Hybrid Radio Seminar

7th February 2017
EBU, Geneva

WiFi Code: 4018

Hybrid Radio Seminar

09:30 - 13:00

https://radiodns.org/organisation/general-assembly/ga-feb-17/hybrid-radio-seminar/

WiFi Code: 4018

Welcome

Matt Deegan, Moderator

WiFi Code: 4018

RadioDNS HYBRID RADIO

Welcome New Members

WiFi Code: 4018

Agenda

Review of 2016 / Plan for 2017

HbbTV Update

Broadcaster Presentations

Service Provider Presentations

NAB and EBU Keynotes

https://radiodns.org/organisation/general-assembly/ga-feb-17/hybrid-radio-seminar/

WiFi Code: 4018

RadioDNS HYBRID RADIO

Meeting Format

Time for questions and discussion

Please give your **name** and **organisation**

Press the Microphone button in front of you to speak

WiFi Code: 4018

Activities 2016

Our Year

WiFi Code: 4018

RadioDNS HYBRID RADIO

Standard Licence & Guidelines

Discussion at July 2016 **Automotive Workshop**

Automotive manufacturers want legal surety that they can use assets provided by broadcasters using RadioDNS' standards

Broadcasters want to know that their assets are going to be used correctly

WiFi Code: 4018

RadioDNS HYBRID RADIO

Standard Licence & Guidelines

We **consulted** during H2 2016

Board debated at length the best solution

Decision:

To create a Standard Licence for Metadata (with Guidelines) and encourage broadcaster adoption

WiFi Code: 4018

HbbTV - DNS Services

HbbTV added DNS discovery to their standard

They approached us to provide their DNS lookup service for their users

Revenue generating opportunity for RadioDNS

Decision:

To provide a DNS lookup service to HbbTV

WiFi Code: 4018

Changes to Standards

Some **broadcasters** want to provide “private” streaming URLs and links to enhanced content only to trusted partners

Needed to adapt the **SPI** standard to be able to identify who was asking for metadata

WiFi Code: 4018

Radio DNS HYBRID RADIO

Changes to Standards

NPR requested that we add better support to **SPI** to identify presenters, guests, contributors

Automotive Manufacturers requested that we add support to **SPI** enable voice navigation

Standard Metadata Licence may need a new location in the **SPI** document

WiFi Code: 4018

RadioDNS HYBRID RADIO

Changes to Standards

Decision:

Amend the SPI standard (TS 102 818) to add:

- Client Identification
- Programme roles
- Phonemes
- Licence URLs

WiFi Code: 4018

Events in 2016

Promoting Hybrid Radio

WiFi Code: 4018

RadioDNS HYBRID RADIO

Events 2016

Salon de la Radio

Geneva Motor Show

RadioDays Europe

NAB Show

WorldDAB General Assembly

WiFi Code: 4018

RadioDNS HYBRID RADIO

RadioDays Europe 2016

WiFi Code: 4018

RadioDNS HYBRID RADIO

NAB Show 2016

WiFi Code: 4018

Activities 2016

Our Year

WiFi Code: 4018

RadioDNS HYBRID RADIO

Plan for 2017

What’s coming this year

WiFi Code: 4018

RadioDNS HYBRID RADIO

2017 Strategy

Continue **Project Logo** growth

North America focus

Develop **Standard Licence for Metadata**

Update **Standards - SPI / RadioTAG**

Launch **HbbTV** provision

Grow **Membership**

WiFi Code: 4018

Project Logo

Increasing coverage in 2017

WiFi Code: 4018

RadioDNS HYBRID RADIO

Project Logo

Focused on **automotive** market requirements

Continuing our **partnership** strategy

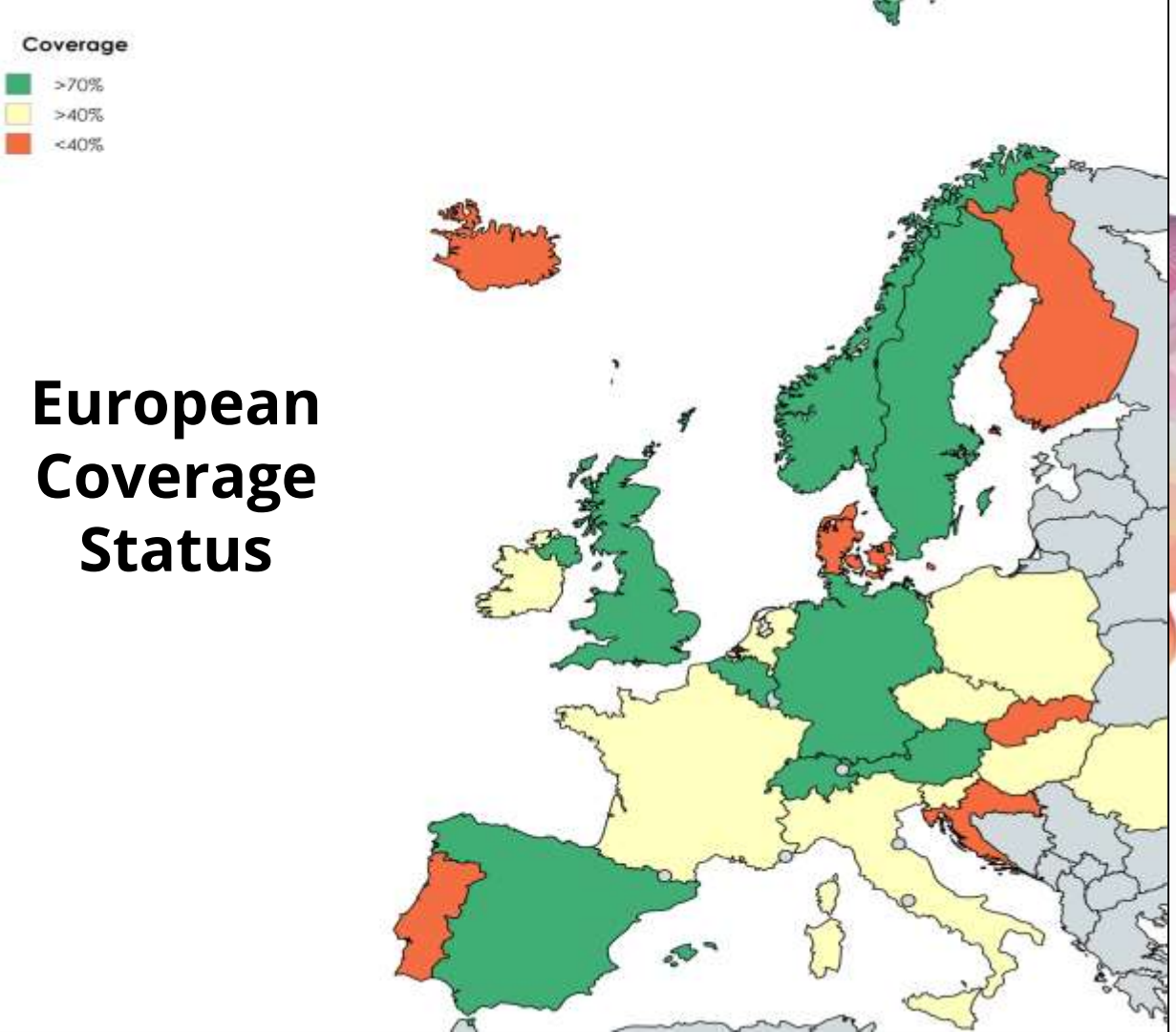
EBU, RadioPlayer, AER etc.

Better promotion of **service providers**

Aim for services launch in **North America**

WiFi Code: 4018

European Coverage Status



WiFi Code: 4018

RadioDNS HYBRID RADIO

In 2017

EBU bringing more members onto their platform and offering source code to other broadcasting unions

Radioplayer supports Project Logo for all stations

Austria announcement

Canada will be launched in 2017

Working with **US** broadcasters more

WiFi Code: 4018

HbbTV & DNS

Rob Koenen, HbbTV Association

WiFi Code: 4018

RadioDNS HYBRID RADIO

Standard Metadata Licence

Clarity for broadcasters and manufacturers

WiFi Code: 4018

RadioDNS HYBRID RADIO

Background

Broadcasters are providing metadata and content

Logos etc.

Automotive Manufacturers want to use the metadata, but want permission from broadcasters

At the **July Automotive Workshop** we agreed to find a solution

WiFi Code: 4018

RadioDNS HYBRID RADIO

Principles

Broadcasters provide metadata for free

Manufacturers must use it correctly, as defined in the **Implementation Guidelines**

Licence agreement is **implicit** by use

Broadcasters must include a **link to the licence** in their SI file, or it may not be used

WiFi Code: 4018

RadioDNS HYBRID RADIO

Standard Metadata Licence

Accessible on a **permanent URL** on our website

Similar in style to a **Creative Commons** licence

Initially restricted in scope to the **automotive** environment

RadioDNS will **not be a party** to the licence

WiFi Code: 4018

creative commons

Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND 4.0)

This is a human-readable summary of (and not a substitute for) the **license**.

Disclaimer

You are free to:

Share — copy and redistribute the material in any medium or format

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give **appropriate credit**, provide a link to the license, and **indicate if changes were made**. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

NonCommercial — You may not use the material for **commercial purposes**.

NoDerivatives — If you **remix, transform, or build upon** the material, you may not distribute the modified material.

WiFi Code: 4018

Radio DNS HYBRID RADIO

creative commons

Attribution-NonCommercial-NoDerivatives 4.0 International

Official translations of this license are available in other languages.

Creative Commons Corporation ("Creative Commons") is not a law firm and does not provide legal services or legal advice. Distribution of Creative Commons public licenses does not create a lawyer-client or other relationship. Creative Commons makes its licenses and related information available on an "as-is" basis. Creative Commons gives no warranties regarding its licenses, any material licensed under their terms and conditions, or any related information. Creative Commons disclaims all liability for damages resulting from their use to the fullest extent possible.

Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and conditions that creators and other rights holders may use to share original works of authorship and other material subject to copyright and certain other rights specified in the public license below. The following considerations are for informational purposes only, are not exhaustive, and do not form part of our licenses.

Considerations for licensors: Our public licenses are intended for use by those authorized to give the public permission to use material in ways otherwise restricted by copyright and certain other rights. Our licenses are irrevocable. Licensors should read and understand the terms and conditions of the license they choose before applying it. Licensors should also secure all rights necessary before applying our licenses so that the public can reuse the material as expected. Licensors should clearly mark any material not subject to the license. This includes other CC-licensed material, or material used under an exception or limitation to copyright. More considerations for licensors.

