



Hybrid Radio Update 2018

13th February 2018
EBU, Geneva

SSID: RadioWeek
WiFi Code: RadioActive



Welcome

Walter Huijten, Chair

SSID: RadioWeek
WiFi Code: RadioActive

Agenda

What Happened in 2017

Coffee

Our Plans for 2018

with added Member Presentations

<https://radiodns.org/organisation/general-assembly/ga-feb-18/>

SSID: RadioWeek
WiFi Code: RadioActive



Achievements 2017

Nick Piggott, Project Director

Steering Board Members 2017

Walter Huijten (Chair) NPO	Ben Poor (Secretary) EBU	Travis Baxter (until 18/10) Bauer Media
Nacho Seirul-Lo (from 13/2/18) NXP	Nicolas Bresou ma.radio	Kath Brown Commercial Radio Australia
Joe D'Angelo Xperi Inc.	Alexander Erk IRT for ARD	John Farrell Frontier Silicon
David Layer NAB	Sean O'Halpin BBC	Christian Winter Audi

Technology Education

Technology

RadioDNS Technology

Technology Standards

Operating the DNS service

Providing Technical Support

Technical Standards

“Durable”

No changes to standards published in 2017

Wider implementation of standards has not exposed any significant problems

Changes to the SPI (RadioEPG) and Visual Slideshow (RadioVIS) standards are done in consultation with WorldDAB Technical Committee

Changes to the Lookup and SPI standards are awaiting publication

Technical Standards

List of requests to investigate technical standards

Renewed interest in formalising the **RadioTAG** standard

NPR (US, National Public Radio) have adopted SPI (TS 102 818) as their in-house metadata exchange standard

Technology Group now manages standards - Ben will report later

Operating the DNS service

Multiple cloud instances globally

Typical response time <50ms (same region)

All requests are validated

Change requests (switching DNS records from one service provider to another) are validated with the incoming service provider and broadcaster

>90% of valid change requests processed within 1 working day

Preferring registration requests by submitting URL to SI.xml

Technical Support

One-on-one support for members

Helping with implementation and policy questions

Documentation (including HOWTO documents)

Ideas and hints - e.g. generating FM & DAB test signals

Identifying and fixing problems with implementations

Support Tools

SI Generator / Editor - **si.radiodns.org**

Test signals - audio streams and live DAB ETI streams for bench testing

Service testing tools - quick debugging

Utilities and library code - open source

Device testing platform - prerequisite for certification

Education

Education

Broadcasters

Manufacturers

Technology and Service Providers



Durable Interoperable

Broadcasters

“Publishing your content using our standards will give you the widest coverage of devices, and give you the freedom to switch between service providers

Require RadioDNS compliance from your service provider”

Manufacturers

“RadioDNS standards are durable, and interoperable, which means they will operate through the lifetime of your vehicles, and have no single point of failure”

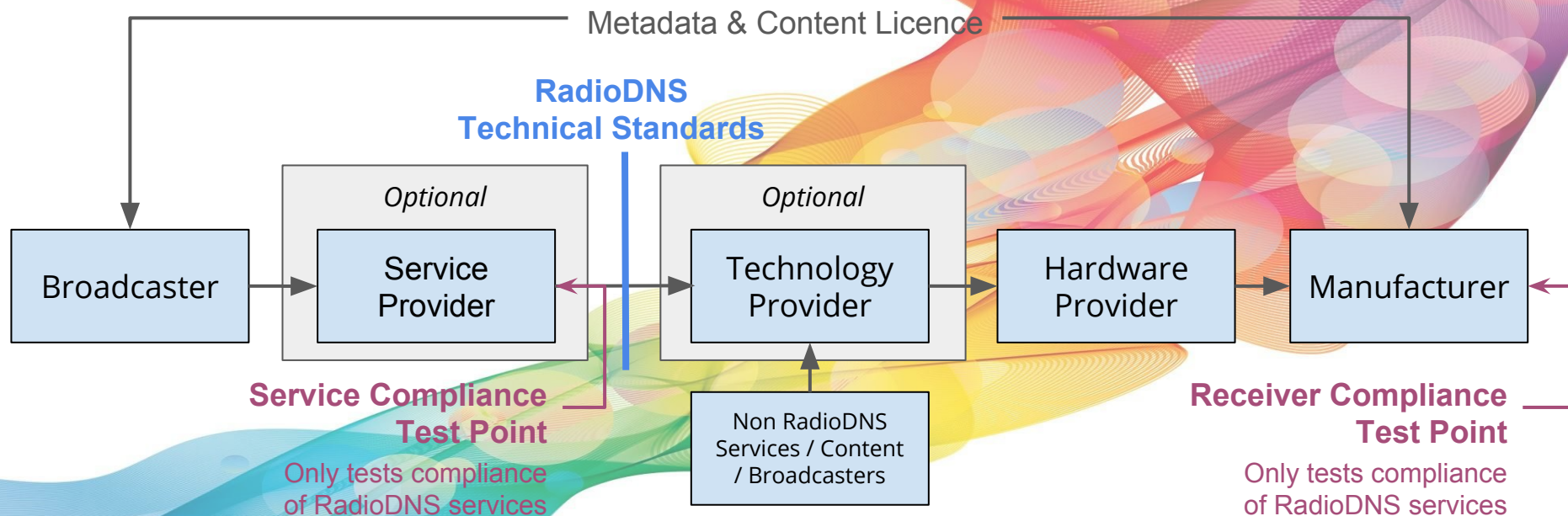
Require RadioDNS compliance from your technology provider(s)”.

Service and Technology Providers

“Supporting RadioDNS standards does not preclude you offering or acquiring content using other methods.

RadioDNS compliance testing only validates your implementation of RadioDNS”

RadioDNS in the chain





Shows and Conferences

Education in Person

RadioDNS In Real Life

Making the vision real and tangible

Showing devices, services

Interactive discussion

addressing business specific questions

Making new contacts





Growth

Coverage Growth



United States

Australia (Commercial Radio expanded)

Belgium (Commercial Radio added)

Ireland (Commercial Radio added)

Austria (Commercial Radio added)

DNS Entries

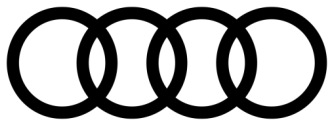
43% increase in FM radio stations

10% increase in DAB/DAB+ radio stations



The New Audi A8

The first production vehicle in the world to
feature integrated RadioDNS functionality



The radio with Vorsprung durch Technik

Christian Winter

RadioDNS Seminar, Geneva, 2018-02-13

New Audi A8 and Audi A7

Premium cars with the next generation infotainment platform



New Audi A7 Sportback

Interior with 2 haptic response touchscreens



Audi A8

MMI Navigation plus with MMI touch response



MMI Navigation plus with MMI touch response

Multimedia capabilities

› DAB/FM/AM hybrid
radio

› Online Radio

› Podcasts

› USB

› SD-Card



› DVD/CD

› TV

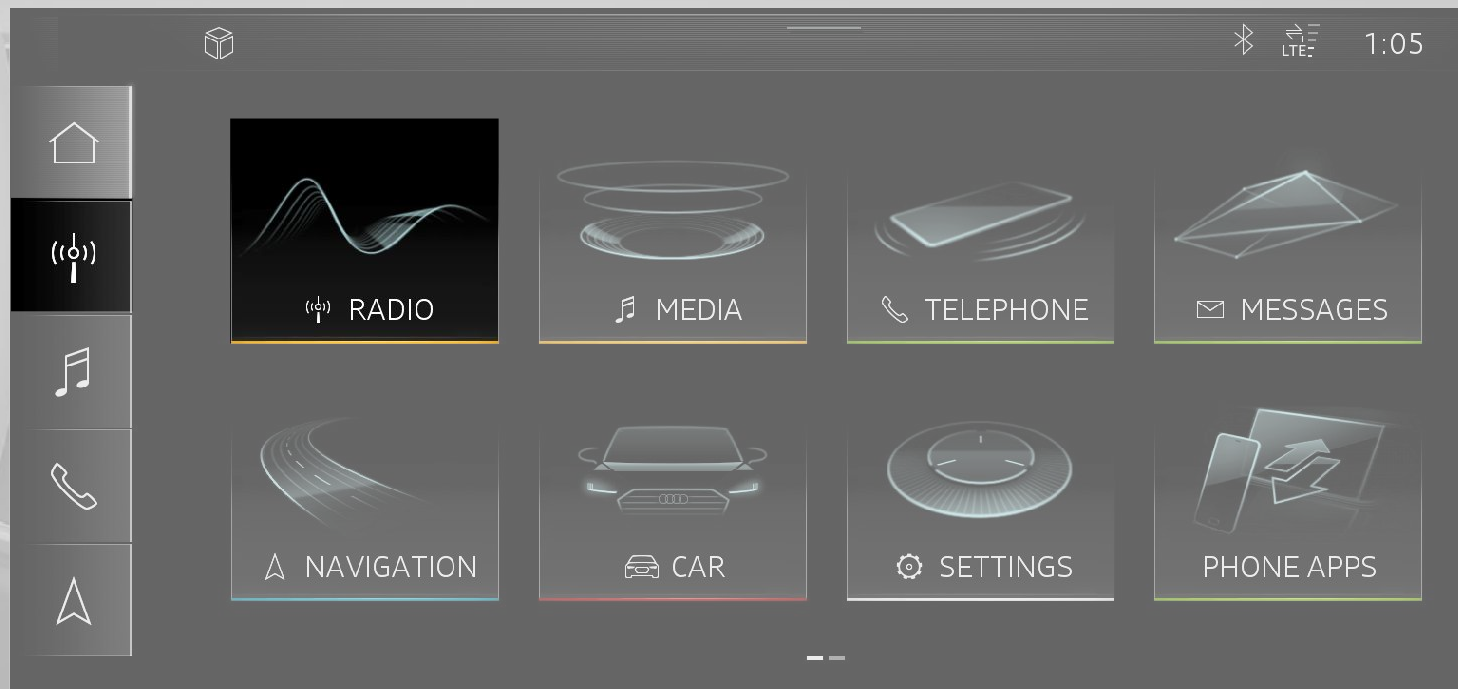
› Online media

› Carplay

› Android Auto

MMI Navigation plus with MMI touch response

More competition for the radio

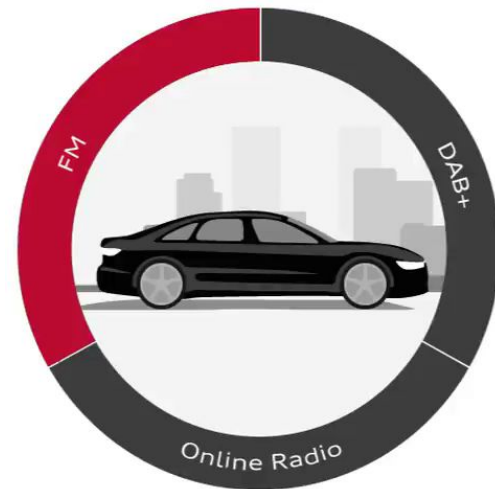


Radio is besides all the other multimedia options in a modern infotainment system still number one in terms of listening time.*

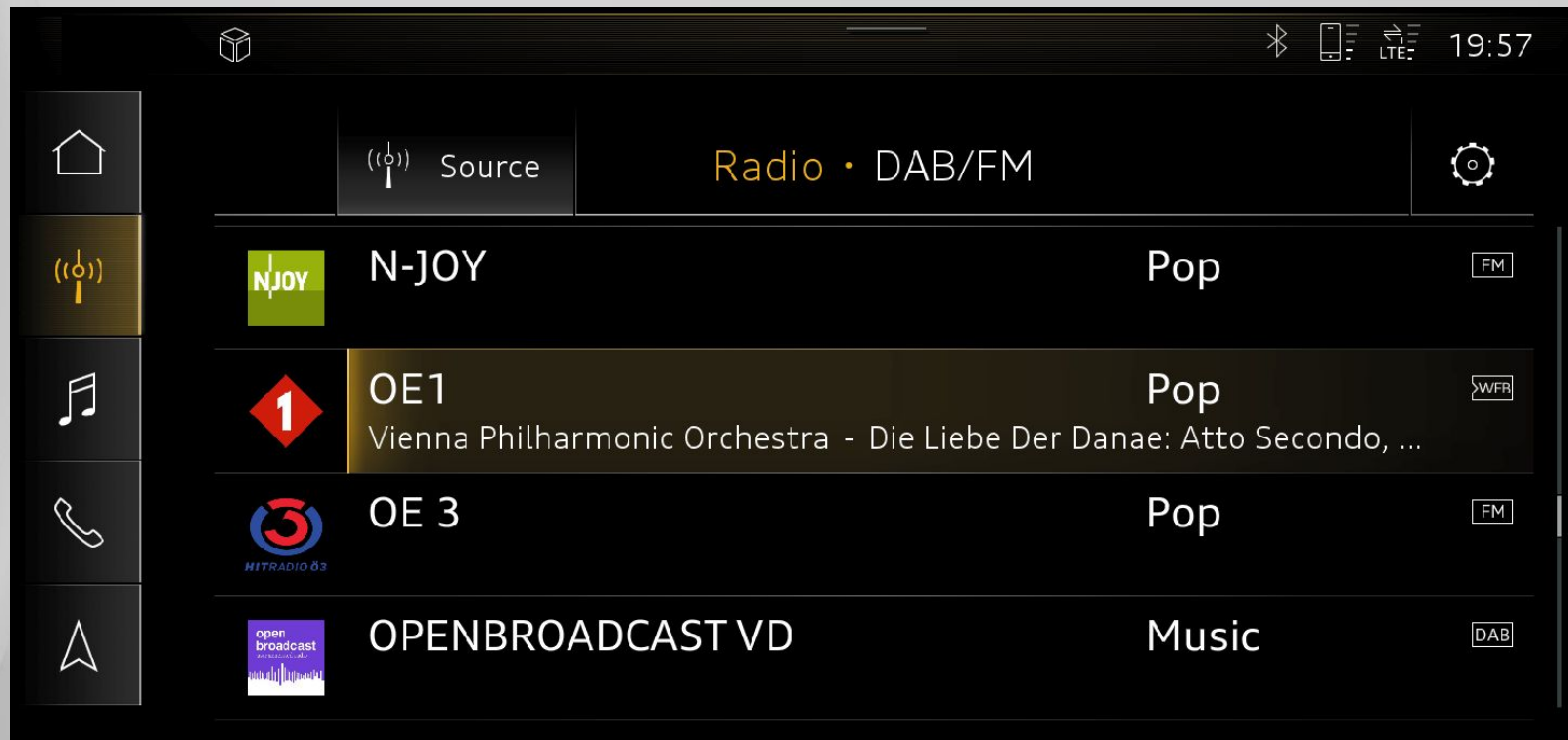
* <http://www.radioplayer.co.uk/great-cars-need-great-radios>

Progressive Goal

“Our main goal for the radio in the new Audi A8 was not just offer new features, but integrate them in a way that the customer receives the best user experience.”



