



Nick Piggott

Vorsitzender, RadioDNS Projekt

Agenda

- Hybrid Radio - Kurze Hintergrund
- Aktuellster Stand des Projekts
- UKW/IP Umschaltung
- Ziele des Projekts in Deutschland

Dann...

- **Tobias Wallerius**, Visteon GmbH



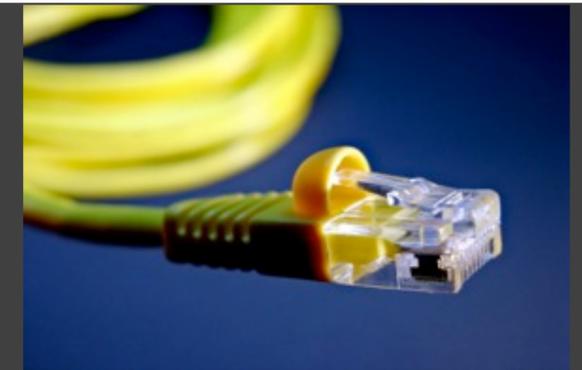
Die Konvergenz von Rundfunk & Internet

“Hybrid” Radio



Rundfunk ist für den Massenmarkt ideal
Preiswert, Universell, Gratis

Das Internet bringt einen Rückkanal
**Zusätzliche Inhalte, Personalisierbar und
Geschäftsmodelle**



Rundfunk mit IP

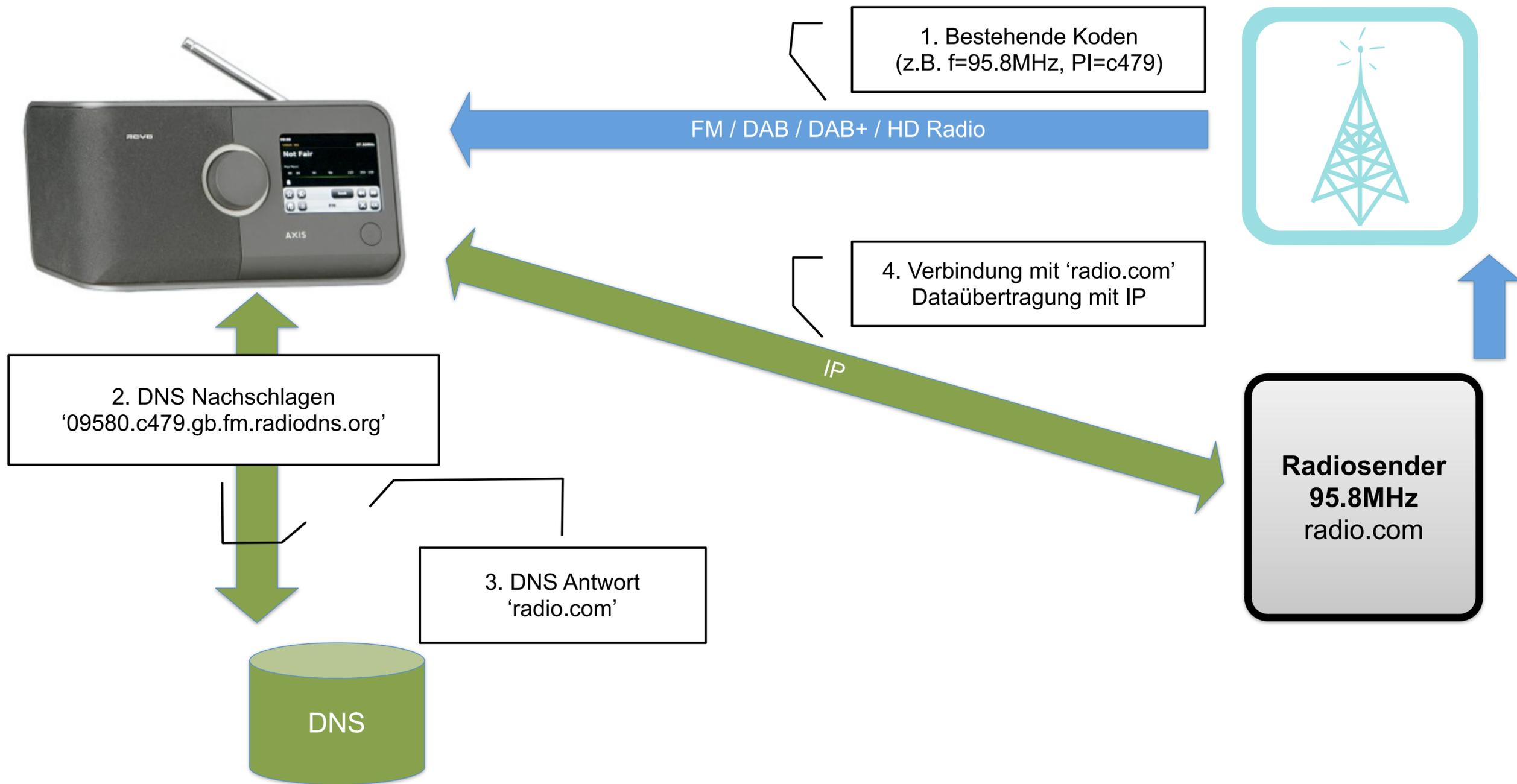
- Konvergente, **verbundene** Geräte, z.B.
 - Handys mit eingebaute UKW-Funktionalität
 - Autos mit eingebaute IP-Funktionalität
- Rundfunk **'wie eine App'**
 - Audio über zuverlässigen Rundfunk
 - Meta-Daten und zusätzliche/personalisierte Daten über IP

