RadioDNS Hybrid Radio

Nick Piggott, Project Director
nick.piggott@radiodns.org

HD Radio®
Digital AM & FM
RADIO DATA SYSTEM

RadioDNS
HYBRID RADIO

Works Best

Looks Worst

Radio DNS Hybrid Radio

Broadcast works for the mass market
Reliable, ubiquitous, free

The Internet adds value
Enhanced experience & interactivity

Radio DNS HYBRID RADIO

Why “RadioDNS”?

RadioDNS operates a specialist **DNS server** for radio

Helps the radio receiver discover and connect to the radio station over the Internet

e.g.

Capital FM (95.8MHz, RDS PI code C479) = capitalfm.com

KSNE (106.5MHz, RDS PI code A4DE) = iheartmedia.com

1. Existing Identifiers
(e.g. f=95.8MHz, PI=c479)

FM / DAB / DAB+ / HD Radio

4. Contact ‘capitalfm.com’
Exchange data over IP

IP

2. DNS lookup
‘09580.c479.ce1.fm.radiodns.org’

3. DNS Response
‘capitalfm.com’

DNS

Capital FM
95.8MHz
capitalfm.com

Radio DNS
HYBRID RADIO

FM / DAB / DAB+ / HD Radio

IP

Capital FM
95.8MHz
capitalfm.com

Listener finds station by tuning **normally**

No central database of stations

The radio connects **directly** to radio station

NO connections come via RadioDNS

RadioDNS HYBRID RADIO

US Automotive Market

Automotive manufacturers **ready to launch**

Won't launch unless US broadcasters are **providing services / content**

RadioDNS, as a **not-for-profit**, cannot forward-invest or subsidize the market

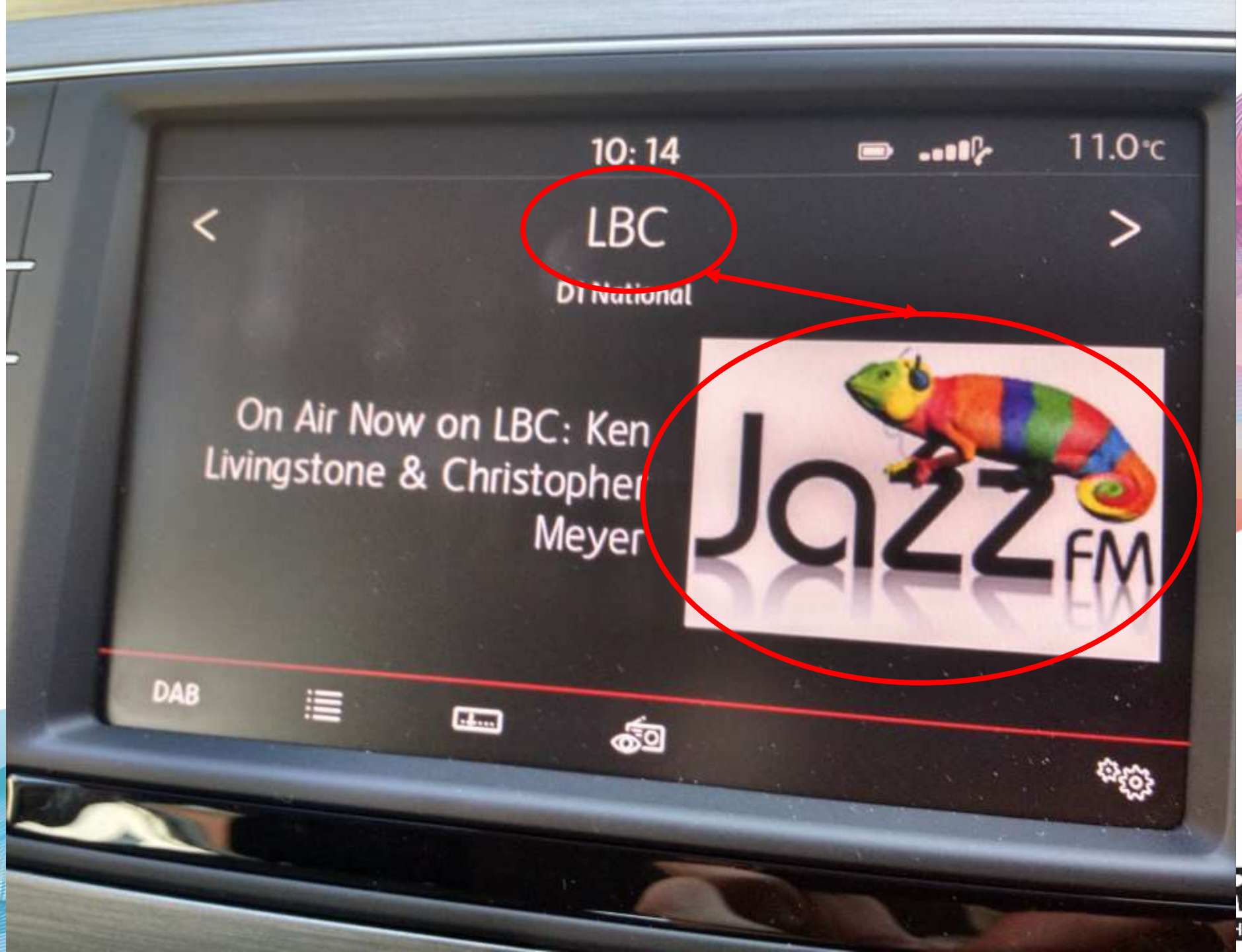
What's the **lowest cost/commitment** the US radio industry can give to reassure automotive to launch?

