DAB+ Digital Radio

Introduction to DAB+ Digital Radio

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Contents

History

- Eureka 147 project

- Technical targets and basis

- Initial deployments

  - UK, Sweden, Norway, Germany

The Eureka family of standards

> One family provides the most cost effective delivery of digital radio and mobile TV

DAB :   1995   Original audio with PAD and data services standard
                            EN 300 401   Main document
                            TR 101 496   Guidelines of use and operation

T-DMB : 2006   Added video services for Mobile TV and enhanced data streaming
                            TS 102 427   Data Broadcasting - MPEG-2 TS streaming
                            TS 102 428   DMB video service; User Application

DAB+ : 2007   Enhanced audio service efficiency
                            TS 102 563   Transport of AAC audio

ETSI

www.etsi.org/standards

Hybrid: 2015   Optimised digital broadcast radio and IP connectivity
                            TS 101 499   Hybrid Digital Radio (DAB, DRM, RadioDNS); SlideShow; User Application Specification
                            TS 102 818   Hybrid Digital Radio (DAB, DRM, RadioDNS); XML Specification for Service and Programme Information (SPI)

DAB+ Features

Audio – room for lots of services

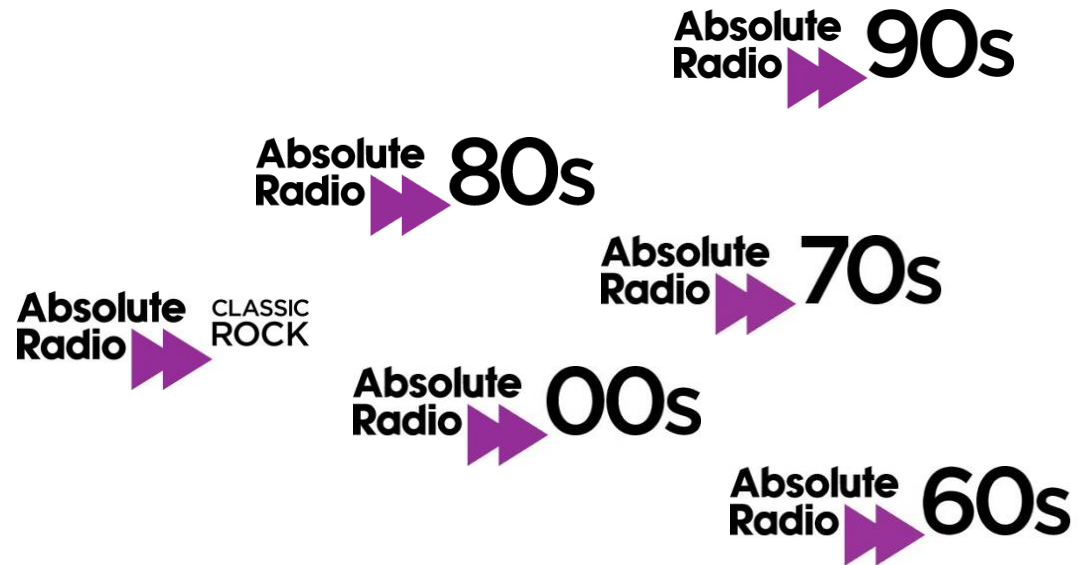**Simulcast stations (AM / FM)**

new DAB+ only stations

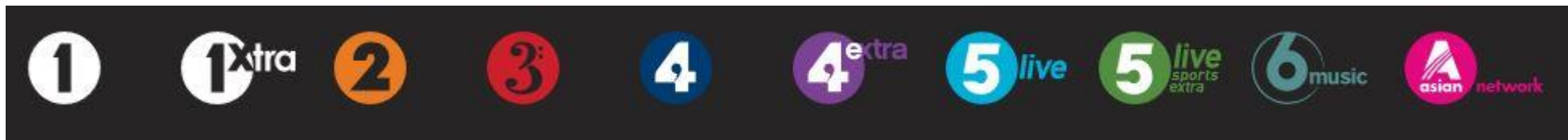# For broadcasters: opportunity to extend brand portfolios

