

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)

## **RDS (Radio data system) – FM-radiofoni i VHF-frekvensområdet fra 64,0 MHz til 108,0 MHz – Del 3: Brug og registrering af åbne data-apps**

Radio data system (RDS) – VHF/FM sound broadcasting in the frequency range from 64,0 MHz to 108,0 MHz – Part 3: Usage and registration of Open Data Applications (ODAs)

**DANSK STANDARD**  
Danish Standards Association

Göteborg Plads 1  
DK-2150 Nordhavn

Tel: +45 39 96 61 01

Tel: +45 39 96 61 01

[dansk.standard@ds.dk](mailto:dansk.standard@ds.dk)

[www.ds.dk](http://www.ds.dk)

This is a preview of "DS/IEC 62106-3:2018". Click here to purchase the full version from the ANSI store.

DS projekt: M316755

ICS: 33.160.40

**Første del af denne publikations betegnelse er:**

**DS/IEC, hvilket betyder, at det er en international standard, der har status som dansk standard.**

**Denne publikations overensstemmelse er:**

**IDT med: IEC 62106-3:2018**

**DS-publikationen er på engelsk.**

**Denne publikation erstatter: [DS/EN 62106:2015](#)**

---

### **DS-publikationstyper**

Dansk Standard udgiver forskellige publikationstyper.

Typen på denne publikation fremgår af forsiden.

Der kan være tale om:

#### **Dansk standard**

- standard, der er udarbejdet på nationalt niveau, eller som er baseret på et andet lands nationale standard, eller
- standard, der er udarbejdet på internationalt og/eller europæisk niveau, og som har fået status som dansk standard

#### **DS-information**

- publikation, der er udarbejdet på nationalt niveau, og som ikke har opnået status som standard, eller
- publikation, der er udarbejdet på internationalt og/eller europæisk niveau, og som ikke har fået status som standard, fx en teknisk rapport, eller
- europæisk præstandard

#### **DS-håndbog**

- samling af standarder, eventuelt suppleret med informativt materiale

#### **DS-hæfte**

- publikation med informativt materiale

Til disse publikationstyper kan endvidere udgives

- tillæg og rettelsesblade

### **DS-publikationsform**

Publikationstyperne udgives i forskellig form som henholdsvis

- fuldttekstpublikation (publikationen er trykt i sin helhed)
- godkendelsesblad (publikationen leveres i kopi med et trykt DS-omslag)
- elektronisk (publikationen leveres på et elektronisk medie)

### **DS-betegnelse**

Alle DS-publikationers betegnelse begynder med DS efterfulgt af et eller flere præfikser og et nr., fx **DS 383**, **DS/EN 5414** osv. Hvis der efter nr. er angivet et **A** eller **Cor**, betyder det, enten at det er et **tillæg** eller et **rettelsesblad** til hovedstandard, eller at det er indført i hovedstandard.

DS-betegnelse angives på forsiden.

### **Overensstemmelse med anden publikation:**

Overensstemmelse kan enten være IDT, EQV, NEQ eller MOD

- **IDT:** Når publikationen er identisk med en given publikation.
- **EQV:** Når publikationen teknisk er i overensstemmelse med en given publikation, men præsentationen er ændret.
- **NEQ:** Når publikationen teknisk eller præsentationsmæssigt ikke er i overensstemmelse med en given standard, men udarbejdet på baggrund af denne.
- **MOD:** Når publikationen er modificeret i forhold til en given publikation.

