
DAB+ in the Asia Pacific & Globally

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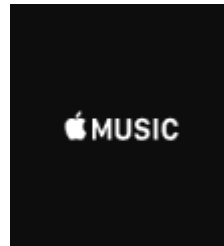
WorldDAB Asia Pacific Committee Chair
& CEO Commercial Radio Australia

New ways of listening



Competition is intense

Services and aggregators



- To secure its future, radio needs to
 - innovate
 - retain its independence

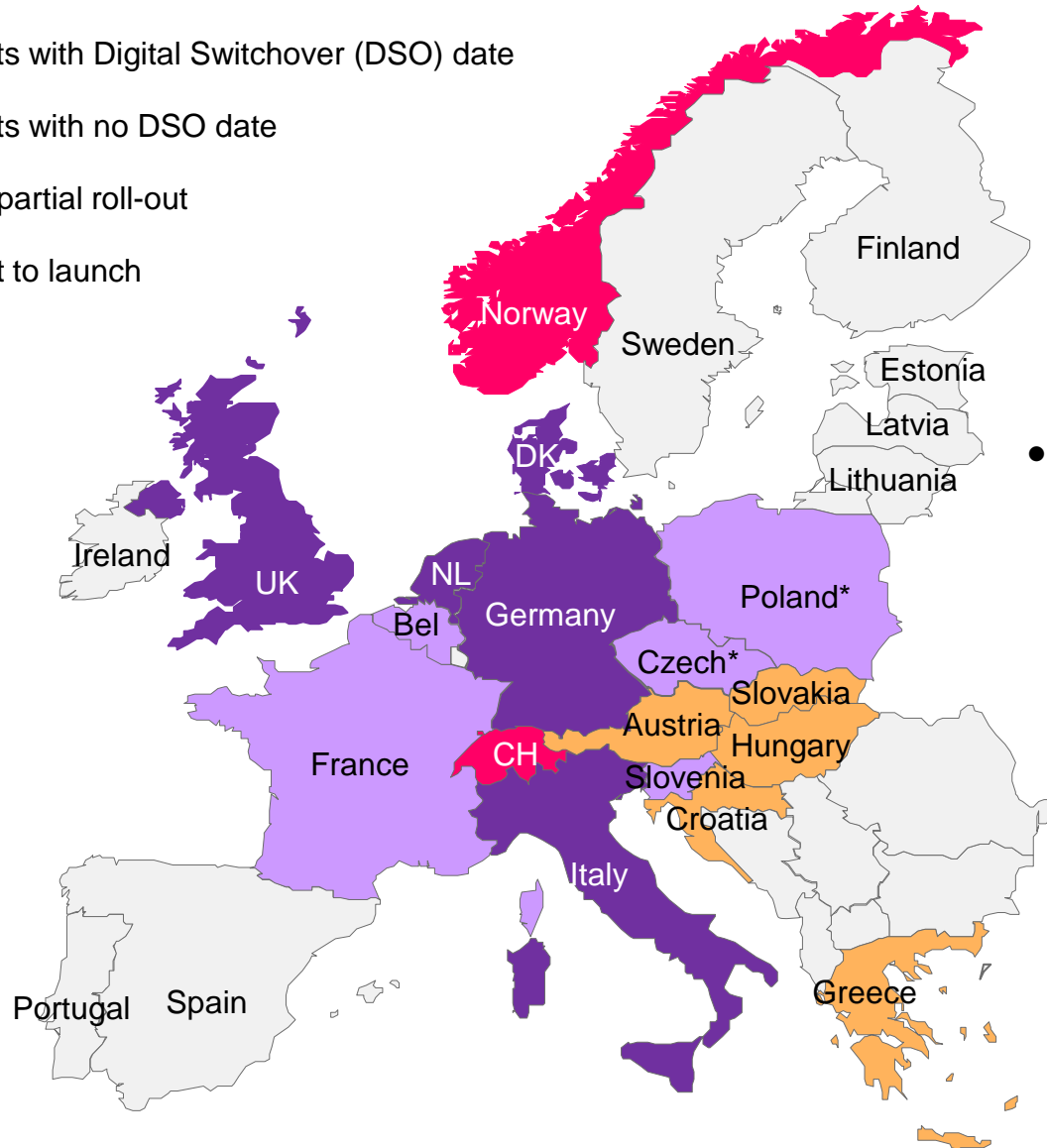
Analogue spectrum is full



- Poor quality experience for listeners
- No new services
- Difficult to innovate

Today, DAB firmly established across Europe

- Established markets with Digital Switchover (DSO) date
- Established markets with no DSO date
- Recent launches / partial roll-out
- Trials on air / about to launch