Analogue and digital

Digital-only services

For broadcasters: opportunity to extend brand portfolios

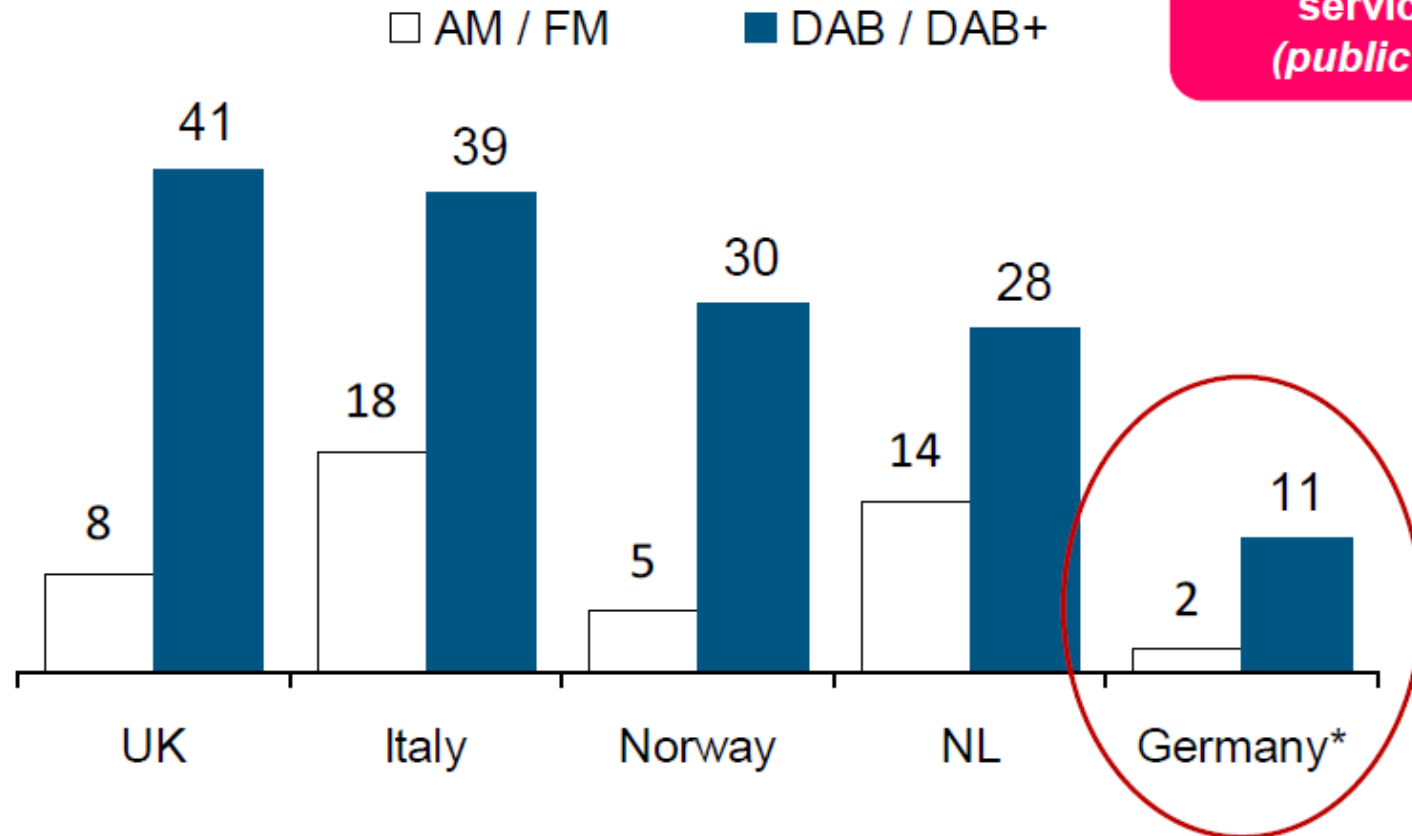*Analogue and digital*

Digital-only services

DAB+ offers flexibility – pop-up stations

Mark Cummins video clip

DAB+ provides expanded national services

National radio services

Up to 6x as many national services on DAB *(public and private)*

Legend: □ AM / FM ■ DAB / DAB+

UK: 8, 41
Italy: 18, 39
Norway: 5, 30
NL: 14, 28
Germany*: 2, 11

* Will double in next 12 months with launch of second national multiplex   Source: WorldDAB

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9

Choose the station from a list

No more need to remember the station's frequency!!!

