

Progress on the RadioText Plus (RT+) implementation

RT+ is a new RDS feature permitting more than just tagging music titles and artist names in RadioText

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- **The proposed ODA-RT+ enhancement came from**
 - IRT / Nokia / WDR and was a joint development
- **In 2005 a co-ordination meeting was held at Nokia**
 - Interested RDS experts were invited to participate
 - A number of minor changes were agreed in the specification
- **The RDS Forum 2006 examined the specification**
 - Several RDS experts from the USA were invited to join
 - Some possible 'tags' were more precisely defined
 - There was agreement to add RT+ to an upgraded RDS standard
 - The RT+ specification was published on the Forum web site
 - US NRSC agreed to adopt RT+ despite a parallel development (RBDS, Annex U)
- **2007 - Nokia agreed to the use of RT+ as an open technology**
 - This was also an essential RDS Forum requirement
 - Several RDS experts met in Bellevue, WA, USA to carry out a field trial with RT+
- **The RDS Forum 2008 agreed the proposed standard upgrade**
 - WorldDMB agreed an equivalent feature (DL+) for DAB/DMB radio
 - US NRSC mapped HD Radio text features to equivalent RT+ features
- **August 2009 – IEC published upgraded RDS standard**

- **There exist two good sources of information**
 - The EBU published a very general article to explain the new RT+ feature
 - You can download this article from here
 - http://tech.ebu.ch/docs/techreview/trev_307-radiotext.pdf
 - In the newly upgraded RDS standard
 - The RT+ specification is in Annex P
 - You can find this specification on the RDS Forum web site
 - Just go to section “RDS standard updating”
 - The new RDS Standard reference is
 - IEC 62106 Edition 2 : 2009
 - Now it is also available from the IEC web store
 - <http://webstore.iec.ch>

- **In 2008 – Clear Channel Radio / USA implemented RT+ on 400 stations**
 - Here is their press release
 - <http://www.clearchannel.com/Radio/PressRelease.aspx?PressReleaseID=2276>
 - Since then over 200 commercial radio stations followed
 - They belong to the Greater Media, Radio One and Bonneville broadcast groups

- **Several German public broadcasters started RT+ in 2006**

- Now - in 2010 - there are already 12 FM programmes
 - The number is likely to increase



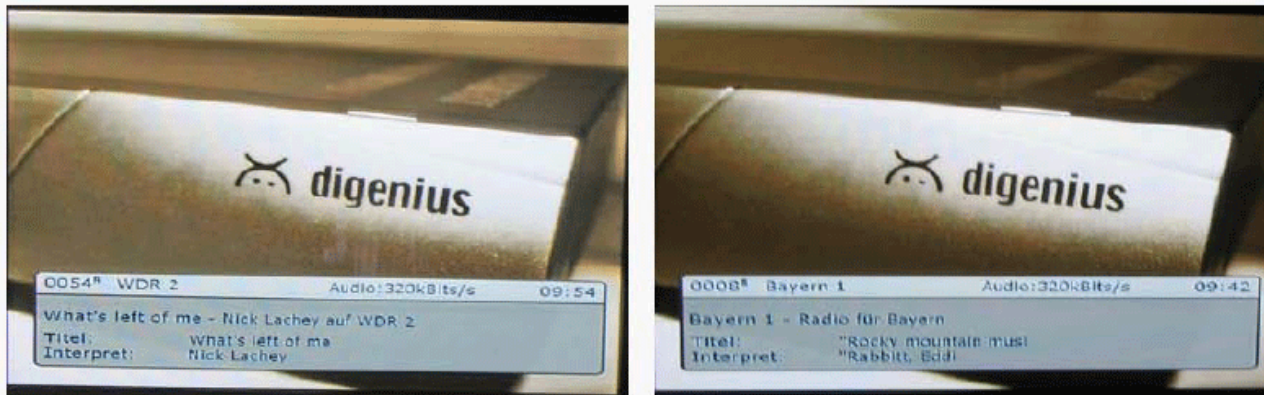
- In addition, in Germany, some RDS features are also used on DVB-S radio
 - To achieve this the RDS Forum upgraded the UECP to the new version 7
 - The UECP can be downloaded from this web site / Go to 'Publications' and there it is

- **2009: in London the commercial station**

Absolute Radio started RT+ music tagging



- The first receiver with RT+ was for DVB-S radio

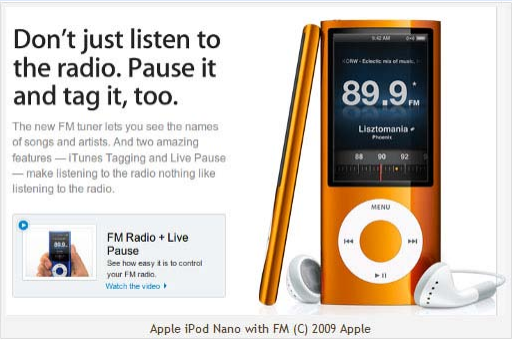


- The first line is normal RT
- The second and third line are obtained from RT+
- RT+ info stays on the display as long as the (music) item is running

Demo during the RDS Forum 2006 using the Digenius DVD-S set-top box

Then Kenwood converted its entire RBDS car radio line to also support RT+





This 91.3 screen was captured in October 2009 on radio BAYERN 1 in Munich:

- Upper line shows normal RadioText scrolling through the display
- Lower two lines show -RT+ tagged music info
 - > Music title on line 1
 - > Artist name on line 2

*September 2010:
Apple implemented RT+ in the iPod nano 5G and also in the new iPod nano 6G*

Don't just listen to the radio. Pause it and tag it, too.