Unsere Einstellung

- **Offene** Standards, **open source** - **keine Patente**
- **Einfache** - **Wiederverwendung** bestehender Technik
- **Ein** Standard Weltweit, der mit allen Rundfunk Systemen funktioniert
- **Offene** Organisation - **vertrauenswürdig**, zuverlässig, transparent
- RadioDNS ist eine **gemeinnützige** Organisation

RadioDNS

HYBRID RADIO



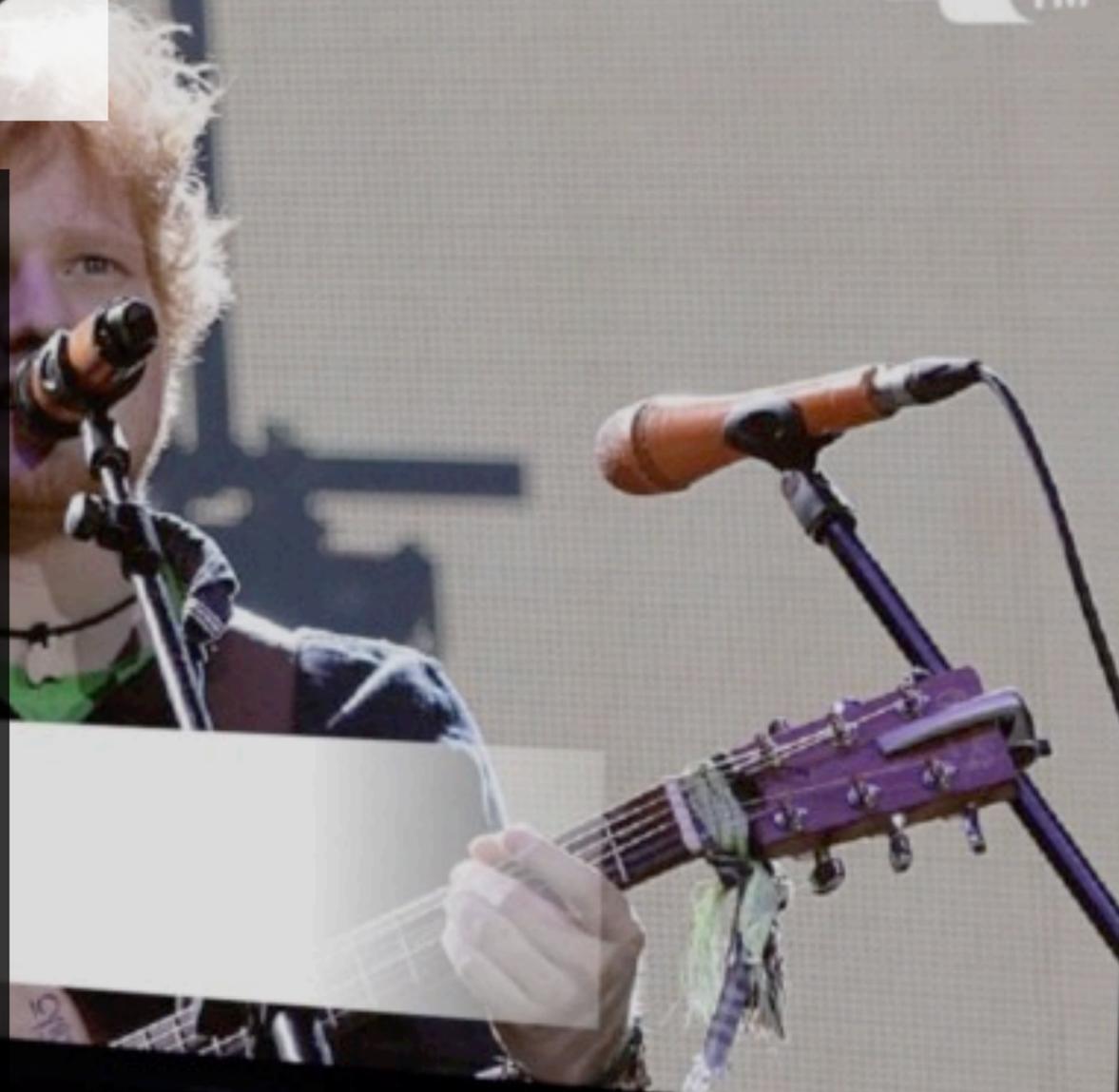
Radio

95-106
CAPITAL
FM

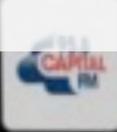
ED SHEERAN -
Lego House

- Einfaches System Bilder zum Radio zu senden.
- Click-through fähig, für e-commerce oder Direktmarketing
- Schaut modern und attraktiv aus

On air now
The Bassman
1pm-4pm



Radio EPG

 Capital

 Classic fm

 Heart

 LBC

Now: The Bassman
Next: Greg Burns

Now: Nick Snaitch
Next: Tim Lichfield

- Senderinformation für Navigation (mit Logos und Beschreibungen) oder zum durchsuchen.