Project Logo

Meta-data for better user interfaces

Radio DNS
HYBRID RADIO

RadioDNS HYBRID RADIO


10:14
11.0°C
LBC
On Air Now on LBC: Ken
Livingstone & Christopher
Meyer
Jazz FM
DAB


12:59
6.0°C
RIX FM
Bäst musik just nu!
1
SR P3
NRJ
PRINCIPALES
RIX FM
Ondas Regional
SR P1
ROCK
Band
FM
Stations
Manual
Setup

Device

Meta-Data

Better Radio

RadioDNS HYBRID RADIO

Project Logo

Uses RadioDNS **Service & Programme Information** standard (TS 102 818 v3.1.1) to provide meta-data to hybrid radio devices

Specifies a **mandatory minimum meta-data set**

RadioDNS **does not** control or aggregate any meta-data

RadioDNS HYBRID RADIO

Project Logo

Doesn’t force a specific user interface model on manufacturers

Intended to enhance **existing user interfaces**, not replace them

No requirement to implement a platform-neutral or “app-like” User Interface

Minimum Meta Data

Station Name – 8, 16 and 140 characters

Description

Genre(s) – multiple using TVAnytime standards

Logos - 32x32px; 112x32px; 128x128px; 320x240px; 600x600px

Frequencies & PI codes

Logos

Meta-Data Flow

FM, HD

HTTP / IP

DNS

Meta-Data

Radio Station

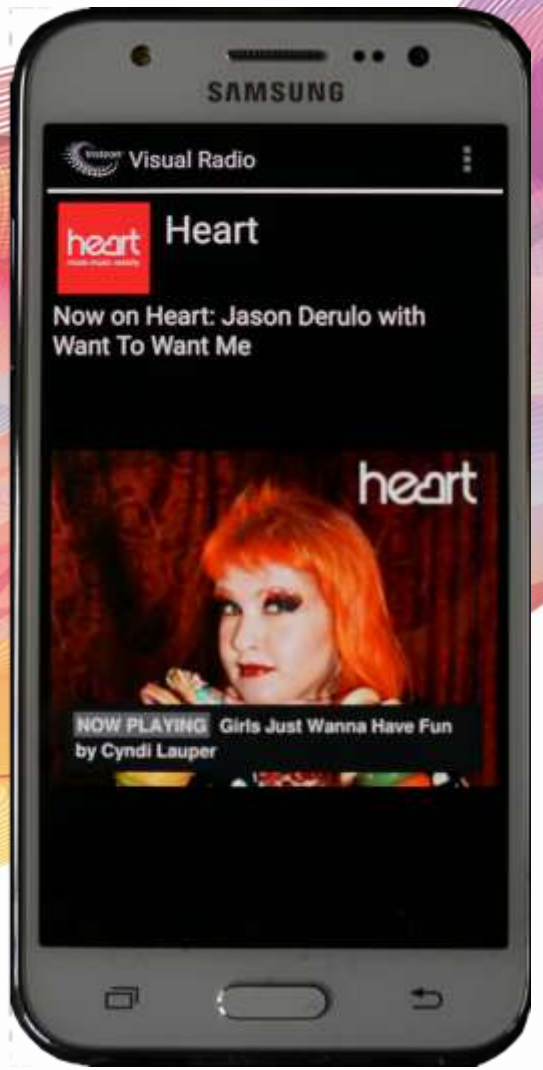
RadioDNS HYBRID RADIO

Not Mandatory

- **Streaming URLs**
- Complex music rights issues in some countries

- **Dynamic Visuals / Album Art**
- Harder to create dynamic visuals

- **RadioTAG Interactivity**
- More complex protocol



Radio DNS
HYBRID RADIO


Radio
DNS
HYBRID RADIO

Broadcast-IP Switching

When the broadcast signal is weak, the radio switches to streaming using the smartphone

When the signal improves, it switches back to broadcast

Requires the broadcaster to provide **streaming URLs**

Not a **mandatory** part of Project Logo

Can be offered only to “**trusted partners**” who implement it properly

Radio DNS HYBRID RADIO

Hybrid for Analogue AM

RadioDNS uses **RDS PI** codes in the FM broadcast signal

- We think making assumptions of coverage based on TX location and power will be very inaccurate and difficult to maintain

AMSS (AM Signalling System) is RDS for AM radio

- Encodes an SID identifier by phase shifting the carrier ±20°