- First countries switching off FM
 - Norway 2017
 - Switzerland 2020-24

DAB+ in the Arab States



ASBU
Arab States Broadcasting Union

**Arab States
Broadcasting
Union
recommends
DAB+**



Algeria DAB+ trial started in February 2018 in Algiers

Tunisia DAB+ on air since 2008, 12 DAB+ services, 45% population coverage

Qatar trial on-air with 10 DAB+ services

Oman pilot conducted and getting ready to launch DAB+

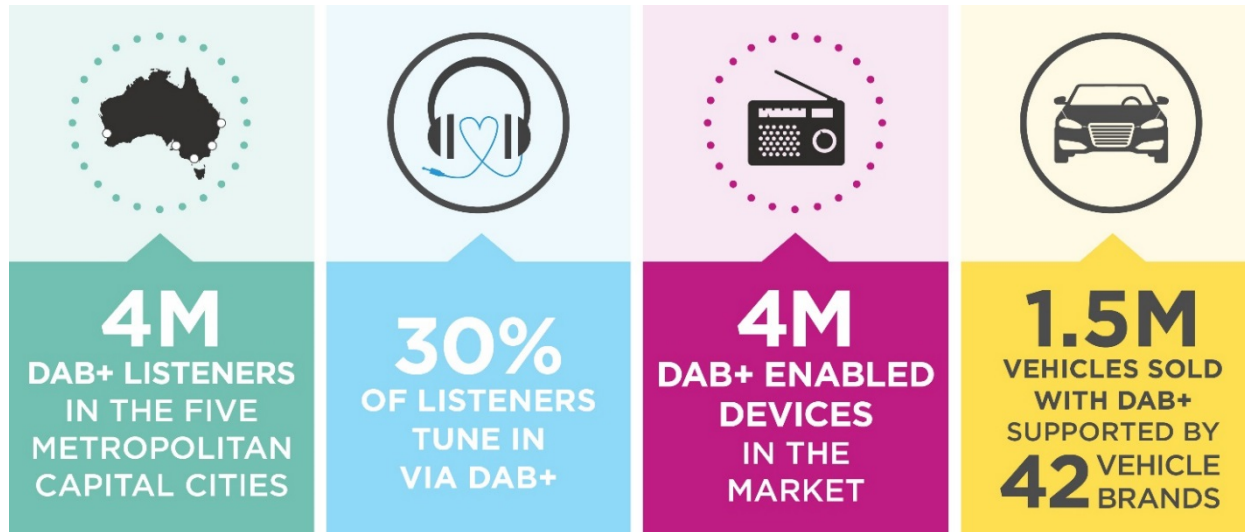
Jordan DAB+ trial on air in Amman today

Saudi Arabia showing strong interest in digitising radio

Kuwait has regular DAB+ with 95% population coverage and 16 services on air

UAE trial since 2014, 1.8m popn coverage, initiated consultation on DAB+ receiver specifications

Bahrain trial since 2016, 4 services, 40% population coverage



- 4 million milestone reached for number of listeners and number of DAB+ receivers sold since launch
- Work continuing on major consumer campaign to launch 2H 2018
- CRA has commissioned GfK to undertake research into consumer awareness of DAB+, receiver purchase drivers and satisfaction levels. Findings to be released Q3

- DAB+ studio and 3 Tx sites – Jakarta, Batam and Entico.
- RRI invited WorldDAB to a one day seminar in May with representatives from Parliament and MCIT to discuss DAB+ roll out in Indonesia – Pop 255m.
- Kominfo (MCIT) is to issue a digital radio paper which recommends the DAB+ standard/s for Indonesia.



- Manager, Digital Broadcast NBTC attended the DAB+ Workshop in KL – keen to hear about prioritisation of access seekers for their DAB+ trial.
- Frequency plan for the trial has been out for consultation – now approved.
- Number of proposed trial sites has increased from 8 to 10 - Bangkok, Chaingmai, Pattaya, Sriracha, Khon Khean, Nakhon Ratchasima, Nakhon Srithamarat, Phuket, Prachuap Kiri Khan, Songkhla in the south.
- Meeting held with Radio Thailand on March 20 to help prepare for DR. Growing interest from MCOT, PRD and private sector.
- The NBTC board will change in April/May with new people being appointed by the parliament.
- Issues to be resolved in regulation, - multiple facility providers want to use their own (extensive) infrastructure when a collaborative sharing approach will be much more economically viable (inc RTA, MCOT, PRD)
- WorldDAB/RadioDNS are assisting ongoing DAB and hybrid demonstrations where possible to maintain momentum.