Hybrid Radio in the new A8 and A7



› With „service following online“ the system links to the online stream if neccessary.

› Project Logo“ Station logos will be downloaded online and cached to the system

Easy to use Unified Station List



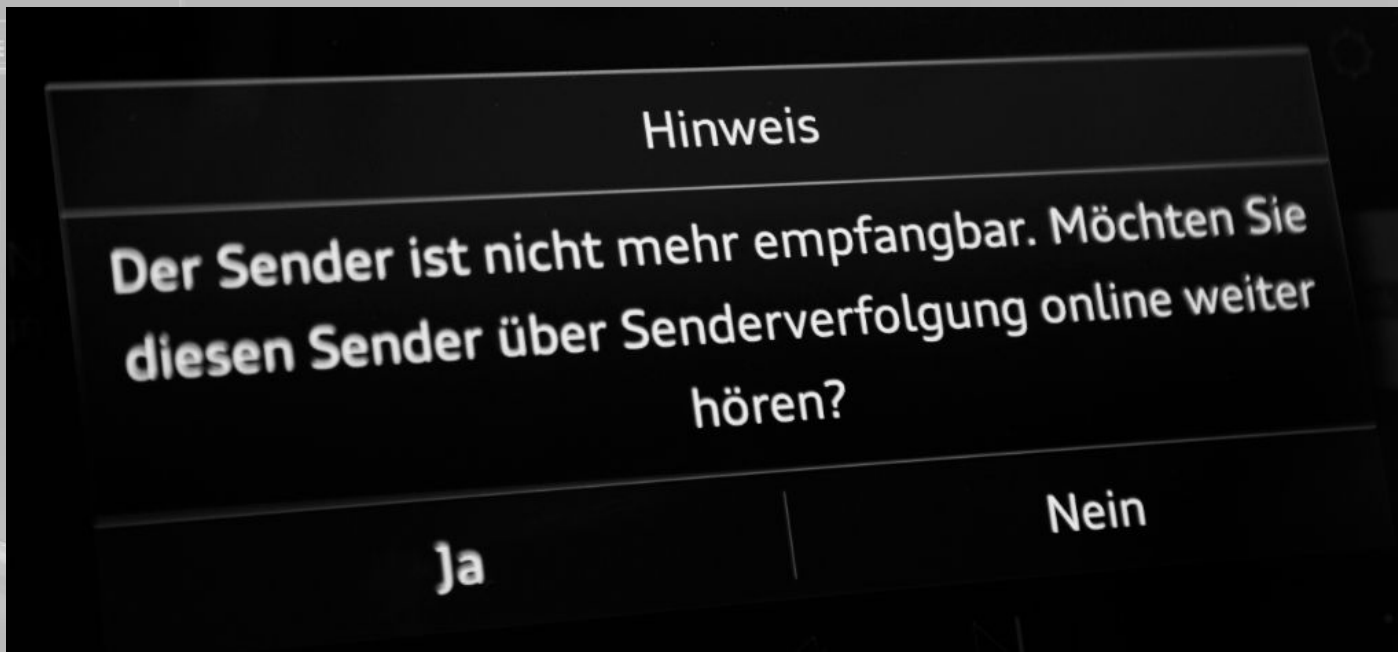
Reduced Now playing screen



Customizable



Controllable



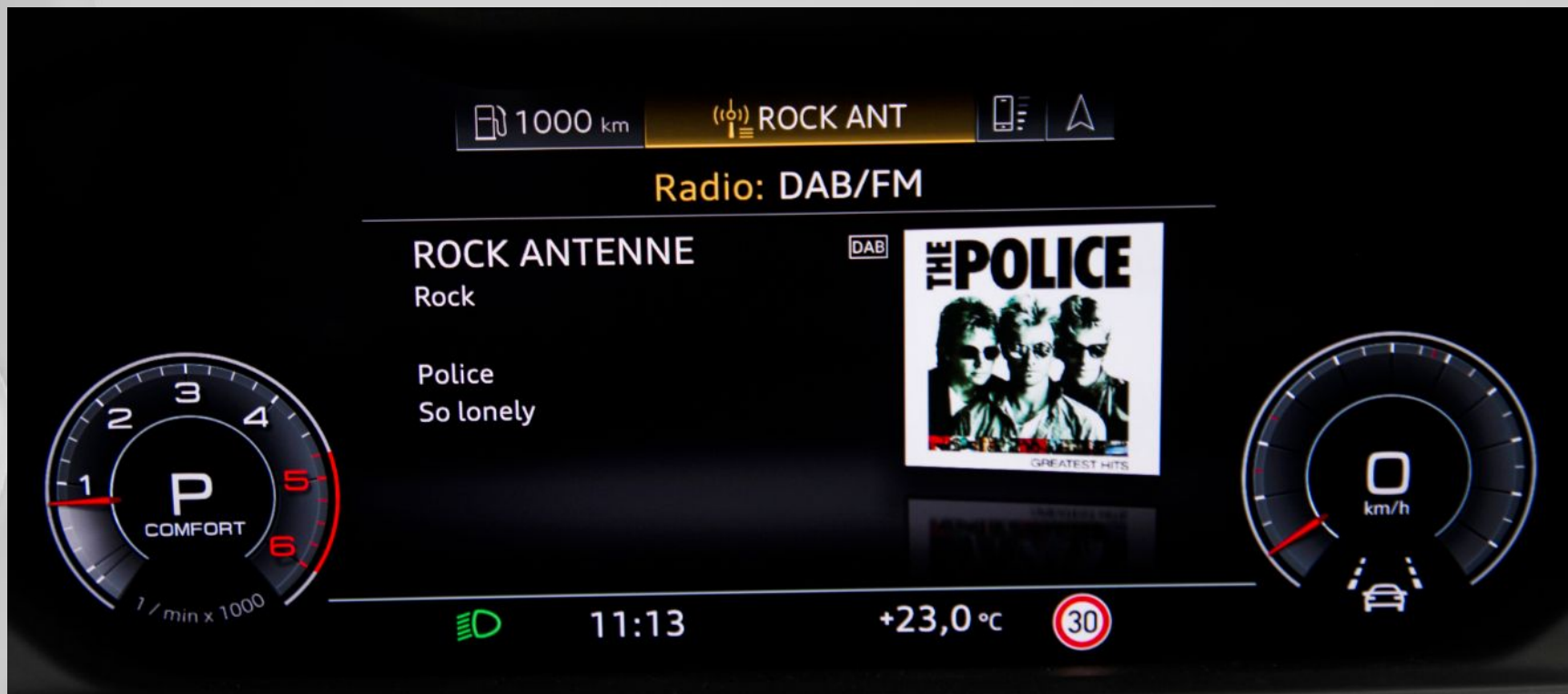
Easy access with shortcuts



Intelligent search for the integrated online radio



Integrated in the cluster instrument



Connected



Hybrid Radio

Platform and standards

The open standards of RadioDNS allowed us to build the first integrated Hybrid Radio in the car.

- › Standards reduce development costs for the complex Hybrid Radio Feature.
- › Using standards helps that hybrid radio is working independently from a content provider during the lifetime of a car.
- › Products can be launched faster worldwide.
- › Broadcaster are responsible for their data and no 3rd party.
- › Radioplayer supports RadioDNS via offering their data in the RadioDNS-Format.
- › Additional access to the Radioplayer-API helps getting Streaming URLs, Now Playing



Our Hybrid Radio platform is fast, extendable and easy to integrate in other cars of the Volkswagen group due to the usage of open standards.

Hybrid Radio

The Todo-list

01.
Rollout

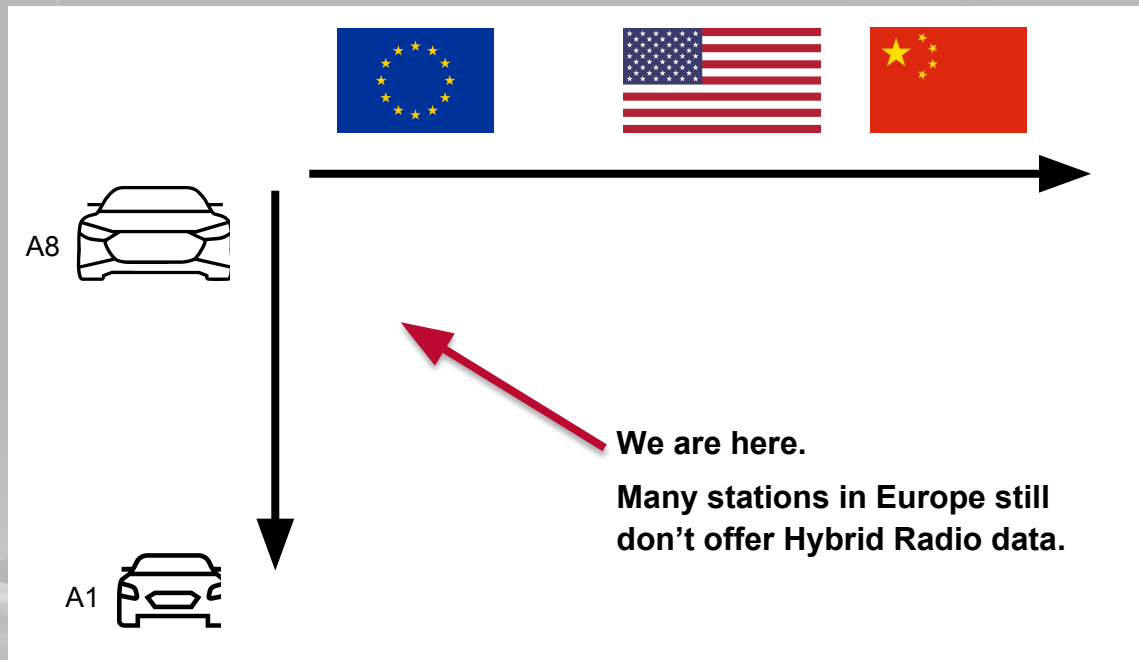
02.
Data coverage and quality

03.
Get feedback from the
customers and radio industry

04.
Integrate new features

01. Rollout

Cars and markets



02. Data coverage and quality

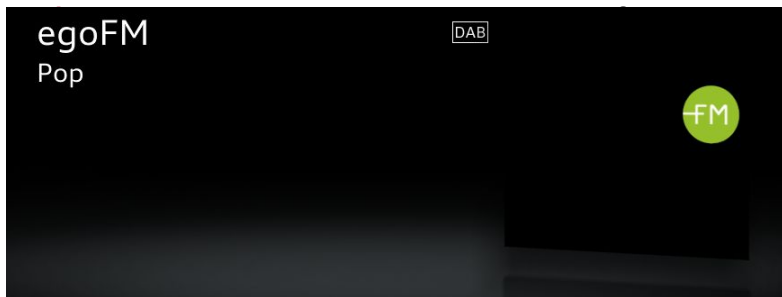
Feedback to the radio stations

Many stations in Europe still don't offer Hybrid Radio data.

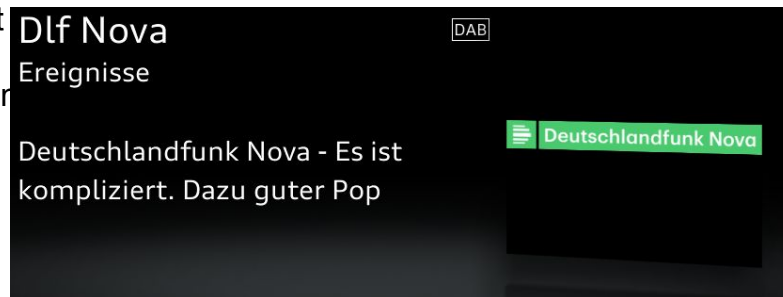
- › Keep in mind that radio has a lot of competition in the car
- › Contact RadioDNS or Radioplayer, they help you to make your station hybrid.

When you offer Hybrid Radio think about the golden rules

- › High streaming delays minimize the seamless linking experience.
- › Pre-roll advertising are counterproductive for seamless linking.



Screenshot: egoFM logo with transparency



Screenshot: too small logo in incorrect format

03. Get feedback from the customers and radio industry

“We have a hybrid radio demo outside - tell us your feedback.”

If you don't get the chance today or tomorrow visit the RadioDNS booth at the Radiodays Europe

04. Integrate new features

An outlook

We will extend our hybrid radio platform

- › Based on customer feedback we want to further improve hybrid radio.
- › We add fingerprinting based song recognition to our platform to finally solve the problem “What’s that song on the radio?” in 2018.
- › Add direct access to radio subservices and podcast library.

Audi e-tron GT concept 2017





Thank you!

Member Presentation

Pluxbox

Hybrid Radio

An opportunity to grab

By Cas Adriani - Pluxbox

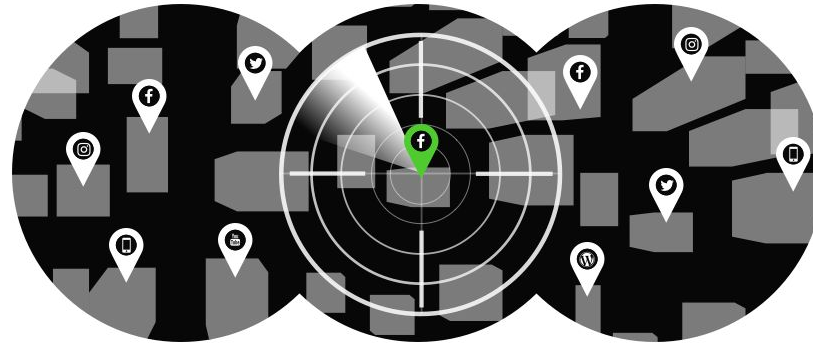
Concept Pitch



VOLTAGE
BRUNO MARS - Just T
he Way You Are



Radio consuming is changing



Video

Audio

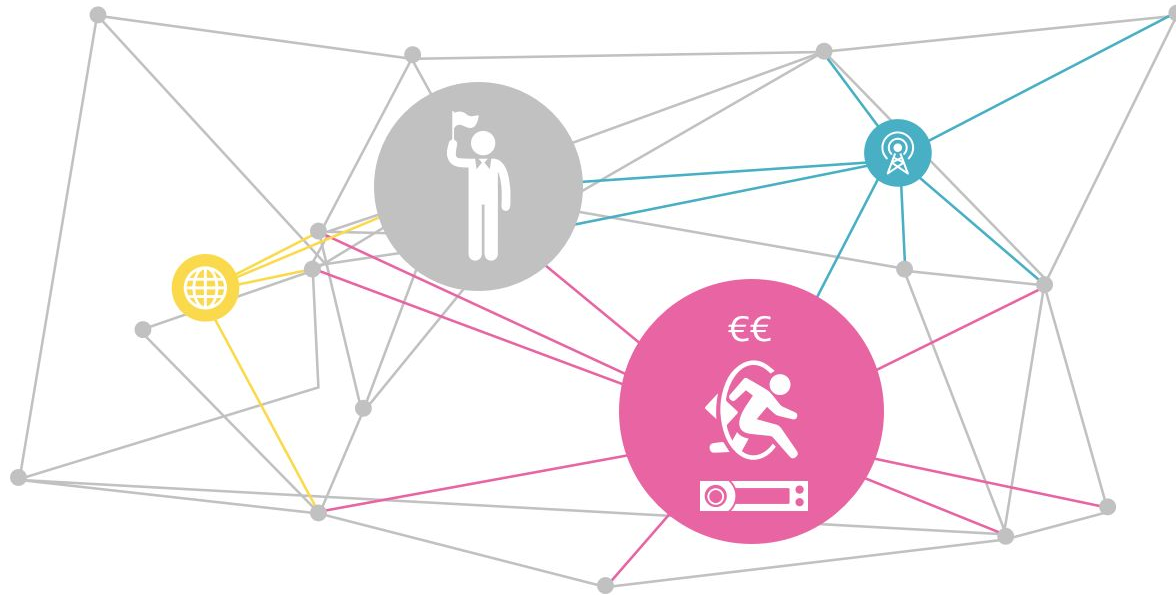
Social Media

Nowadays we consume content throughout the day, from different locations through different channels and in different forms.