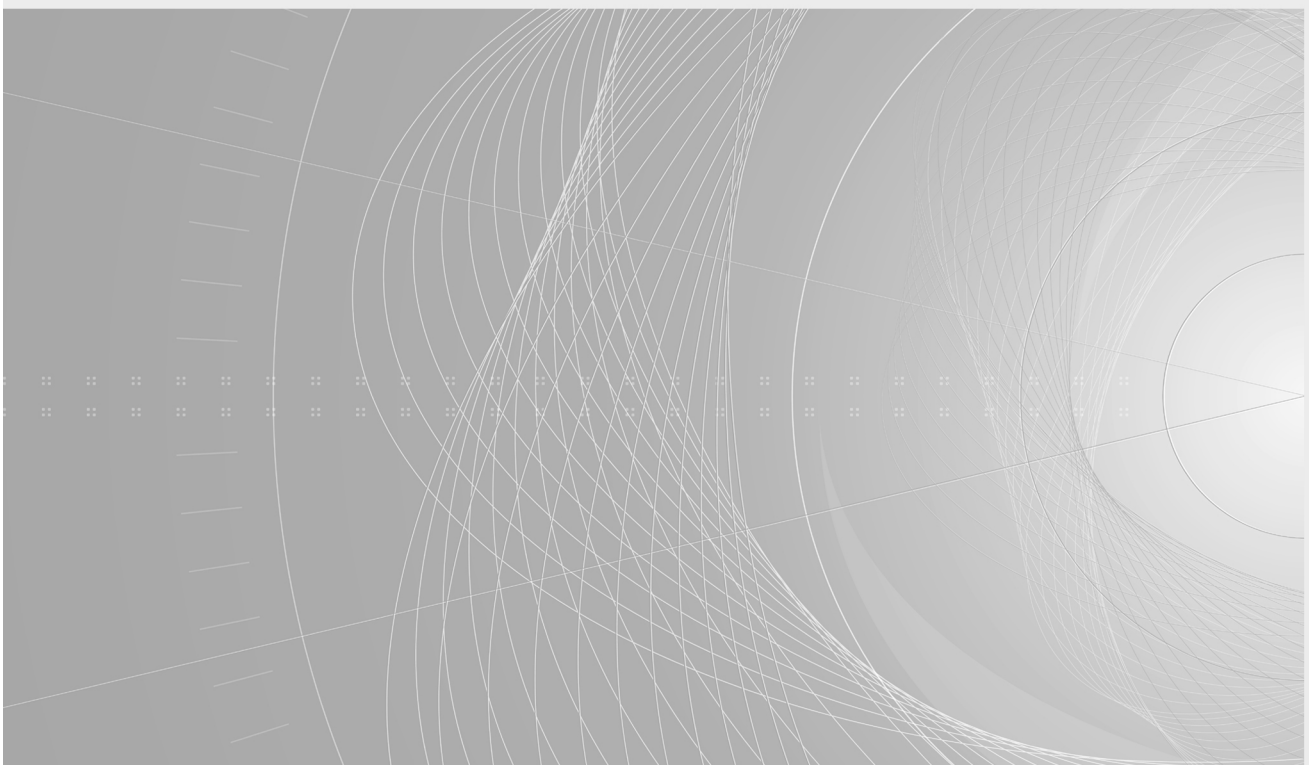
This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)



Edition 1.0 2018-09

# INTERNATIONAL STANDARD

**Radio data system (RDS) – VHF/FM sound broadcasting in the frequency range  
from 64,0 MHz to 108,0 MHz –  
Part 3: Usage and registration of Open Data Applications (ODAs)**



This is a preview of "DS/IEC 62106-3:2018". Click here to purchase the full version from the ANSI store.



### THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2018 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland

Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

#### About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

#### About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

#### IEC Catalogue - [webstore.iec.ch/catalogue](http://webstore.iec.ch/catalogue)

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

#### IEC publications search - [webstore.iec.ch/advsearchform](http://webstore.iec.ch/advsearchform)

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

#### IEC Just Published - [webstore.iec.ch/justpublished](http://webstore.iec.ch/justpublished)

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

#### Electropedia - [www.electropedia.org](http://www.electropedia.org)

The world's leading online dictionary of electronic and electrical terms containing 21 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

#### IEC Glossary - [std.iec.ch/glossary](http://std.iec.ch/glossary)

67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

#### IEC Customer Service Centre - [webstore.iec.ch/csc](http://webstore.iec.ch/csc)

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: [sales@iec.ch](mailto:sales@iec.ch).

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)



Edition 1.0 2018-09

# INTERNATIONAL STANDARD

---

**Radio data system (RDS) – VHF/FM sound broadcasting in the frequency range  
from 64,0 MHz to 108,0 MHz –  
Part 3: Usage and registration of Open Data Applications (ODAs)**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

---

ICS 33.160.40

ISBN 978-2-8322-6068-5

**Warning! Make sure that you obtained this publication from an authorized distributor.**

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)

## CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	7
2 Normative references .....	7
3 Terms, definitions, abbreviated terms and conventions .....	7
3.1 Terms and definitions.....	7
3.2 Abbreviated terms.....	7
3.3 Notation and conventions.....	7
4 ODA usage.....	8
4.1 General.....	8
4.2 ODA group structures .....	8
4.3 ODA coding for group type A or B .....	9
4.3.1 General .....	9
4.3.2 Group type 3A: ODA Application Identification (AID).....	9
4.3.3 ODA group availability signalled in group type 3A for legacy data .....	10
4.4 ODA coding for group type C on data-streams 1, 2 and 3.....	11
4.4.1 General .....	11
4.4.2 Group type C ODA Application Identification (AID) to channel number assignment on data-streams 1, 2 and 3 .....	12
5 ODA registration .....	12
5.1 General.....	12
5.2 ODA-AID codes reserved for testing with no registration being required.....	12
Annex A (informative) Open data registration.....	13
Bibliography.....	20
Figure 1 – 37-bit ODA group type A structure.....	8
Figure 2 – 21-bit ODA group type B structure.....	8
Figure 3 – 56-bit or 7-byte ODA group type C structure.....	8
Figure 4 – Group type 3A for Application group type code, AID and 16-bits of ODA data .....	9
Table 1 – ODA group availability signalled in group type 3A for legacy ODAs .....	11

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### **RADIO DATA SYSTEM (RDS) – VHF/FM SOUND BROADCASTING IN THE FREQUENCY RANGE FROM 64,0 MHz TO 108,0 MHz –**

#### **Part 3: Usage and registration of Open Data Applications (ODAs)**

#### FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62106-3 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 first edition, together with IEC 62106-1, IEC 62106-2, IEC 62106-4, IEC 62106-5 and IEC 62106-6, cancels and replaces IEC 62106:2015, and constitutes a technical revision.