Services are listed alphanumerically

Increasing use of logos for brand recognition

Easy to choose a station, listener has more information about the services available
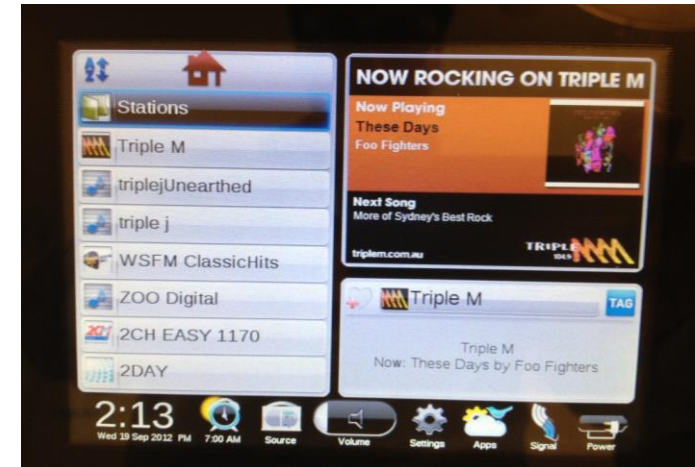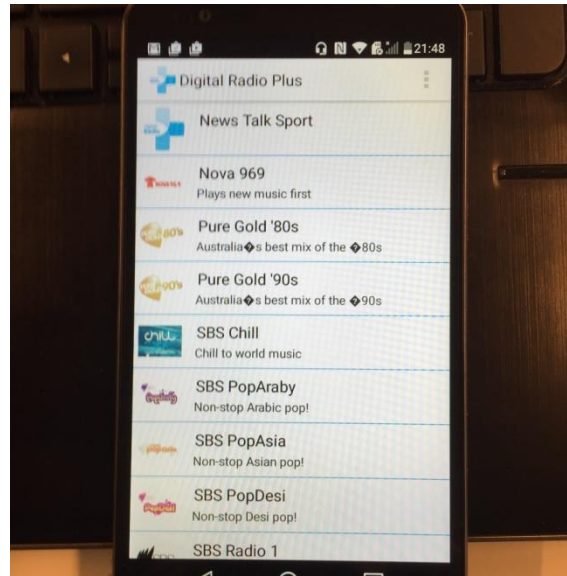
Programme Associated Data (PAD)

Dynamic Label Segment (DLS) - Text

Straight forward, effective

Up to 128 characters per text segment

All DAB+ receivers have DLS text display

Good receivers block text display or have an appropriate scrolling speed

Programme Associated Data (PAD)

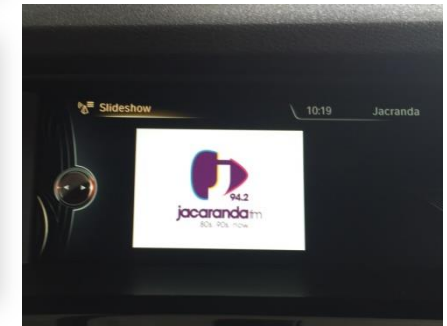## SlideShow (SLS) - Images

Further strengthens the audio message

Standalone advertising during song items

Promotion of station activities

Traffic and weather reports

Sports results and stock market information

Local news, happenings, community events
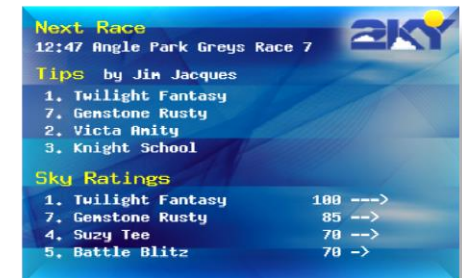
Data services

Traffic e.g. TMC and TPEG can provide up to the moment information on
- current traffic flow and congestion
- fuel locations and prices
- parking
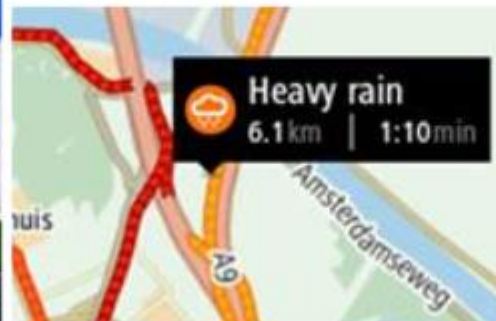
Journaline
- Hierarchical categorised data service

