IDAG / OMRI

Jorn Jensen, NRK

Dr. Les Sabel, Technical Committee, WorldDAB

Kuala Lumpur, 6 March 2017


INTERNATIONAL DMB
ADVANCEMENT GROUP

31 members from 17 countries

DMB Mongolia
RNI Radio, Latvia
DigiBNetworks, Malta
Mobile TV PTY, South Africa


DIGITAL AUDIO BROADCASTING+
MORE STATION AND BETTER SOUND QUALITY
THE FIRST
DAB+
SMARTPHONE
LG
Life's Good
Radiodays
Europe

LG Stylus 2

The world's first DAB+ enabled smartphone went on sale in over 20 countries in Q2.

When ***the*** USP is DAB+,
that must be
clearly communicated.

LG Stylus DAB+

DAB+ ideally needs to be in the name

WorldDAB, the EBU and IDAG have formally teamed up to better be able to incentivize more DAB+ enabled smartphones.

Open
Mobile
Radio
Interface


KONSOLE
LABS


Fraunhofer
IIS


MOBIELE TV NL


EBU


COMMERCIAL RADIO
AUSTRALIA


aim
all in media


BBC


IRT


WORLD
DAB


radio
player

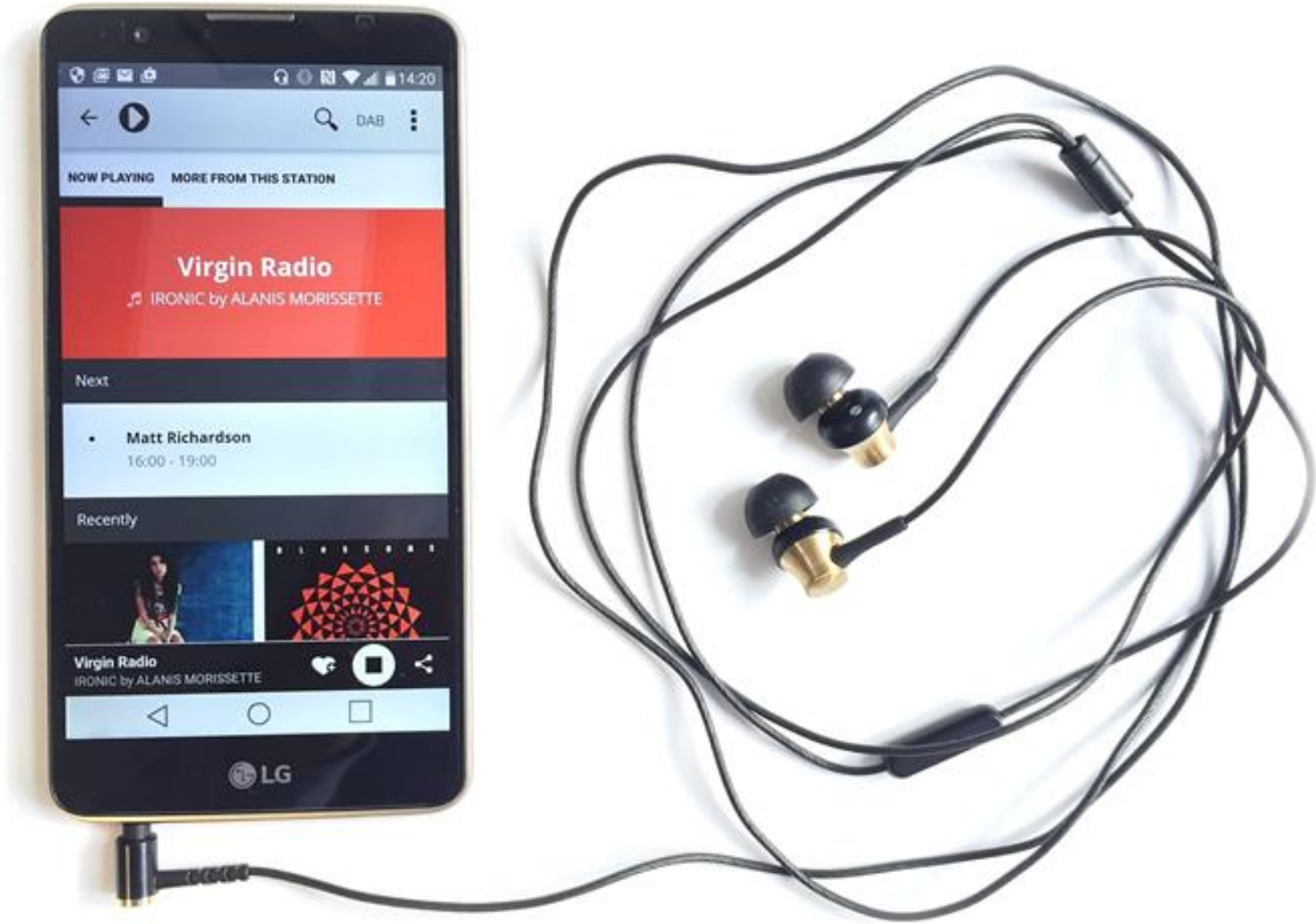

INTERNATIONAL DMB
ADVANCEMENT GROUP

OMRI is
the open and universal
smartphone “bridge”
between
the DAB+ chipset and the apps.

Announced during IBC, 2016.