Different moments, channels and form

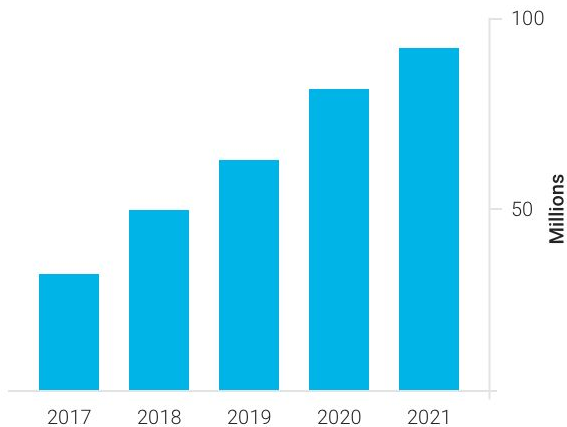
It's all about the `YOU` Who's jumps through one of your €€ hula hoops!





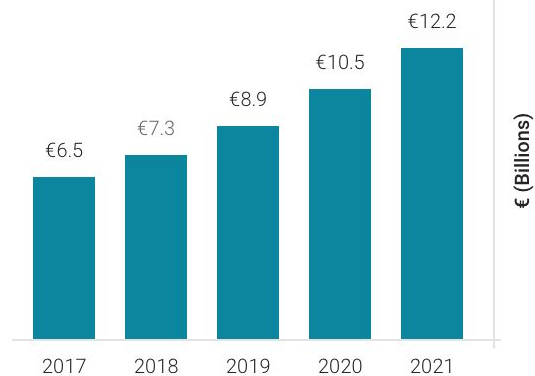
But... listening to (digital) radio in the car is still growing

Estimated Connected Car Shipments



Source: OICA, KPMG, ITU, Google Consumer Barometer
GSMA Intelligence, BI Intelligence estimates, 2016

Estimated Connected Car Entertainment
Markt Potential



Source: Strategy&, Intelligence, BI Intelligence estimates, 2015



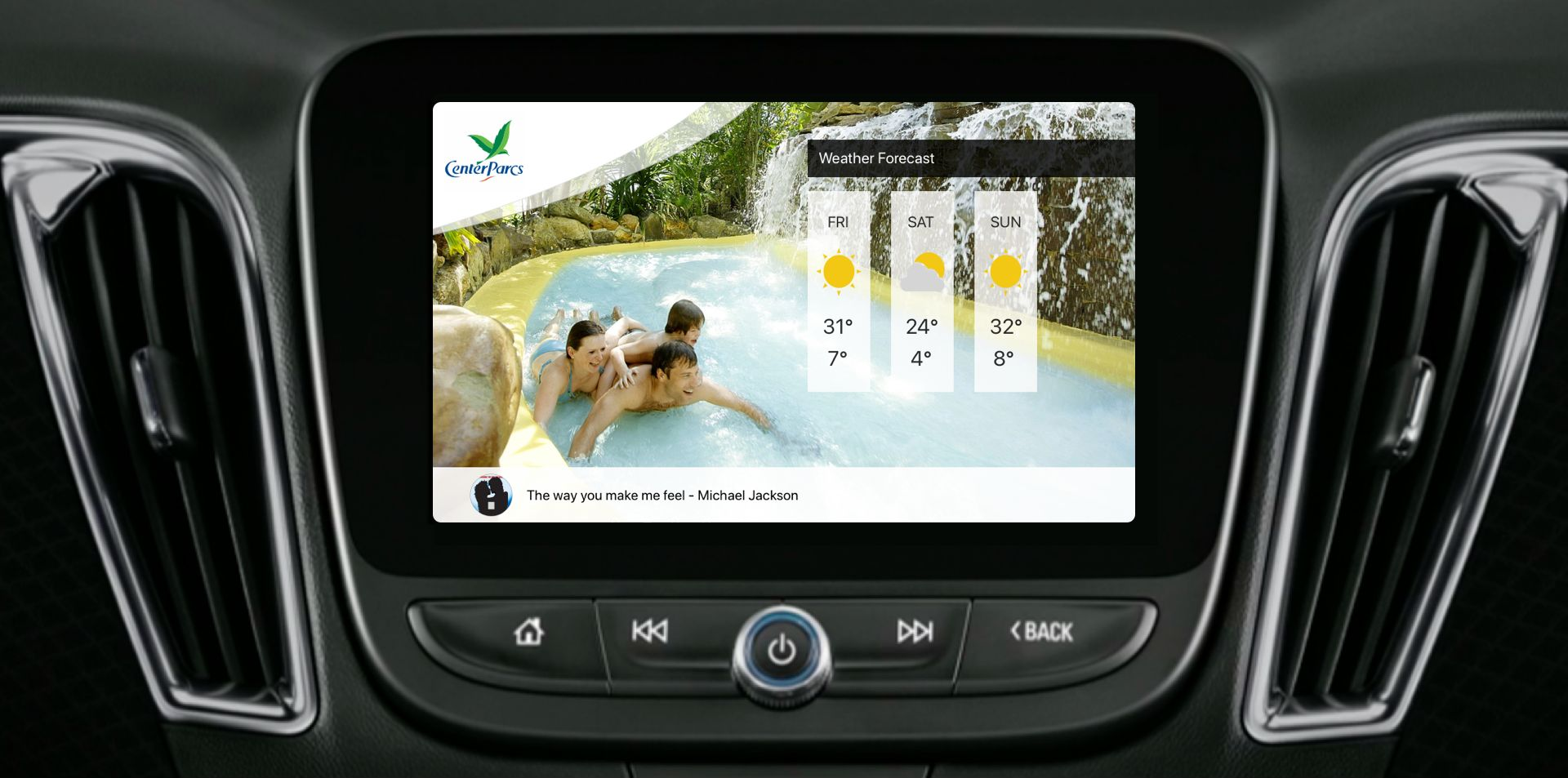
Hybrid Radio

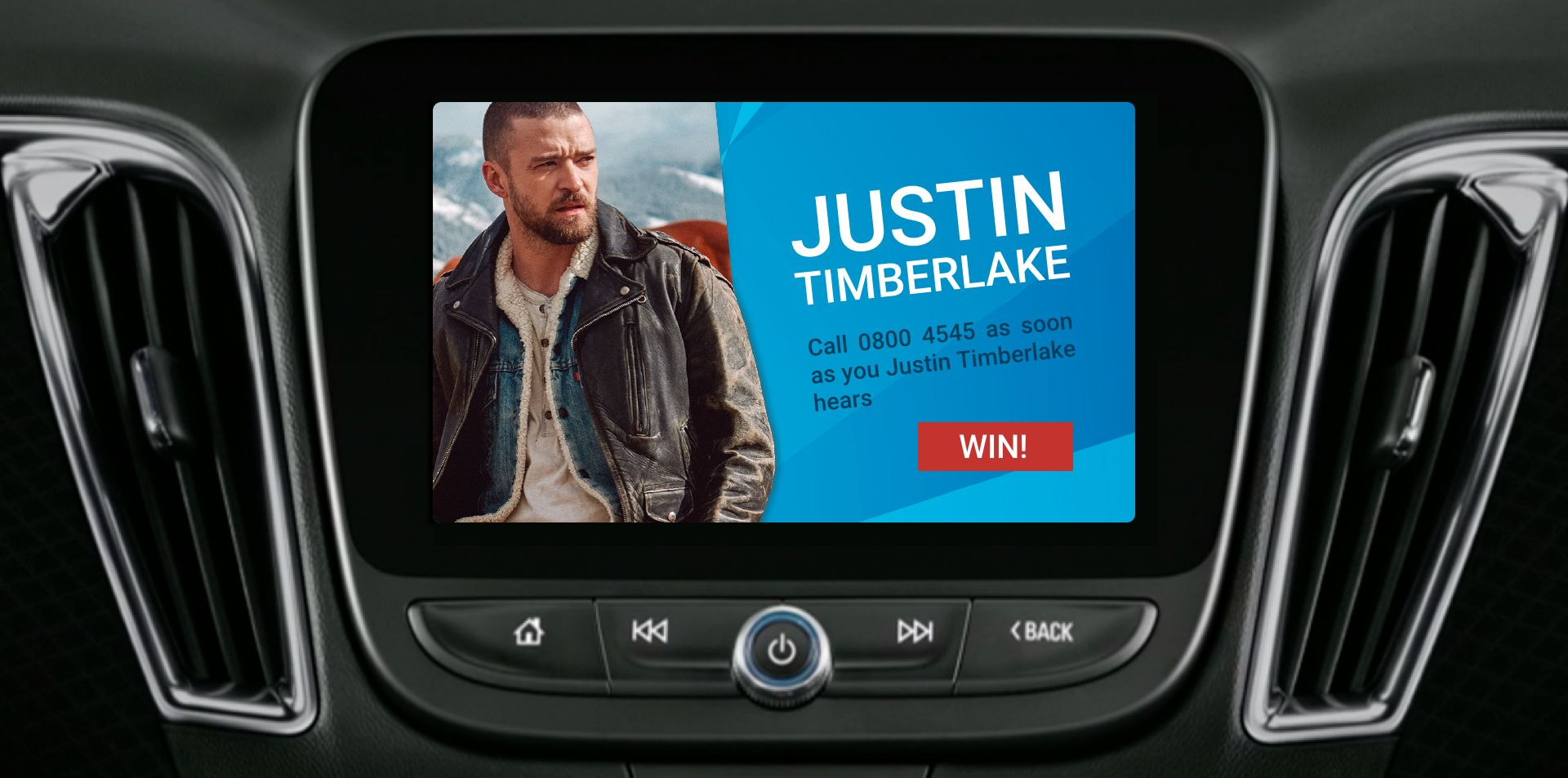
A touch point you shouldn't miss

Concept Pitch



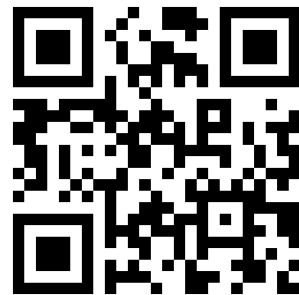






Connect Your Phone

Scan the QR with your
MixFM app to use the
SMART buttons








Ed Sheeran

WORLD TOUR 2018



BUY TICKETS

19:09
Thursday, May 28

 **Your Androidauto sends you a link** 19:09
<http://buytickets.com/ed-sheeran-world-t...>



Consideration

Rihanna

Featuring **SZA**

Album **ANTI**

Produced by **Antydote**
& **Kuk Harrell**



**FLAVOR
MIX**

The Afternoon Show
Presented by: Dan Doe



< BACK











Not another thing to do, It already fits perfectly in your workflow

Joost=Wakker! - woensdag, 7 februari 2018
Joost Burger

7 **LIVE** Drafts Verkeer

06:00

06:00:00 A-blok

06:04:00 ANP NIEUWS

06:05:10 B-blok

06:09:10 TOTH JOOST BURGER

06:09:11 Major Lazer ft PARTYNEX TDOOR & Nicki Min - Run...

06:12:34 Martin Garrix & Matisse & Sadko - Forever

06:16:12 Woensdag 7 februari

06:16:42 Ed Sheeran - Perfect (Mike Perry Remix)

06:20:23 Calvin Harris Ft Kelis - Bounce

06:23:57 Roundup

06:24:27 Selena Gomez & Marshmello - Wolves

06:27:18 Tie(sto ft. Gucci Mane & Steffen - BOOM

06:30:13 Weer

06:30:43 BOTH JOOST BURGER

06:30:44 Hardwell ft. Austin Mahone - Creatures Of The night

06:33:44 Portugal. The Man - Feel it Still (Ofenbach Remix)

06:36:39 Roundup

06:37:09 Avicii ft. Rita Ora - Lonely Together

ANP Nieuwslezer:

06:30:13 Weer

06:30:43 BOTH JOOST BURGER

00:01

06:30:44 Hardwell ft. Austin Mahone - Creatures Of The night

03:00

06:33:44 Portugal. The Man - Feel it Still (Ofenbach Remix)

02:55

06:36:39 Roundup

00:30

Vandaag in de HOT or NOT de nieuwe single van Justin Timberlake

3405 / 67%

1677 / 33%

Hot or Not

Filthy - Justin Timberlake

hybridradio

<http://radiodns.wpengine.com/wp-content/uploads/2015/08/ebucontent.png>

GENERAL DETAILS

Type

Hot or Not

Filthy - Justin Timberlake

3405 / 67%

1677 / 33%

Hot or Not

Filthy - Justin Timberlake

hybridradio

<http://radiodns.wpengine.com/wp-content/uploads/2015/08/ebucontent.png>



Insights and learnings

Voting tool

Dashboard | List | Survey | Exports | Settings

Time left



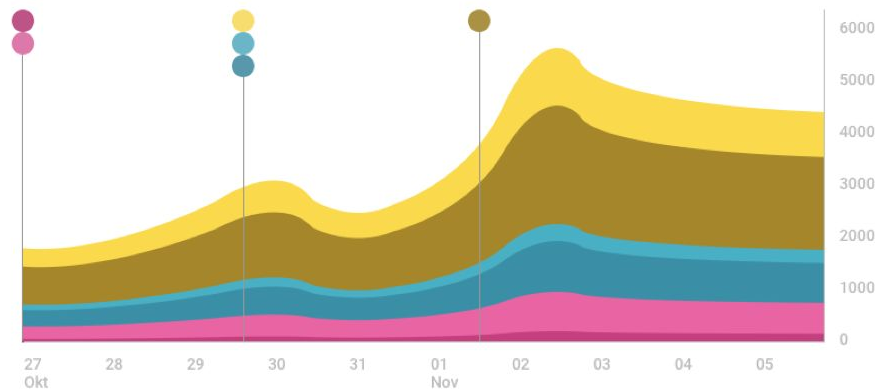
3 days

Gregory Porter geeft derde concert in Carré

Consumed
12920

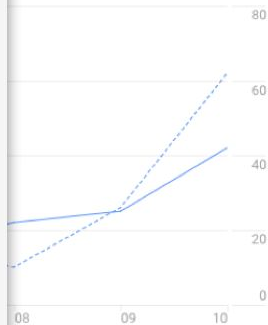
Interactions
286

Type item
Last 7 days

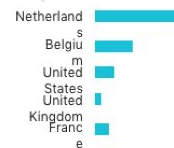


type item

Last 7 days



Locations



Voters at this time

442

12 current votes
per minute

Top 10

1. Bohemian Rhapsody - Queen (20102)
2. Hotel California - Eagles (18273)
3. Stairway to heaven - Led Zeppelin (12391)
4. Piano Man - Billy Joel (10231)
5. Child in Time - Deep Purple (9312)