Considerations for the public: By using one of our public licenses, a licensor grants the public permission to use the licensed material under specified terms and conditions. If the licensor's permission is not necessary for any reason–for

WiFi Code: 4018

RadioDNS HYBRID RADIO

Test & Demonstration

Verifying Hybrid Radio Implementations

WiFi Code: 4018

RadioDNS HYBRID RADIO

Test & Demonstration

Operational **now:**

Device testing (Core, Visuals, EPG)

In **2017**:

Platform testing

Demonstration service

WiFi Code: 4018

RadioDNS HYBRID RADIO

Test and Development Platform

Current Client (change)
Revo PiXiS R5 (NP Test) (0.01)

Passes	62
Failures	1
Incomplete	1

RadioDNS Core

CORE-1A DNS CNAME resolution based on received PI code	pass	Perform Test
CORE-1B DNS CNAME resolution based on received ECC matching a previously calculated value	pass	Perform Test
CORE-1C DNS CNAME resolution based on received ECC not matching a previously calculated value	pass	Perform Test
CORE-2 Repeating DNS CNAME resolution when PI code changes	pass	Perform Test
CORE-3A DNS SRV resolution for RadioVIS application (HTTP transport)	pass	Perform Test
CORE-3B	untested	Perform Test

Validation Certificates

Issued to a **specific** (device + firmware) version

Confirms passed tests **on the date shown**

Not a warranty or guarantee of perfection

WiFi Code: 4018

RadioDNS HYBRID RADIO

Trademarks

We will issue **Trademark Licences** to organisations

Trademark Licence will allow use only on products holding a validation certificate

Currently only **members** can use the Test and Demonstration platform, and therefore use trademarks

WiFi Code: 4018

Membership

Growing in 2017

WiFi Code: 4018

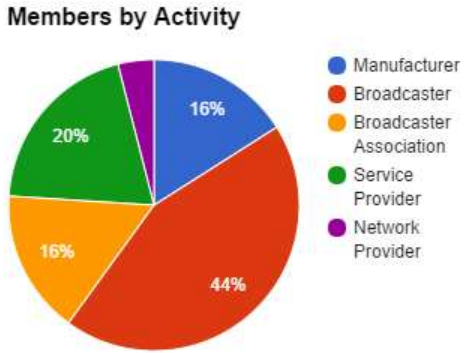
RadioDNS HYBRID RADIO

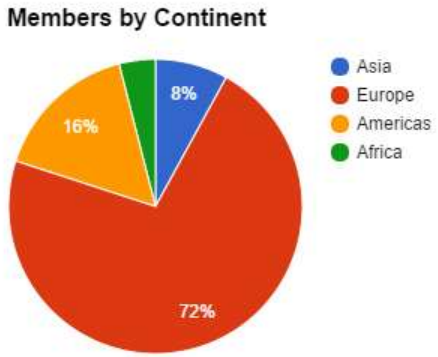
Membership

We are **entirely** funded by our members

Currently (2017) **25 Members**

Target (start 2018) **28 Members**





Member Benefits

Members are **co-owners** of RadioDNS

Participation in **Working Groups**

Free use of **Test & Demonstration** platform

Marketing and **event** staging

Priority support from the **Project Office**

WiFi Code: 4018

Member Benefits

The majority of our **support time** goes to:

Automotive Manufacturers / OEMs

Service Providers

WiFi Code: 4018

RadioDNS HYBRID RADIO

Events in 2017

February	March	April
EBU Digital Radio Summit NPR Metadata Summit	ABU Digital Radio Symposium RadioDays Europe	NAB Show
May	**September**	**October**
WorldDAB Automotive Event	IFA (TBC) IBC (TBC)	WorldDMB General Assembly CRA Conference (TBC)

WiFi Code: 4018

RadioDNS HYBRID RADIO

Devices 2017

What’s on the market / coming to market

WiFi Code: 4018

RadioDNS HYBRID RADIO

Tabletop

Frontier Silicon enable RadioDNS support in the **Undock** partner app for their modules

Demo outside

Philips, Sony both keep RadioDNS under review, would like more broadcasters providing Visuals

WiFi Code: 4018

RadioDNS HYBRID RADIO

Automotive

Most **Manufacturers** have requested RadioDNS support from their OEMs

We have seen **enormous increase** in OEM support requests, particularly for demos

Remaining objections: **Coverage** and **licensing**

Expect a line-fit RadioDNS implementation this year

WiFi Code: 4018

Accelerating Devices

Coverage is key to growing faster

We'll keep growing coverage by **linking** broadcasters to service providers

WiFi Code: 4018

RadioDNS HYBRID RADIO

Questions

2016 Activities and 2017 Plan

WiFi Code: 4018

RadioDNS HYBRID RADIO

Broadcaster Updates

Walter Huijten, NPO
Kath Brown, CRA

WiFi Code: 4018

RadioDNS HYBRID RADIO

NPO

Walter Huijten

WiFi Code: 4018

RadioDNS & NPO

A Broadcaster perspective

nederlandse
publieke
omroep

RadioDNS Hybrid Radio Seminar 2017 - EBU Geneva

Walter Huijten

RadioDNS & NPO

Walter Huijten

Service Manager Radio

Committed to RadioDNS and Hybrid Radio since 2012

Hybrid Radio

12 channels on DAB and Internet

5 channels on FM

Ubiquitous: be present everwhere

Metadata: look good on all devices

Current Focus

Project logo

- solve chicken & egg (broadcasters have a task!)
- relevance by coverage

Automobile

- best use case for rich experience
- especially competitive car environment

In short: look good everywhere

Logos always present and current

Station and programme info

Service switching if possible

Relevant and timely visuals (e.g. adverts)

Alternative content to broadcast

With minimum effort for NPO

By open standards = RadioDNS

Broadcaster wants max. effect with min. effort

Publish once distribute many

Prefer open standards to proprietary solutions

Risk of stale metadata and logos in cars

Broadcaster wants to be in control

Thanks for your attention

Walter Huijten - NPO

walter.huijten@npo.nl

h8ten

Commercial Radio Australia

Kath Brown

WiFi Code: 4018

RadioDNS HYBRID RADIO

HYBRID RADIO – LOOKS GOOD TO US!

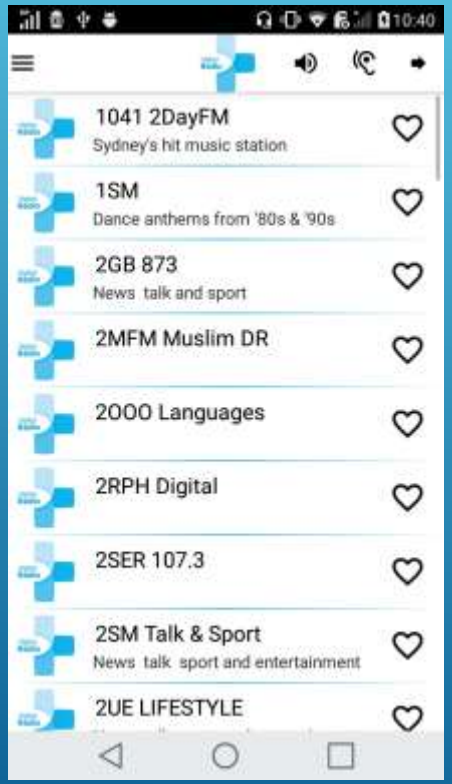
COMMERCIAL RADIO AUSTRALIA

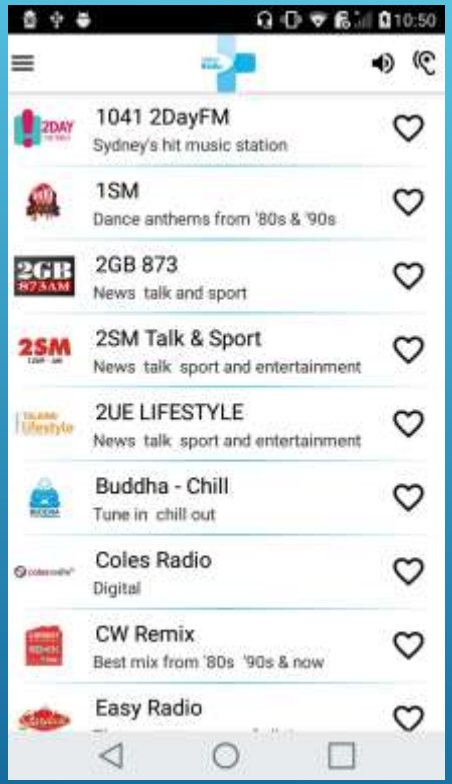
RadioDNS 11th General Assembly

7 February 2017

RADIO LOOKS BETTER WITH DNS ENHANCEMENTS

Station list with no logos



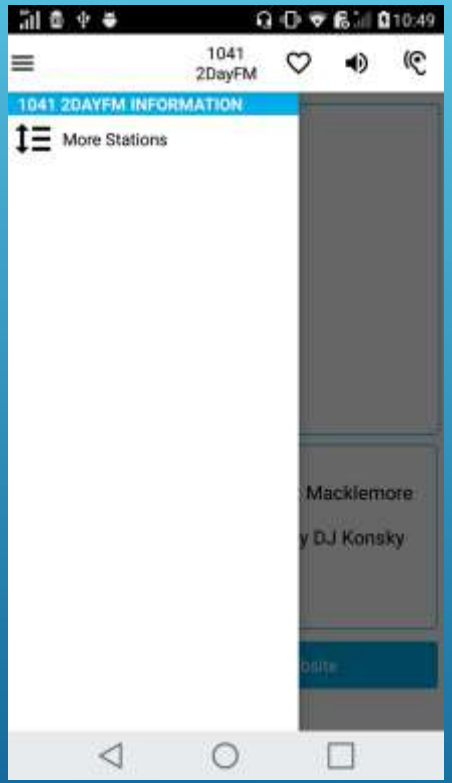


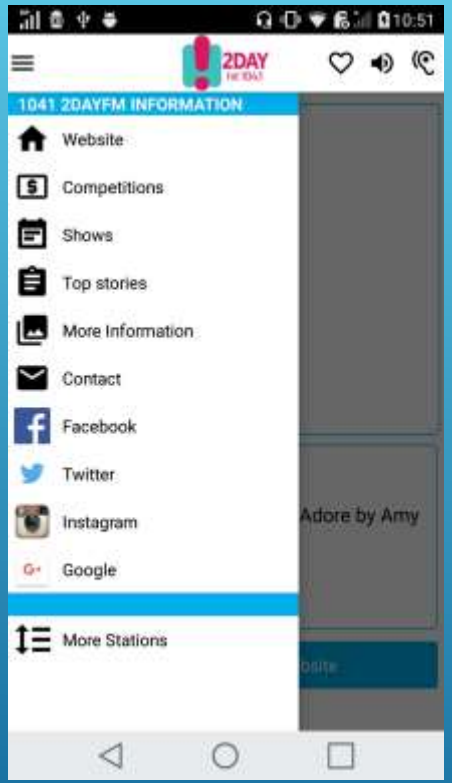
Station list with Logos delivered over IP or broadcast

RADIO LOOKS BETTER WITH LOGOS

RADIO LOOKS BETTER – DOES MORE!