github.com/ebu/OpenMobileRadioInterface

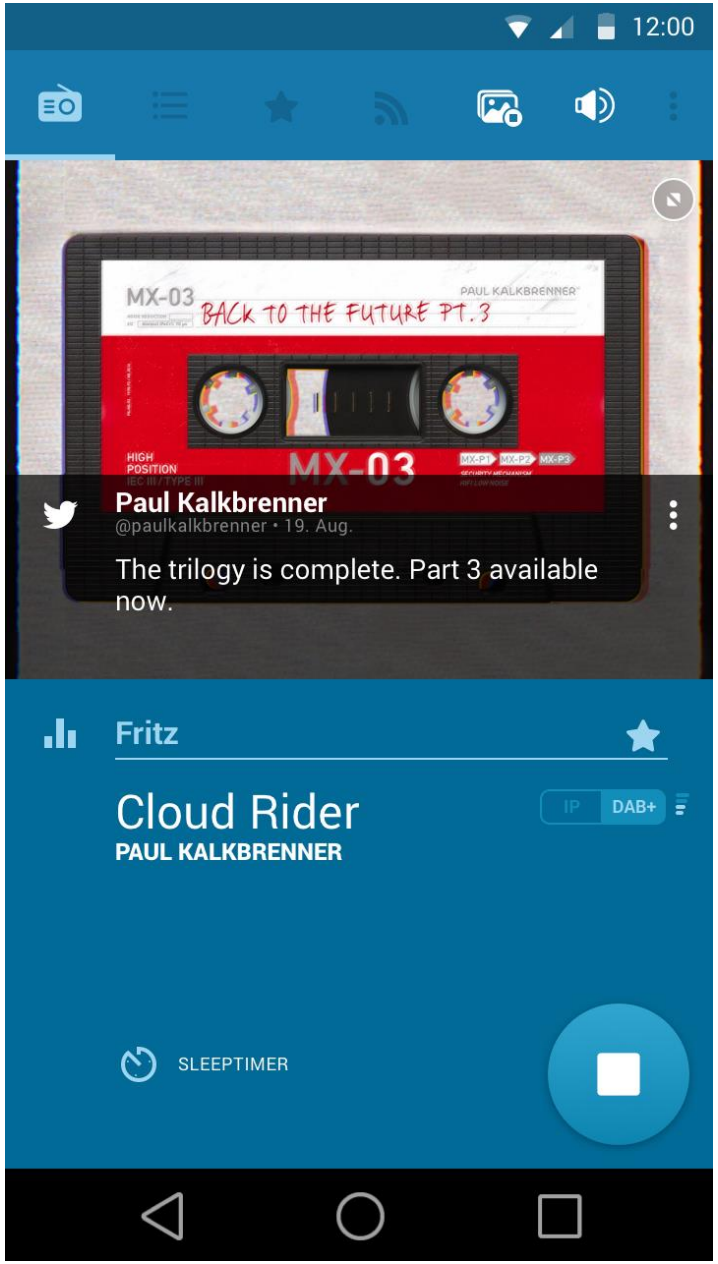
radio player

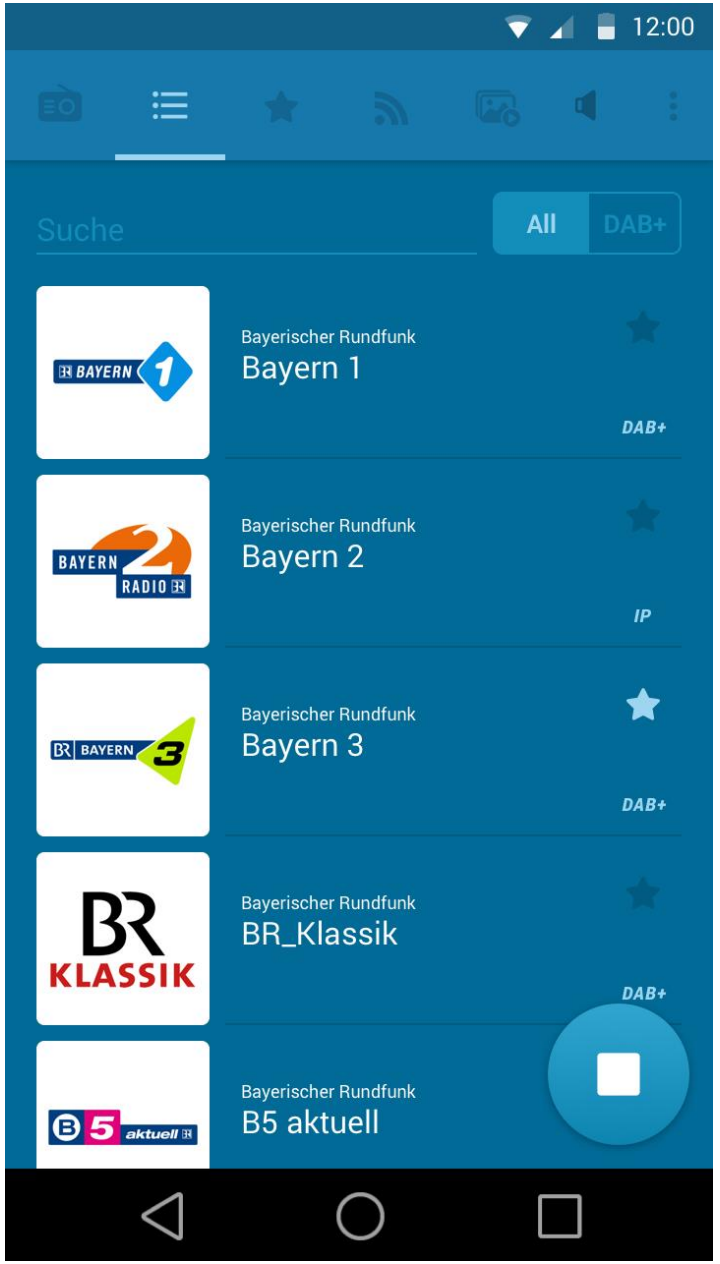


WORLD DAB

DIGITALRADIO DAB+

KONSOLE LABS