Custom Applications can be developed

Video services

T-DMB is the video delivery service within the DAB family of standards

Currently transmitted in South Korea, Norway and the Netherlands

Can received on variety of devices including smartphones and handheld portable receivers and USB stick receivers

Support features

Service and Programme Information (SPI)

- Station/service logos
- Website links
- Programme schedules

Announcements and EWS

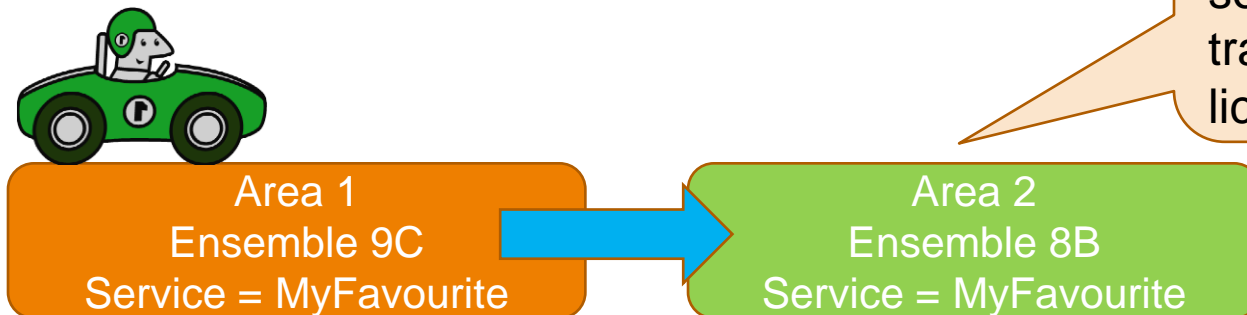- Traffic information / channel
- Emergency warnings
- News, weather, travel information

Service Following

- Links services in different areas on different ensembles
- Provides continuity of service for services across multiple service areas

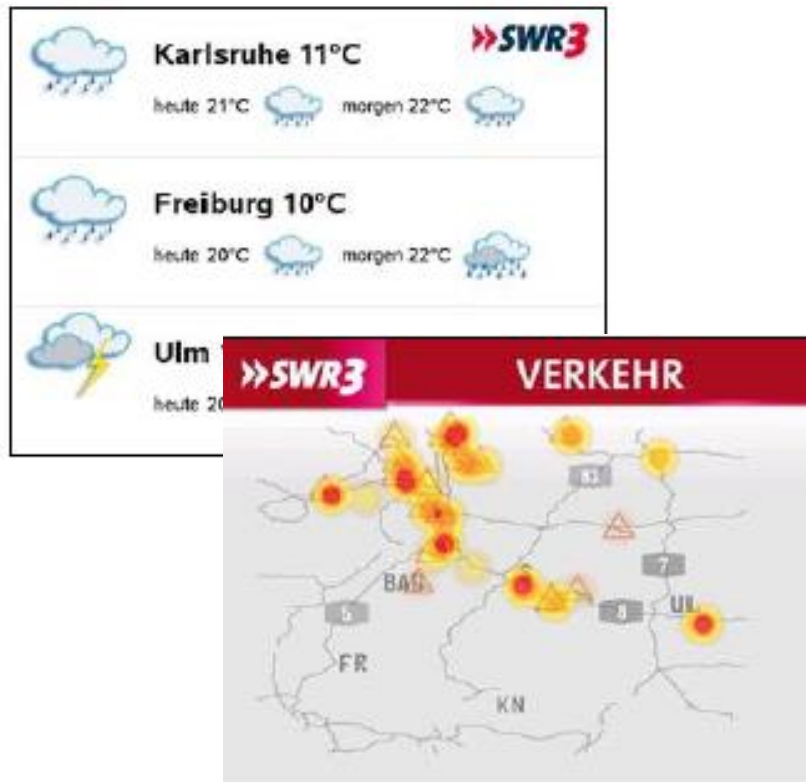Logos delivered as SI provide immediate visual brand recognition
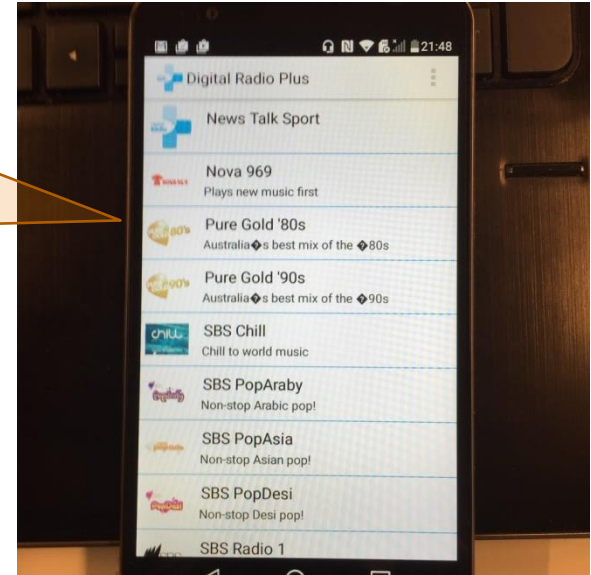
In-car listening can continue on the same service in different transmission and licence areas

