RDS Forum – the association of RDS users

R09/048_6
October 2009

Position regarding the Programme Service feature use

The RDS Forum has been monitoring the use of the Programme Service (PS) feature for a number of years, when it was observed that some radio stations started to use the PS feature incorrectly in respect of the RDS Standard (see IEC 62106:2009, Section 7.12). As a result the RDS Forum drafted 10 years ago additional explanations in the RDS Standard (IEC/EN 62106:2000) to improve the understanding of the functionality of the PS feature. This confirmed the RDS Forum and International Standard position that the PS feature shall be used solely as a static feature and that dynamic use of the PS feature is "expressly forbidden" – except for specific changes allowed to describe significant changes to the audio programme service (see IEC 62106:2009, Section 6.2.2).

(A new version of the RDS Standard was published as IEC 62106 Ed.2 : 2009 in August 2009.)

The RDS Forum needs to explain the main reasons for this position:

- The PS feature is specifically designed to allow speedy acquisition of the 8 alpha-numeric characters used to identify the audio programme service of a radio station and display it, statically, for easy reading and station selection by the listener. This is critical to overall usability of RDS equipped radios.

- The majority of RDS equipped radios store the PS in receiver memory for quick recall upon selection of a pre-set radio programme. The listeners "see what they hear" and can thus quickly toggle through all pre-set radio programmes to make a choice.

  (There is a high probability if Dynamic or Alternate PS is used that the pre-set will save eight unrelated characters that do not identify the audio programme service. Thus a user will not be able to relate the audio programme service heard to the displayed PS.)

- Some RDS equipped radios (i.e. car radios) automatically scan the FM band and use the PS of receivable radio programmes to display them associated with pre-set buttons for programme selection labelled with the received PS characters to identify a potentially available radio programme.

  (There is a high probability if Dynamic or Alternate PS is used that incomprehensible pre-set button labelling will occur.)

- The RDS Forum believes that the use of Dynamic or Alternate PS poses a significant safety problem when received by in-vehicle RDS equipped radios. It takes the view that rapidly changing PS displays have a clear potential for driver distraction.

  (In this context it is also important to note that the European Commission published Recommendation 2007/78/EC on safe and efficient in-vehicle information to request the industry supplying in-vehicle information and communication systems to comply with these there addressed safety principles. Some vehicle manufacturers already have designed a dynamic recognition method that disables changing PS displays.)

In summary, the RDS Forum confirms that the use of Dynamic or Alternate PS is completely contrary to the RDS standard IEC 62106 and it is noted that best practice for all dynamic text is to use the RadioText and RadioText Plus features only.

The RDS Forum expects all Radio Regulators to ensure that the RDS PS feature is ***only*** used as specified in the RDS Standard; prohibiting all use of Dynamic or Alternate PS. This is vital to ensure appropriate operation of all RDS equipped radios – of which many millions are now in use, requiring compliant transmissions for correct functionality.

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Explanation of terms:

Programme Service name (PS)

This is the label of the programme service consisting of not more than eight alphanumeric characters coded in accordance with the RDS standard IEC 62106:2009, which is displayed by RDS receivers in order to inform the listener what programme service is being broadcast by the station to which the receiver is tuned. An example for a name is 'Radio 21'. The Programme Service name is not intended to be used for automatic search tuning and must not be used for giving sequential information.

(The RDS feature to be used for automatic search tuning is the PI code.)
(All Clauses from the latest version of the RDS Standard relating to the use of the PS feature are attached as Appendix 1.)

Dynamic-PS or **Alternate-PS**: The non-standard PS that can regularly change and can contain text information.

(These terms relate to the non-standard use of the PS feature; they are thus not used in the RDS Standard.)

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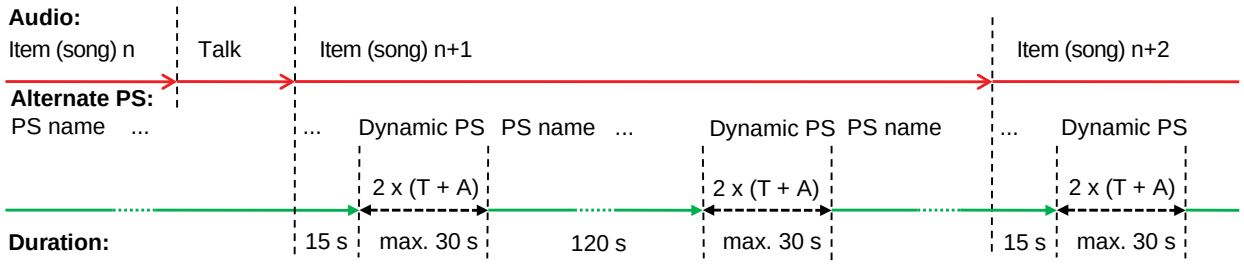
Advise to radio stations still using
Dynamic or **Alternate PS**

As outlined above the correct transmission technique for text messages in RDS is to use the RadioText features and not Dynamic or Alternate PS. The RDS Forum recognises that it may be challenging for a radio station that has previously implemented Dynamic PS to switch it off without some replacement strategy. Radio stations should recognise that there are more radios available today that support the RadioText (RT) features and they should implement RT, eRT or RT+ to carry their dynamic text as soon as possible.