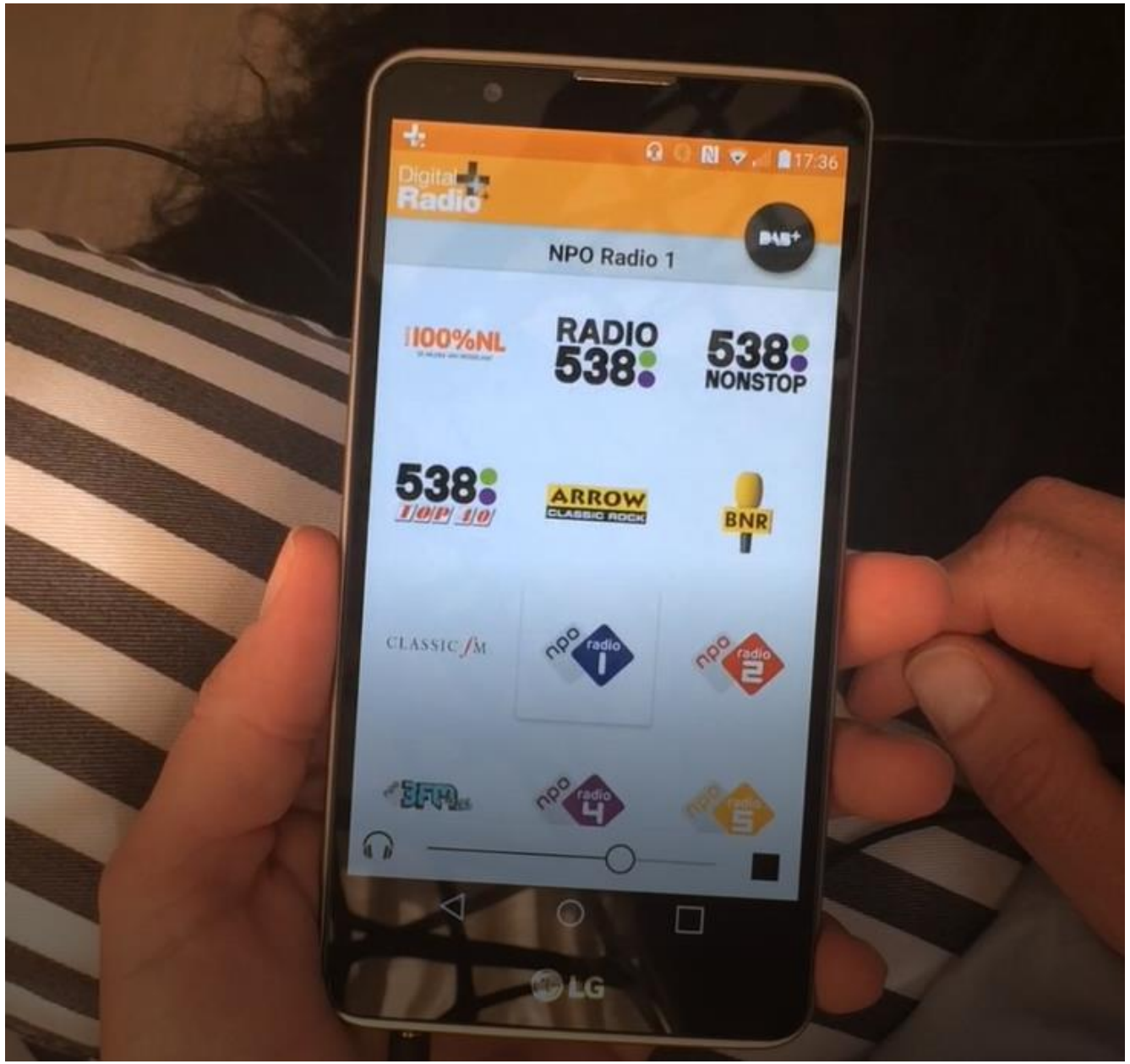




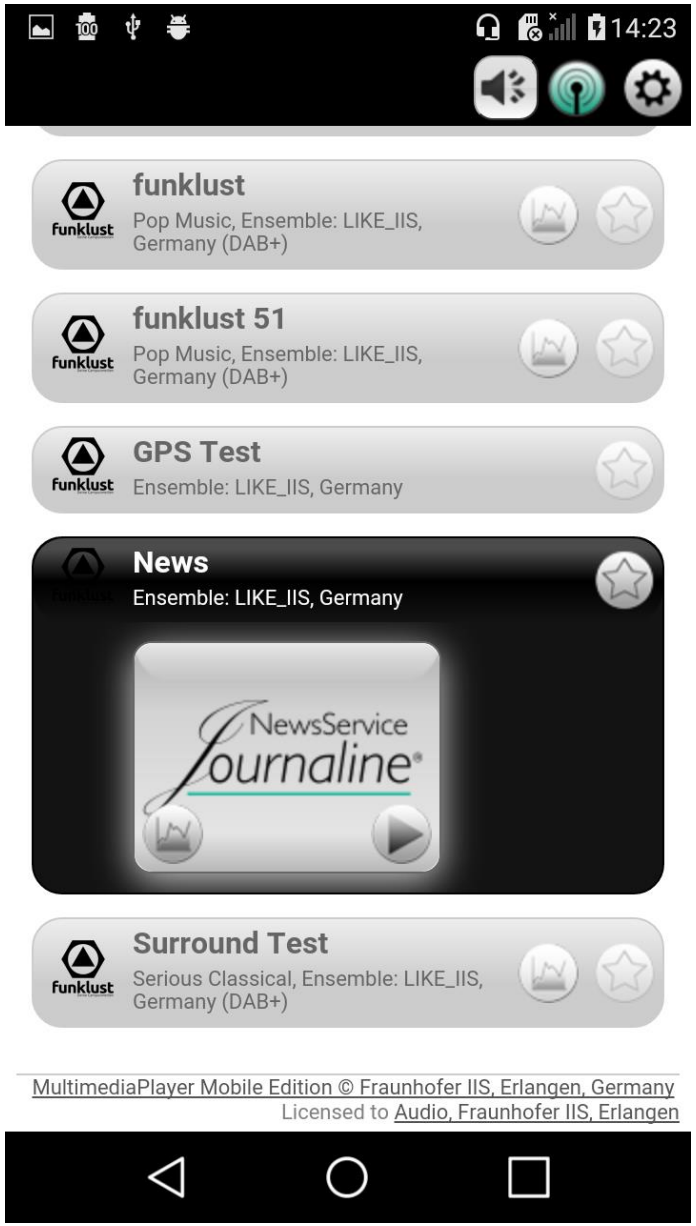
WORLD DAB

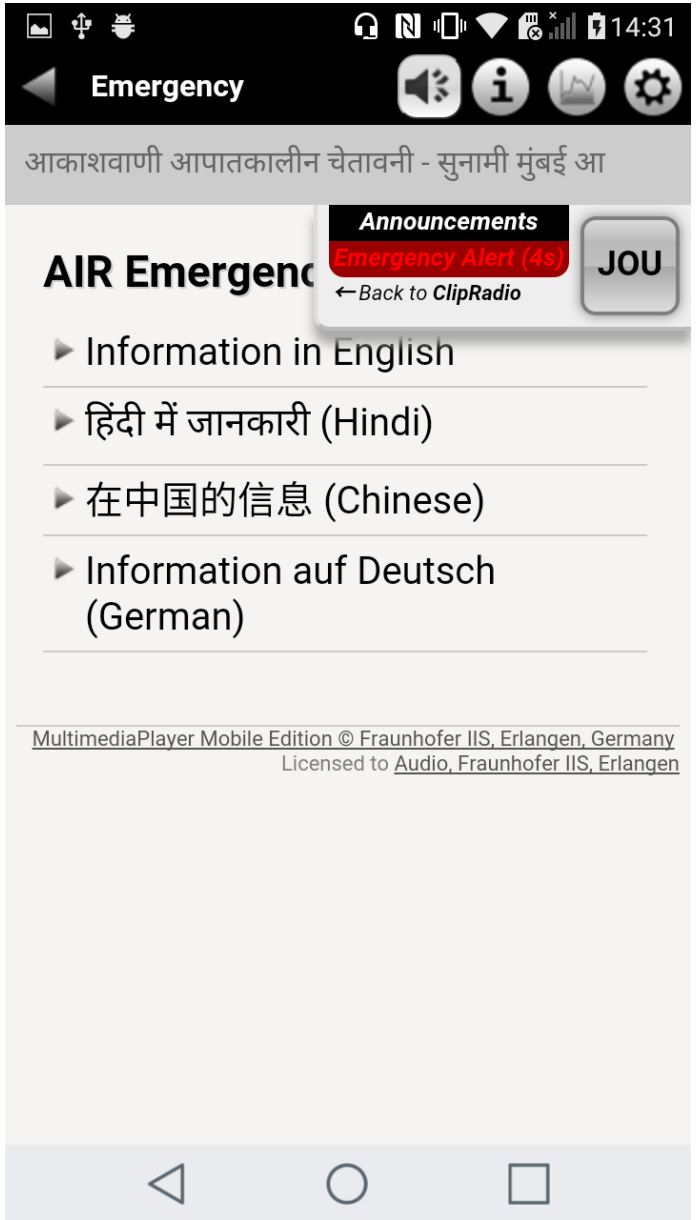
DIGITALRADIO DAB+

ARS | Traffic & Transport Technology



Fraunhofer
IIS