RadioManager is the one stop shop

Station settings > Images & texts > Images

Settings ^

General

Epg start times

Themes

Station data v

Images & texts ^

Images

Texts

Datamodel v

Export ^

RadioDNS

vTuner

Tuneln

DAR.fm/OnRad.io

API v

Multistation v

Applications ^

Manage

Marketplace

vote

onair

campaign

broadcastinfo

event

20:21 on 07-02-2018

NOW ON AIR

MIX 96.8
Today favorites

Name







vote

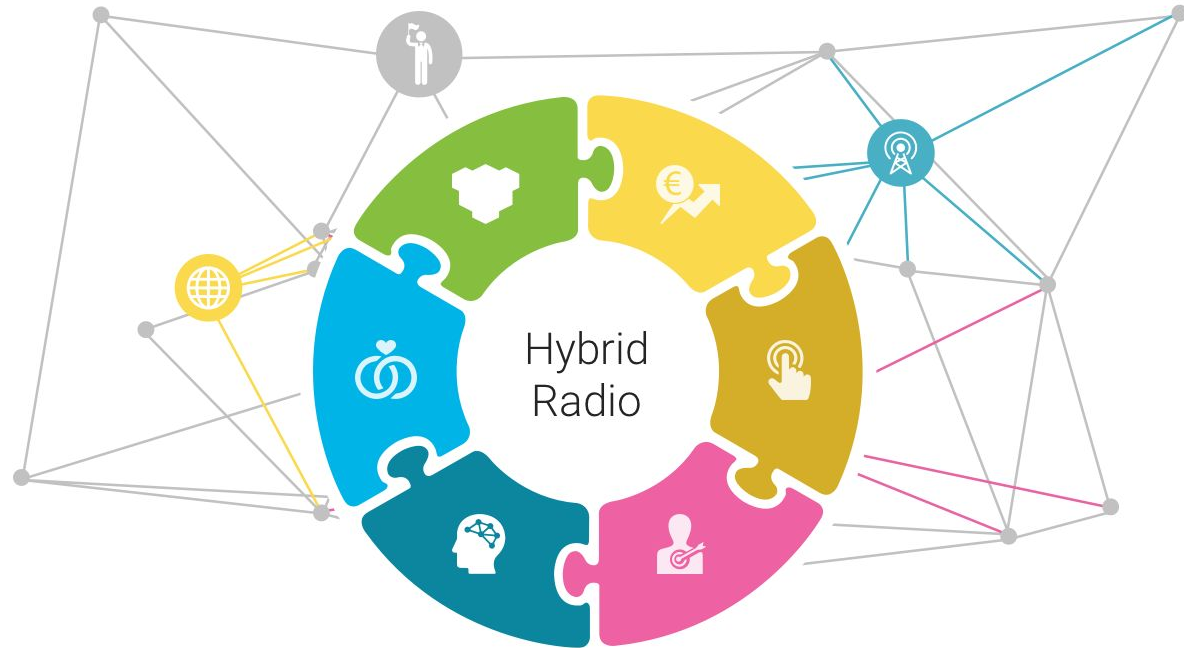
RENDER PREVIEW

```
1 <!doctype html>
2 <html>
3 <head>
4   <style>
5     * {box-sizing: border-box;}
6     html,
7     body {
8       height: 100%;
9       width: 100%;
10      margin: 0;
11      background:url(http://loremflickr.com/660/480/microphone);
12      font-family:arial;
13    }
14  #bar{
15    position: absolute;
16    bottom: 10px;
17    left:15px;
18    width: 290px;
```




The hybrid radio touch point in a nutshell

-  Engagement
-  Insights
-  Targeted Content
-  Touch Points
-  Business model
-  Pluxbox Radiomanager





We can lend you a hand

Inspired or need some help with finding a ubiquitous and monetizing way to reach your (in car) audience?

Don't hesitate to contact us, we just an email away

cas@pluxbox.com
pluxbox.com

THANKS FOR YOUR ATTENTION!

Concept Pitch

Coffee Break

20 Minutes

SSID: RadioWeek
WiFi Code: RadioActive

Member Presentation

TDF Radiobridge



R Radiobridge

Timeshifting the radio experience !

Radiobridge – Made in France by TDF

TDF: major European broadcast service and telecom infrastructure operator

2016 CONSOLIDATED
REVENUES (IFRS)

2016 CONSOLIDATED
REVENUES (by business)

€673.6m
with
2,300
customers

Telecoms 44%

Television 27%

Radio 18%

Medias services 8%

Other 3%

TV channels, multimedia
producers, radio stations,
telecom operators, railways,
institutional, local authorities...



10 100
towers in Europe



1 944
employees



Telecom Infrastructures

Mobile
Operators
Hosting

Datacenters

Business
Connectivity
Solutions

TV & Radio Broadcast Services

DTT TV
Broadcastin
g

FM & DAB
Radio
Broadcastin
g

Broadcast
live feeds
transport

Media & Telematic Services

TV
Head-ends
Arkena

On-demand
video
services
Arkena

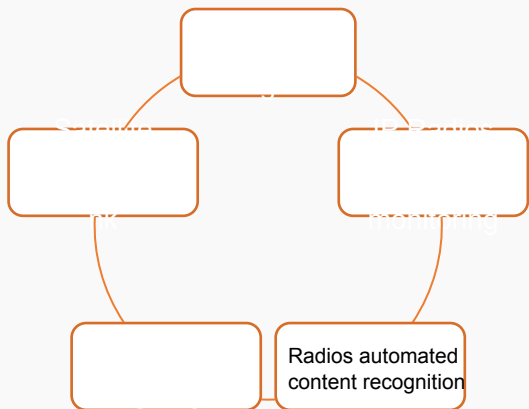
Infotrafic
Mediamobil
e



Our Radio & Automotive Expertise



has more than 40 years of experience and strong expertise in every aspects of radio broadcasting networks and technologies:



Active in multiple
bodies:



Mediamobile

a European leader in telematics solutions for the automotive industry

✓ 20 years of Expertise

Specialists in Traffic and Mobility since 1996



✓ High Technology

Experts in RDS-TMC, DAB-TPEG and Connected services

✓ Already Trusted

By major OEMs, navigation solution providers, media ...

✓ Pan European Player

In France, Germany, Finland, Sweden, Norway, Denmark and Poland

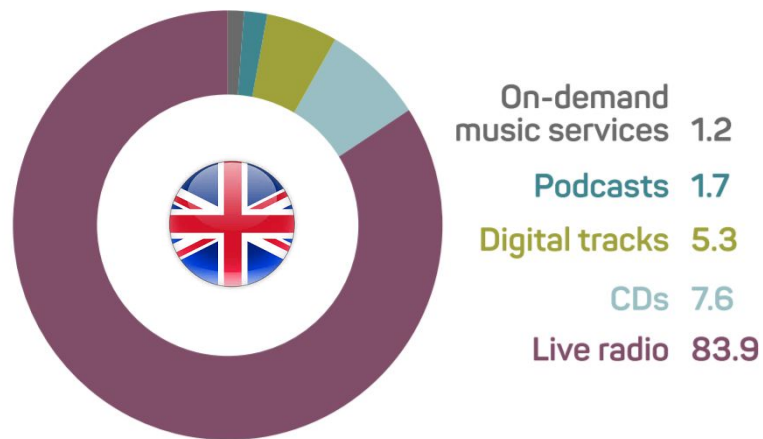
✓ Multi-Service Provider

Real time traffic information, Weather forecast, Parking, Fuel...

Radio Usage In-Vehicle

Radio listening dominates ALL other audio channels for drivers

Share of In Car Audio Listening (%)

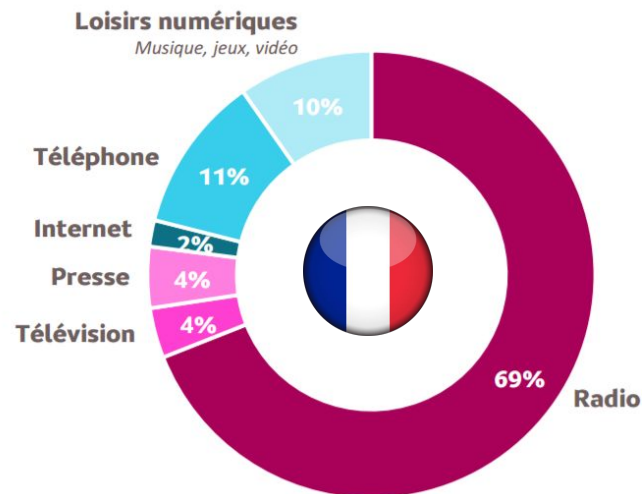


Base: all listen in car in week (1605)

Source: RAJAR Midas Audio Survey Autumn 2015

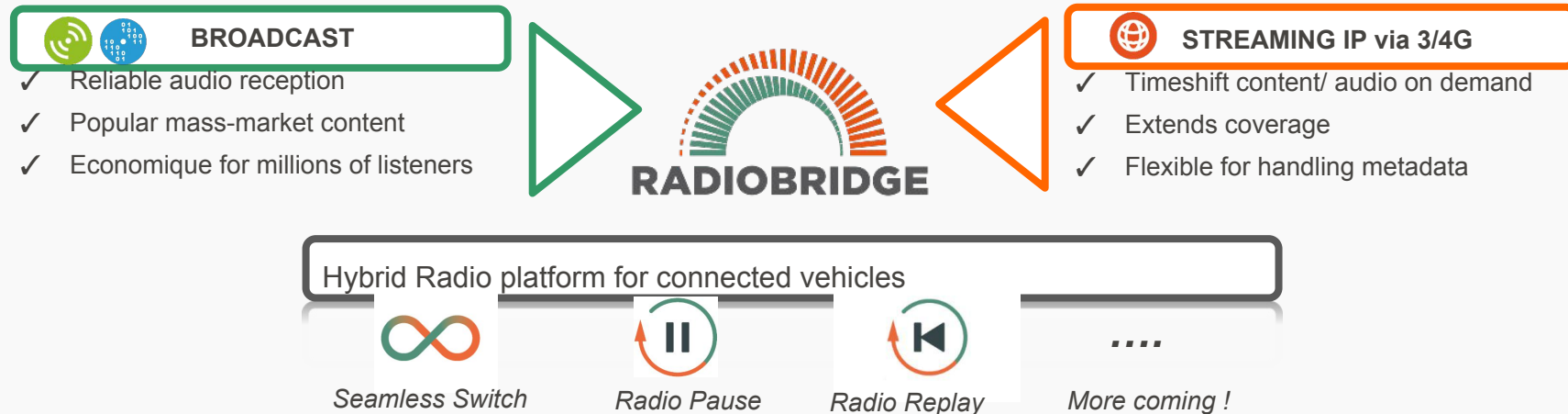
Répartition des contacts médias et multimédias en voiture (part de présence)

Périmètre Médias et Multimédias = TV, Radio, Internet, Presse, Cinéma, Jeux vidéo, Vidéo, Musique, Téléphone

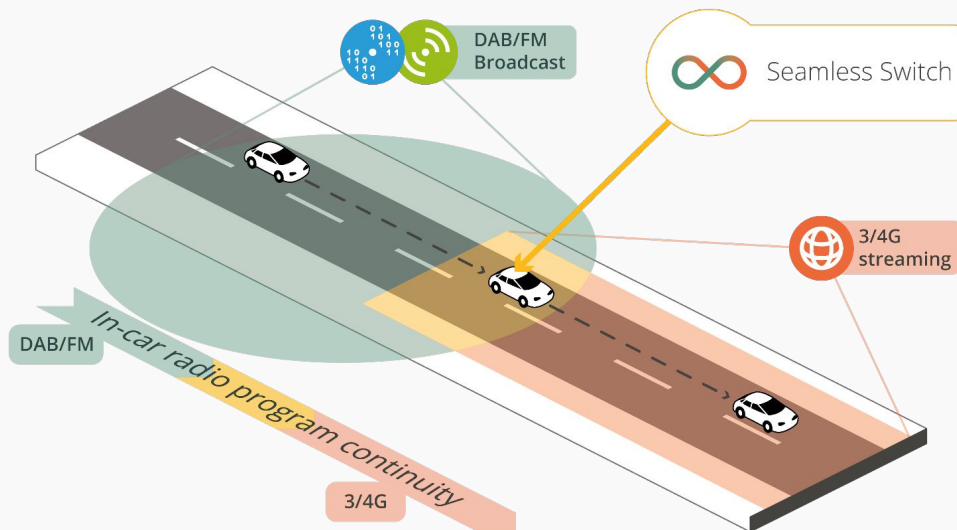


What is Radiobridge ?

