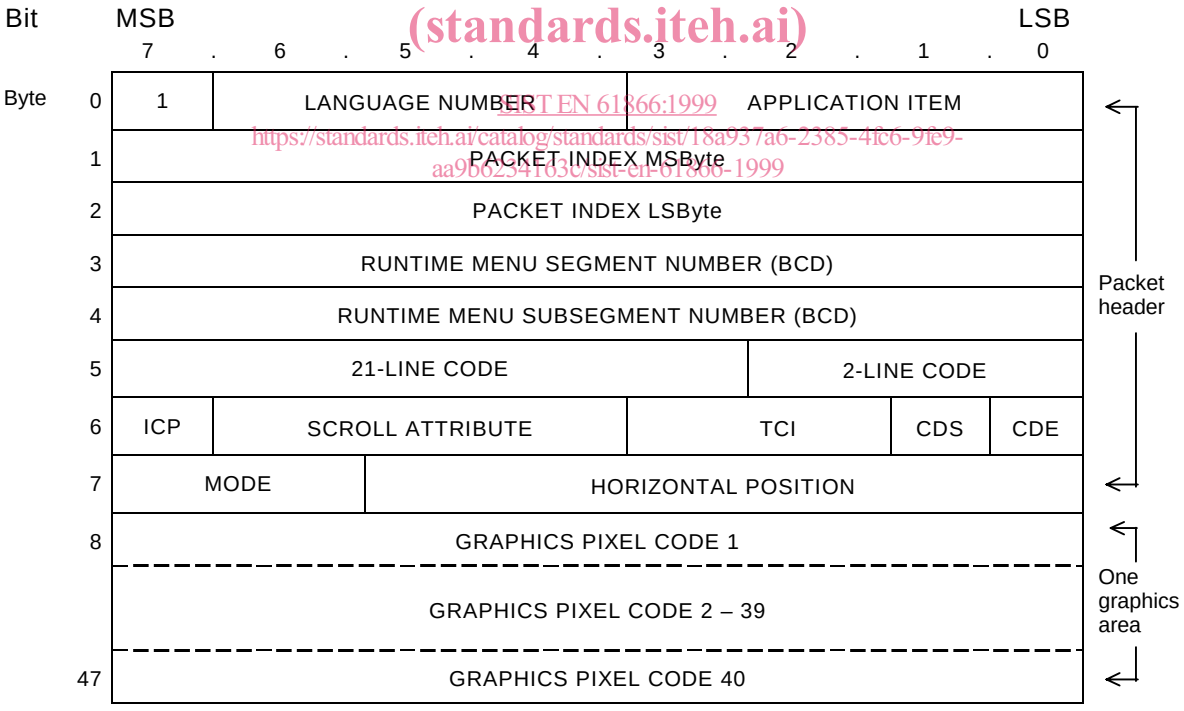

Figure 4 – GRAPHICS RUNTIME MENU packet content

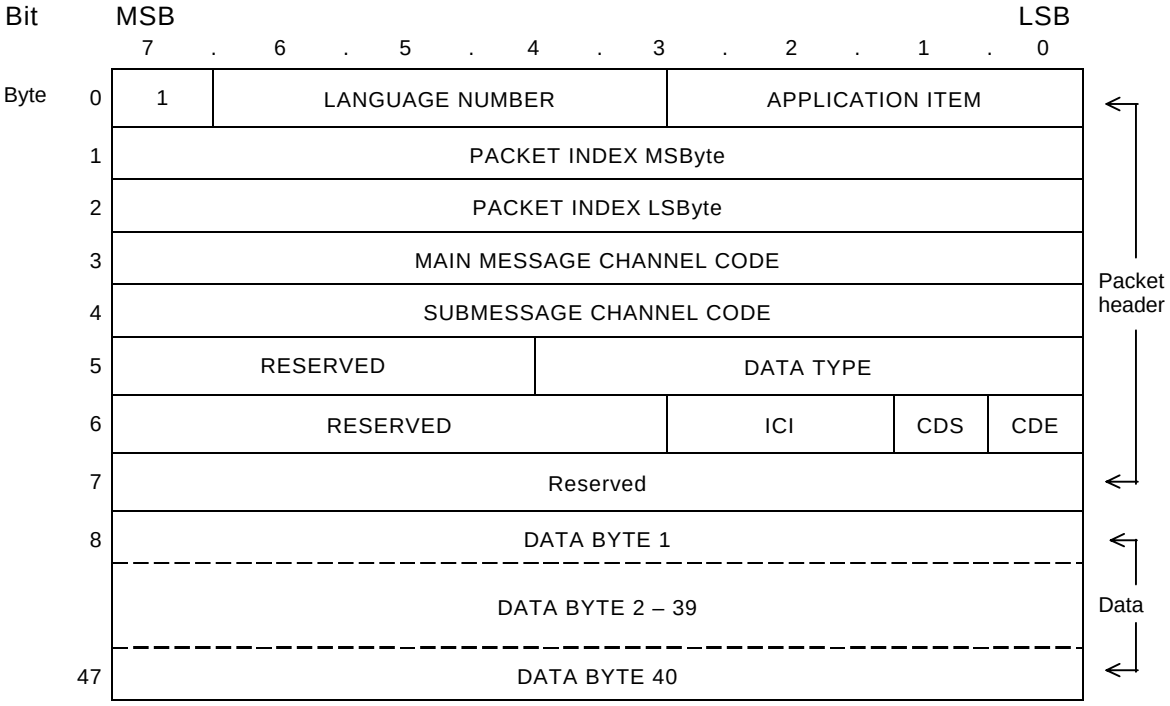

Figure 5 – DATA packet content

2.3 *Packet-header field descriptions, bytes 0 – 7*

2.3.1 *Packet-header byte 0: language number and application item*

Bit 7

0 Reserved for future use

1 Default (must be set to 1 to identify the packet format according to this standard)

Bit 6-4 = language number

654	
000	Language-independent text or one language only
001	Main language, if various languages are recorded
010 *** 111	Additional languages

NOTE – Text lines that are identical in all language versions need to be recorded only once if the given language number is "000". It is recommended to apply additional languages in consecutive order.

If more than one language is applied, then the main language with code "001" shall be specified by the content provider.

Bit 3-0 = application item

3210	
0000	TEXT packet for 2-line and 21-line display
0001	RUNTIME MENU packet for 2-line and 21-line display
0010	GRAPHICS TEXT packet for 2-line and 21-line display
0011	GRAPHICS RUNTIME MENU packet
0111	DATA packet.
1000	TEXT packet, also for 1-line display
1001	RUNTIME MENU packet, also for 1-line display
1010	GRAPHICS TEXT packet, also for 1-line display
1011	GRAPHICS RUNTIME MENU packet, also for 1-line display
****	All other codes are reserved

Only one packet per message channel or RUNTIME menu segment shall be specified as "also for 1-line display".

2.3.2 *Packet-header byte 1-2: packet index*

The main applications for the packet indices are

– to support cache memory management for ITTS program packets;

– to control text line order when loaded into the display memory;

– to specify packets, the content of which shall not be loaded into a cache memory but displayed and/or executed immediately after passing the input filter stages of the decoder;

– to define the priority of a packet with respect to the cache memory size;

– to link DATA packet inherent commands with TEXT packet(s);

– to link DATA packets with horizontal menu text;

– to support a packet group validity check.

The packet index is carried in byte 1-2 of each packet. Rules related to the packet index are as follows:

– a packet index other than "0000h" indicates at which cache memory address the packet shall be stored;

– packets with index "0000h" shall not be loaded into the cache memory;

– textual contents of packets with index "0000h" shall be displayed immediately when occurring at the output of the language and channel filter bank;

– commands (IC) with command index "0000h" in DATA packets with index "0000h" shall be executed immediately;

– commands (IC) with command index "0000h" in DATA packets with index other than "0000h" shall be executed when the corresponding channel becomes invoked. If an IC inherent command index is equal to its packet index, then this IC can only be activated by an IC 5 command; this means such commands are not activated when the corresponding message channel becomes invoked;