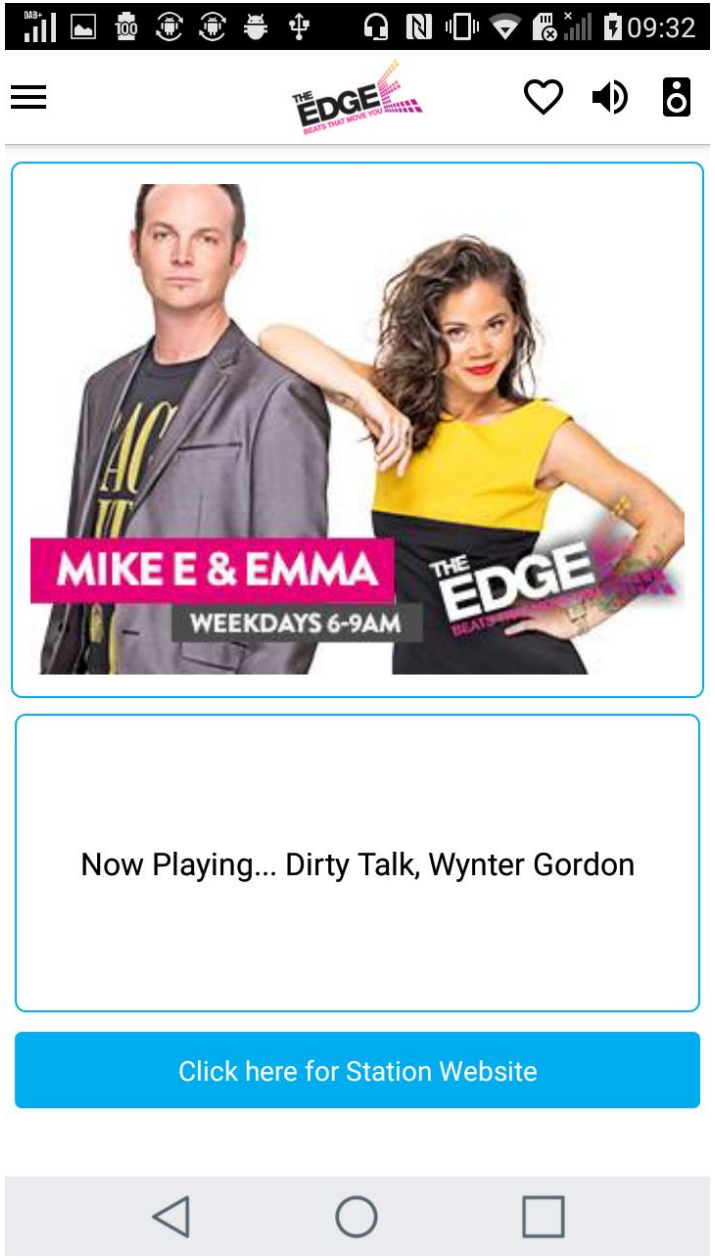


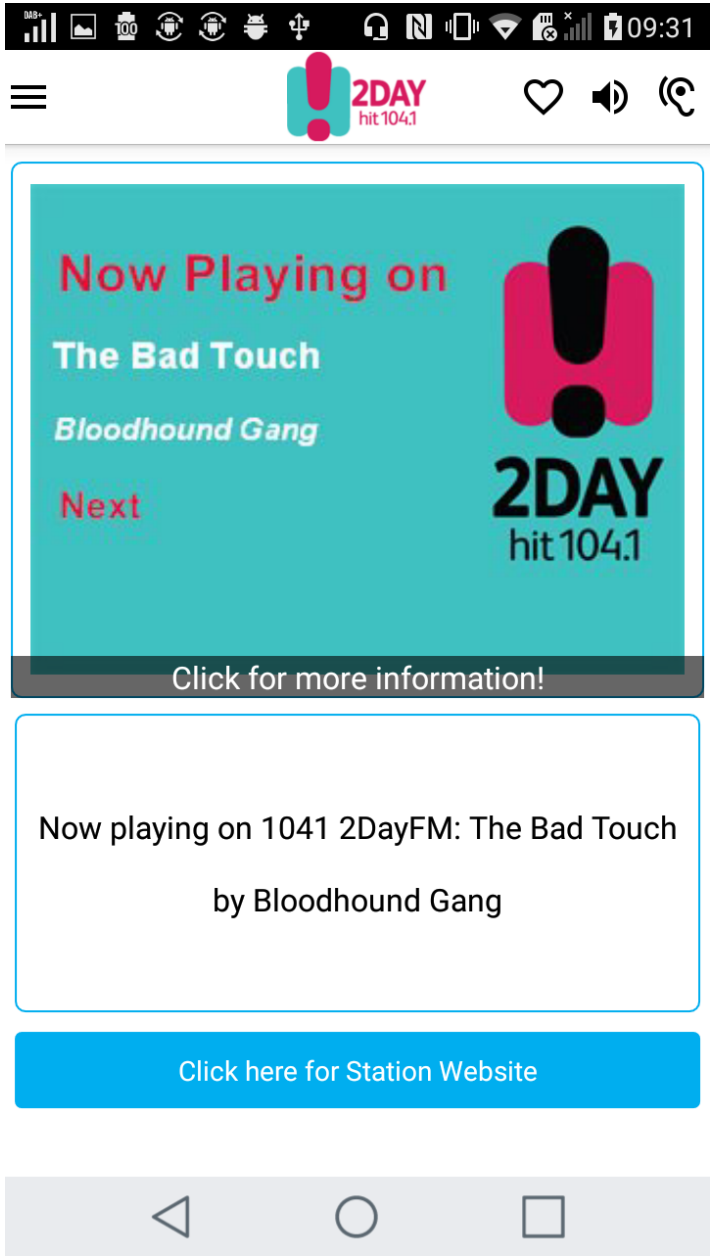


WORLD DAB

DIGITALRADIO DAB+

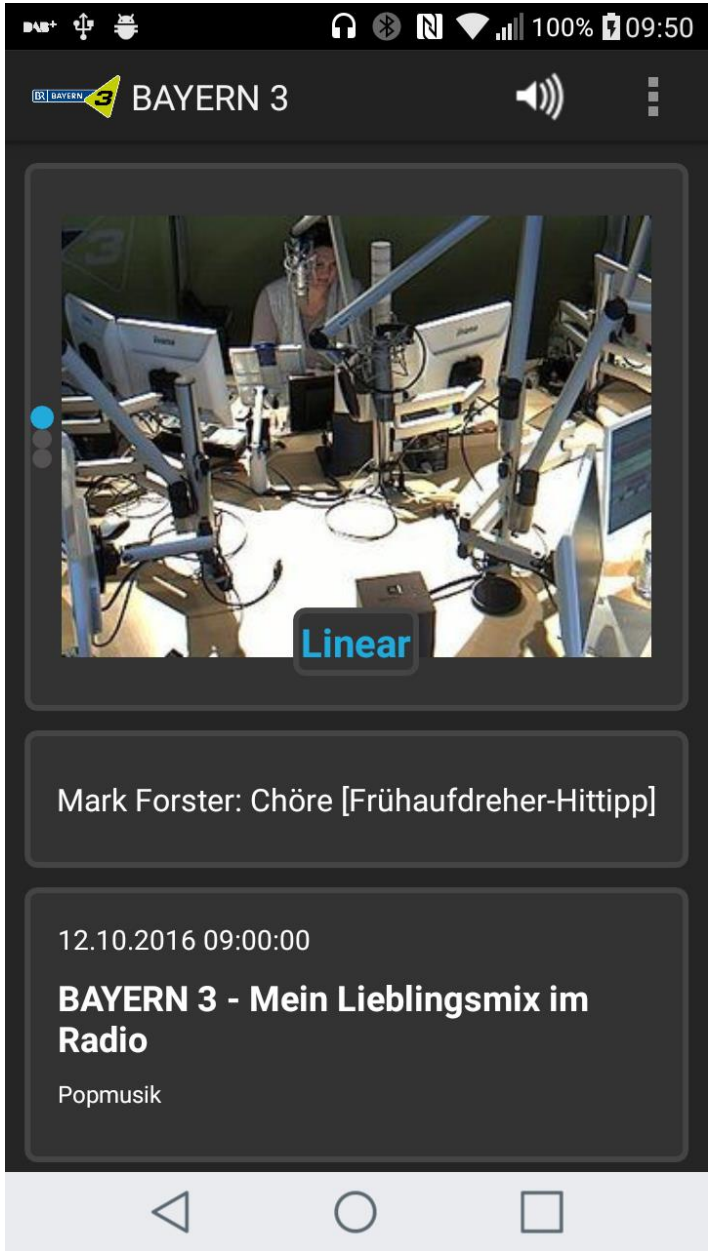
COMMERCIAL RADIO AUSTRALIA