This edition includes the following significant technical changes with respect to IEC 62106:2015:

- Provision has been made to carry RDS on multiple data-streams (RDS2).
- For Open Data Applications, in addition to the already existing 37-bit and 21-bit data group structures a new 56-bit or 7-byte data group structure has been added.

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)

- New are AF coding below 87,6 MHz (down to 64,1 MHz) using ODA-AID. RT+ can now be used with RT and eRT, 0x6365, see IEC 62106-6.

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

CDV	Report on voting
100/2911/CDV	100/3057/RVC

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62106 series, published under the general title *Radio data system (RDS) – VHF/FM sound broadcasting in the frequency range from 64,0 MHz to 108,0 MHz*, can be found on the IEC website.

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

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

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

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)

## INTRODUCTION

Since the mid-1980s a fascinating development has taken place. Most of the multimedia applications and standards have been created or redefined significantly. Hardware has become extremely powerful with dedicated software and middleware. In the mid-1980s, Internet as well as its protocols did not exist. Navigation systems became affordable in the late 1990s, and a full range of attractive smartphones now exist. The computing power of all these new products is comparable with that of the mainframe installations in that era.

Listener expectations have grown faster than the technology. Visual experience is now very important, like the Internet look and feel. Scrolling text or delivering just audio is nowadays perceived as insufficient for FM radio, specifically for smartphone users. New types of radio receivers with added value features are therefore required. RDS has so far proven to be very successful.

FM radio with RDS is an analogue-digital hybrid system, which is still a valid data transmission technology and only the applications need adaptation. Now the time has come to solve the only disadvantage, the lack of sufficient data capacity. With RDS2, the need to increase the data capacity can be fulfilled.

RDS was introduced in the early 1980s. During the introductory phase in Europe, the car industry became very involved and that was the start of an extremely successful roll-out. Shortly afterwards, RDS (RBDS) was launched in the USA [1, 2, 3, 4, 5]<sup>1</sup>.

The RDS Forum has investigated a solution to the issue of limited data capacity. For RDS2, both sidebands around the RDS 57 kHz subcarrier can be repeated a few times, up to three, centred on additional subcarriers higher up in the FM multiplex while still remaining compatible with the ITU Recommendations.

The core elements of RDS2 are the additional subcarriers, which will enable a significant increase of RDS data capacity to be achieved, and then only new additional data applications will have to be created, using the RDS-ODA feature, which has been part of the RDS standard for many years.

In order to update IEC 62106:2015 to the specifications of RDS2, IEC 62106 has been restructured as follows:

Part 1: Modulation characteristics and baseband coding

Part 2: RDS message format, coding and definition of RDS features

Part 3: Coding and registration of Open Data Applications ODAs

Part 4: Registered code tables

Part 5: Marking of RDS and RDS2 devices

Part 6: Compilation of technical specifications for Open Data Applications in the public domain

The following future parts are planned:

Part 7: RBDS

Part 8: Universal Encoder Communication Protocol UECP

---

<sup>1</sup> Numbers in square brackets refer to the Bibliography.

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)

The original specifications of the RDS system have been maintained and the extra functionalities of RDS2 have been added.

Obsolete or unused functions from the original RDS standard IEC 62106:2015 have been deleted. The presentation in Parts 1, 2 and 3 follows the OSI basic reference model for information processing systems [6].

This is a preview of "DS/IEC 62106-3:2018". [Click here to purchase the full version from the ANSI store.](#)

**RADIO DATA SYSTEM (RDS) –  
VHF/FM SOUND BROADCASTING IN THE FREQUENCY  
RANGE FROM 64,0 MHz TO 108,0 MHz –**

**Part 3: Usage and registration of Open Data Applications (ODAs)**

**1 Scope**

This part of IEC 62106 defines the Open Data Application (ODA) feature of the Radio Data System (RDS).

The ODA feature in essence allows raw data to be transmitted via a transparent data channel from a service provider to a suitably equipped receiver without there being any prior knowledge of the data content by the IEC 62106 standard. This document defines the method of packaging the data within the RDS group structure and the identification of the data (using the Application Identification, AID) such that it can be addressed by an appropriate decoder on the receiver.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62106 (all parts), *Radio Data System (RDS) – VHF/FM sound broadcasting in the frequency range from 64,0 MHz to 108,0 MHz*