Area 1
Ensemble 9C
Service = MyFavourite

Area 2
Ensemble 8B
Service = MyFavourite

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DAB+ enables data services – at-home and in-car

Categorised slideshow

TPEG

Enhanced traffic information

Smartphone Apps

A broadcast opportunity?

It adds VALUE to broadcasters content

Links and added extras

BUT

Complete IP delivery is expensive

Broadcasters pay for CDN services to deliver extreme volumes of audio
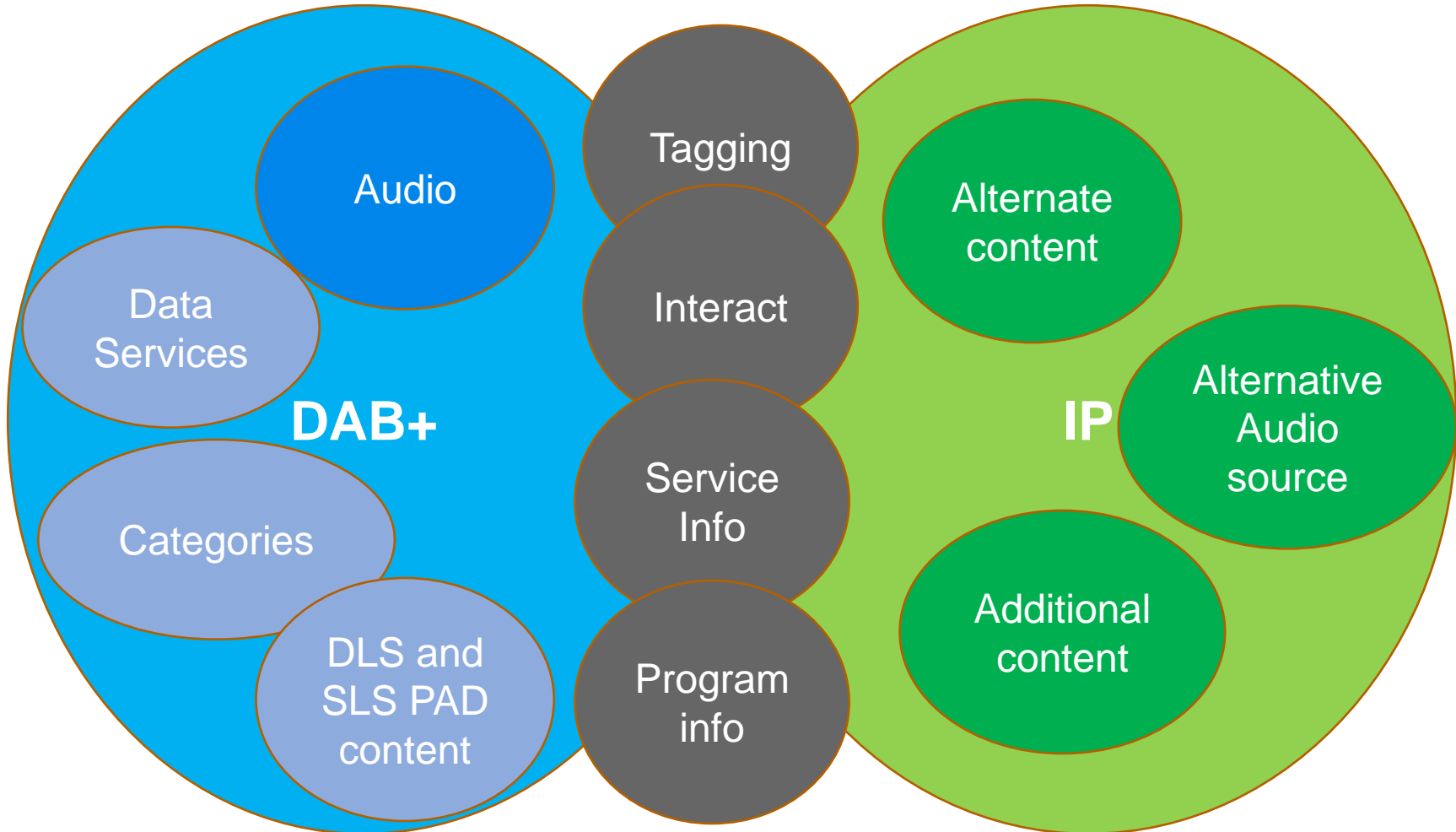
Listeners pay for mobile access while on the move