Stations with no social media assets showing





Stations with social media assets showing via RadioDNS

Adds value too - metrics for measuring engagement

…AND THAT IS JUST THE START OF ADVANCED RADIO FUNCTIONALITY ….

Coffee Break

Back by 11:25 please

WiFi Code: 4018

RadioDNS HYBRID RADIO

Service Provider Updates

Cas Adriani, Pluxbox
Joe D’Angelo, DTS Inc.
Michael Hill, Radioplayer
Arik Azoulay, Aird

WiFi Code: 4018

RadioDNS HYBRID RADIO

Pluxbox

Cas Adriani

WiFi Code: 4018

RadioDNS HYBRID RADIO

Pluxbox

RadioManager 4
07 february 2017, Geneva

Presentation Pluxbox
Cas Adriani

Summary

1. Pluxbox
2. Workflow automatisation
3. Rundown / live rundown
4. CMS for Radio
5. Tools for radio makers
6. RadioDNS
7. API's

Pluxbox

Pluxbox

10 years experience with radio metadata

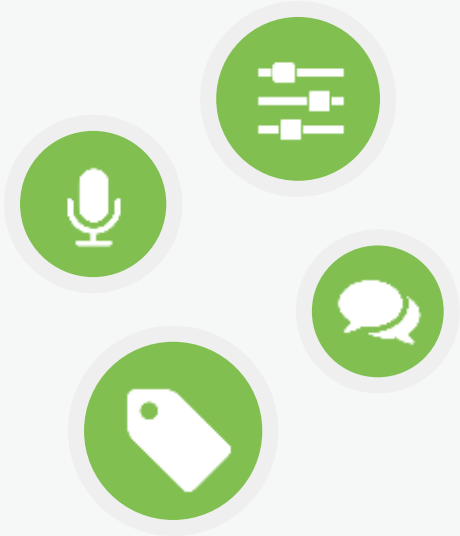
Logging - On demand services

Visual radio

Websites / online players

Metadata distribution (RDS, Shoutcast/Icecast, DAB DLS, DAB Slideshow, RadioDNS, RadioVIS, ...)

RadioManager (version 4)



Pluxbox

Workflow automatisation

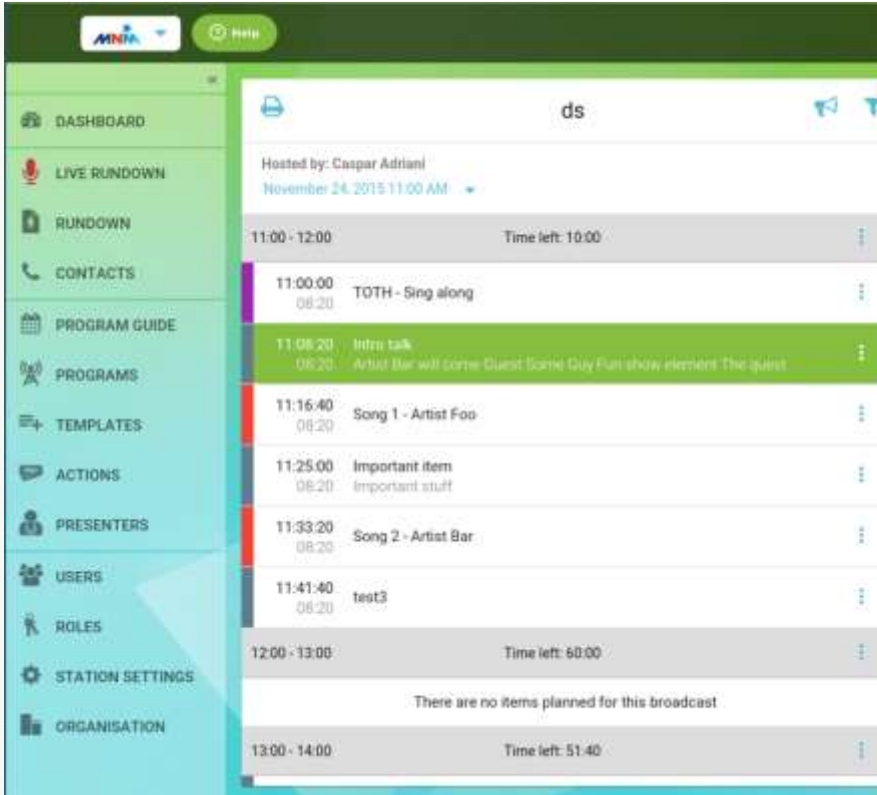
Do more in less time

Less decentralised communication

Dashboard for quick updates of the station

Templates for items

Less recurring topics/guests



Rundown / live rundown

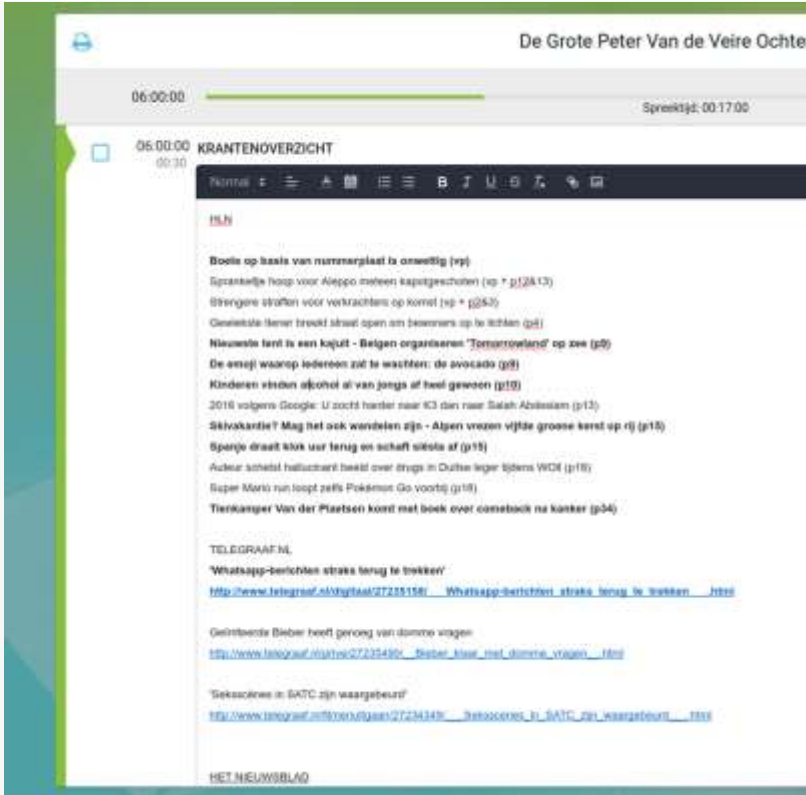
Screen for pre production and during the show

Multiple users, playout and planning integration

Drafts system

Social Media (incoming and outgoing messages)

Drag and drop



CMS for radio

Station information (logo's / naam)

EPG

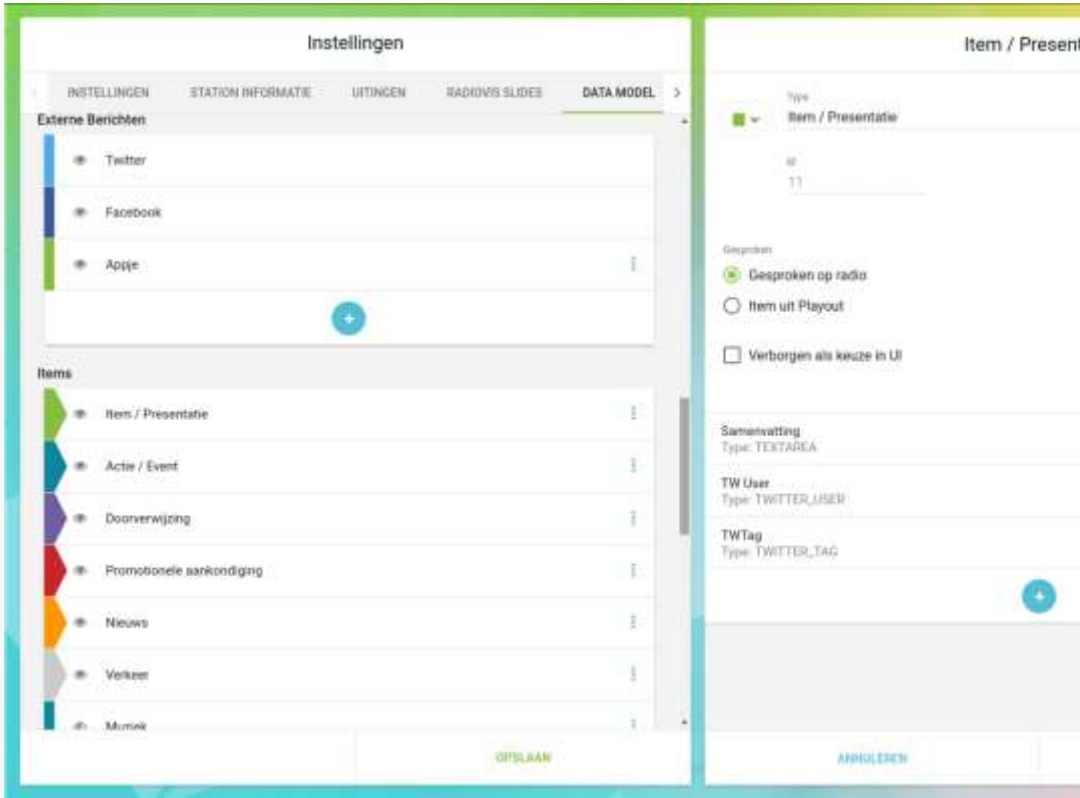
Programs

Presenters

Campaigns

Guests

Items



RadioDNS

XSI

EPG

RadioVIS

RadioTAG *

API’s

RESTfull API's

SDK’s in different languages

RadioManager Connect

Realtime API

CasparCG Connect

Joomla/Wordpress plugins

Middleware solutions

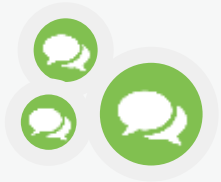
Pluxbox

Continuous updates

Improve communication with listeners

Omni (360°) presence

Pluxbox



Thanks for your time

Questions?

Pluxbox

DTS Inc.