- **Automatische Umschaltung zwischen Rundfunk und Streaming**

- On-Demand Audio links



RadioDNS Heute

PSNEurope's Broadcast Audio's latest news from manufacturers, suppliers and associations for the European broadcast networks. Full analysis of how audio-for-broadcast systems implementation, plus developments in core technology. Keep up to date with the latest news and features with the fortnightly PSNE Audio for Broadcast newsletter. [Register free for PSNE Audio for Broadcast >](#)

RadioDNS moves ahead with new services and technologies

Story Code : ej16
12 September 2012



New interactive services linking digital and analogue radio broadcasts to the internet have been launched this month on both BBC services and German public network ARD.

RadioDNS is an attempt to combine the practicality and familiarity of FM with the additional data and connectivity promised by digital radio when it was introduced in the 1990s. Standing for Domain Name System, DNS is a computer naming protocol that associates specific information with domain names and generates IP

The new breed of radio at IBC
03 September 2012

Visitors to IBC 2012 will have a chance to catch up with the latest developments in Hybrid Radio on the EBU stand (10.F20). Besides showing some applications that are already on air, we'll also be demonstrating new tools that have the potential to revolutionize the radio experience in future. Once again we're pleased to be joined by colleagues from RadioDNS to show how radio can be enhanced through combining

Visualization using RadioVIS is already available to broadcasters in Europe and the US, viewable on phones that are on the market today. RadioEPG, Electronic Program Guide and Service Following feature. We'll be demonstrating these features in stations from NPO and Global UK using RadioVIS.

Tagging content

RadioTAG is the name of a new tagging feature for personalization of programme enrichment. In our prototype implementation where pictures can be tagged (or bookmarked) on a simple receiver...

Hybrid project reaches fruition

RadioDNS
By David Davies

Following a year of high-profile demo events, RadioDNS – the hybrid technology project that aims to enhance broadcast radio listening – has gone 'above ground' with large-scale implementations by the BBC and ARD.

Spawened of the belief that broadcast radio still has a valuable role to play, even with



BBC R&D's George Wright celebrates the launch of RadioDNS services for BBC Radio 1 and 1Xtra

the growing ubiquity of IP streaming, the not-for-profit RadioDNS (Domain Name System) project was established to provide the technology to enhance existing radio services with related content provided via the internet.

In the run-up to IBC, German public broadcaster network ARD announced the introduction of RadioVIS – a RadioDNS sub-project that determines how to add visual information to radio across 68 of its member

stations, covering the majority of Germany on FM and DAB+.

Meanwhile, the BBC has just brought RadioVIS to its Radio 1 and 1Xtra services following two years of work by the BBC R&D team.

"IBC really marks the point at which RadioDNS goes above ground. The project has really assumed its own momentum now," said George Wright, head of the Internet Research & Future Team at BBC R&D. **8.F48**

The Radio Magazine

October - November 2012 Edition No. 101

Technologies combined

"A seamless combination of IP and broadcast radio" is how Nick Huggitt describes RadioDNS. UK, from Global Radio, is chair of the adDNS steering group and he, and the IC's George Wright, spoke to The Radio Magazine about a technology that is on the verge of revolutionizing the commercial radio industry.

RadioDNS uses hybrid radio and the existing domain name system to allow receivers to look up web resources and use them to improve radio for listeners and broadcasters alike. It works with all forms of broadcast radio – FM, DAB, HD radio and IP.

"Broadcast radio has unique strengths. IP does not do as well in providing radio everywhere and we want to use IP radically, providing a seamless combination of IP and broadcast radio," says Nick. To do this several applications have been created. These are RadioVIS, RadioEPG and RadioTAG.

RadioVIS specifies how to add visual information (text and graphics) to radio. For instance, you might enhance an FM broadcast with text and images, giving 'playing now' information, news, travel and commercial information, over an IP connection to the radio delivered over the internet. This is currently in use on the PURE Sensis, the Revv Axis, and some mobile phone applications.

RadioTAG can enable radio listeners to book-



Picture above: RadioVIS can present information and logos for a station; right: don't forget the competition, upgrade your RadioDNS on a Sony Ericsson phone, the great old!

RadioDNS HYBRID RADIO

(Frontier Silicon, Chris Gould (All in Media), Nick Jurasechek (Pure), Richard Morris (Commercial Radio Australia), John Dobby (vTuner), Skip Pizzi (NAB) and Michael Reichert (SAB), RadioDNS are well placed to understand the needs of the radio industry, but they know that the listener is central to the future of radio and of RadioDNS. "We have to consider the ways people listen to radio," says George. "Radio happens around people while they do other things and RadioDNS can capture what they are interested in."

The move to the commercial phase coincides with an announcement at the recent IBC that there has been a consensus to adopt a common standard hybrid radio across Europe and the USA. "The project is really generating interest from Europe and the USA as well as the UK," says George. "So it is truly global. It is one of the few truly global aspects of radio to emerge since FM."

The BBC already uses RadioDNS on all its national networks and German NPO has just embraced it. Radio is now offering it to them they were off to the US to demonstrate it there. "It's moving forward at an accelerated rate," says Nick.