Innovating & enriching the in-vehicle radio listening experience

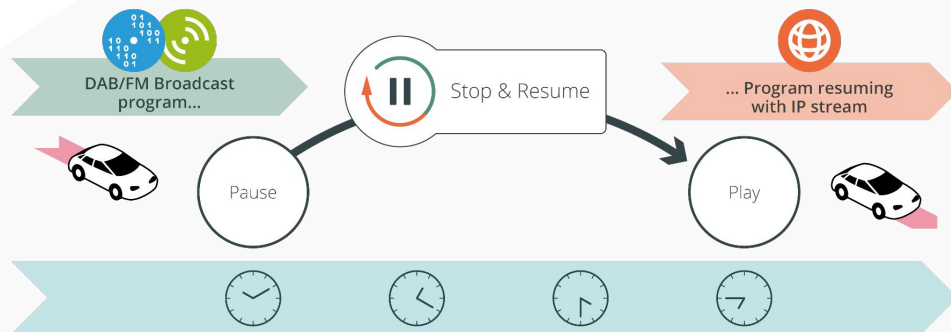


Seamless Bearer Switch



- ✓ Extends programme coverage with radio as the baseline over IP
- ✓ Optimal management of delays between live radio and IP for an inaudible switching process

Timeshifting Services: Pause & Replay

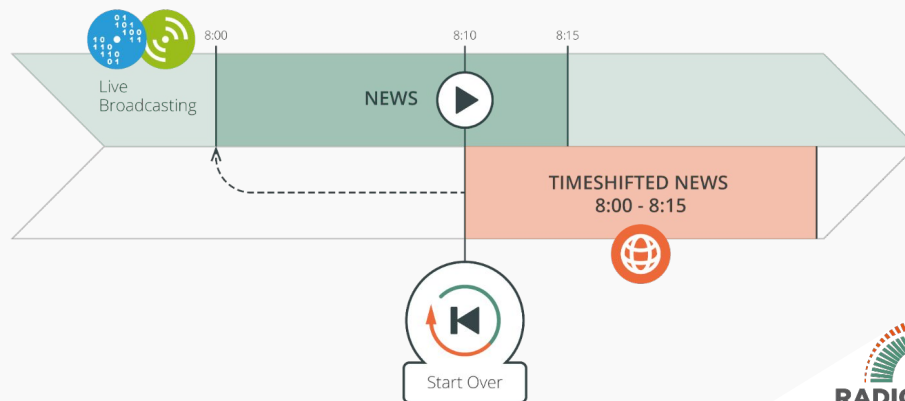


Radio PAUSE

- ✓ Let's you pick up your listening from where you left after an interruption
- ✓ No need to store the audio stream on-board

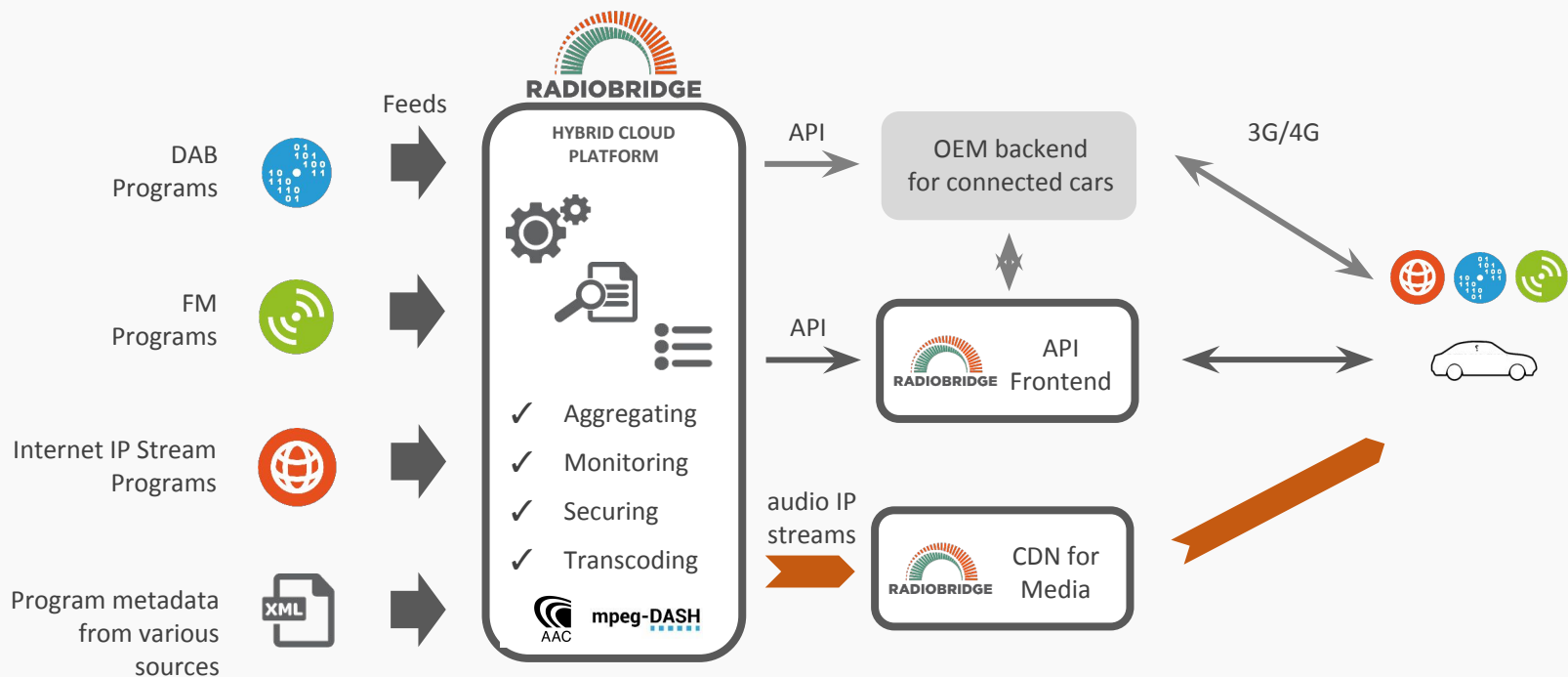
Radio REPLAY

- ✓ Listen to your programme from the beginning if you started your journey after the program started
- ✓ Innovation for radio stations & users to maximise content enjoyment



Radiobridge: Service Platform Overview

Automotive grade, hybrid radio head-end

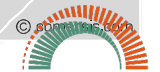
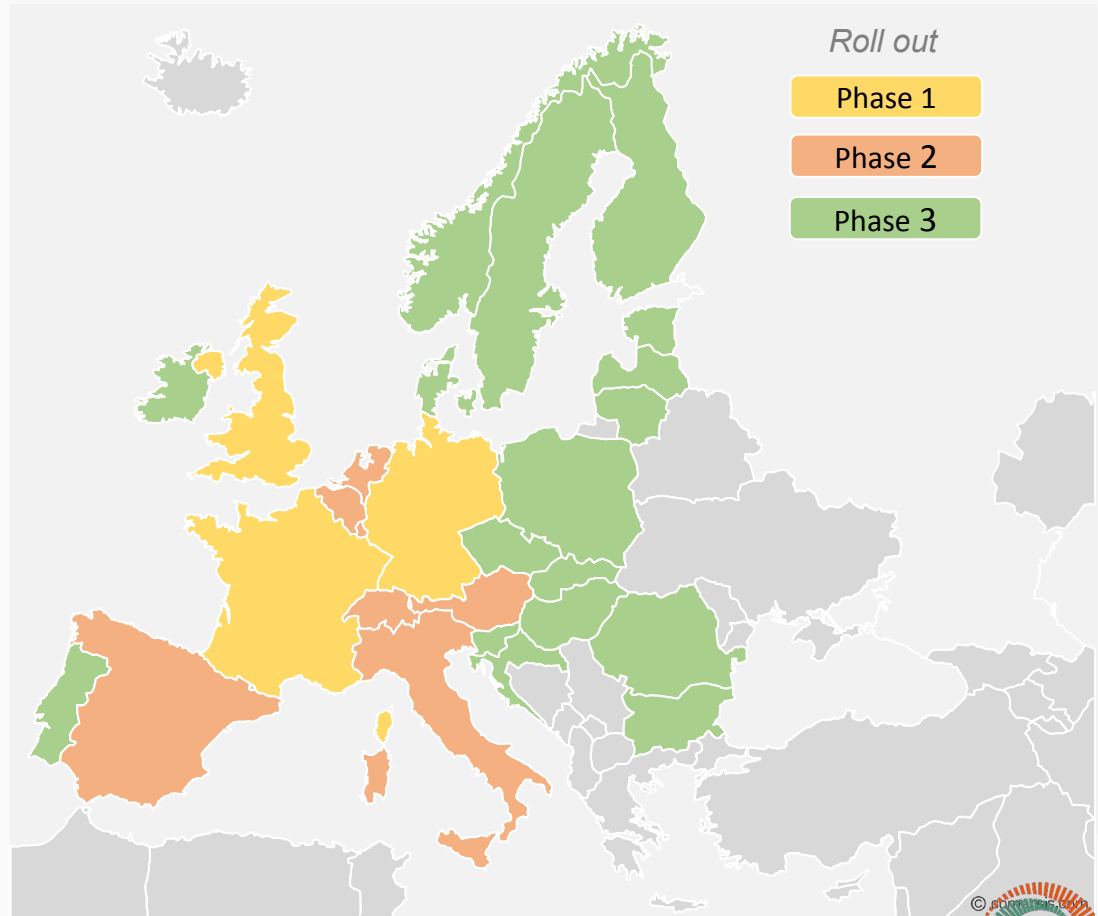


Coverage

Initial EU roll out

- Phase 1: France, Germany, UK
- Phase 2: Italy, BeNeLux, Spain, Austria, Switzerland
- Phase 3: Nordic countries and east EU, Ireland, Portugal
- Worldwide coverage extension depending on the development in Europe and regional conditions
- Station coverage focus on national Public and Private networks to reach at least 50% of FM audience.

Detailed schedule is in preparation



Radiobridge Benefits for OEMs



Improves UX / UI
& Audio Quality



One Stop Shop for
Radio Services



Scalable, Most Popular
Programs Available



Drastically Reduces
3/4G Data Load



Long Term Service
Commitment



High-End Service
Monitoring & Security



Radiobridge Benefits for Broadcasters



Extends coverage...
without extra cost



Improves listening comfort
through timeshifting...
without extra cost



Reinforces direct access
to radio programmes



Increase audience
count as both « live and
shifted » are included



Reliable partnering with TDF
for connected vehicle
content delivery



Mediamobile



Questions?

Andrew Nash
Automotive Director
+33 6 73 64 83 70

andrew.nash@mediamobile.com

www.mediamobile.com

www.v-traffic.com

Plan for 2018

Strategy, Plan and Budget

SSID: RadioWeek
WiFi Code: RadioActive

Vision

“RadioDNS is the global standard for enhancing the experience of radio with additional functionality delivered using internet connectivity.”

Five Year Goal

“RadioDNS is adopted as the standard for hybrid radio combining broadcast and IP in the majority of new connected cars in Europe and North America”

2018 Actions

Project Logo

Making it a radio and automotive industry **standard**

Launch **Standard Licence**

Launch **Service Compliance Testing and Fault Reporting**

Technology group

Publish changes to **Lookup** and **SPI** standards

Investigate new requirements

Grow Membership

Project Logo

Wider implementation in 2018

Project Logo

Specific requirement for more accurate radio station logos in the dashboard

Easy to explain to broadcasters and manufacturers

Easy to implement

Working in conjunction with WorldDAB



Implementation

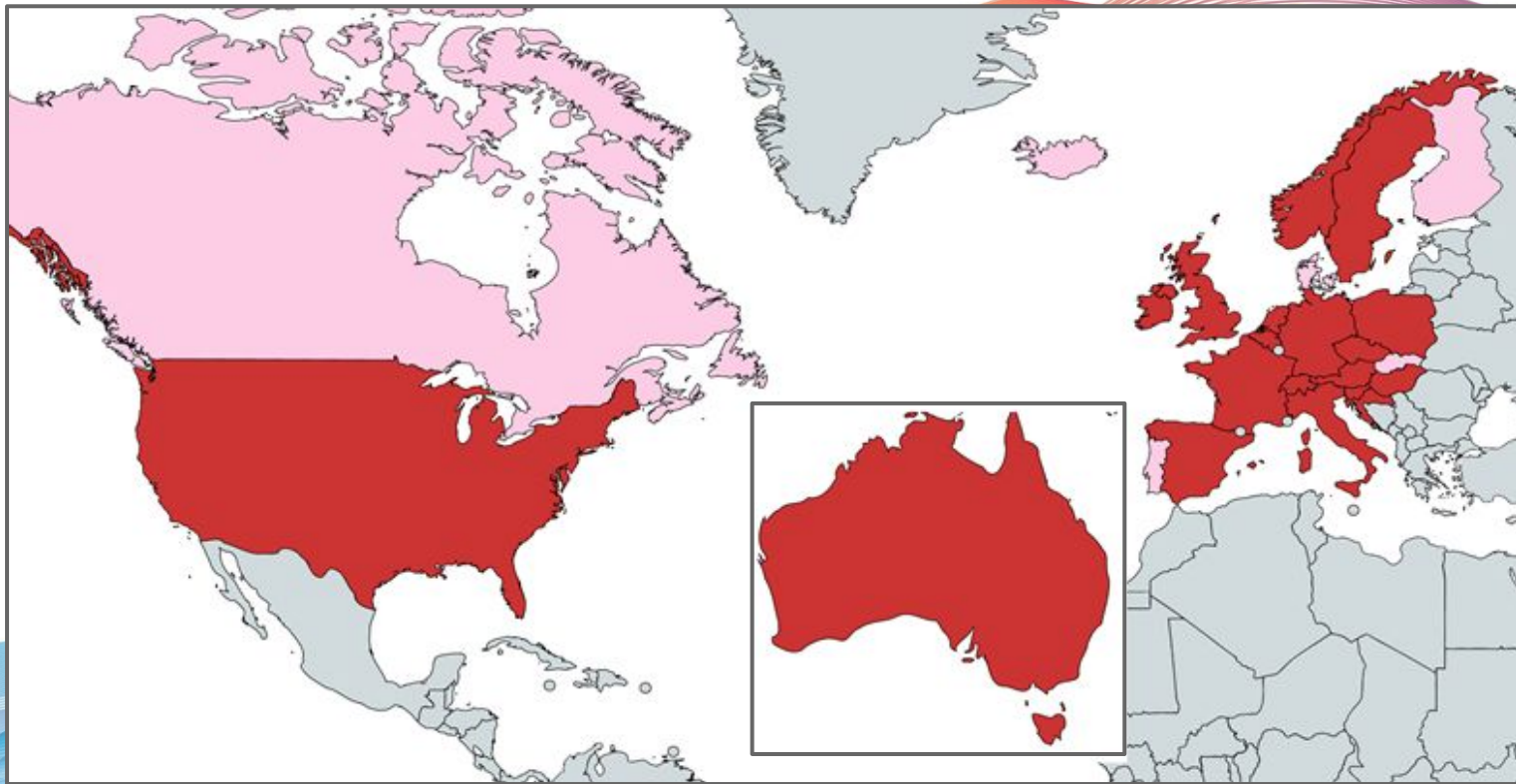
Sufficient **coverage** to be viable

- Using RadioDNS does not prevent “fallback approaches” where RadioDNS / DAB SPI is not available

Logos (metadata) need to be **licensed**

Implementations (Service Providers and Technology Providers) need to be **compliant**

Coverage



Proposal to Industry

RadioDNS, EBU, WorldDAB will

provide practical support to allow all broadcasters to participate

Automotive Industry will

work with their technology suppliers to become Project Logo compliant
(RadioDNS and / or DAB SPI)

Meetings with manufacturers and ACEA (European Automotive
Manufacturers Association)



Standard Licence

Clarity for broadcasters and manufacturers

Principles

Licence enforces **technical compliance** and **implementation compliance**

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

Broadcasters can use a **bespoke licence** but manufacturers may not want to incur costs to review / sign if the content isn't of sufficient value

Standard Licence

RadioDNS will create the a **standard licence** and make it publicly available on a permanent URL on our website


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

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

Our drafting of the licence is being informed by real-world discussions with broadcasters and manufacturers.

