SLOVENSKI STANDARD
SIST ETS 300 230:1998

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Radijska oprema in sistemi (RES) - Storitev kopenskih mobilnih komunikacij - Izmenjava binarnih podatkov in signalizacije s 1200 biti/s

Radio Equipment and Systems (RES); Land mobile service; Binary Interchange of Information and Signalling (BIIS) at 1 200 bit/s (BIIS 1 200)

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Radio Equipment and Systems (RES); Land mobile service; Binary Interchange of Information and Signalling (BIIS) at 1 200 bit/s (BIIS 1 200)

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

The binary signalling procedure described in this ETS is an alternative to existing calling systems such as single-tone, multitone, subaudio and double-tone.

Every I-ETS and ETS prepared by ETSI is a voluntary standard. This ETS contains text concerning conformance testing of the equipment to which it relates. This text should be considered as guidance only and does not make this ETS mandatory.

Transposition dates	
Date of adoption of this ETS:	8 November 1996
Date of latest announcement of this ETS (doa):	28 February 1997
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1 Scope

This ETS describes a binary signalling and data transmission system for private radio equipment operating at 1 200 bit/s using indirect modulation.

This ETS applies to systems operating on either shared, or exclusive, channels.

According to national regulations of various countries, Public Switched Telephone Network (PSTN) access and data transmission can be subject to licensing. The channel access protocol and occupation rules can also be a matter for licensing, depending on the different national regulations.

This ETS permits the addition, if necessary, of supplementary signalling, either sub-audio, multitone, or binary, as appropriate, to permit primary and secondary paging to be used. This ETS does not attempt to define the protocols necessary for such supplementary signalling.

Where parameters relating to the radio environment are specified, reference should be made to the appropriate clauses of ETS 300 113 [3]. However, selective calls according to this ETS can be implemented in equipment fulfilling I-ETS 300 219 [2] (that is messages of categories 0, 2, 4, 5 and messages of category 1 and functions 0, 1 and 2 as defined in subclause 7.2 of this ETS).

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are quoted at the appropriate places in the text and the publications are listed hereafter. For dated references subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] ISO 4335 (1987): "Information processing systems - Data communication - High-level data link control elements of procedures".

[2] I-ETS 300 219: "Radio Equipment and Systems (RES); Land Mobile Service; Technical characteristics and test conditions for radio equipment, transmitting signals to initiate a specific response in the receiver".

[3] ETS 300 113: "Radio Equipment and Systems (RES) Land mobile service; Technical characteristics and test conditions for radio equipment intended for the transmission of data (and speech) and having an antenna connector".

[4] ITU-T Recommendation T.50: "International Alphabet No. 5".

[5] ISO 3309 (1991): "Information technology - Telecommunications and information exchange between systems - High-level data link control (HDLC) procedures - Frame structure".

[6] ETS 300 471: "Radio Equipment and Systems (RES) Land mobile service; Access protocol and occupation rules for the transmission of data in shared channels".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

address: Information which consists of a Regional Code, a common address part, and an individual number or a group number.

address block: A block containing addresses. The first block of a transmission is always an address block. It can be followed by other address blocks (subclause 7.1).

address codeword: A 64-bit codeword. The first 48 bits contain the information, the remaining 16 bits contain the redundancy for the data protection. The first codeword of a transmission is always an address codeword that can be followed by others. The transmitter address, the receiver address and the function of the message are transmitted in the address codeword.

block: The smallest quantity of information that is exchanged over the radio channels according to this ETS. It can correspond to the transmission of either a "codeword" or an "encoded codeword".

call set-up: A complete information exchange between two or more stations, including the transmission of one or more messages.

codeword: A word correctly coded according to this ETS. It contains 48 bits of information. These bits are protected by 16 bits of redundancy, producing a total of 64 bits.

common address: A common part for an individual transmitter and individual receiver address.

data block: A block intended for the transmission of information. The data blocks can only follow address blocks in a transmission.

data codeword: A 64-bit codeword. The first 48 bits contain the information, the remaining 16 bits contain the redundancy for the data protection. The data codewords follows the address codewords. Data codewords are assigned to the transmission of any information.

encoded codeword: The 64 bits of a codeword which have been encoded with the convolutional code, producing a total of 128 bits.

external addressing: An addressing format in which the individual transmitter and receiver address are binary coded within 12 bits using the normal addressing mode. The complete transmitter address with its individual and common part is located in the first address codeword. The complete receiver address with its individual and common part is located in the second address codeword.

group address: An address shared by several stations. The group number can be any number within the normal addressing capacity of 12 bits. The group numbers are user specific.

I-frame: See subclause 10.4.

individual address: The address of a station, which is unique within the network. Each station has an individual address.

message: The contiguous transmission of a codeword sequence consisting of an address codeword which may be followed by other address codewords and by one or several data codewords.

normal addressing: An addressing format in which the individual transmitter and receiver address are binary coded within 12 bits and completely located in the address codeword not being followed by other address codewords.

reserved: Fields within codewords which are intended for a future designation. Reserved fields are intended for the values specified in the protocol.

S-frame: See subclause 10.5.

signalling cycle: A sequence of several messages having the same function which are separated by bit and block synchronization.

sub-address: The individual address of a terminal equipment if a station has connections to more than one terminal. This is defined for data transmission only.

telephone call: A message which allows dialling into telephone networks. The entire telephone number is transmitted within concatenated codewords.

transmission: The information transmitted in between the "power on" and "power off" period of a particular transmitter, which may include blocks and/or speech.

U-frame: See subclause 10.6.

3.2 Symbols

For the purposes of this ETS, the following symbols apply:

dTT	The maximum time during which an acknowledgement or reply may be sent after expiry of TT.
H	Hexadecimal notation, e.g. $2A_H$ is equal to 42 decimal.
K	The maximum number of unacknowledged sequentially numbered I-frames at a specific time.
N1	The highest number of data blocks which may be transmitted within an I-frame.
N2	The maximum number of retransmissions of an I-frame after the expiry of the time control T1.
NA	The number of acknowledgement repetitions within a signalling cycle.
ND	The maximum number of data blocks used for short data transfer.
NM	The number of message repetitions within a signalling cycle.
NR	The maximum number of retries of a message if an acknowledgement is not received.
T1F	The fixed part of the retry waiting time T1 after whose expiry a repetition of a frame is initiated.
T1I	The increment part of the retry waiting time T1 after whose expiry a repetition of a frame is initiated.
T3	The time after which a receiving station automatically exits the group mode.
TAC	The time waiting for an acknowledgement after whose expiry a repetition of the message is initiated.
TAD	The time waiting for a response after whose expiry a repetition of a frame is initiated.
TC	The maximum waiting time to access a channel.
TF	The time after which a call is cleared if an Radio Frequency (RF) carrier is lost.
TI	The time following an intermediate acknowledgement after which further signalling is expected.
TOF	The fixed part of the observation time TO after whose expiry the channel may be occupied.
TOI	The increment part of the observation time TO after whose expiry the channel may be occupied.