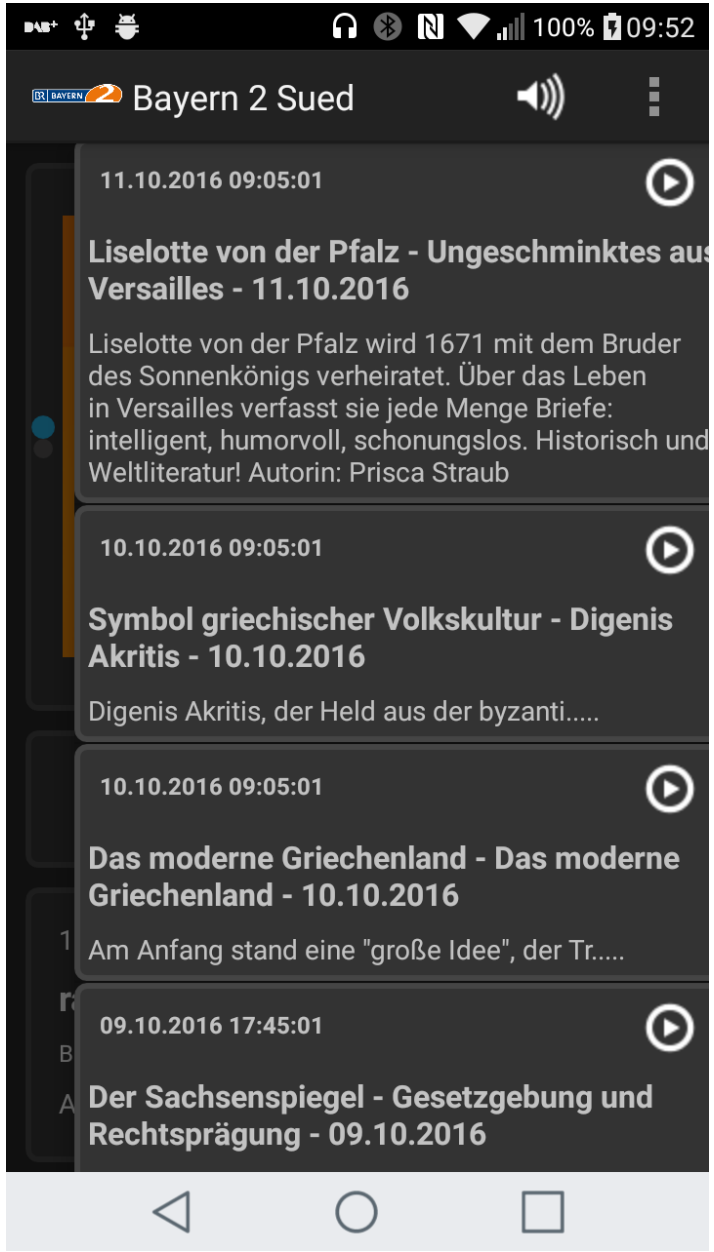




WORLD DAB

DIGITALRADIO DAB+


100% 09:50
BAYERN 3
Linear
Mark Forster: Chöre [Frühaufdreher-Hittipp]
12.10.2016 09:00:00
BAYERN 3 - Mein Lieblingsmix im Radio
Popmusik