With a steering group that comprises not just Nick and George, but also James Crindall (Media UK), Mathias Conchon (EBU), John Farrell

For more information on RadioDNS, visit www.radiodns.org

In Brief

MPEG HE-AAC encoder for VIBES

Thomson Video Networks has embedded Fraunhofer's HE-AAC multi-channel audio software with full metadata support technology in its flagship VIBES EM4000 encoder. "Our VIBES customers are continuously demanding ways to improve their end users' experience, and the Fraunhofer implementation of the MPEG HE-AAC standard gives the unique combination of high

Radio

THE RADIO TECHNOLOGY READER

2013 CALL FOR ENTRIES

Home » Digital Radio » RadioDNS Gains Traction in Europe

- RELATED ARTICLES (→)
- 2013 PC Calendar Wallpaper
 - Test and Measurement Needs for the Shop
 - 2012 Salary Survey
 - Directional Antenna Basics
 - Repair or Replace?
- ➔ MORE...

MOST POPULAR ARTICLES

Sep 10, 2012 2:04 PM, By Doug Irwin, CPBE DRB

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London - Sep 10, 2012 - James Crindall (who writes an interesting blog) posted an article on MediaUK regarding RadioDNS. The BBC has enabled its national radio stations with RadioVIS, or slideshow presentations that are synchronized to the artists that they are playing. In doing so, they joined other U.K. broadcasters such as Heart, Capital, Absolute Radio, Planet Rock, Xfm, and LBC 97.3.

RadioDNS is a service that allows an enabled radio to follow a radio station that is broadcasting via multiple media types - over-the-air FM or

- RELATED ARTICLES (→)
- 2013 PC Calendar Wallpaper
 - Test and Measurement Needs for the Shop
 - 2012 Salary Survey
 - Directional Antenna Basics

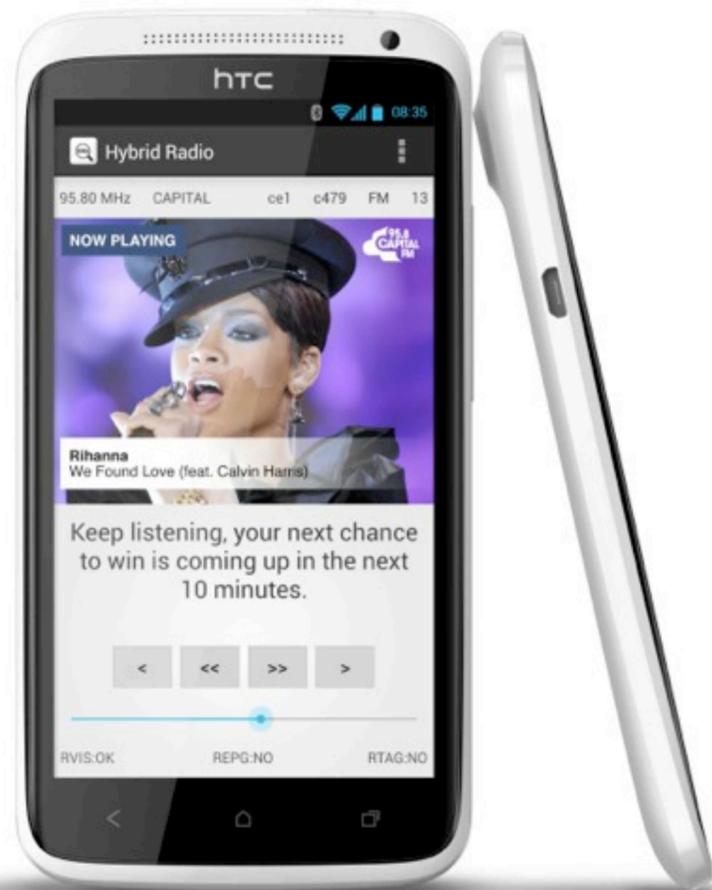
Home » Digital Radio » EBU Participates in RadioDNS Demos at NAB 2012