Joe D’Angelo

WiFi Code: 4018

DTS Connected Radio: Enabling Global Hybrid Radio Solutions

RadioDNS General Assembly

February 2017

Joe D'Angelo
Senior Vice President, Global Broadcast Radio

GLOBAL FOOTPRINT

DTS TECHNOLOGY PORTFOLIO

HD RADIO TECHNOLOGY
BY THE NUMBERS

NUMBER OF CONVERTED STATIONS

2,500 Stations Converted in USA, Canada & Mexico

260 Major Markets

300 Million Population Coverage

4,000 Digital Audio Services

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.
As of January 2017

HD RADIO TECHNOLOGY
BY THE NUMBERS

NUMBER OF RADIOS IN USE

- ~35 Million Radios in use throughout North America
- 43% of new cars sold in USA were equipped with HD Radio Technology
- 216 vehicle models offer HD Radio Technology
- 114 vehicle models are equipped with HD Radio Technology as standard equipment

All major car manufacturers off HD Radio Technology in their vehicle lineup

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.
As of January 2017

DTS BROADCAST RADIO TECHNOLOGY
PORTFOLIO OF SOLUTIONS

Technology solutions deployed to
<u>support global hybrid radio</u>

aim all in media

ARCTIC PALM Technology Inc.

HD Radio® a dts solution

dts® Connected Radio

dts® Neural Surround

Strong Support for Digital Hybrid Radio

THE VEHICLE HAS EVOLVED INTO
THE ULTIMATE CONNECTED AUDIO PORTAL

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

DIGITAL BROADCAST RADIO
LAYING THE FOUNDATION FOR HYBRID SERVICES

HD Radio® a dts solution

DAB+ Digital Audio Broadcasting

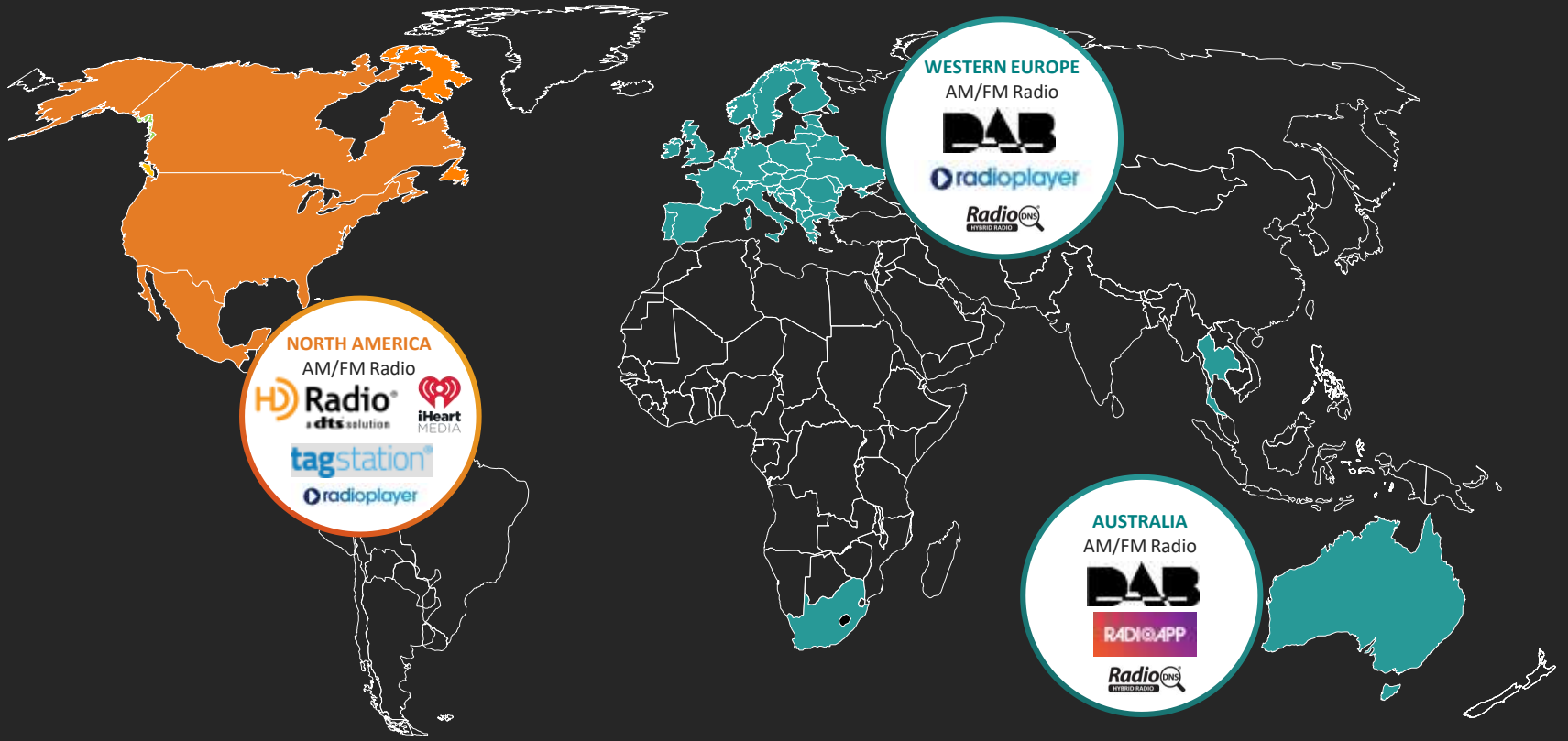
Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
THE DEFINITION:

A global solution for over-the-air broadcast **MERGING BROADCAST RADIO WITH THE INTERACTIVE BENEFITS OF INTERNET CONNECTIVITY**. It enhances and improves multiple broadcast solutions such as **analog AM and FM**, as well as digital solutions such as **HD Radio**, **DAB** and **DAB+** with a richer and more consistent user experience. Connected Radio couples a device's tuner and IP connection, offering the consumer additional new features.

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

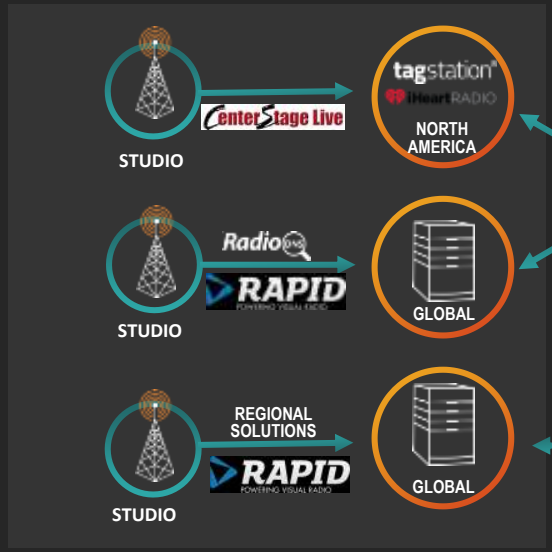
CONNECTED RADIO
MULTIPLE STANDARD AND CONTENT SOLUTIONS



Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

DTS HYBRID RADIO
SYSTEM OVERVIEW

Connected Radio



API SERVER

dts

STATION FOLLOWING SERVICES

DTS HI-FI MUSIC CATALOG

DTS MIDDLEWARE

AM/FM ANALOG

DAB+ Digital Audio Broadcasting

HD Radio a dts solution

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
GLOBAL HYBRID RADIO DEVELOPMENT PLATFORM

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
ENHANCES THE CONSUMER EXPERIENCE