100% 09:52
Bayern 2 Sued
11.10.2016 09:05:01
Liselotte von der Pfalz - Ungeschminktes aus Versailles - 11.10.2016
Liselotte von der Pfalz wird 1671 mit dem Bruder des Sonnenkönigs verheiratet. Über das Leben in Versailles verfasst sie jede Menge Briefe: intelligent, humorvoll, schonungslos. Historisch und Weltliteratur! Autorin: Prisca Straub
10.10.2016 09:05:01
Symbol griechischer Volkskultur - Digenis Akritis - 10.10.2016
Digenis Akritis, der Held aus der byzanti.....
10.10.2016 09:05:01
Das moderne Griechenland - Das moderne Griechenland - 10.10.2016
Am Anfang stand eine "große Idee", der Tr.....
09.10.2016 17:45:01
Der Sachsenspiegel - Gesetzgebung und Rechtsprägung - 09.10.2016

OMRI Technical Approach

Technical approach

- Open API – to be published on Android Developers website (TBC)
  - Currently available as Open Source on EBU gitlab : https://github.com/ebu/OpenMobileRadioInterface
- Provide Open Source example code
  - To help smartphone manufacturers
  - To help App developers

- Current status
  - Focus has been on LG Stylus 2 DAB implementation
  - Currently using the IRT shim layer between LG API and OMRI API
  - Updates and additions in progress
  - Minimum requirements drafted
  - New WorldDAB Technical Committee Task Force established – Task Force OMRI

OMRI – Minimum Requirements

Profile	General DAB requirements	Metadata/Data services (User applications)	API Classes

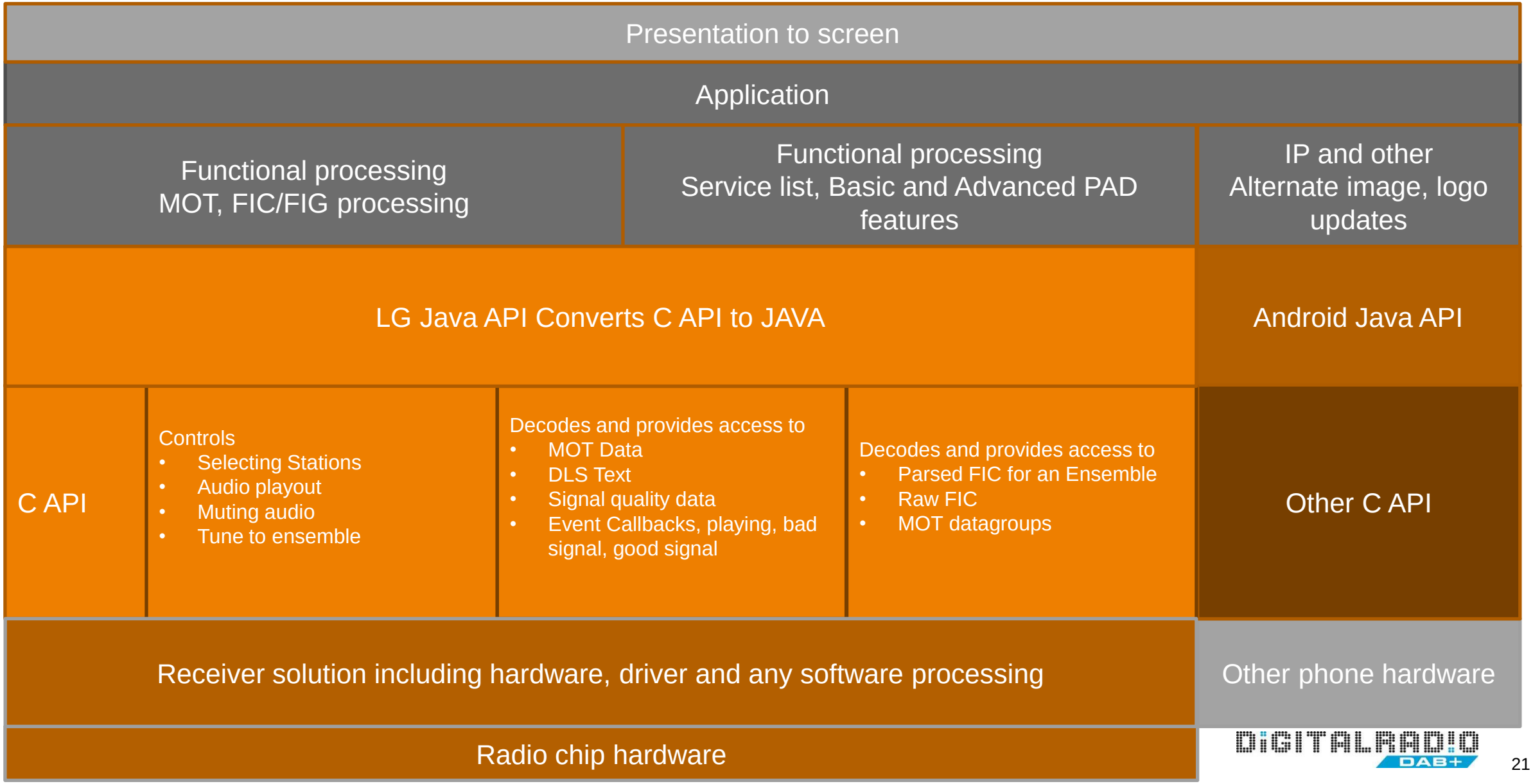
Core Profile
 	
(mandatory minimum requirement)
	Band 3 reception (174 to 240 MHz);
	
	Mode 1 operation
	
	API permits 'band scan' and 'tune to specific frequency' returning available ensemble(s), services, service components including basic parameters (audio (DAB/DAB+), data (UATy), etc).
	
	DAB audio
	• MPEG layer 2
	• MPEG-4 HEAACv2
	
	One sub-channel with minimum 144 Capacity Units (e.g.192 kbps@EEP-3A/UEP-3)
	
	All FEC code rates (UEP and EEP)
	
	Additional sub-channel,
	• Minimum additional 24 Capacity Units (e.g. 32kbps@EEP-3A)
		Text:
		• Character set decoding
		  ○ Complete EBU Latin based repertoire
		  ○ UTF-8
		• Service label and service component label
		
		User Applications:
		• Dynamic Label
		• Slideshow
		• Categorised SlideShow
		• ClickThroughURL
		• Dynamic Label+
		
		Packet Mode:
		• Multiple packet mode streams (minimum 4) (i.e. can access SlideShow / SPI data on extra sub-channel).
		• Enhanced Packet Mode FEC protection
			Packages/Classes/Interfaces:
			
			org.universalradio.radio.*
			
			org.universalradio.radioservice
			
			org.universalradio.tuner
			
			org.universalradio.radioservice.metadata
			• Textual
			• TextualDABDynamicLabel
			• TextualMetadataListener
			• Visual
			• VisualDABSlideShow
			• VisualMetadataListener
			• TextualDABDynamicLabelPlusItem
			• VisualIPRdnsRadioVis
			•