Apr 20, 2012 9:40 AM, By Doug Irwin, CPBE DRB

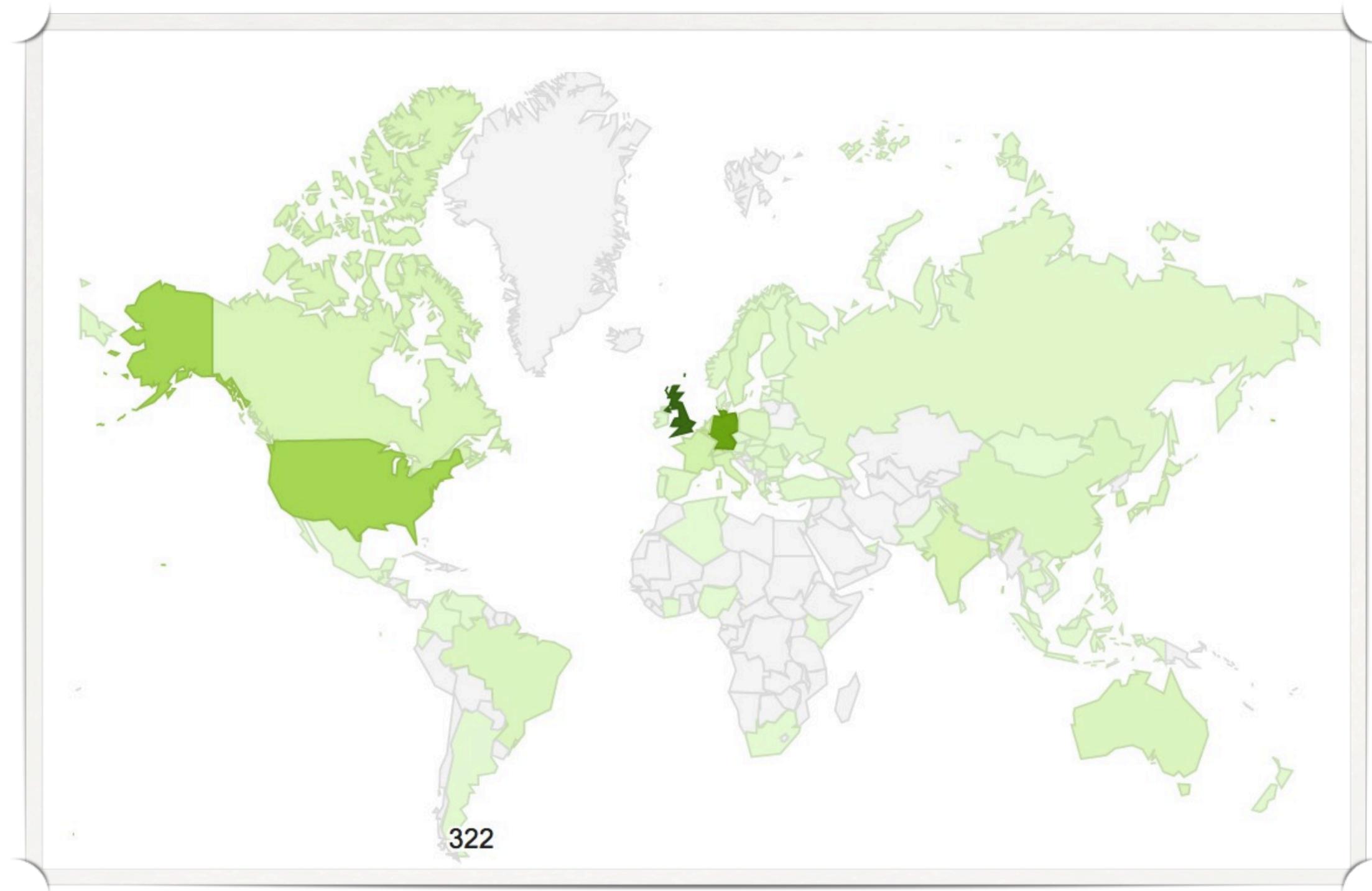
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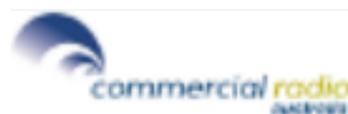
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Las Vegas - Apr 19, 2012 - At the 2012 NAB Show, the European



