

INTERNATIONAL STANDARD

Specification of the radio data system (RDS) for VHF/FM sound broadcasting in the frequency range from 87,5 MHz to 108,0 MHz

Withdrawn



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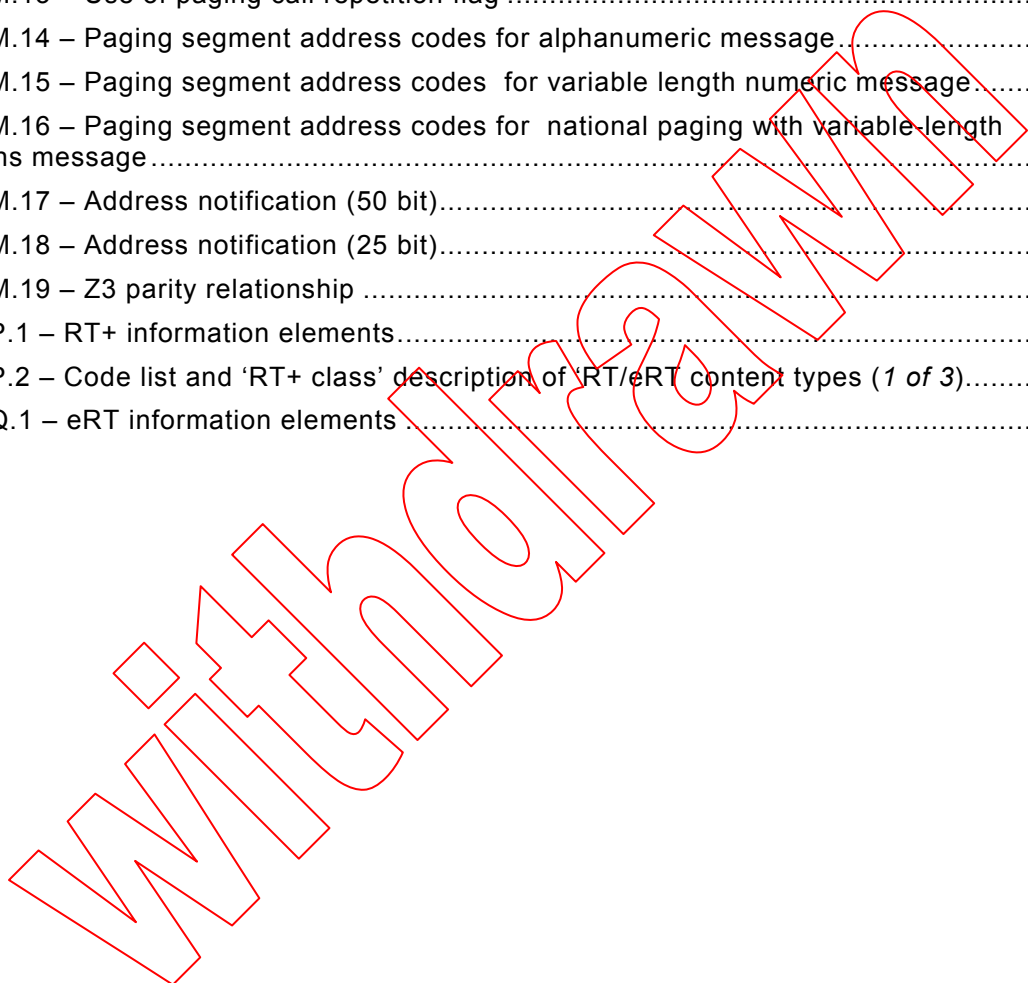
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SPECIFICATION OF THE RADIO DATA SYSTEM (RDS)
FOR VHF/FM SOUND BROADCASTING IN THE FREQUENCY
RANGE FROM 87,5 MHz TO 108,0 MHz**

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International Standard IEC 62106 has been prepared by technical area 1: Terminals for audio, video and data services and contents, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This third edition cancels and replaces the second edition, published in 2009 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- for the RDS feature EON and the use of group types 14A and 14B some additional explanations were added;
- in Annex E, containing the character code tables to be used in RDS, the explanation for Table E.1 and Table E.2 was extended;
- several small typing errors were corrected;
- to Enhanced RadioText in Annex Q an additional explanation was added.