AM/FM ANALOG

HD Radio a dts solution

DAB

RAPID Powering Visual Radio

CenterStage Live

AM/FM IP APIs

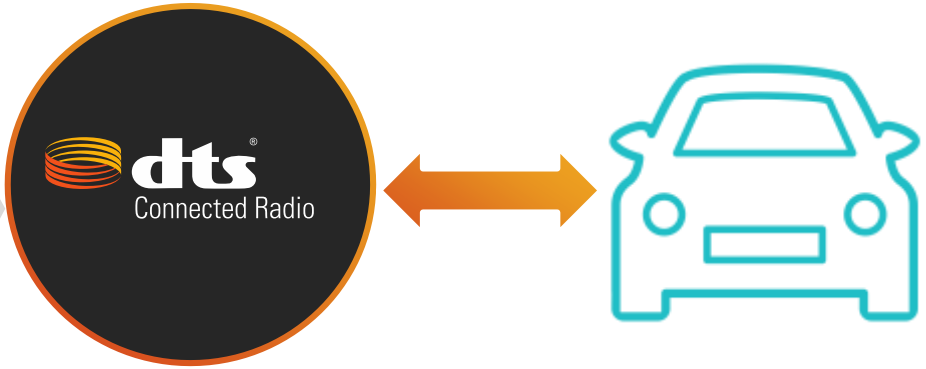
RadioDNS Hybrid Radio

tagstation

radioplayer

iHeart MEDIA

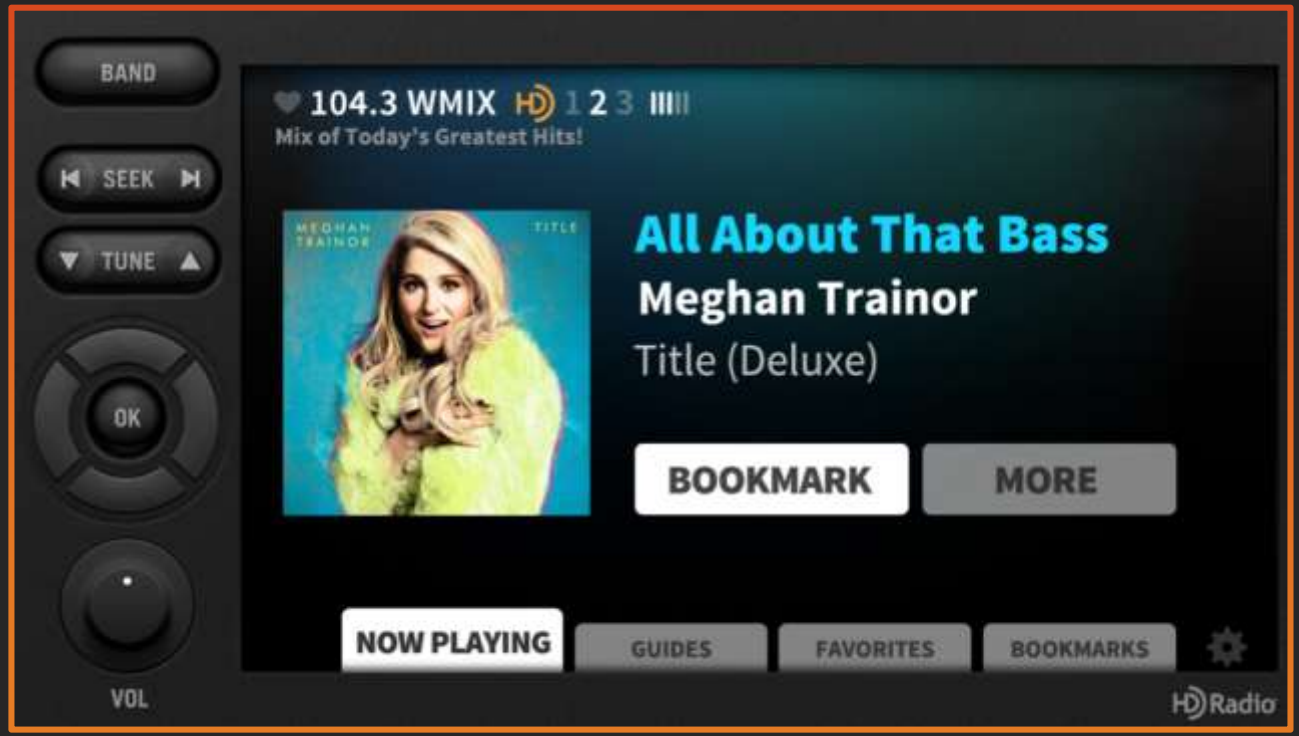
RADIOAPP



ONE SOLUTION FOR MULTIPLE
RADIO STANDARDS AND IMPLEMENTATIONS

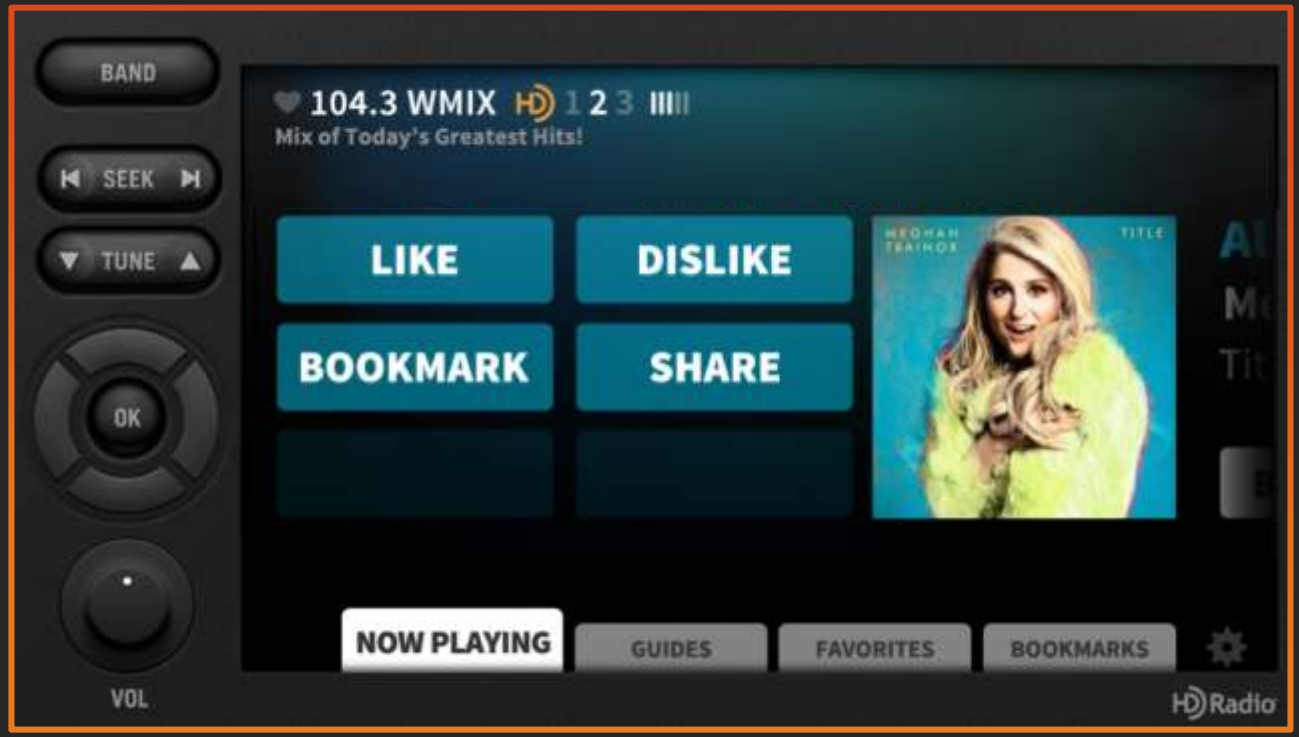
Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
FEATURES



Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
FEATURES



LIKE BOOKMARK SHARE

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
FEATURES

- ANALOG AM/FM
- DIGITAL AM/FM
- IP ENHANCED DATA

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
FEATURES

STATION GUIDE WITH CURRENT SONGS BEING PLAYED

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO FEATURES

ONE-TOUCH INTERACTION WITH LOCAL RADIO STATIONS

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
FEATURES

SEND POI TO MAP FOR LOCAL ADVERTISING

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

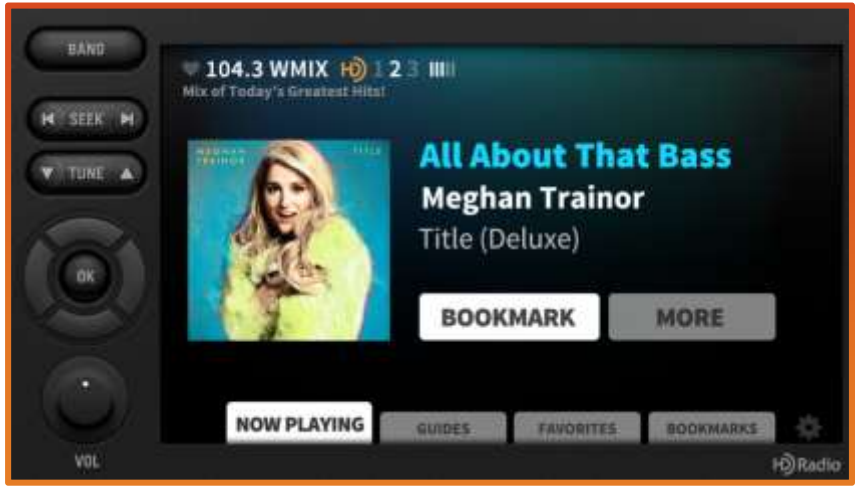
CONNECTED RADIO
FEATURES

UTILIZE NAVIGATION TO LOCATE ADVERTISER

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

CONNECTED RADIO
RADIO DAYS EUROPE – MARCH 2017

dts®
Connected Radio



radioplayer

RadioDNS
HYBRID RADIO

RAPID
POWERING VISUAL RADIO

AM/FM ANALOG

DAB+
Digital Audio Broadcasting

Information on this slide is confidential property of DTS. Any unauthorized copying is strictly prohibited. © 2017 DTS, Inc.

Radioplayer

Michael Hill

WiFi Code: 4018

RadioDNS HYBRID RADIO

Helping to grow hybrid radio

Michael Hill, Managing Director

WiFi Code: 4018

RadioDNS HYBRID RADIO

Radioplayer aims to help in **three key areas**

- Understanding hybrid **hardware**
- Improving the quality of hybrid **metadata**
- Helping to refine the hybrid **user experience**

WiFi Code: 4018

RadioDNS HYBRID RADIO

‘Stretch projects’ help us explore hybrid

We challenged ourselves to build a car radio system with…

- A single list of stations/favourites across DAB, FM, and IP
- The ability to switch platform automatically as signals vary
- Extra features powered by a connected smartphone
- A simple interface that’s safe to use in a car

WiFi Code: 4018

RadioDNS HYBRID RADIO

Radioplayer Car - launching this month

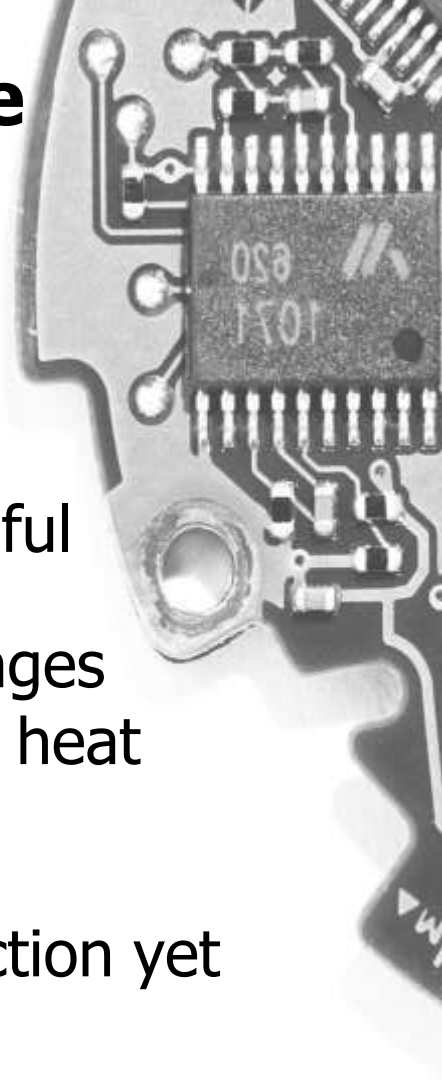
www.radioplayercar.com

WiFi Code: 4018

Radio DNS
HYBRID RADIO

What we learned about **hybrid hardware**

- A good radio needs multiple tuners
- Implementation standards for DAB chips vary
- ‘Over-the-air’ firmware upgrades are really useful
- In high-end hybrid hardware, there are challenges around physical size, power management, and heat
- Several interesting ‘software defined radio’ solutions are promised….but few are in production yet



WiFi Code: 4018

What we learned about **hybrid metadata**

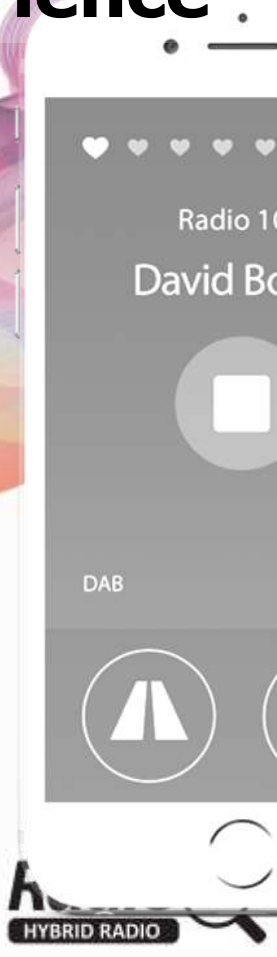
- A hybrid radio needs the right ‘metadata Lego’
- The quality of over-the-air metadata varies globally
- There’s no single reliable source of metadata
- With the right knowledge/effort, you can fill the gaps
- But maintaining hybrid metadata needs care and resource

WiFi Code: 4018

Radio DNS HYBRID RADIO

What we learned about the **hybrid user experience**

- The core radio experience is what's important
- Switching audio platforms seamlessly is difficult
- A 'connected radio' must also work when offline
- A simple interface is a safe interface – limit choice!
- Voice control is hard to implement, but useful