Creative Commons

“Human Readable” and “Legal Text” versions

 **creative commons**

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

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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.

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 **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.


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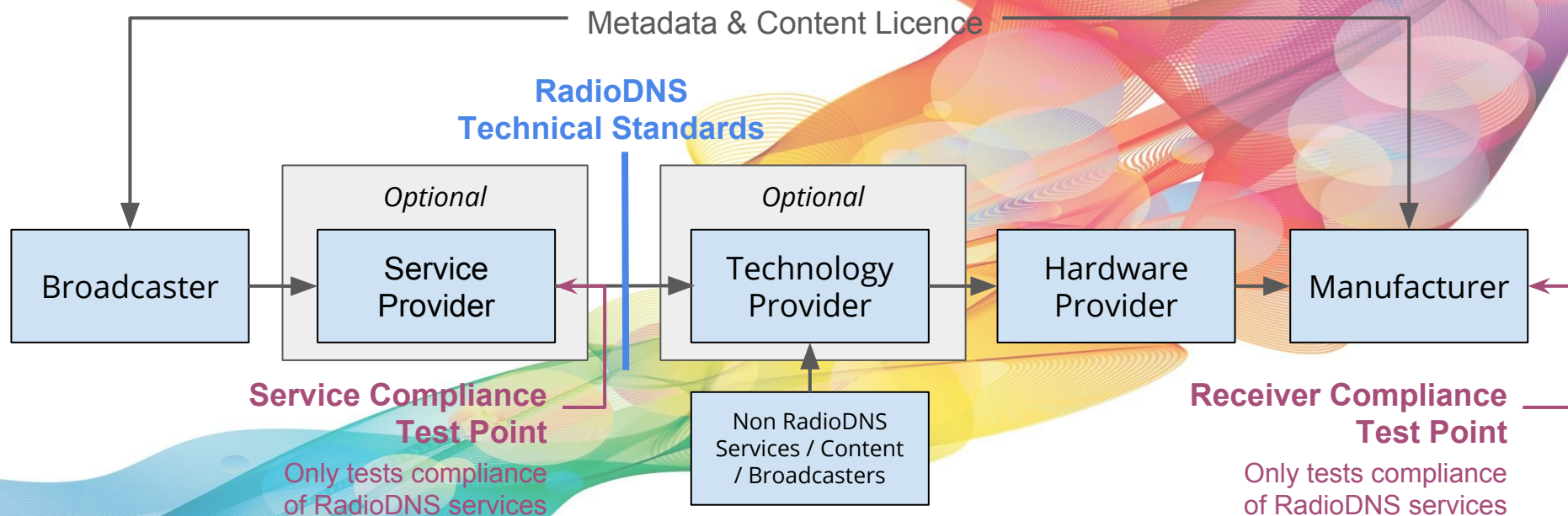
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Compliance and Certification

Verifying RadioDNS Implementations

RadioDNS in the chain



Compliance Testing

Operational **now**:

Technology testing (Core, Visuals, EPG)

In **2018**:

Service testing

Fault reporting

Test and Development Platform

Current Client ([change](#))
Revo PiXiS RS (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](#)

Technology Certification

Tests validate the **end-experience**, the intermediate processes are not investigated

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

Only tests compliance with **RadioDNS** functionality

If a radio station is providing **RadioDNS** services, they must be presented to the end-user in accordance with the specifications, the guidelines and the licence.

Service Certification

Launching in 2018, similar approach to Technology certification

Tests validate the **service presentation** for compliance with the standards

Issued to a **specific** platform version

Only tests compliance with **RadioDNS** functionality

Fault Reporting

Additional functionality to Service testing

Allows a **manufacturer/technology provider** to investigate why something is wrong

If it's a service provision failure, report it **directly** to the service provider

Saving time and money chasing problems

Trademarks

We will issue **Trademark Licenses** 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

We are telling broadcasters and manufacturers to look for RadioDNS compliance



Membership

Growing in 2018

Unique Member Benefits

Project Office support will be prioritised to members

The Technical Group will only be accessible to members.

Testing tools will only available to members

The fault checking and reporting service

Certification and trademark licensing

We will charge for non-members to attend our events (except in exceptional circumstances)

Staying Open

Technical standards

The SI construction tool, and a basic “monitoring” tool

HOWTO documents on technical implementation

Presentations materials that we have used publicly

Minutes of Steering Board and General Assembly meetings

Code under recognised open source licences

Market data about the rollout of RadioDNS services

Member Presentation

Radioplayer

Technical Group

RadioDNS General Assembly 2018

Ben Poor, TG Chair

Overview

New group within RadioDNS

Formed from within RadioDNS membership, but can invite external observers/experts

Successor to **Application Teams**, which have successfully developed and pushed standards work

Responsible for all technical development of standards, and related work.

Not responsible for technical operational matters, e.g. running DNS servers

“Creating an open and transparent process for technical standards”

Project Teams

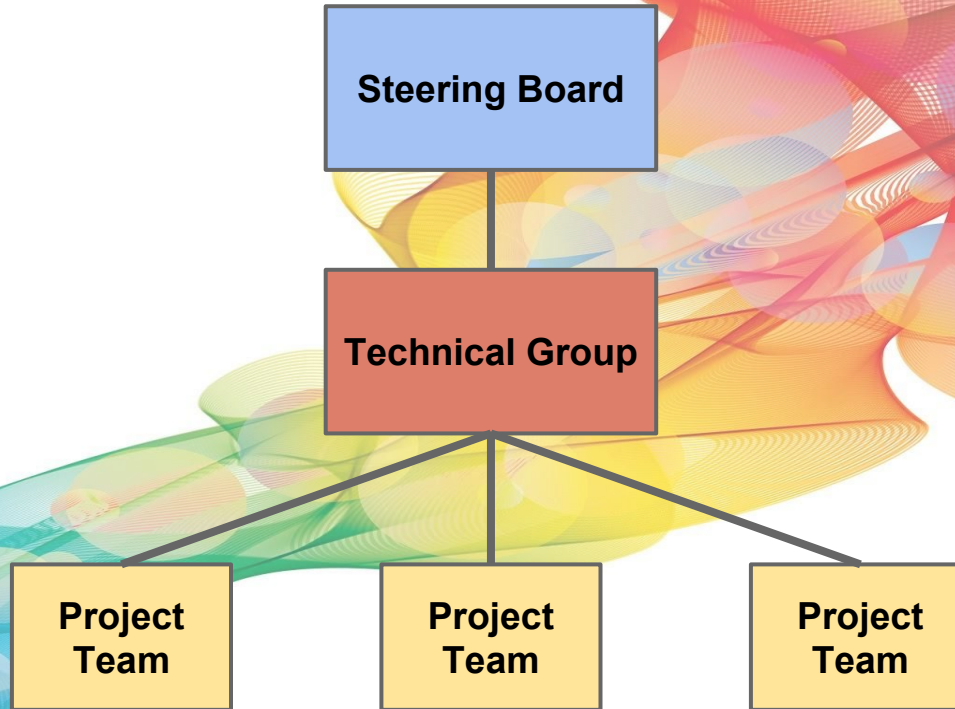
Created by the Technical Group to undertake **specific** packages of work

Timebound, defined, deliverables - not ongoing discussion groups

Vehicles for the delivery of technical and standards work within RadioDNS

Reports back to the Technical Group

Relationships



Objectives

Transparency, Predictability, Visibility

A view of past, current and proposed work

Timetable of activities for the next 12 months

A public page giving details of the technical activities of the TG

Regular meetings

Clear separation between the Steering Board and the Technical Group

Current Membership



Current Activities

2018

Workplan Development

Item	Specification (if applicable)	Proposer	Title	Summary	Priority	Complexity	Assigned	Proposed Delivery
1	ETSI TS 102 818 (Hybrid SPI)	RadioDNS	GeoRSS XSD Fixes	Previous versions of the specification incorrectly linked to the 1.1 GeoRSS XSD URL, using the 1.0 namespace. This was fine at publication time as this pointed to the 1.0 XSD. However, they have since restructured their website and have now corrected this, causing some validation errors in some parsers. A fix would be to ensure that the 1.0 namespace is using the 1.0 XSD. Future updates would take this to 1.1.	HIGH	LOW	Andy Buckingham Ben Poor	April 2018
2	ETSI TS 102 818 (Hybrid SPI)	NPR	Contributors and Creators	Define production, contribution, creation tags against individual programmes for data exchange purposes	LOW	MEDIUM		
3	ETSI TS 102 818 (Hybrid SPI)	Audi	Phonemes	Define metadata for phonemes and graphemes in various languages and phonetic schema.	HIGH	MEDIUM	Andy Buckingham	June 2018
4	ETSI TS 102 818 (Hybrid SPI)	TBC	Service Language	Add language indicators for a service, to indicate that a service is either wholly in one language or has a mix of many languages. This should indicate the general service language, and can be overridden by individual programmes.	LOW	LOW		
5	ETSI TS XXX XXX (Tagging and Bookmarking)	RadioDNS	Bookmarking and Tagging specification	Complete and publish the specification document for bookmarking and tagging a radio service. A mature draft is in circulation, with some detailed comments from members of the Steering Board that will need to be addressed. This is linked to the CPA specification (ETSI TS 102 407) that defines the methods of authentication on devices.	MEDIUM	HIGH	Daisuke Otsuki Andy Buckingham Ben Poor	June 2018
6	ETSI TS 102 407 (CPA)	TBC	CPA for Voice Control devices	Extensions to the specification to allow for CPA on voice control only devices, or more detailed guidance on pairing a visual console (e.g. smartphone) with such a device to allow CPA to work.	DESCOPE			
7	ETSI TS 102 270 (RadioDNS Lookup)	RadioDNS	Client API Key	Guidance on providing an authorization key for RadioDNS services in order to authenticate/customise the response. Particularly applicable for the implementation of "trusted" relationships for SPI data.	HIGH	LOW	Ben Poor	April 2018
8	N/A	TG	Technical Group working platform	Define and implement a working platform for the group that would assist the communication and implementation of technical projects. This should include workspace for documentation, forum for discussions, SCM for code and working documents, calendar for meetings, issue tracking and collation. Open to members of the TG only.	MEDIUM	MEDIUM	Ben Poor	September 2018
9	ETSI TS 101 469 (Hybrid Slideflow)	TBC	Clarification on Category/D/Slide/D	Clarification is required on the format of Category/D and Slide/D for visualisation (e.g. carrying this information in HTTP or Slomp headers)	LOW	LOW		
10	ETSI TS 102 818 (Hybrid SPI)	EBU	Hybrid Data Platform	Participation in an open-source collaborative reference platform for hybrid SPI, alongside EBU, RTT and others.	DESCOPE			
11	ETSI TS 102 818 (Hybrid SPI)	TBC	Multiple term declarations	Clarification and definition on how multiple terms and licenses can be carried within the SPI data and how these should be interpreted by clients.	MEDIUM	LOW		
12	ETSI TS 102 270 (RadioDNS Lookup)	TBC	Bearer definitions for HD to support multicast channels (e.g. HD-2)	Extension of the bearer definitions for the HD radio platform to support multicast channels.	LOW	LOW		
13	ETSI TS 102 818 (Hybrid SPI)	RadioDNS	Cascading term declarations	Adding the ability to define a term override on a per-service level, to cope with individual services having more restrictive licensing that the service provider.	MEDIUM	LOW		
14	ETSI TS 102 818 (Hybrid SPI)	RadioDNS TG	SPI extensibility	An investigation into the current extensibility of the SPI, and whether additional functionality can be easily added to the document. Should assess how further extension can maintain usability, and how different use cases can be accommodated.	HIGH	HIGH	Ben Poor	October 2018

16 existing tasks

2 descoped

Rest classified:

- PRIORITY
- COMPLEXITY

Priorities

XSD Schema Fixes (SPI)

Client API Key (RadioDNS Lookup)

Phoneme Support (SPI)

Work for these is largely done, but needs to be verified and tested

Proposals for Project Teams received, Suggested delivery dates April - June 2018

Additional Tasks

Tagging and Bookmarking Specification

Recent updated draft document, needs review and verification

Technical Group Working Platform

A simple platform for TG collaboration (issue management, document management, workspace)

Next Steps

1. Project Team Kickoff
2. Workplan Completed
3. Calendar of activities established
4. Standards work submitted

Get Involved!