Weltweites Interesse







UKW und DAB
74% von Zuhörer
64% von Zuhören

Nur DAB+

Sender Information

Fehlerfreie Metadaten für Radio



Ohne Metadaten



Radio



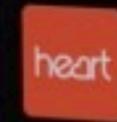
Capital

Now: The Bassman
Next: Greg Burns



Classic fm

Now: Jamie Crick
Next: Classic fm Drive



Heart

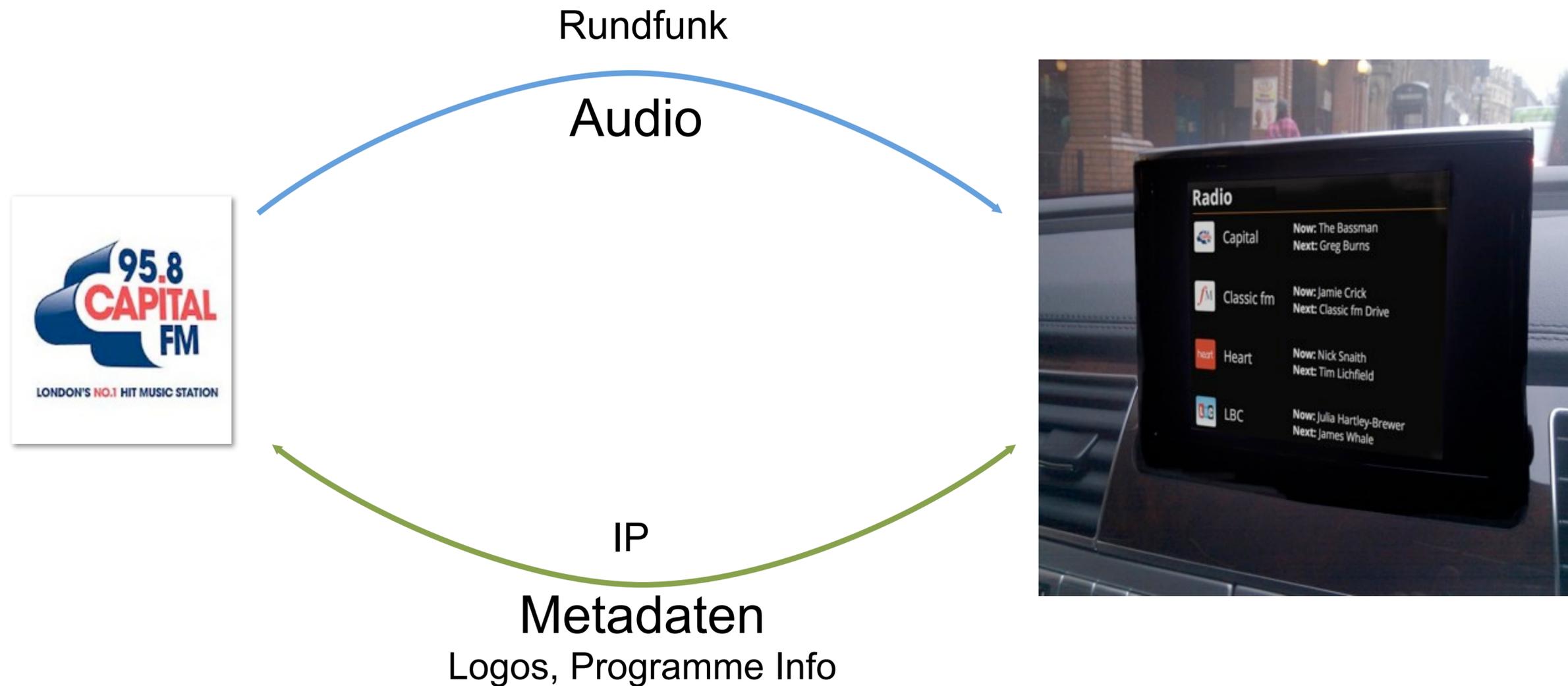
Now: Nick Snaith
Next: Tim Lichfield



LBC

Now: Julia Hartley-Brewer
Next: James Whale

Sender Information

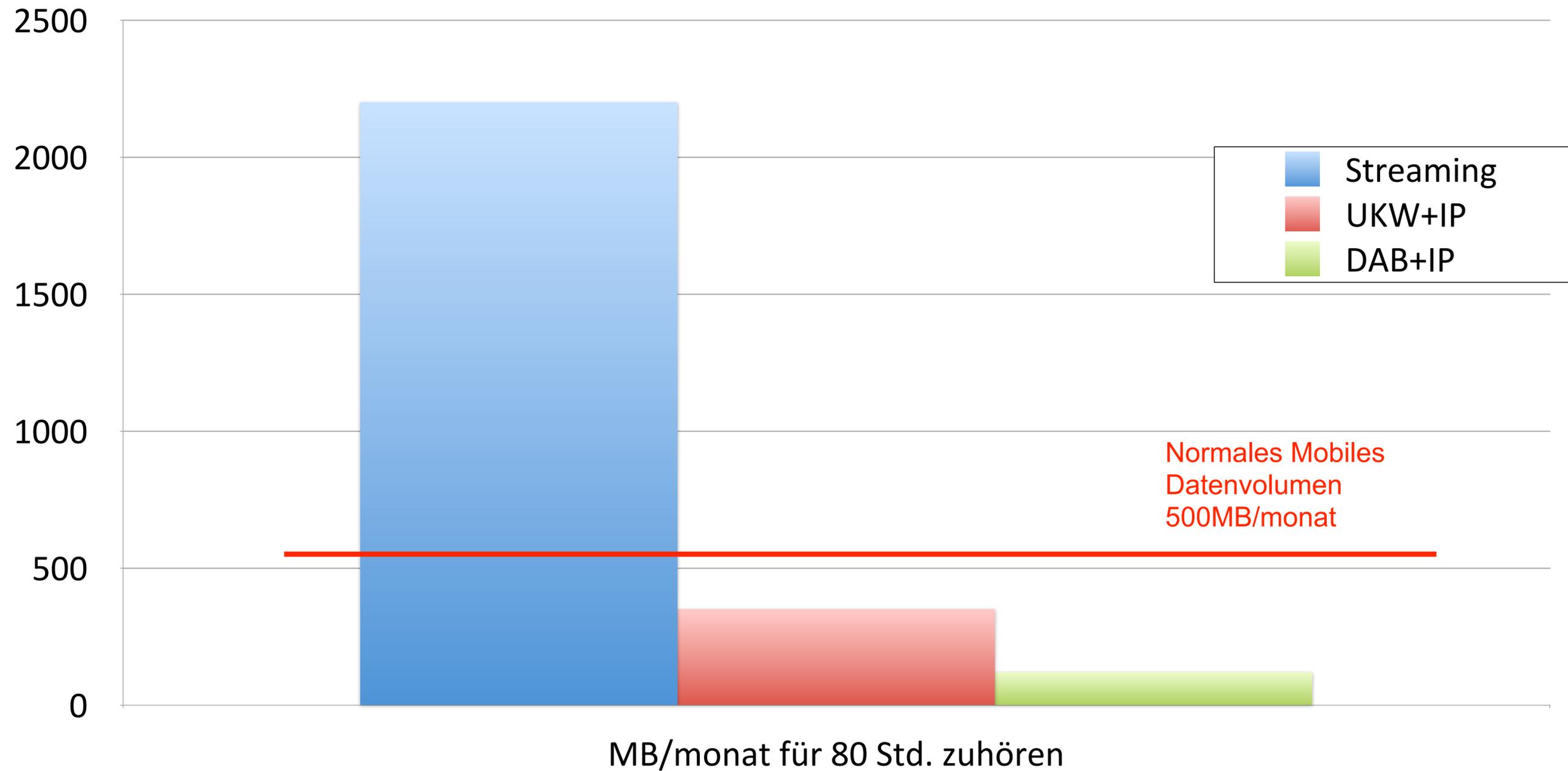


Direkt aus Radiosender ins Empfangsgerät über IP

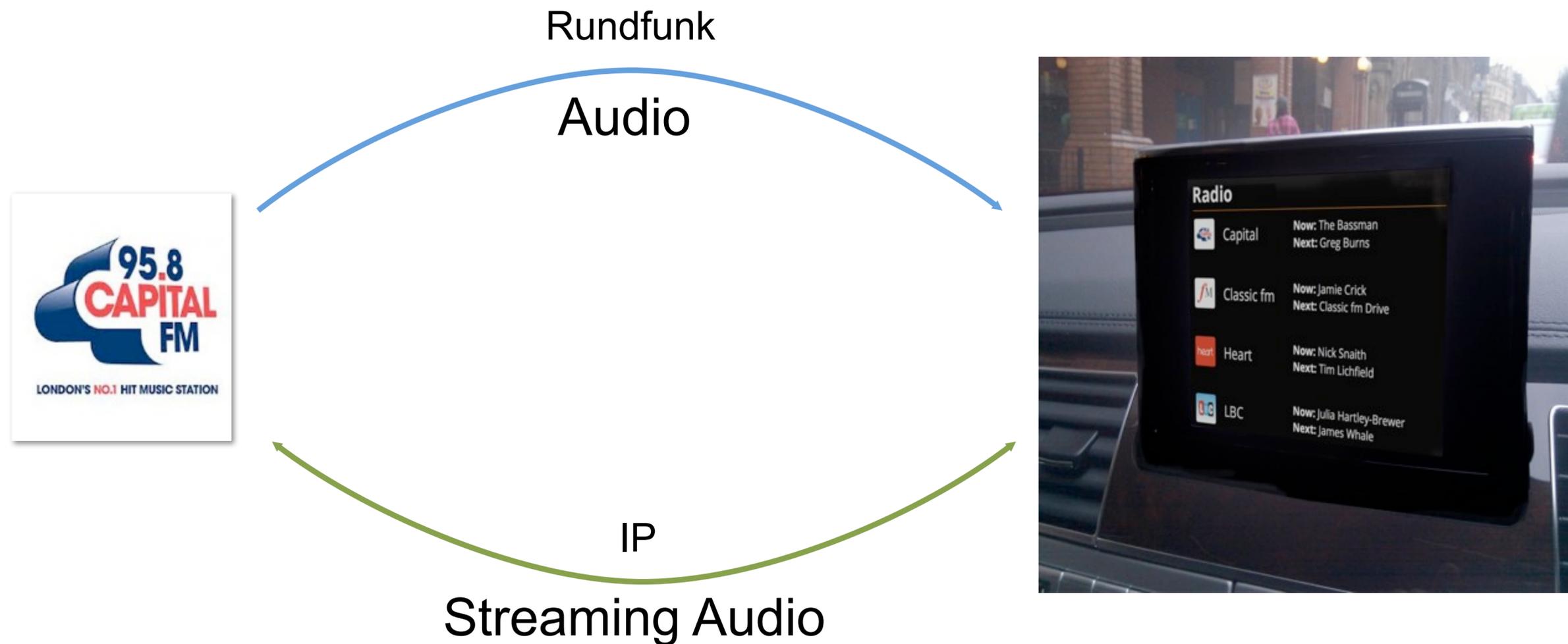
Automatische Umschaltung

zwischen Rundfunk und IP Streaming

Streaming v Rundfunk



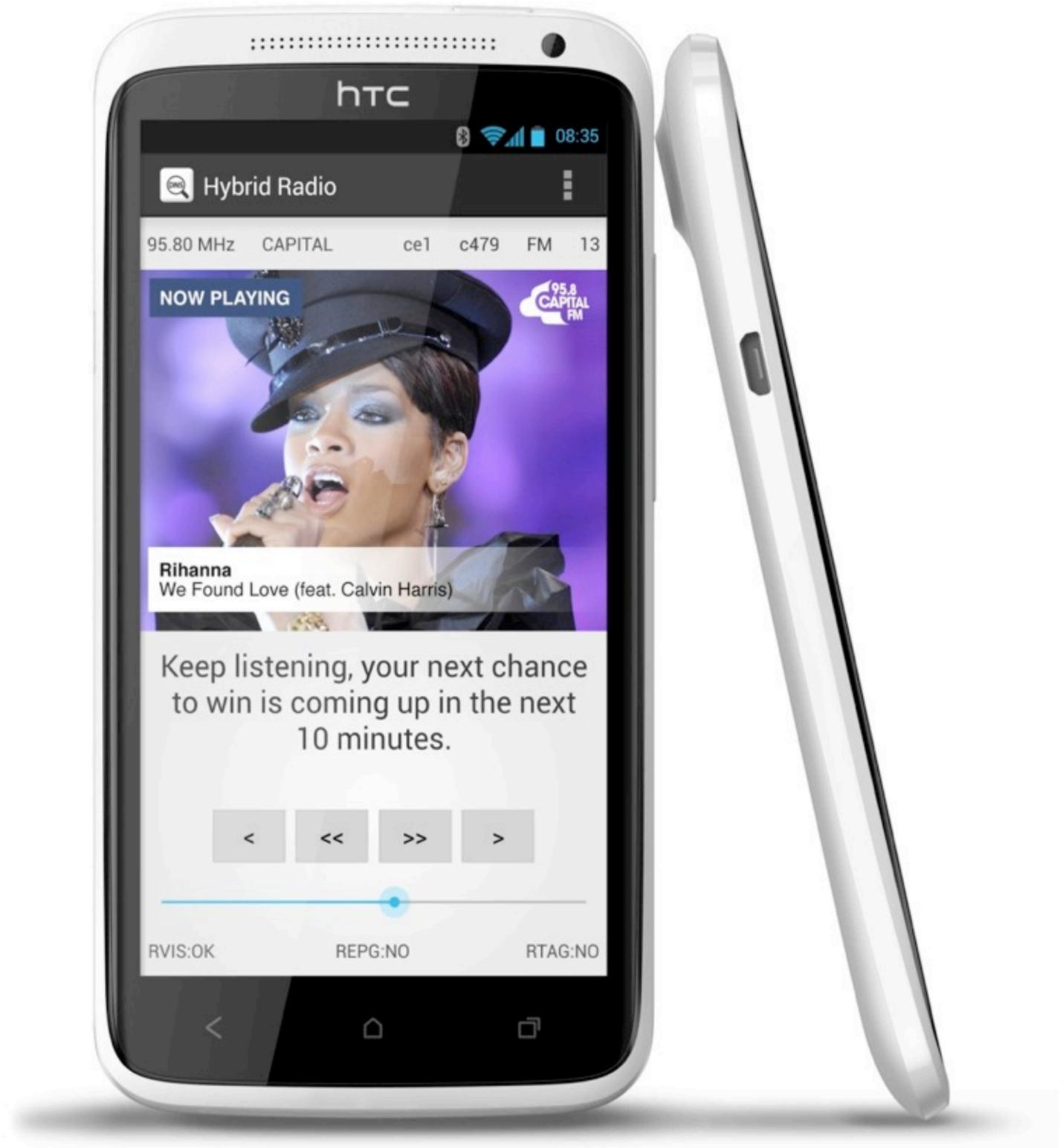
Automatische Umschaltung



Nutzen Streaming Audio nur wenn das Rundfunksignal schwach ist

UKW-IP Switching

Demo Video



RadioEPG Information

```
<?xml version="1.0" encoding="UTF-8"?>
<serviceInformation
  xmlns="http://schemas.radiodns.org/epg/10"
  xmlns:epg="http://www.worlddab.org/schemas/epgDataTypes/14"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://schemas.radiodns.org/epg/10 http://schemas.radiodns.org/epg/10 /radioepg_xsi_10.xsd"
  creationTime="2013-01-21T10:23:00"
  originator="Clear Channel Media and Entertainment"
  serviceProvider="Clear Channel Media and Entertainment" xml:lang="en">