WiFi Code: 4018

Radioplayer **actions** – how we're helping

- Launching Radioplayer Car, and sharing our learnings
- Supporting Project Logo, with automated feeds (Austria)
- Contributing to the WorldDAB Automotive UX Group
- Partnering with car companies, to encourage hybrid
- Prototyping new hybrid interfaces, using our 'black box'
- New trial API - one endpoint across Radioplayer Worldwide

WiFi Code: 4018

@radiomikehill

michael.hill@radioplayer.co.uk

WiFi Code: 4018

Aird

Arik Azoulay

WiFi Code: 4018

Radio DNS HYBRID RADIO

WiFi Code: 4018

WiFi Code: 4018

Alpha Test– Q4 2015

Conclusion

- There's a real need...
  - -> **Hundreds** of users
  - -> **Thousands** of tags

- ...Needing a better user experience

BOOKMARKED PODCAST

CAR TAGGING

WiFi Code: 4018

Here comes RadioDNS

WiFi Code: 4018

Authentication

Broadcast	Device	User
Logo	Logo	Logo
Slideshow, Metadata	Slideshow, Metadata	Slideshow, Metadata
	Tag	Tag
		Smartphone Sync
« RDS » like	«Set-top-box » like	Cross device use

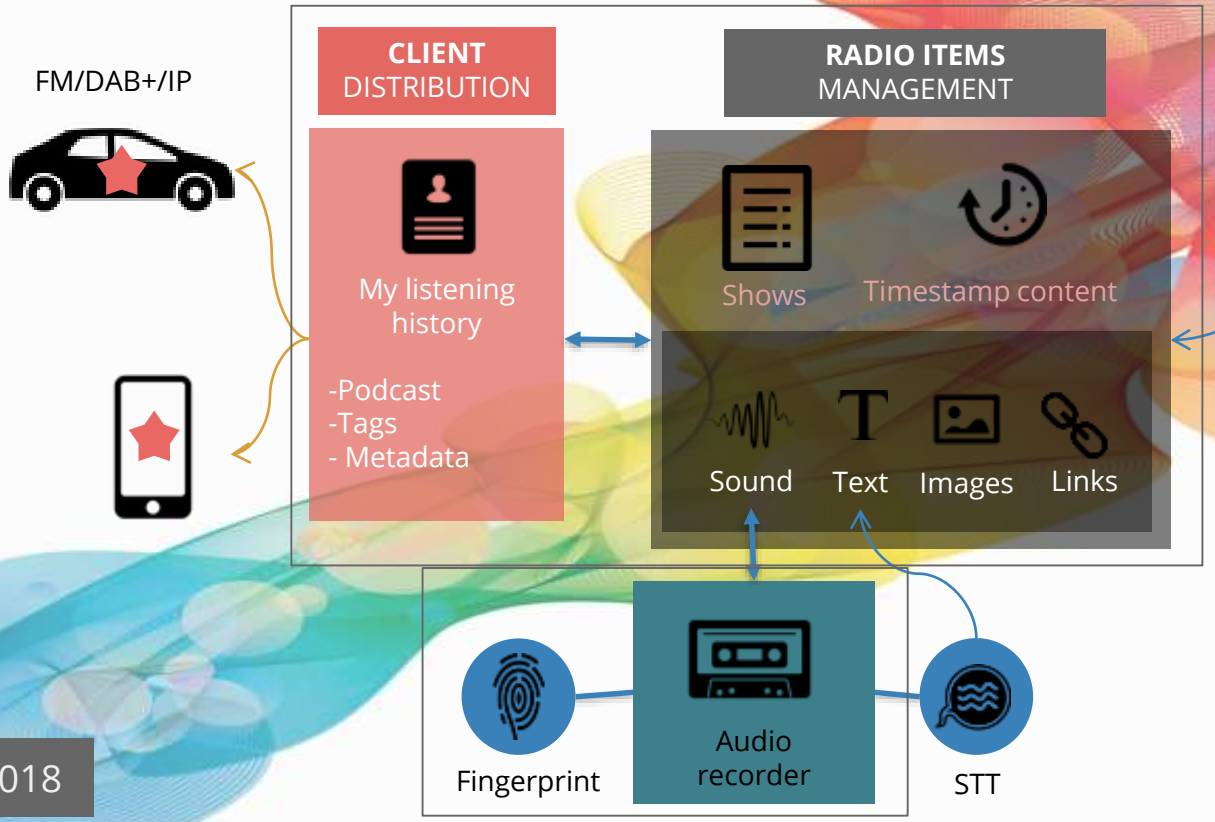
WiFi Code: 4018

Demo

- Authentication
- Tag

WiFi Code: 4018

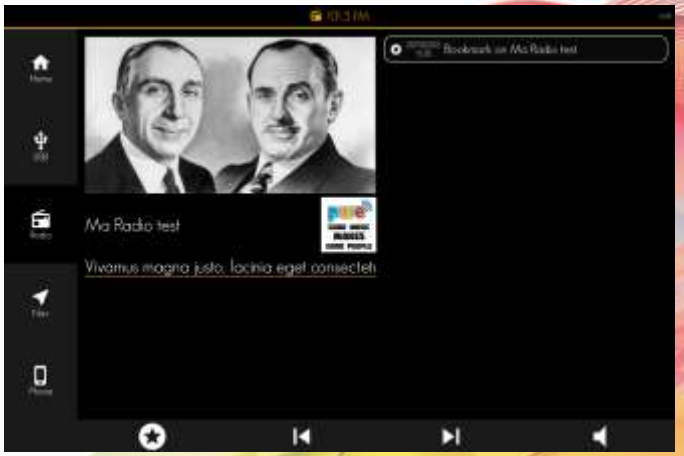
Service Provider Infrastructur



WiFi Code: 4018

...you can create services on top of

- ReST API's to let you be creative



CAR SYSTEM

MOBILE

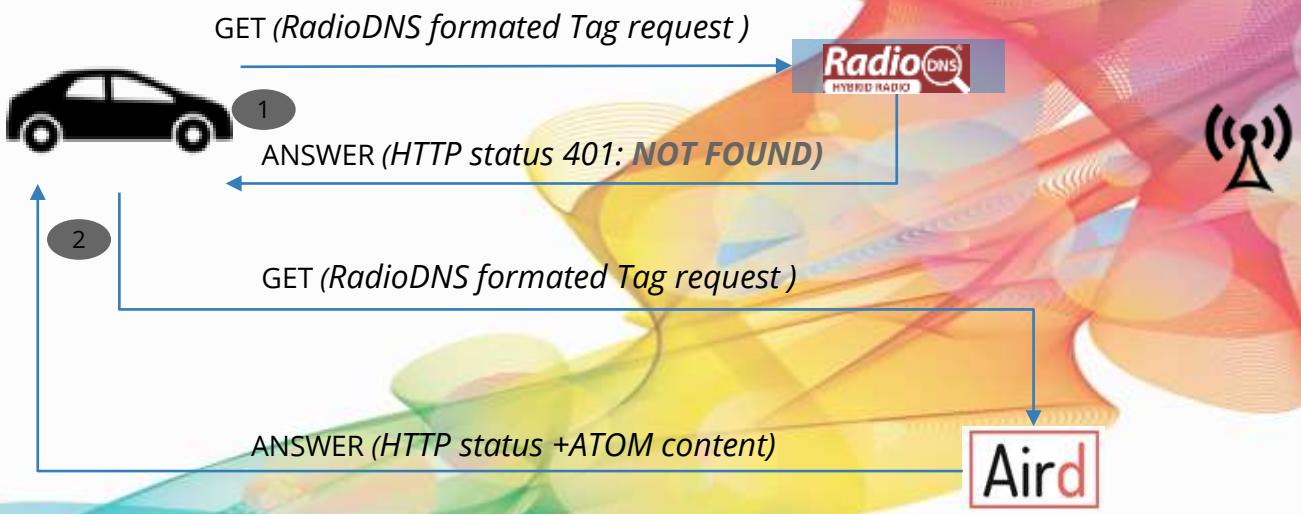
Example of services:

- **Bookmark & listen seamlessly from phone & car**
- **End of a show**
- **Show Suggestion**

WiFi Code: 4018

Aird
HOW TO MAKE IT ON A LARGE SCALE ?

Aird as a « backup » service



100% ANSWER

WiFi Code: 4018

Level of service

1. The radio has its service provider registered:
   - –Metadata display
   - –« Show » podcast, Tagged
     - •In the car
     - •On the phone (car app or radio app)

2. The radio doesn’t have a service provider
   - –Defined length podcast, Tagged
     - •In the car
     - •On the phone

WiFi Code: 4018

Perenity & Stability

- Guaranty of service
  - Solid Message driven Architecture built from the best of technologies
  - Smart error management
- Guaranty of perenity