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

CDV	Report on voting
100/2122A/CDV	100/2418/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.¹

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

¹ For technical reasons equations and some figures had to be left unchanged and are not in accordance with the ISO/IEC Directives, Part 2:2011.

INTRODUCTION

IEC 62106:2000 (first edition) and IEC 62106:2009 (second edition) have the same main text and annex structure. However, the main text of this edition is slightly restructured to more closely conform to ISO/IEC Directives, Part 2:2011. Nevertheless, cross-referencing between this edition and the previous editions remains possible. To find the corresponding subclause quickly between this edition and the first edition, it is basically sufficient to subtract 3 clauses. Example: see 3.1.5.1 in the first edition, published in 2000 becomes, see 6.1.5.1.

Withdrawn

SPECIFICATION OF THE RADIO DATA SYSTEM (RDS) FOR VHF/FM SOUND BROADCASTING IN THE FREQUENCY RANGE FROM 87,5 MHz TO 108,0 MHz

1 Scope

This International Standard describes the Radio Data System, RDS, intended for application to VHF/FM sound broadcasts in the range 87,5 MHz to 108,0 MHz which may carry either stereophonic (pilot-tone system) or monophonic programmes (as stated in ITU-R Recommendation BS 450-3 and ITU-R Recommendation BS.643-3). The main objectives of RDS are to enable improved functionality for FM receivers and to make them more user-friendly by using features such as Programme Identification, Programme Service name display and, where applicable, automatic tuning for portable and car radios, in particular. The relevant basic tuning and switching information therefore has to be implemented by the type 0 group (see 6.1.5.1), and it is not optional unlike many of the other possible features in RDS.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 10646:2014, *Information technology – Universal Coded Character Set (UCS)*

ISO 14819 (all parts), *Intelligent transport systems – Traffic and travel information messages via traffic message coding*

ITU-R Recommendation BS.450-3, *Transmission standards for FM sound broadcasting at VHF*

ITU-R Recommendation BS.643-3, *Radio data system for automatic tuning and other applications in FM radio receivers for use with pilot-tone system*

ITU-T Recommendation E.212, *For the three digit Mobile Country Codes used in Annex M of this RDS specification refer to Complement to ITU-T Rec. E.212 (05/2004) published by ITU Geneva as Annex to ITU Operational Bulletin 897, dated 2007-12-01*

US NRSC-4-B, *National Radio Systems Committee – NRSC-4-A: United States RBDS standard*

ETSI EN 301 700, *Digital Audio Broadcasting (DAB); VHF/FM broadcasting: cross referencing to simulcast DAB services by RDS-ODA 147*

3 Abbreviations

For the purposes of this document, the following abbreviations apply.

3.1

AM

<broadcasting> amplitude modulation

3.2

ARI

Autofahrer-Rundfunk-Information

Note 1 to entry: See Annex H.

3.3

FM

<broadcasting> frequency modulation

3.4

group type and version

combination of a particular group and a particular version

Note 1 to entry: RDS uses 16 data groups, 0 to 15, each with either a version A or B. For example, data group 0 can be combined with version A, and becomes 0A, or type 0A group. Type 0 group means version A and B of data group 0.

3.5

hexadecimal notation

C notation "0x" is used for hex (base 16) numbers

Note 1 to entry: This notation is used throughout this standard.

3.6

LF

long wave broadcasting frequency band

Note 1 to entry: LF applies to ITU, Region 1 only.

3.7

MF

medium wave broadcasting frequency band

Note 1 to entry: MF applies to ITU, all Regions.

3.8

RDS specific abbreviations and definitions

see Clause 7 and Annex S

3.9

VHF

very high frequency broadcasting band, here Band II, that is 87,5 MHz to 108,0 MHz

Note 1 to entry: VHF applies only to ITU.

4 Modulation characteristics of the data channel (physical layer)

4.1 General

The Radio Data System is intended for application to VHF/FM sound broadcasting transmitters in the range 87,5 MHz to 108,0 MHz, which carry stereophonic (pilot-tone system) or monophonic sound broadcasts specified in ITU-R Recommendation BS.450-3.

It is important that radio-data receivers are not affected by signals in the multiplex spectrum outside the data channel.

The data signals are carried on a subcarrier which is added to the stereo multiplex signal (or monophonic signal, as appropriate) at the input to the VHF/FM transmitter. Block diagrams of