```

XML Document Preamble

Includes boilerplate information about the document and the Provider of the document (in this case, Clear Channel).

```
<services>
  <service>
```

```
    <epg:shortName xml:lang="en">KSNE</epg:shortName>
    <epg:mediumName xml:lang="en">Sunny 106.5</epg:mediumName>
    <epg:longName xml:lang="en">Sunny 106.5</epg:longName>
    <mediaDescription>
      <epg:shortDescription xml:lang="en">
        Sunny 106.5 Las Vegas The Best Variety of Yesterday and Today
      </epg:shortDescription>
    </mediaDescription>
    <mediaDescription>
      <epg:multimedia url="http://www.ksne.com/template/masthead/sunny-106-51.jpg"
        type="logo_unrestricted"
        width="180" height="138" />
    </mediaDescription>
```

Descriptive Elements

Station names, descriptions (in different lengths).

Logos in different sizes and image formats.

```
    <epg:genre href="urn:tva:metadata:cs:ContentCS:2004:3.6.4.5">
      <epg:name>Classic/Dance/Pop-rock</epg:name>
    </epg:genre>
    <epg:genre href="urn:tva:metadata:cs:ContentCS:2004:3.1.1.11">
```

Station Genre

List of genre for this station

Mit RadioDNS

- Nutzung von **UKW oder DAB Radio** – kein Streaming
- Keine Pufferung, **viel weniger Datenverbrauch**
- Hilft den **bestehenden Radiosender**