Aird

WiFi Code: 4018

RadioDNS HYBRID RADIO

OFFICIAL LAUNCH

Aird

13th of FEBRUARY

Arik Azoulay
arik@26lights.com

WiFi Code: 4018

RadioDNS HYBRID RADIO

National Association of Broadcasters

David Layer

WiFi Code: 4018

RadioDNS HYBRID RADIO

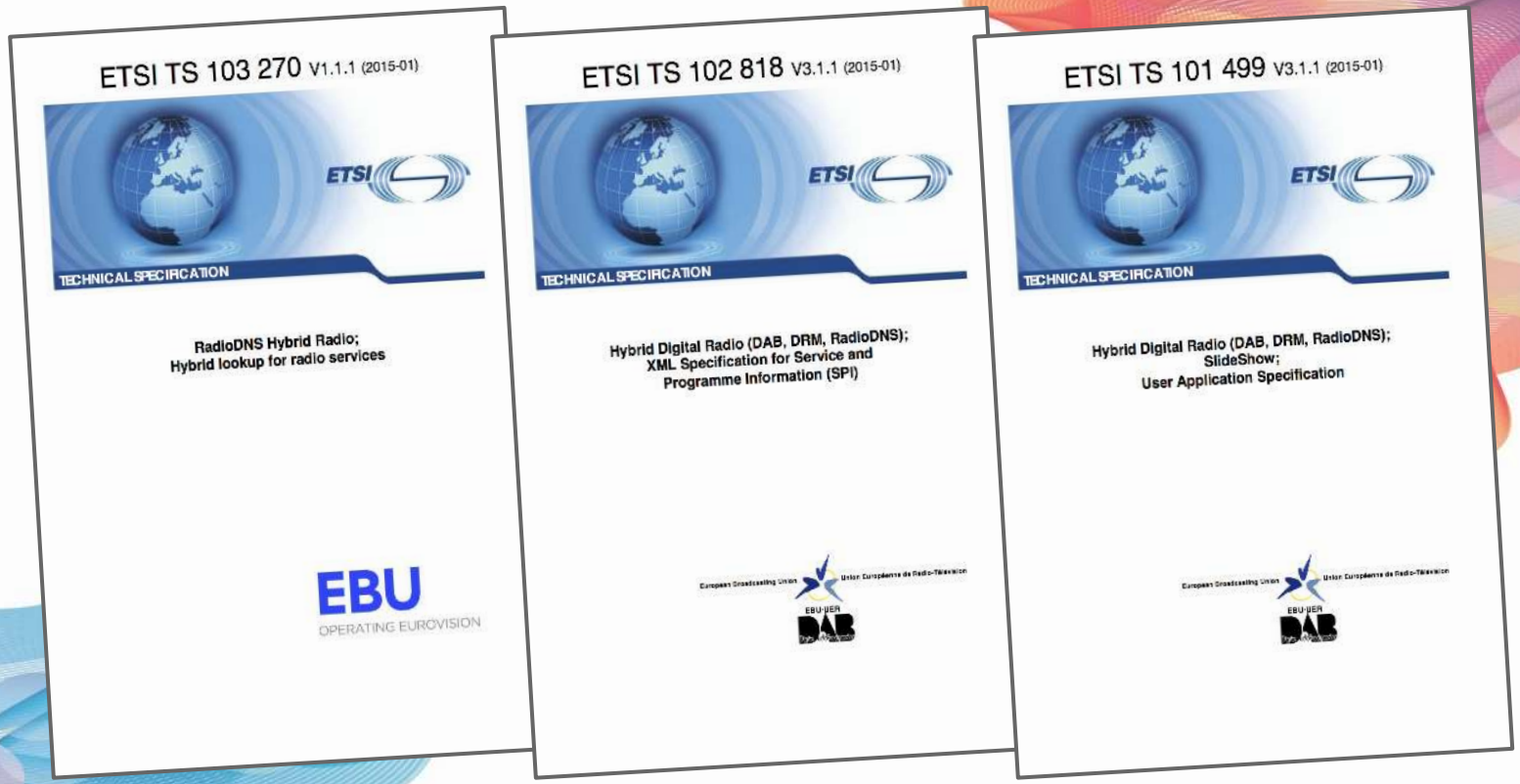
National Association of Broadcasters (U.S.) Keynote

David H. Layer
Senior Director, Advanced Engineering
NAB Technology Department

RadioDNS members

RadioDNS HYBRID RADIO

Open technology standards

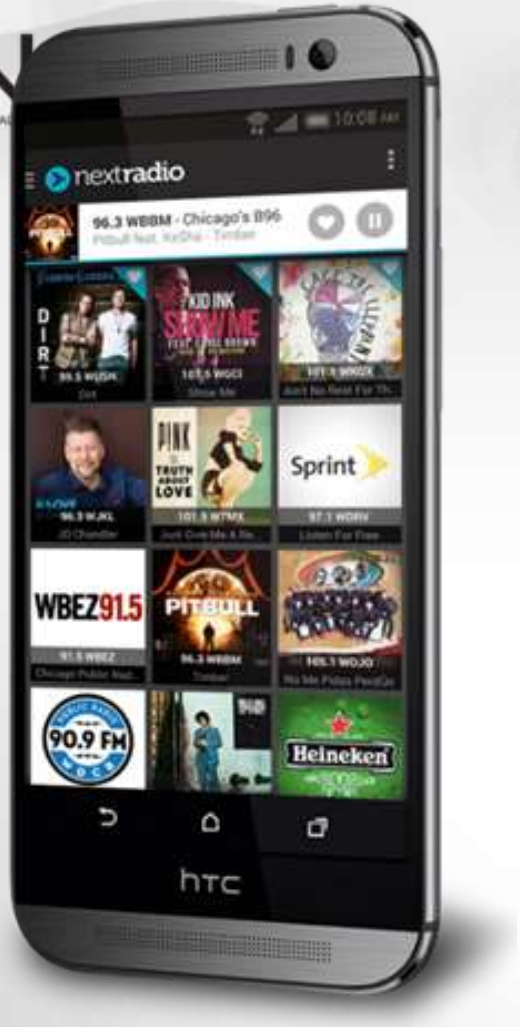


RadioDNS HYBRID RADIO

HOT 97 FM
97.1 WQHT-FM
How much could you save?
Curious? Contact your local Geico agent, whether it's to ask a question or buy a policy. We're here to help you now!
GEICO
HD Radio on the smartphone
HOT 97 FM
97.1 WQHT-FM

HD Radio
Calendar Integration
HD Radio
HD Radio

HD Radio in smartphone (2012)



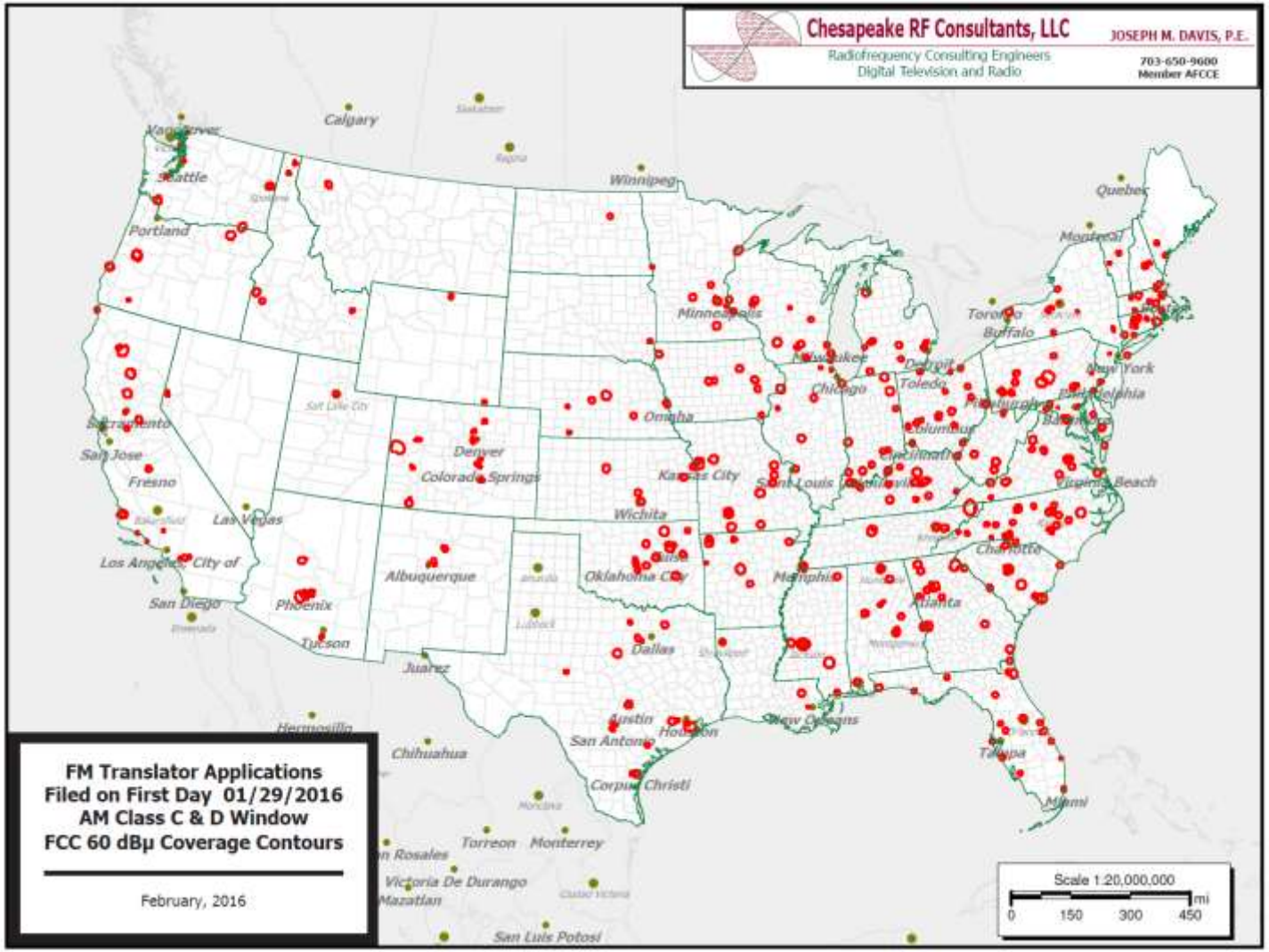
FM radio APIs

Basic FM tuner

Station logo service or RadioDNS

Representation in NextRadio guides

Full TagStation or RadioDNS - now playing


Chesapeake RF Consultants, LLC
JOSEPH M. DAVIS, P.E.
Radiofrequency Consulting Engineers
Digital Television and Radio
703-650-9600
Member AFCCE
FM Translator Applications
Filed on First Day 01/29/2016
AM Class C & D Window
FCC 60 dBμ Coverage Contours
February, 2016
Scale 1:20,000,000
0 150 300 450 mi
Calgary
Seattle
Portland
Winnipeg
Quebec
Montreal
Toronto
Buffalo
Minneapolis
Milwaukee
Chicago
Detroit
Toledo
New York
Philadelphia
Omaha
Columbus
Cincinnati
Sacramento
San Jose
Fresno
Denver
Colorado Springs
Kansas City
St. Louis
Virginia Beach
Wichita
Las Vegas
Los Angeles City of
San Diego
Albuquerque
Phoenix
Tucson
Oklahoma City
Memphis
Charlotte
Atlanta
Dallas
Juarez
Austin
San Antonio
Houston
New Orleans
Tampa
Miami
Chihuahua
Corpus Christi
Torreon
Monterrey
Victoria De Durango
Mazatlan
San Luis Potosi

New! Dial Report™

An unprecedented measurement view of your radio listeners and their listening

DIALREPORT™

Where data speaks volumes™

Welcome to the new Dial Report

Providing a digital measurement report of analog radio usage.

Features:

- ✓ Radio campaign performance insights updated daily
- ✓ Mid-Campaign and post-campaign performance
- ✓ Consumer demographic profiles
- ✓ Attribute broadcast radio to consumer interaction
- ✓ Campaign data to inform future radio spot buys

Campaign measurement with NextRadio

Terrestrial FM radio on your smartphone

Features & benefits:

- ✓ A new portable FM listening and viewing experience
- ✓ Increased session listening minutes for radio stations
- ✓ Groundbreaking engagement for advertisers
- ✓ Radio listener data and insights
- ✓ Robust reporting and measurable ROI

What NextRadio measures:

Exposure
by audiences and location

Insights
about station formats

Impressions
who heard, saw and took action

Demographic
reach summary

Lift
Summary

Days
that perform best

Dayparts
that perform best

Location Behavior
of listeners

In-store Visits

In-app Purchases

New! Dial Report™

An unprecedented measurement view of your listeners and their listening

Landing Page
All of your campaigns located in one place for easy access

Dashboard View
An at-a-glance overview of your campaign progress

Maps
Geographic drilldown views and results

KPIs
Day & dayparts, demographics, format breakdowns, etc.