DAB+ Hybrid Radio

Information delivery

Audio delivered via DAB+

Programme information delivered via broadcast or IP

Slides and text delivered in DAB+ broadcast (PAD) inc URLs

logos delivered via broadcast or IP

Additional features, interactivity and content delivered via IP

DAB+ Hybrid Radio

The Ecosystem

DAB+ Hybrid Radio

Where?

In the car

In the home

WiFi

On the move

free WiFi

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DAB+ Hybrid Use Cases

Broadcasters have invested in DAB+, websites and social media

Those same assets can be delivered to listeners on hybrid receivers
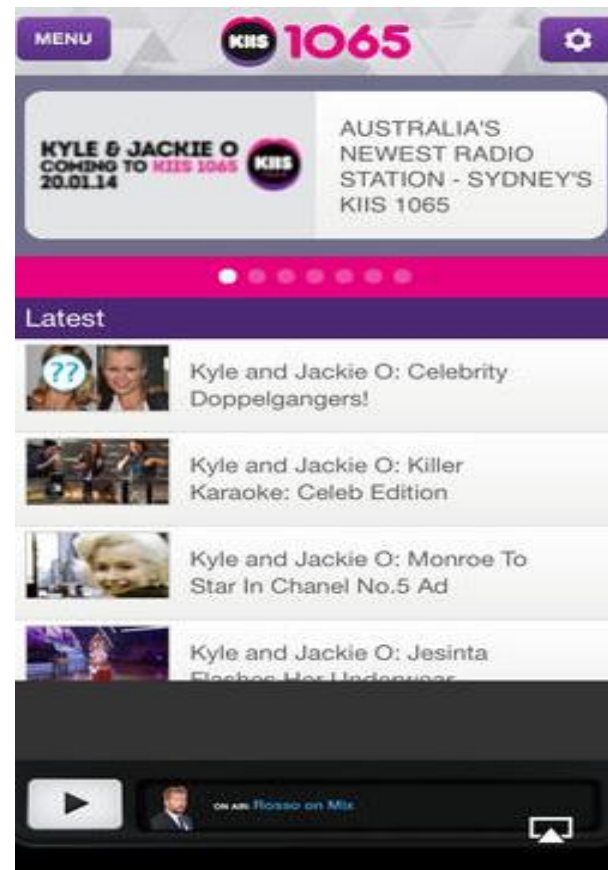
DAB+ Hybrid Radio Use Cases

Advertising

Accessing a website from a

ClickThroughURL

associated with a product / service being advertised

DAB+ Hybrid Radio Use Cases

Broadcast Categorised Slideshow

Now with IP interactivity

Trivia & info
Links to
social media
assets

Rankings

Match info

Broadcast Sponsors'
logos/categorised sport
slideshow

Social media
Commentary

DAB+ Hybrid Radio Use Cases

Brand building

Accessing the station's website from a

ClickThroughURL

to promote activities and loyalty

DAB+ Hybrid Radio Use Cases

Brand Recognition

Logos in Service List

Can be delivered via broadcast or pulled via IP connection to broadcaster

Programme information can also be delivered via broadcast or pulled via IP connection to broadcaster