We would welcome additional members

Open to suggestions for additional work, projects,
ideas

**Your chance to shape the technical work that
RadioDNS does**

Member Presentation

Xperi Connected Radio

RadioDNS Open Meeting

Xperi Automotive Hybrid Radio

13 February 2018

Joe D'Angelo
Senior VP, Broadcast Radio

Dynamic 18 Months



DTS acquires iBiquity
Oct. 5, 2015



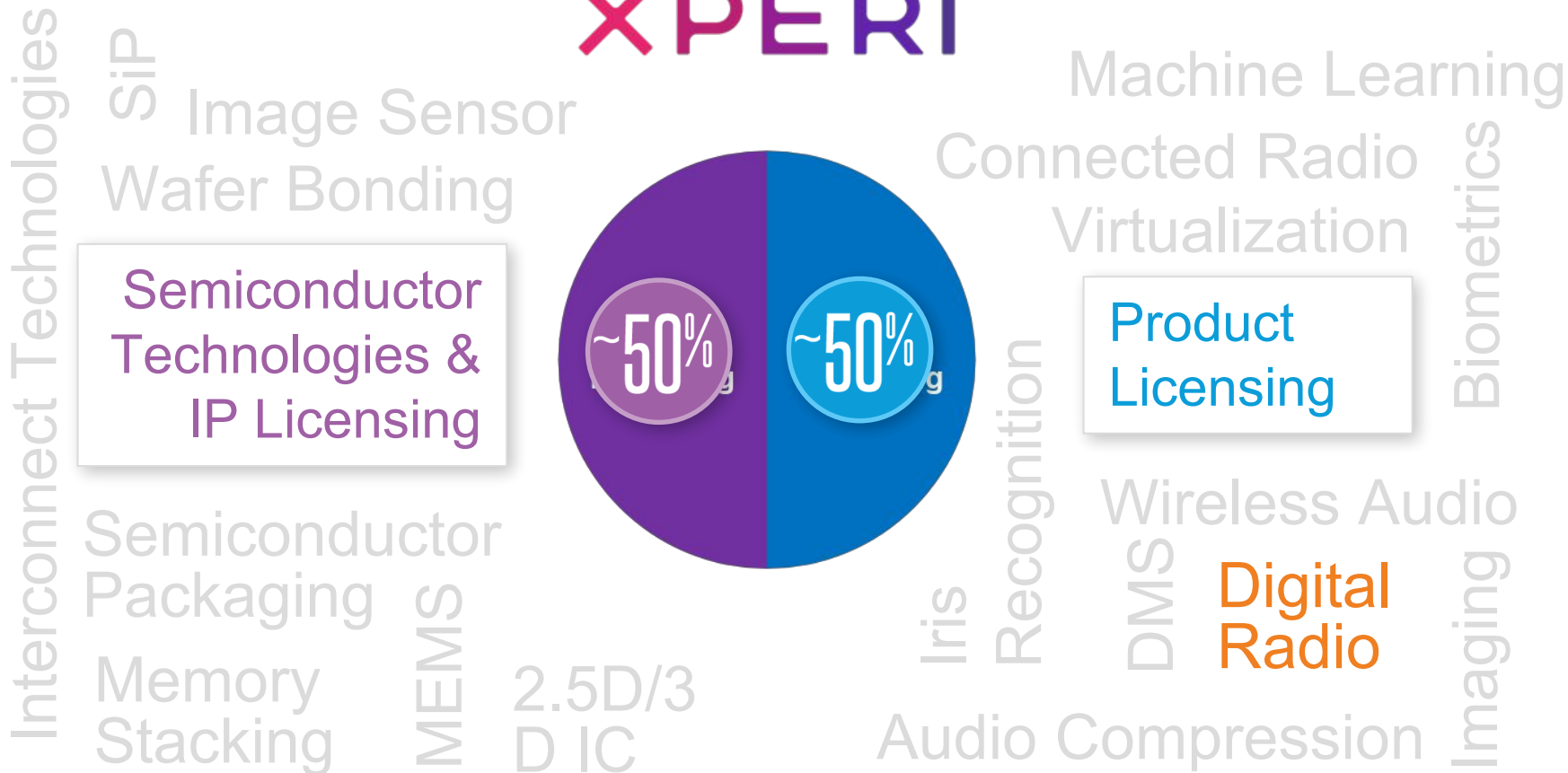
DTS acquires All in Media
Sept. 2016



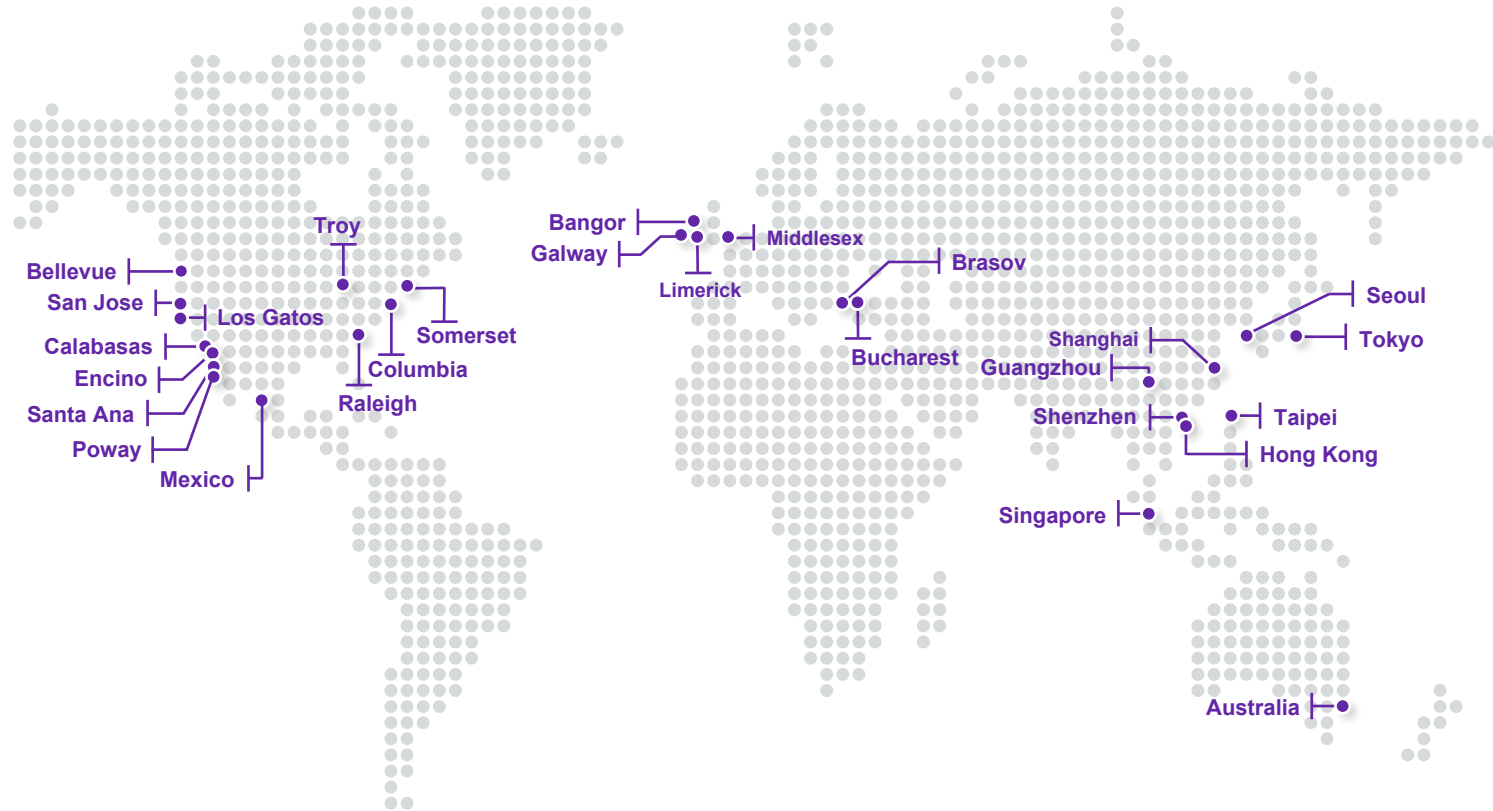
Tessera acquires DTS
Dec. 1, 2016



XPERI, Inc. Launched
March 6, 2017



Global Footprint



Broad Technology Portfolio



Automotive

Intelligent sensor modules
Driver monitoring systems
Image Quality
Automotive smart vision
Small Machine Learning

ZiBond® & DBI® in Image Sensors and MEMS

DTS HD® Audio Codec
HD Radio™ Technology
DTS Connected Radio
DTS Neural:X™
DTS Audio Pre-Processing
All In Media Broadcast Technology
Arctic Palm Studio Systems



Mobile

Face recognition
Object recognition
Face beautification
Biometrics
Small Machine Learning
Image Processing Unit
High Dynamic Range
Electronic Image Stabilization
Fast Focus

ZiBond® and DBI® in Image Sensors, RF and MEMS
DTS HD® Audio Codec
DTS Headphone:X®
DBI® in 3D memory
DTS Sound™

Post-Processing
DTS Play-Fi® Wireless
Multi-Room Audio
All In Media Radio Apps



IOT

Object recognition
Biometrics
Small Machine Learning

ZiBond® in MEMS
DBI: 3D integration of sensors & computing

DTS Audio Codecs
DTS Play-Fi® Wireless
Multi-Room Audio
HD Radio™
DTS Hybrid Radio
DTS Virtual:X™
Post-Processing
DTS Audio
Pre-Processing



MR/AR/VR

Immersive Video
Object Recognition
Display (LTM, GD)
Small machine learning
Object recognition
Gaze tracking
IRIS recognition
Head tracking
Depth mapping

ZiBond® & DBI® in Image Sensors, RF and MEMS
DTS HD® Audio Codec
DTS Headphone:X®
DTS Play-Fi® Wireless
DTS SixtyS Audio Codec



Consumer Electronics

Image Processing
High Dynamic Range
Small Machine Learning
Immersive Video

Semiconductor packaging
ZiBond® & DBI® in Image Sensors, RF and MEMS
DTS HD® Audio Codec
DTS:X™ Audio Codec
DTS Headphone:X®

DTS Play-Fi® Wireless
Multi-Room Audio
HD Radio™
DTS Virtual:X™
Post-Processing
DTS Sound™
Post-Processing

Broad Technology Portfolio



Automotive

Xperi Broadcast
Technology



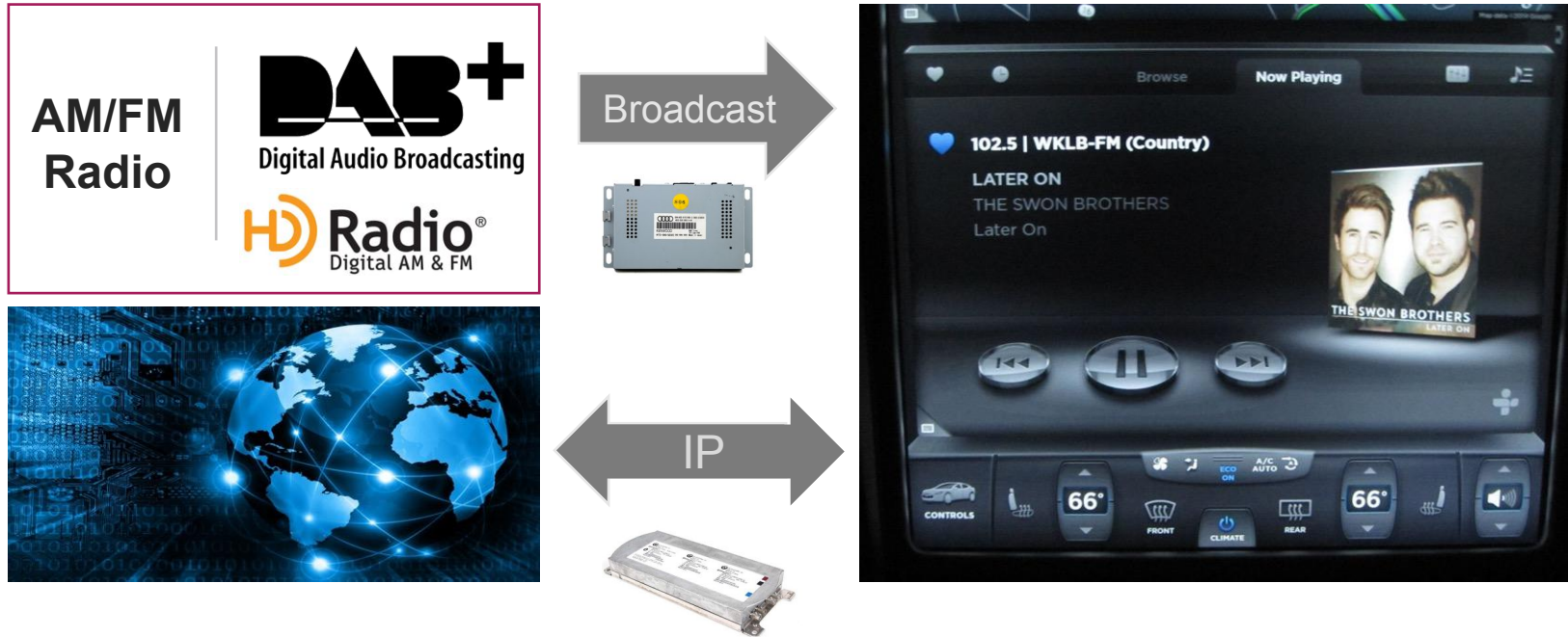
Over 6,000 Radio Stations Globally



+45,000,000 Vehicles



Evolution of Broadcast Radio – Digital Connectivity



Hybrid Radio Has Fantastic Potential, But Must Deliver

Broadcaster Requirements/Expectations

- ✓ *Editorial Control*
- ✓ *Content Integrity*
- ✓ *Enhanced Listener Insights*
- ✓ *Limited Impact on Workflow*
- ✓ *Limited Impact of Production*



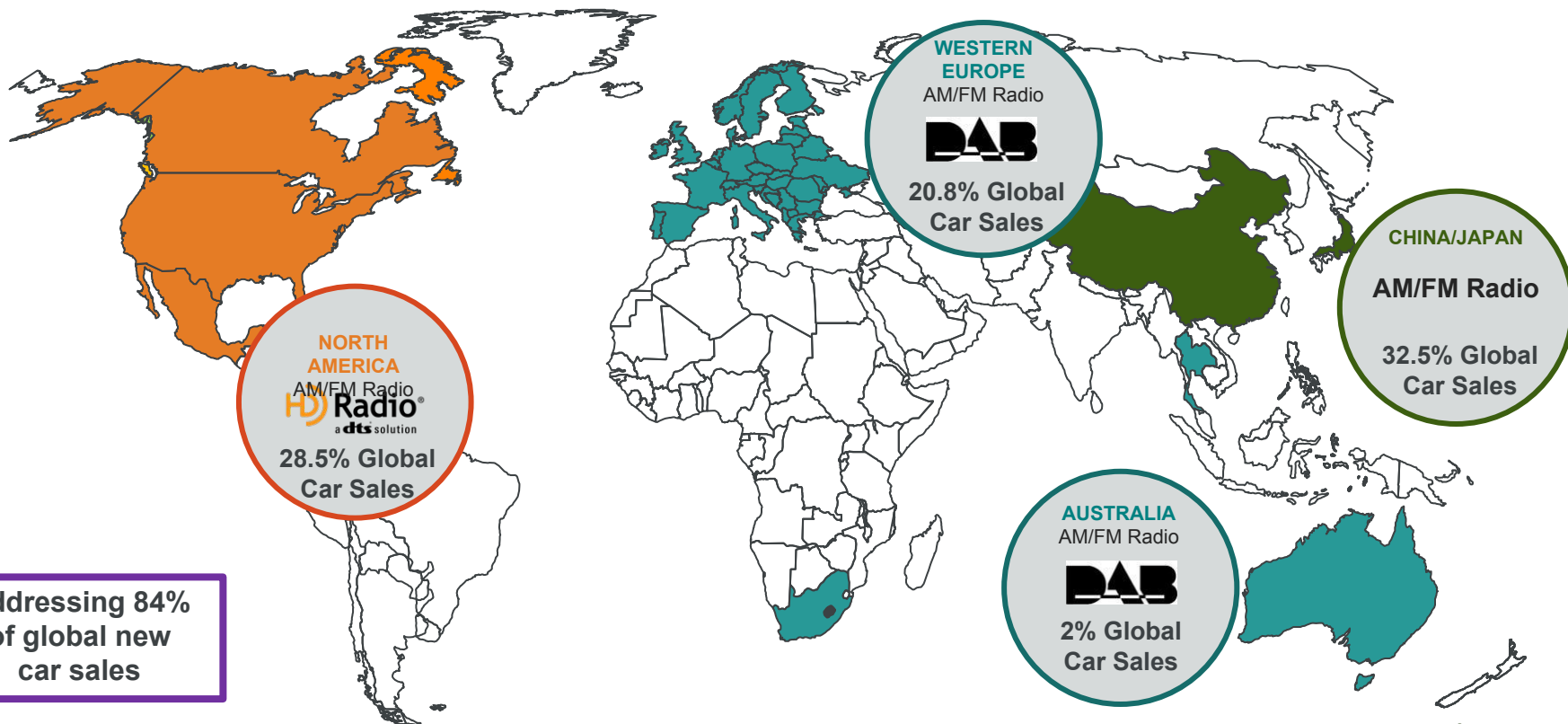
Hybrid Radio Has Fantastic Potential, But Must Deliver