However, if they wish to continue, during a transitional period only, it is recommended to use a less damaging Alternate PS approach. In this context "Alternate PS" is defined as transmitting the PS name of the audio programme service name of a radio station, statically for at least 30 seconds in each minute. The remaining 30 seconds or less would then be available to carry dynamic PS content – although this is deprecated by the RDS Forum – until a RT featured service is possible.

As an example, the timing of the sequence is detailed below:

Temporary solution to identify Title and Artist in PS



T + A = Title + Artist

(**Note however this important restriction:** In many car radios PS is used to establish dynamically a station list that the listener can use then for easy programme selection. A station using Dynamic or Alternate PS cannot be used for

this and there are already requirements from some car manufacturers to replace text information on the PS display with LOCAL 1, LOCAL 2 etc., which will then result in the complete loss of the radio programme's identification.)

Ultimately, the radio station should stop to use Alternate PS and change over to using the RadioText features instead for text information. If the text contains for example 'Title' and 'Artist' information, then RT+ should be used in addition to tag these items.

(There are more and more inexpensive radios in the market that can do Dynamic Label with Digital Radio and RT with FM/RDS. The trend is accelerated with Digital Radio now being strongly promoted in Europe. Thus more and more listeners will be able to view RT messages. The display of RadioText is usually disabled on in-vehicle equipment for safety reasons. However in most cases the user can activate this display mode, but must then read the instruction manual, which is very often not done. A more sophisticated approach is to enable the RT display automatically at very low vehicle speeds and/or in the stand-still.)

Appendix 1

How to implement PS correctly

Clauses in the new version of the RDS standard (IEC 62106 : 2009) relating to a correct Implementation of the Programme Service name

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. 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.

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6.1.5 Coding of the Group types

6.1.5.1 Type 0 groups: Basic tuning and switching information

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The Programme Service name comprises eight characters, intended for static display on a receiver. It is the primary aid to listeners in programme service identification and selection. The use of PS to transmit text other than a single eight character name is not permitted (see also 6.2.2). Transmission of a PS name usually takes four type 0A groups, but to allow an instant display of the PS when a receiver pre-set is selected, the PS name is often stored for subsequent recall from memory when a programme service is selected. For this reason PS shall generally be invariant.

If a broadcaster wishes to transmit longer Programme Service names, programme-related information or any other text, then RadioText provides this feature.

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6.2.2 Coding and use of information for display

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The Programme Service name comprises eight characters, intended for static display on a receiver. It is the primary aid to listeners in programme service identification and selection. The use of PS to transmit text other than a single eight character name is not permitted (see also 6.1.5.1). Transmission of a PS name usually takes four type 0A groups, but to allow an instant display of the PS when a receiver pre-set is selected, the PS name is often stored for subsequent recall from memory when a programme service is selected.

The transmission and reception conditions for PS described were designed on the basis that PS would generally be invariant. A few transmission operators have allowed PS to change to reflect the origin of the service, for example when a regional service switches to a national service. These changes which may occur a few times a day and have a duration of anything between a few minutes and several hours, are acceptable, but any other dynamic changes to PS are NOT acceptable and may cause a safety hazard by distracting a vehicle driver. A similar effect could be experienced with dynamic text transmission of PTYN. As a result, dynamic PS and PTYN transmissions are expressly forbidden.

Similarly RT and eRT could also be distracting to a vehicle driver; therefore the in-vehicle display of RT and eRT should normally be disabled and the RT/eRT display should be designed for end-user viewing only, when manually enabled.

Glossary of terms

7.12 Programme Service name (PS)

This is the label of the programme service consisting of not more than eight alphanumeric characters coded in accordance with Table E.1, which is displayed by RDS receivers in order to inform the listener what programme service is being broadcast by the station to which the receiver is tuned (see 6.1.5.1). An example for a name is 'Radio 21'. The Programme Service name is not intended to be used for automatic search tuning and must not be used for giving sequential information.

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7.14 Programme TYpe Name (PTYN)

The PTYN feature is used to further describe current PTY. PTYN permits the display of a more specific PTY description that the broadcaster can freely decide (e.g. PTY=4: Sport and PTYN: Football). The PTYN is not intended to change the default eight characters of PTY which will be used during search or wait modes, but only to show in detail the programme type once tuned to a programme. If the broadcaster is satisfied with a default PTY name, it is not necessary to use additional data capacity for PTYN. The Programme Type Name is not intended to be used for automatic PTY selection and must not be used for giving sequential information.

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7.16 RadioText (RT)

This refers to text transmissions coded in accordance with the *basic character set* of Table E.1, addressed to receivers, which would be equipped with suitable display facilities (see 6.2.2).

7.17 Enhanced RadioText (eRT)

This is an enhanced RadioText *alternative* to enable text transmissions coded in accordance with the *extended character set* of Table E.2, addressed to receivers, which would be equipped with suitable display facilities (see 6.2.2 for the display and Annex Q for the coding). eRT uses an ODA and is thus not incompatible with old receivers incapable of response to using this feature.

7.18 RadioText Plus (RT+)

This allows to tag specific elements of RadioText and permits, among many other possibilities, to improve the presentation on a display for RT or eRT. The tagged RadioText elements can also be stored as a list that could be searched by the end user. A popular application is to list music titles and artist names (see annex P for the coding). Many other application possibilities would exist or could be developed. RT+ is an ODA and is thus compatible with old receivers not using this new feature.