OMRI – Minimum Requirements

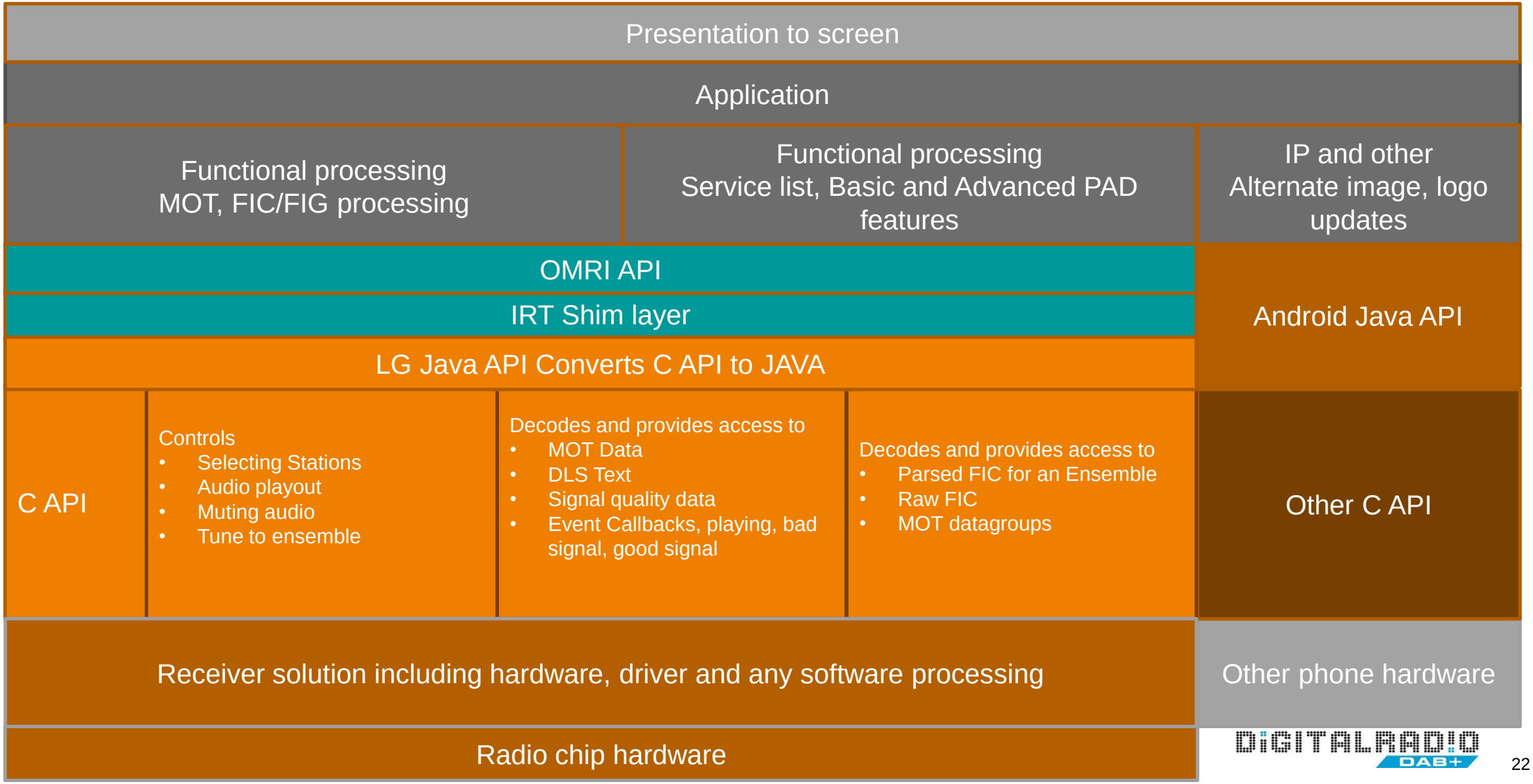
Profile	General DAB requirements	Metadata/Data services (User applications)	API Classes

Advanced receiver profile
 	
(optional in whole or part)
	Additional sub-channels to make the total simultaneous sub-channels 3 or more (e.g. to allow additional simultaneous decoding of other data services e.g. TPEG or Journaline)
	
	DMB video service decoding
		User Applications:
		• SPI (with delivery in MOT directory mode)
		• Announcements
		• Hybrid functionality
		  ○ SI, Logos
		  ○ PI
		  ○ RadioDNS
		  ○ Alternative Image
		• Service Linking
		• Additional character set decoding
		• Other Ensemble functionality
		• TII decoding
			Packages/Classes/Interfaces:
			
			org.universalradio.radioservice.metadata
			• Group
			• Location
			• ProgrammeInformation
			• ProgrammeServiceMetadataListener
			• ServiceInformation
			• SPIProgrammeInformation
			• TermID