Sky Tbred Cent
Thoroughbred racing

SkySportsRadio1
News sport talk & racing

SkySportsRadio2
Sports programming

Stardust Radio
The greatest songs of all time

The Edge
Beats that move you

TheRange-Country
Today�s hottest country

Triple M
Triple M rocks Sydney

Triple MClasRock
The rock that started it all is back

DAB+ Hybrid Radio Use Cases

Main image is broadcast

Alternate Images provided over IP to high resolution devices

More details,

higher resolution,

alternative links

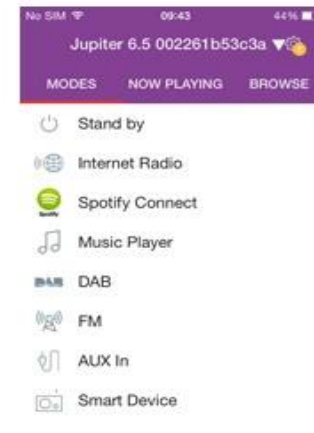Potential for targeted advertising and information through the Common Platform Authentication (CPA)
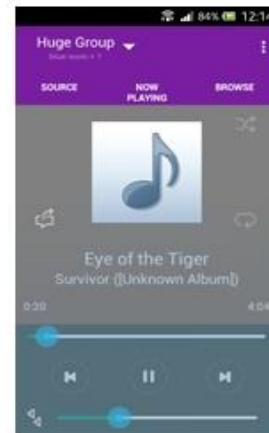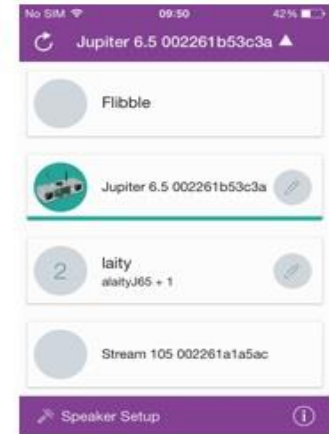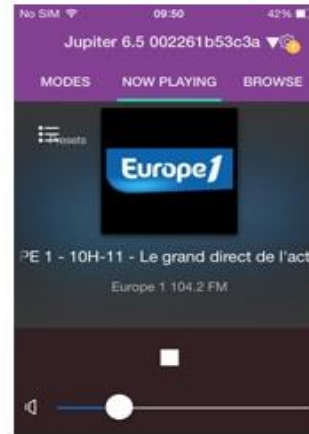
DAB+ Hybrid Radio Use Cases

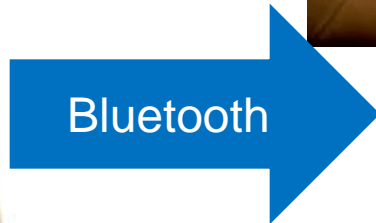Smartphone App for home radio control

UNDOK from Frontier-Silicon

DAB+ Hybrid Radio Use Cases

DAB+ enabled smartphone

Bluetooth to in-car audio system

Bluetooth

DAB+ Hybrid Radio Use Cases

Hybrid Radio provides positive business drivers - Broadcasters

- Improves branding
- Adds value to broadcaster's content the same as mobile Apps
  - Potential for personalisation
  - Potential for click-through sales models
  - Redirection via the broadcasters website – performance metrics
- Promotes listener loyalty
- Promotes listener participation
- Maximises quality
- Improves broadcasters currency through monitoring and awareness of audience desires

DAB+ Hybrid Radio Use Cases

Hybrid Radio provides positive business drivers - Listeners

- Has all the interactivity that IP streaming Apps have
- Only uses data capacity if the user wants to
  - Interactivity
  - Activating Alternative (high resolution) images
- Uses less battery
- Overcomes blackspots – broadcast content still available when out of mobile network coverage or congestion

Thank you

For further information, please contact:

www.worlddab.org

or

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WorldDAB Technical Committee

Current activities

Clean Task Force

- Main standard update - Published in 2016

- Removing old un-used features

- Updating associated standards documents, e.g. Audio coding, rules of use, Reg tables

Announcements Task Force

- Rules of use

- Emergency warnings

- Output expected in late 2017

OMRI Task Force

- Smartphone API definition

- Output expected in late 2017

Interoperability workshop

- Allows equipment manufacturers to test products with multiple system types

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Other organisations

iDAG / OMRI

- DAB+ / DMB smartphone development

RadioDNS

- Hybrid radio support

EBU

- RadioHack
  - New ideas and interworking wor
- Digital Radio summit
- Broadcast Network Planning group
  - Planning guidelines update

ABU

- Joint workshops and education

ASBU

- Joint workshops and education