Automotive Requirements/Expectations

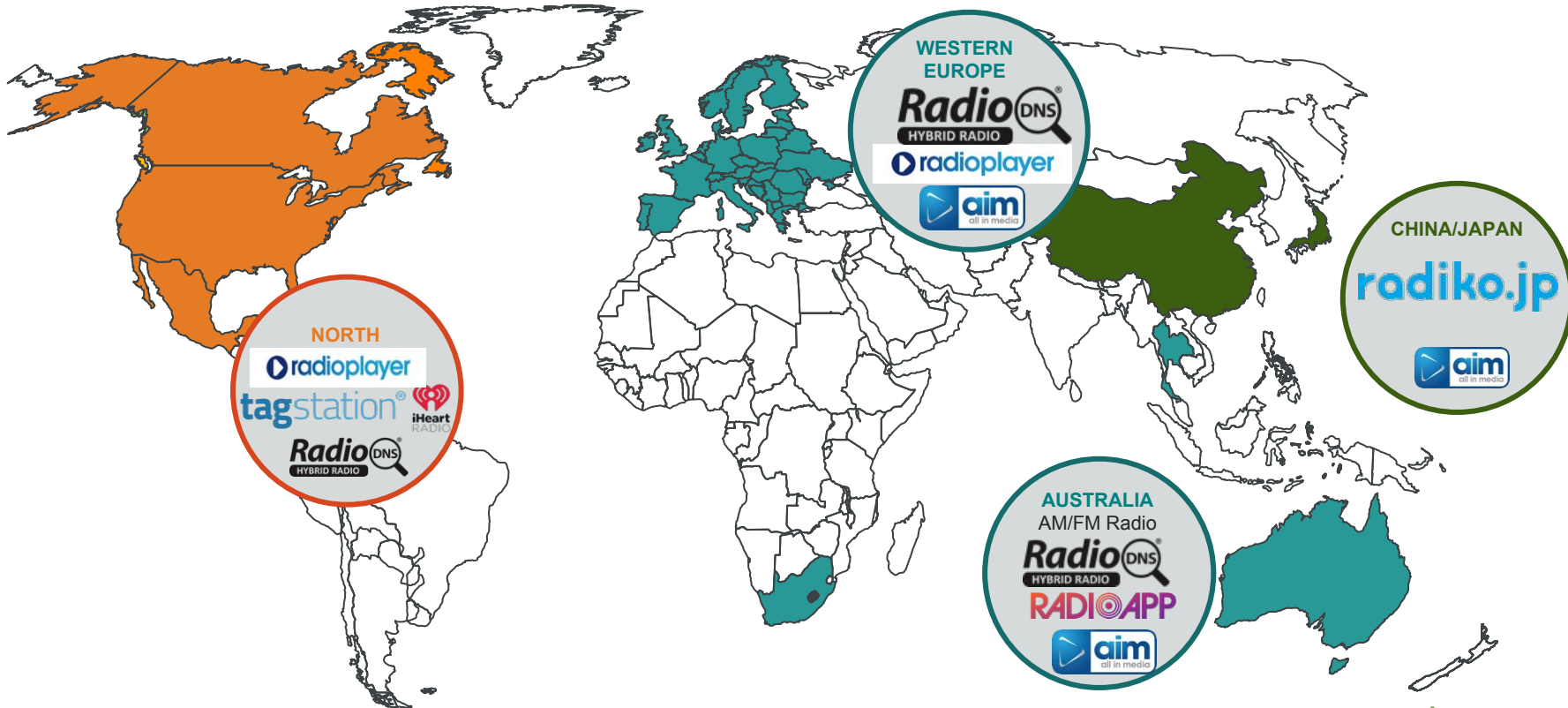
- ✓ *Modern Digital Experience for Broadcast Radio*
- ✓ *Simple/safe Content Discovery*
 - ✓ *Accurate Station List*
 - ✓ *Now Playing “Live Guide”*
 - ✓ *Sortable Station Guide*
 - ✓ *Voice Interface Ready*
- ✓ *Rich Content Engagement – Music, Talk, Sports, etc.*
- ✓ *Global/Cross Platform Solution - analog, DAB, HD Radio*
- ✓ *Simple Integration and Product Development*
- ✓ *Consistent User Experience*



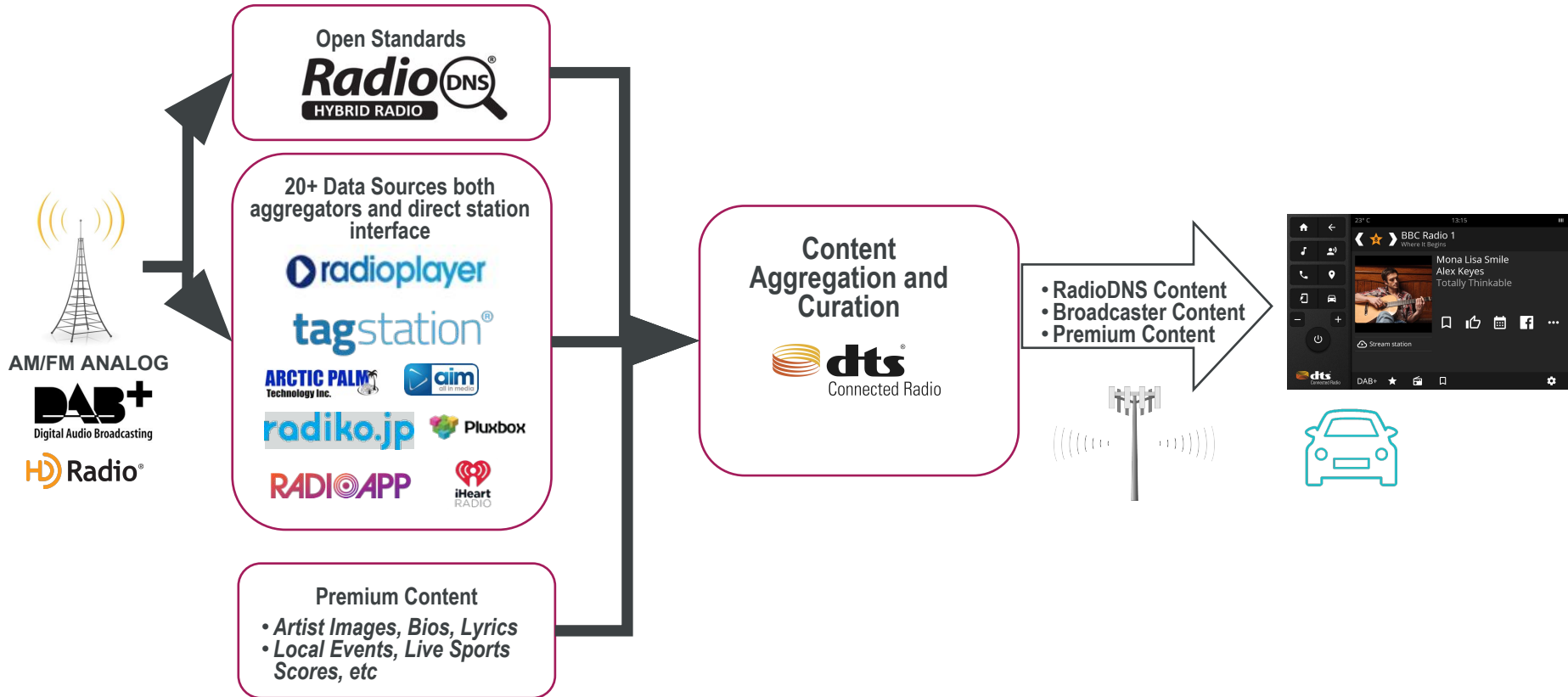
Evolution Broadcast Radio – The Global Challenge



Multiple Standards and Solutions Around the World



DTS Connected Radio: Ensuring Broadcaster Control



Connected Platforms Provide Unique Opportunities

BROADCAST & IP

Discovery

Enhancement

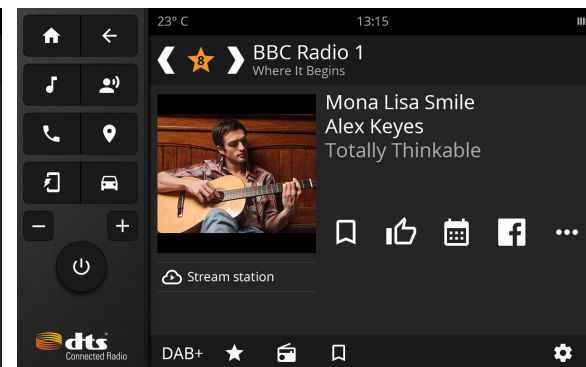
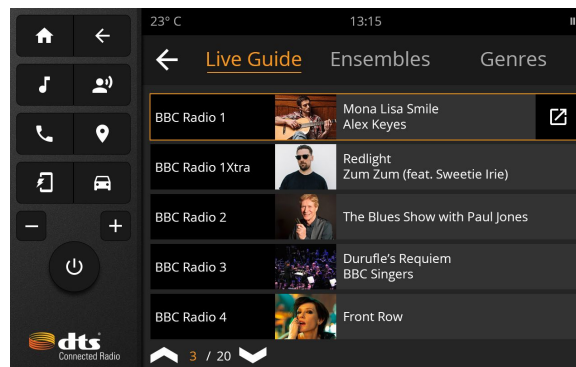
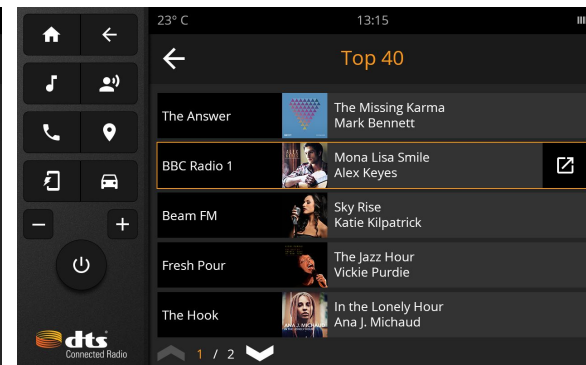
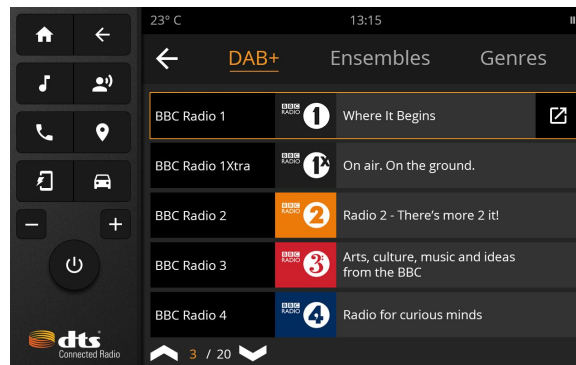
Measurement

Interactivity

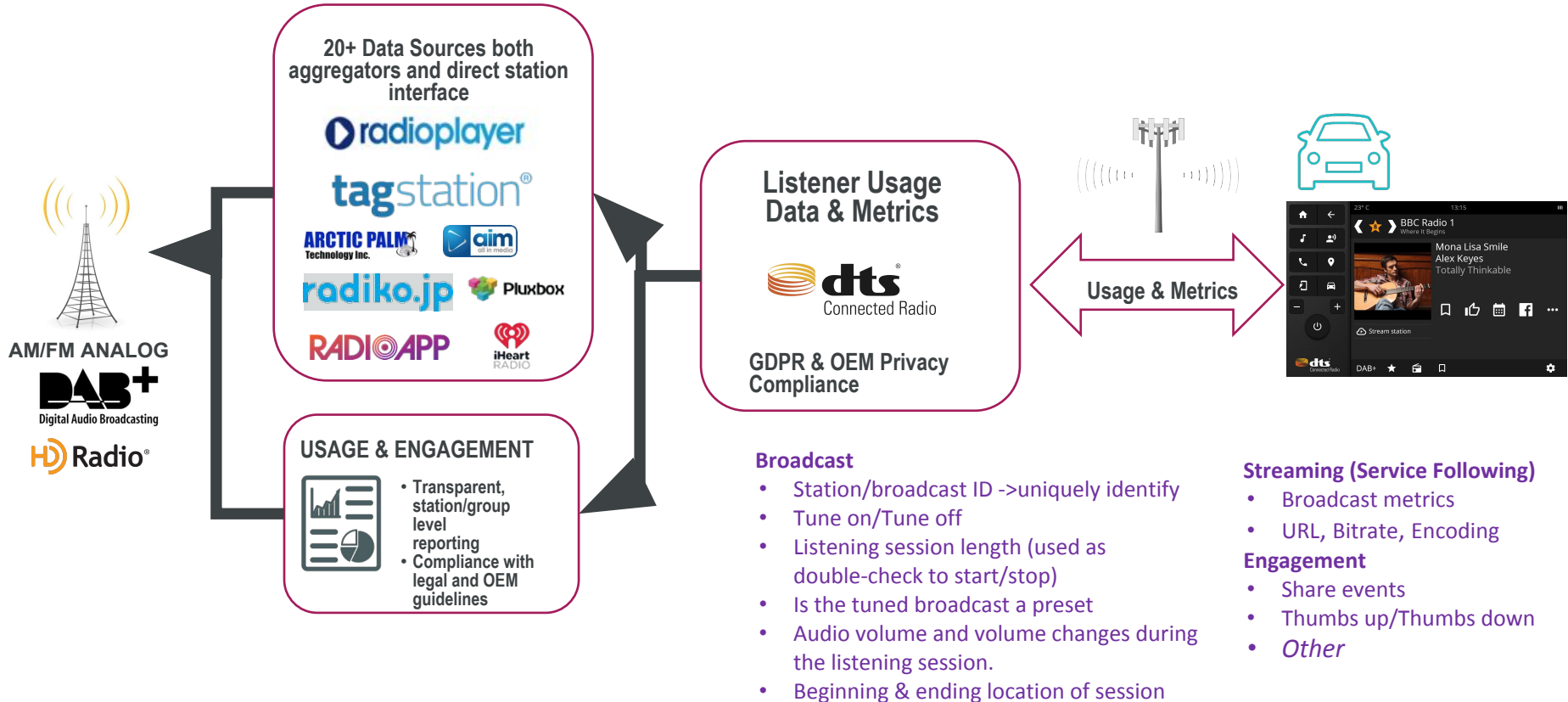
DAB+
Digital Audio Broadcasting

HD Radio[®]

AM/FM Radio



DTS Connected Radio: Ensuring Broadcaster Visibility



Summary

Summary

RadioDNS is **growing**

World's first **automotive hybrid radio**

Broadcasters - make your station **look better**

Manufacturers - make your radio **work better**

Membership - has **benefits** to you



Thank You

radiodns.org