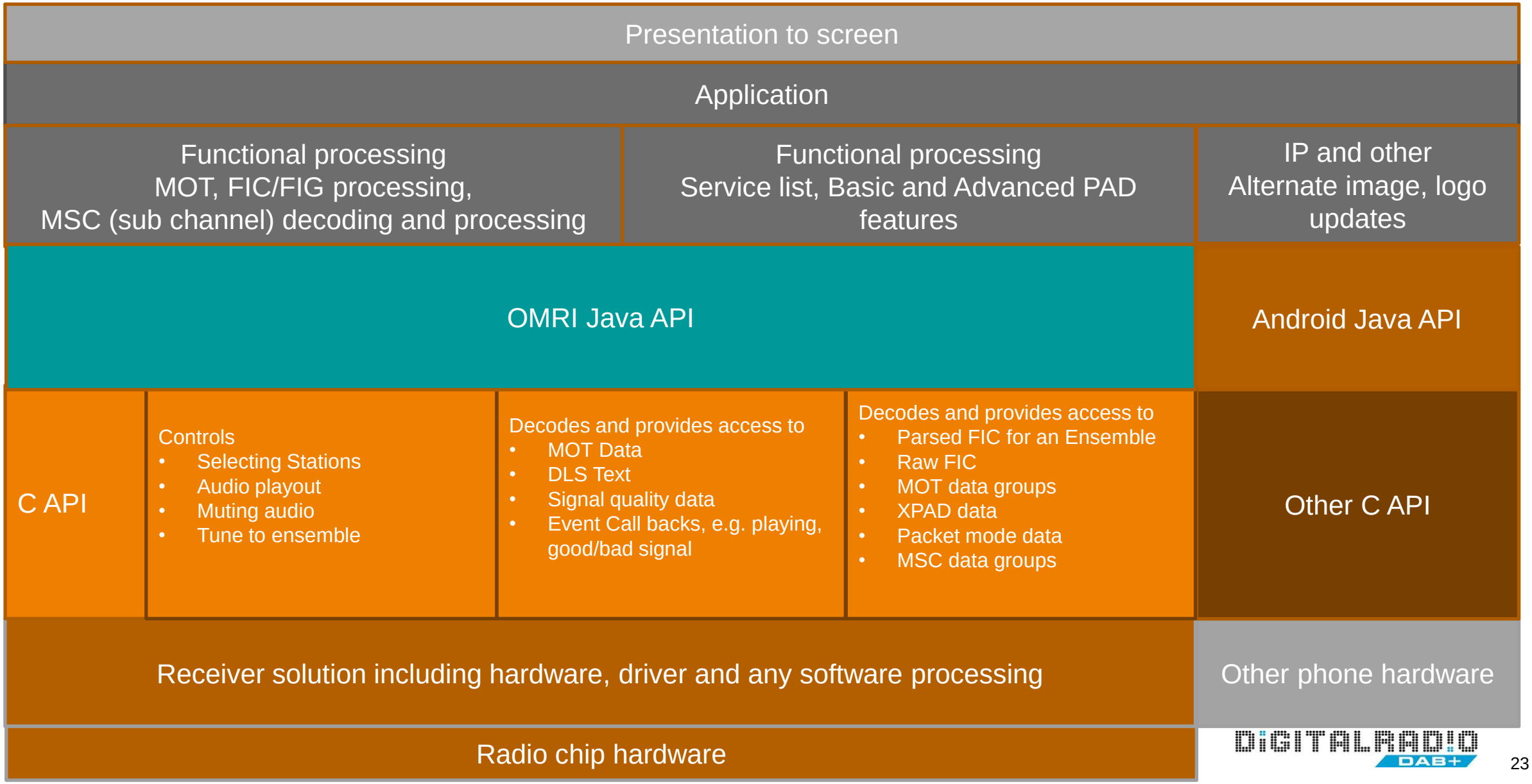
LG Software stack



OMRI-LG Software stack



OMRI Software stack

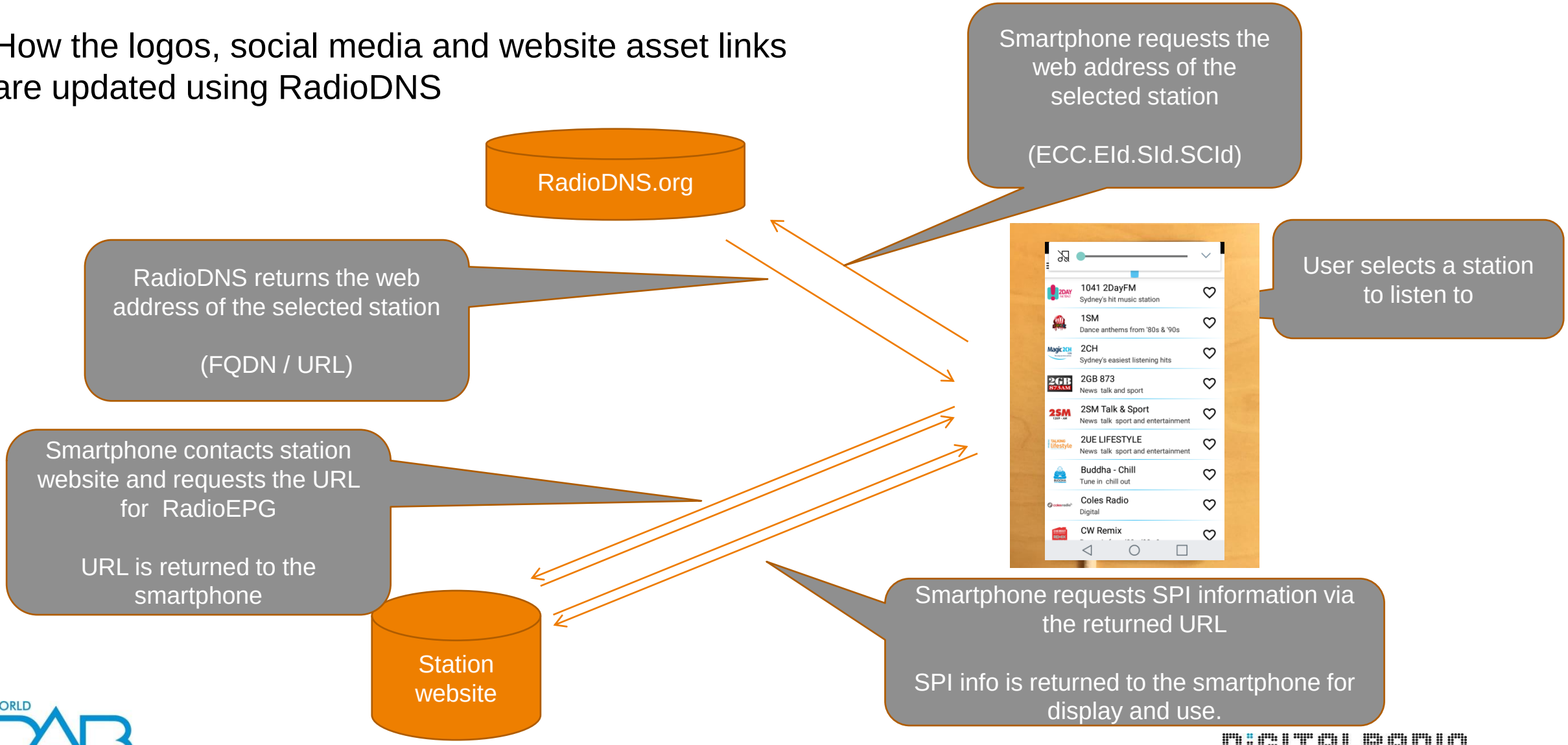


TF OMRI next steps

- Next steps under the WorldDAB “OMRI” Task Force
  - TF chairman is Alex Erk, IRT
  - Establish Terms of Reference
  - Establish work programme
    - OMRI API specification updates including functional enhancements
    - API and example App code
    - Standardisation routes
      - Android Developers website
      - ETSI

Project Logo demonstration

How the logos, social media and website asset links are updated using RadioDNS



Advanced features demonstration

Video to demonstrate

Click-through URLs

Categorised Slideshow

Logo based Service List

Social media and web assets

Thank you