We’re investigating the implications for broadcasters and manufacturers of implementing AMSS to enable hybrid

Open Technology

Any broadcaster or manufacturer can implement RadioDNS for **free – no contracts or licences**

You can use **any** system provider

You can build your **own** system

You're **not locked in** (or locked out) for life

There's no **gatekeepers**

More Functionality

RadioDNS has defined a series of applications

- **Album art / dynamic visuals**
- **RadioTAG interactivity**

And we're looking at new applications

- **Web content delivery**
- **Local audio insertion**

European Coverage

RadioDNS is the standard for hybrid radio in Europe

- **Germany, UK, France, Spain –** more than 60% coverage
- Most other European countries – over 50% coverage

Coverage is %age of radio listening with accompanying RadioDNS meta-data

Our Asks

What you could do to support RadioDNS

Support RadioDNS

1. Provide “Project Logo” meta-data for your radio station(s)

2. Investigate if AMSS would be allowed on US AM transmissions

Project Logo – Launching

Our **service providers** can do everything for you

You are their customer – **you** remain in control

Costs are very low and negotiable

https://radiodns.org/partners/

Project Logo - Do It Yourself

You need:

- A Webserver - your existing station website server is fine
- Your station logo in 5 different sizes as JPEG images
- Follow the HOWTO guides at https://radiodns.org/developers/documentation/#howto
- Use the guided tool at https://si.radiodns.org

It should take about 1-2 hours to complete

AMSS in the US

AMSS is standardised as part of **TS 102 386**

Information Paper from the EBU

https://tech.ebu.ch/docs/techreview/trev_305-murphy.pdf

Would the FCC allow inclusion of AMSS information?

Summary

RadioDNS is an **open** and **non-proprietary** hybrid radio system – no risk of lock ins or lock outs

Automotive manufacturers are **ready to implement**

We need **two things** from US broadcasters

- Support Project Logo with minimum metadata
- Investigate if the FCC will allow AMSS for AM Hybrid


NAB
NATIONAL ASSOCIATION OF BROADCASTERS
Questions
www.radiodns.org
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