- Ein **App-like Erlebnis** für UKW oder DAB+

Unsere Ziele

- Hybrid in alle rundfunkfähigen Handys und Autos integrieren
- Die Hersteller müssen Live Hybrid Dienste sehen
 - Deutschland ist natürlich ein Schlüsselmarkt
- ARD VIS und EPG sind für DAB+ schon eingeführt
- Wir wollen aktiv mit Privatradios zusammenarbeiten

Einfacher Beginn

- Service Information (SI) muss nur einmal erstellt werden
 - Übertragung von Logos und Senderbeschreibungen
- Offene Software Lösungen können in Ihr bestehendes System integriert sein
- "SaaS" (Software as a Service) Lösungen sind auch erhältlich und preiswert

Neue Infos!

- RadioDNS, RadioVIS und Radio EPG werden mit ETSI standardisiert sein
 - Entweder diskrete Standards oder mit bestehende Standards eingeblendet
 - RadioEPG 1.1 kommt bald, und ist schon an IMDA Standard angepasst
- Für RadioVIS wird COMET (HTTP) empfohlen sein
 - STOMP/ActiveMQ wird ein sekundäres Protocol
- RDS ECC ist wichtig, aber wir haben auch eine Lösung für Hersteller, den ECC aus die GPS Informationen abzuleiten.

Hilfe

- Emailen Sie uns: **feedback@radiodns.org**
- Docukemente: **radiodns.org/docs**
- Software und Libraries: **radiodns.org/for/developers**
- Unsere Email Gruppen: **radiodns.org/discussions**
- Service Providers: **radiodns.org/for/broadcasters/**



Danke