NAB®
NATIONAL ASSOCIATION OF BROADCASTERS

12:41
10.01.2017
Navigation
Radio
Media
Tel
Vehicle
Radio
RADIO
MEDIA
CLEAR
NAVI
TEL
ON

Vehicle
Sound
Radio
Media
Telephone
9:51
FM ROCKS

BAND
SEEK
TUNE
OK
94.1 MIX -FM HD1
HD Radio
ST
LIVE GUIDE
GENRE
FREQ
Adult Hits
1 / 2
91.1
KVKL FM
93.1 HD1
KYMT FM/H...
93.1 HD3
KYMT HD3
94.1 HD1
KMXB FM/H.
NOW PLAYING
GUIDES
PRESETS
BOOKMARKS
SETTINGS
OSIGO
dts

OS Agnostic

sdl

QNX Microsoft

Android Linux

iOS Android

Windows Phone

(COURTESY FORD)

Ford DEVELOPER PROGRAM

NAB®
NATIONAL ASSOCIATION OF BROADCASTERS

European Broadcasting Union

Peter MacAvock

WiFi Code: 4018

RadioDNS HYBRID RADIO

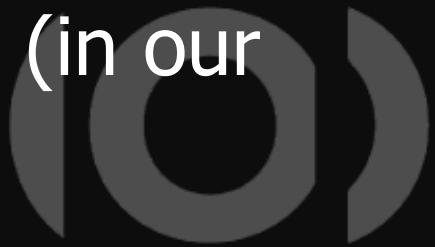
Hybrid Radio

Peter MacAvock (EBU)

Digital Radio is the future of Radio.
Hybrid is the way of getting there

*Digital Radio*is the future of Radio.*
*Hybrid*is the way of getting there*

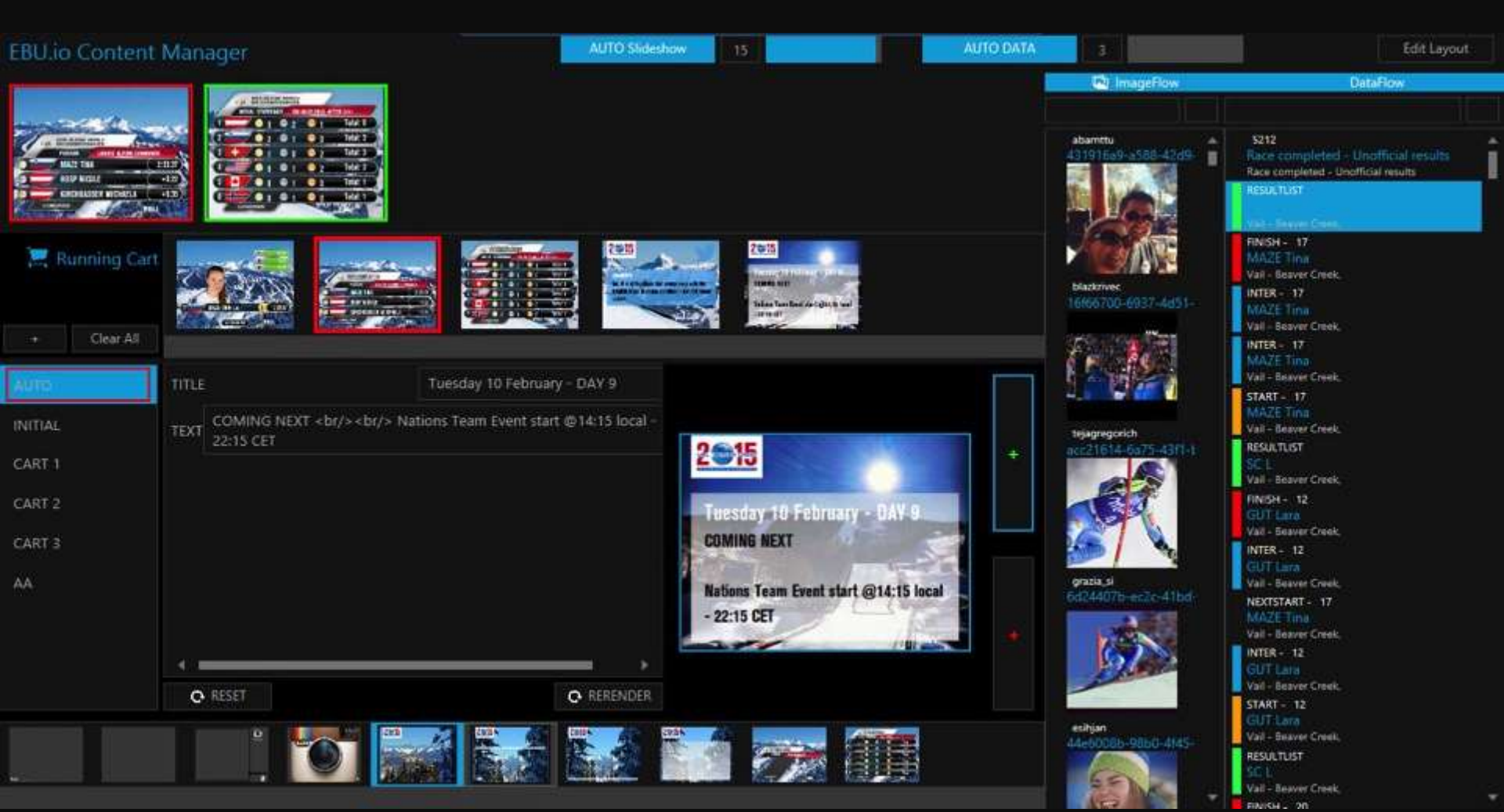
* Peter MacAvock (who is no expert on radio)
* Digital Radio's definition is variable:
  * DAB + DRM + Internet Radio
* Hybrid Radio is based on RadioDNS (in our view)



EBU’s work in Hybrid

- Mathias Coinchon and Michael Barroco
- Hybrid Radio Hosting
- Open Source Hybrid Radio Production tools
- Enter Ben Poor

EURORADIO @ 2015 FIS Alpine World Ski Championships in Vail / Beaver Creek


EBU.io Content Manager
AUTO Slideshow
15
AUTO DATA
3
Edit Layout
ImageFlow
DataFlow
Running Cart
+
Clear All
AUTO
INITIAL
CART 1
CART 2
CART 3
AA
TITLE
Tuesday 10 February - DAY 9
TEXT
COMING NEXT

 Nations Team Event start @14:15 local - 22:15 CET
2015
Tuesday 10 February - DAY 9
COMING NEXT
Nations Team Event start @14:15 local - 22:15 CET
RESET
RERENDER
abarnttu
431916a9-a588-42d9-
blazkrivec
16f66700-6937-4d51-
tejagregorich
acc21614-6a75-43f1-
grazia_si
6d24407b-ec2c-41bd-
esihjan
44e6006b-98b0-4f45-
5212
Race completed - Unofficial results
Race completed - Unofficial results
RESULTLIST
Vail - Beaver Creek,
FINISH - 17
MAZE Tina
Vail - Beaver Creek,
INTER - 17
MAZE Tina
Vail - Beaver Creek,
INTER - 17
MAZE Tina
Vail - Beaver Creek,
START - 17
MAZE Tina
Vail - Beaver Creek,
RESULTLIST
SC L
Vail - Beaver Creek,
FINISH - 12
GUT Lara
Vail - Beaver Creek,
INTER - 12
GUT Lara
Vail - Beaver Creek,
NEXTSTART - 17
MAZE Tina
Vail - Beaver Creek,
INTER - 12
GUT Lara
Vail - Beaver Creek,
START - 12
GUT Lara
Vail - Beaver Creek,
RESULTLIST
SC L
Vail - Beaver Creek,

2015 ALPINE WORLD SKI CHAMPIONSHIPS
RESULT
LADIES DOWNHILL TRAINING #2
31 HRONEK VERONIQUE +3.65
32 RUIZ CASTILLO CAROLINA +3.82
33 BRODNIK VANJA +3.83
34 GAGNON MARIE-MICHELE +4.21
35 KIRCHGASSER MICHAELA +4.46
36 KRIZOVA KLARA +4.47
LONGINES
EBU

PURE

2015 ALPINE WORLD SKI CHAMPIONSHIPS
RESULT
LADIES DOWNHILL TRAINING #2
31 HRONEK VERONIQUE +3.65
32 RUIZ CASTILLO CAROLINA +3.82
33 BRODNIK VANJA +3.83
34 GAGNON MARIE-MICHELE +4.21
35 KIRCHGASSER MICHAELA +4.46
36 KRIZOVA KLARA +4.47
LONGINES
EBU

PURE

San Murezzan 2017

SAN MUREZZAN 2017

Uorschla Cranzla recloma

igl è las 11.50 - Uorschla Cranzla recloma !

Ils Campiunadis da skis 2017 èn averts

Cun la festa d'avertura en il Kulm Park è lantschà il cumbat per medaglias a San Murezzan.

Vendi passa 1'000 bigliets al di per cursas mundialas

L'aura e buns resultats han dimuls e dà a blers l'impuls da cumprar in ticket per ils Campiunadis mundials da skis.

Lavur explosiva durant ils Campiunadis mundials

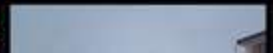
Dapi mesemna hai da radunit 45 centimeters nav en il territon da skis nua che la cursa dels urnens ha lieu.

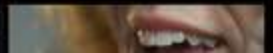
Bancas Raiffeisen Grischun cun in gudogn

L'unun da las bancas Raiffeisen dal Grischun ha serrà l'orin 2016 cun 4,6% dapli gudogn.

San Murezzan pulsescha

0:34 min, dals 6.2.2017





21% 19:19
m.rtr.ch
3
RTR
Damaun
-1°/5°C

San Murezzan 2017

Uorschla Cranzla recloma

Igl è las 11.50 - Uorschla Cranzla recloma
!

Ils Campiunadis da skis 2017 èn averts

And .....

- Visualisation showcase from FIS World Skiing Championships (St. Moritz)
- Hybrid Radio Hosting
- Open Source Hybrid Radio Production tools
- Enter Ben Poor

DIGITAL RADIO SUMMIT ’17

08 Feb 2017
at EBU, Geneva

Summary

Matt Deegan

WiFi Code: 4018

RadioDNS HYBRID RADIO

Automotive UX Workshop

Starts at 14:30 promptly

Lunch is served outside

WiFi Code: 4018

RadioDNS HYBRID RADIO