SLOVENSKI STANDARD
SIST EN 301 545-2 V1.4.1:2024

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Digitalna videoradiodifuzija (DVB) - Interaktivni satelitski sistem DVB druge generacije (DVB-RCS2) - 2. del: Nižje plasti za satelitski standard

Digital Video Broadcasting (DVB) - Second Generation DVB Interactive Satellite System (DVB-RCS2) - Part 2: Lower Layers for Satellite standard

Ta slovenski standard je istoveten z: **ETSI EN 301 545-2 V1.4.1 (2024-01)**

ICS:

33.170	Televizijska in radijska difuzija	Television and radio broadcasting

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Foreword

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NOTE: The EBU/ETSI JTC Broadcast was established in 1990 to co-ordinate the drafting of standards in the specific field of broadcasting and related fields. Since 1995 the JTC Broadcast became a tripartite body by including in the Memorandum of Understanding also CENELEC, which is responsible for the standardization of radio and television receivers. The EBU is a professional association of broadcasting organizations whose work includes the co-ordination of its members' activities in the technical, legal, programme-making and programme-exchange domains. The EBU has active members in about 60 countries in the European broadcasting area; its headquarters is in Geneva.

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The DVB Project is an industry-led consortium of broadcasters, manufacturers, network operators, software developers, regulators and others from around the world committed to designing open, interoperable technical specifications for the global delivery of digital media and broadcast services. DVB specifications cover all aspects of digital television from transmission through interfacing, conditional access and interactivity for digital video, audio and data. The consortium came together in 1993.

The present document is part 2 of a multi-part deliverable covering the DVB Interactive Satellite System specification as identified below:

ETSI TS 101 545-1: "Overview and System Level specification";

ETSI EN 301 545-2: "Lower Layers for Satellite standard";

ETSI TS 101 545-3: "Higher Layers Satellite Specification";

ETSI TR 101 545-4: "Guidelines for Implementation and Use of ETSI EN 301 545-2";

ETSI TR 101 545-5: "Guidelines for the Implementation and Use of ETSI TS 101 545-3".

National transposition dates	
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Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 October 2024
Date of withdrawal of any conflicting National Standard (dow):	31 October 2024

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

The present document is a specification of the lower layers and the lower layer embedded signalling for the management and control system, for two way interactive satellite networks specified by ETSI TS 101 545-3 [i.16]. It represents a new generation of ETSI EN 301 790 [1]. The following amendments have been made relative to ETSI EN 301 790 [1]:

- The modulation schemes are CPM, 8PSK and 16QAM, in addition to QPSK.
- The FEC for QPSK, 8PSK and 16QAM is a 16-state turbo code, commonly called Turbo-phi.
- The FEC for CPM is Convolutional Coding.
- The waveform characteristics are configurable to allow adaptation to different applications.
- A set of normative reference waveforms are specified, to support interoperability.
- The MF-TDMA burst constructions for the reference waveforms are differentiated with respect to the operating point, by balanced use of preamble, postamble and pilots so that the decoder synchronization sensitivity threshold corresponds with the payload decoding sensitivity threshold.
- The forward link packet encapsulation uses GSE as specified in ETSI TS 102 606 [8] with strengthened integrity control to comply with the recommendations for internet subnet-working as found in IETF RFC 3819 [9]. Alternative encapsulation over a TS Packet stream is supported for migration.
- The return link packet encapsulation is an adaptation of the generic stream encapsulation (ETSI TS 102 606 [8]), where the IP packets are fragmented just in time so that the fragments fit exactly into the remaining free space of varying size available in the transmission frame payloads of different size, without using an intermediate fixed frame size streaming layer like ATM and MPEG TS. This new encapsulation protocol for the return link was named RLE (Return Link Encapsulation).
- The link transport specification is generalized to suit a multitude of protocols, not only IP. This applies to the forward link as well as the return link and to the design of the RLE protocol. The support of transport of other protocols than IP is however considered implementation dependent.
- Support for random access user traffic is included.