The new FM tuner lets you see the names of songs and artists. And two amazing features — iTunes Tagging and Live Pause — make listening to the radio nothing like listening to the radio.



Apple iPod Nano with FM (C) 2009 Apple

- To see what can be done with the FM radio – use this link <http://www.apple.com/ipodnano/features.html#fmradio>

NOKIA
Connecting People

■ In some recent mobile phone models

- Nokia implemented RT+ with the new Symbian^3
- These are those new Nokia models: N8, E7, C7 and C6



These phones have all an FM/RDS radio with RT/RT+ for

- **Music titles** (to purchase the song)
- **Artist names**
- **Radio programme web address** (stored to non-volatile memory)
 - That web address is then always available on your phone !!!

Broadcasters – This brings a real digital breeze to your listeners of your so popular analogue FM radio with RDS

- If you go for that RDS feature, you can only win-win-win

- Watch also this video to learn what the N8 does

<http://www.youtube.com/watch?v=zGuY3tMvbC4>

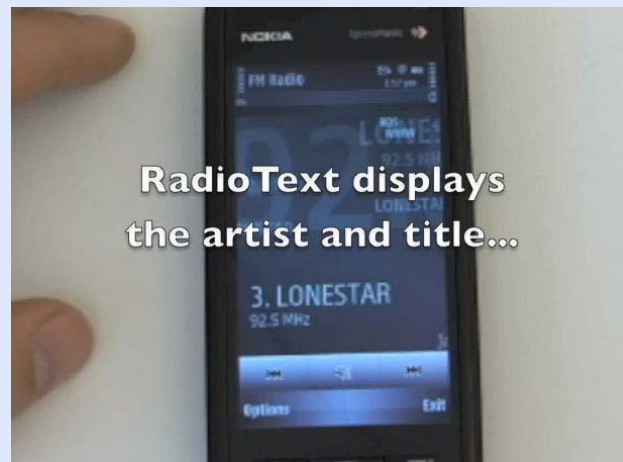
- **Yes, but from where to get the data?**
 - If recorded music is used, the record industry can provide the metadata needed for music title & artist names
 - This ensures that the notation is correct and as published by the record labels
 - Errors of misspelling are thus easily avoided
 - The metadata also permit correct retrieval of any music item, if the listener wants to purchase it from one of the Internet providers

- **Here is an interesting viewpoint held by the US radio marketing expert Jeff Haley ***
 - He points to recent products launched by Apple (iPod nano) and Microsoft (Zune)
 - “The broadcaster distribution of the FM signal on mobile devices will change radio misperceptions and drive more listeners. Our next opportunity will be to drive greater listener satisfaction through the direct purchase of music from our programming.”
 - “If radio was available on every mobile phone, and if half of the subscribers listened to it half an hour a day, then that would create \$ 3 billion annual increase in radio advertising revenue.”
 - The RDS technology helps to enable song tagging and radio stations should increasingly use this feature ...

* Jeff Haley is CEO of the US Radio Advertising Bureau / Previously Global Marketing manager for Time Warner

- **The iPod nano implemented only title & artist name**
 - The motivation was definitely commercial
 - To sell music items via the Internet iTunes shop
 - Share some of the profit made with the broadcasters that implement music tagging by offering them a percentage and motivate them to support the business
- **RT+ can make radio much more interesting**
 - Broadcaster benefit: Listeners will listen more radio
 - Listeners are interested in new music presented by DJ's
 - Advertising is accepted if programme content is interesting
 - RT+ enables web addresses and phone numbers
 - Mobile phone/PDA enables the listener to access the radio station's web services like the homepage with programme guides, competitions, pictures, advertisements, wikipedias and music stores
 - Broadcasters can achieve a much higher listener satisfaction
 - They can only **win-win-win** & a return on their investment is possible here

- **These two videos show a simulation**
 - RT+ for music with title & artist information and
 - Web enabled FM radio using a web address obtained via RT+
 - You find these two demos here
 - <http://share.ovi.com/album/jyrkihoisko.radio>



■ The ideal multimedia content

- to show on a (mobile) FM radio connected to Internet will be the home page of the radio programme

Example: www.br-online.de/br-klassik/



- This **web address** can be captured and stored from RT with RT+
- Thus the home page will automatically appear on the display
 - like on the radio shown above
- The new open source Symbian platform (release ^3) supports this **RT+ feature** since February 2010
- **FM radio now is becoming “digital” !!! – thanks to RT+**

- **If you find that RT+ is interesting for you**
 - I can arrange a contact to experts with broadcast implementation experience
 - Just contact me
 - dkopitz@compuserve.com

- **The investment in RT+ will be future proof**
 - RT+ equivalents exist in all digital radio technologies
 - DMB/DAB/DAB+
 - DRM+
 - HD Radio

- Hans-Christoph Quelle (formerly Nokia)
- Werner Richter (IRT, Germany)
- Matthias Ewert (WDR, Germany)
- Andreas Niendorf (Digenius, Germany)
- Jeff Littlejohn (ClearChannel Radio, USA)
- Jyrki Hoisko (Nokia, USA)
- Allen Hartle (Jump2Go, USA)
- Mike Bergman (Kenwood, USA)
- Jonathan Pearce (Silicon Labs, UK)
- Joop Beunders (Catena, Netherlands)

They all helped the RDS Forum to achieve the RT+ development objectives



- RDS specification first published by EBU in 1984
- First RDS CENELEC standard published in 1990
- CENELEC RDS standard updated in 1992 and 1998
- First RBDS US standard published in 1993, updated in 2005
- First RDS IEC standard published in 2000, updated in 2009
- RDS specification – 25th anniversary in 2009

- **Total number of FM radio / RDS decoder ICs annual sales:**
 - Far over 600 million chips now per year