- Request from the Malaysian Technical Standards Forum for a one day workshop to help understand the various standards & justification of selecting DAB for Malaysia
- Hosting the 4th ABU/ASBU/WorldDAB workshop in July @ 30pax from 12 countries



Sri Lanka

- New Lotus Tower transmission facility, complete.
- Telecommunications Regulatory Commission keen to demonstrate a DAB+ transmission from there.
- National broadcaster Sri Lanka Broadcasting Corporation
- Regulator is interested in how Australia & others have licenced DAB+ in Band III without interfering with TV.
- Private broadcasters interest in hearing the business case.
- Broadcaster Guild est. Sept 17, private & state owned media organisations.



340m, tallest structure in South Asia



Myanmar

- Myanmar National Broadcaster, MRTV continue the DAB pilot project they started in August 2016 with services in Yangon.
- There seem to be more interest from other states in Myanmar

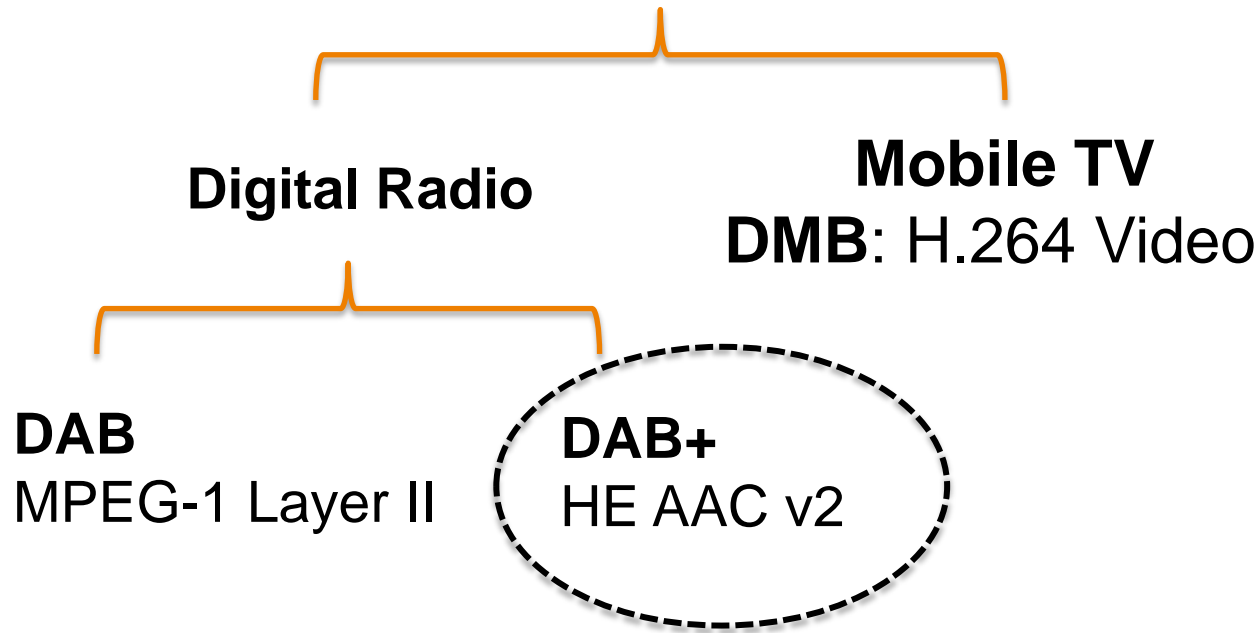


DAB+ technical overview

The DAB 'family'

A set of complementary technologies that are based on the same underlying core.

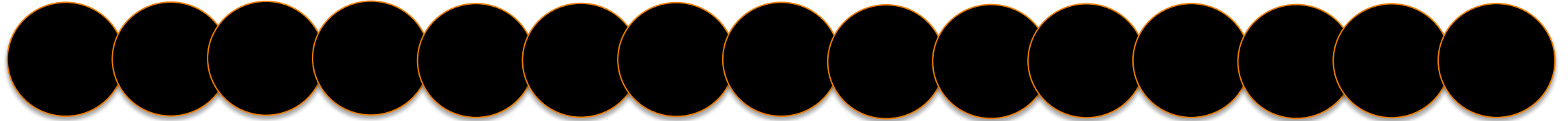
DAB Family



- **Open, Mature** Digital radio standards with a host of additional features
- **Flexible**, giving broadcasters and regulators choices about how broadcast services should be delivered
- **Robust** in all environments; delivering content reliably to mobile, portable and fixed receivers

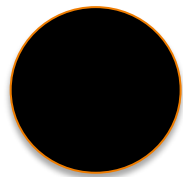
Spectrum efficiency

Analogue Radio (AM/FM)



15 radio stations = 15 frequencies used (min. total 3 MHz w/200 KHz separation)

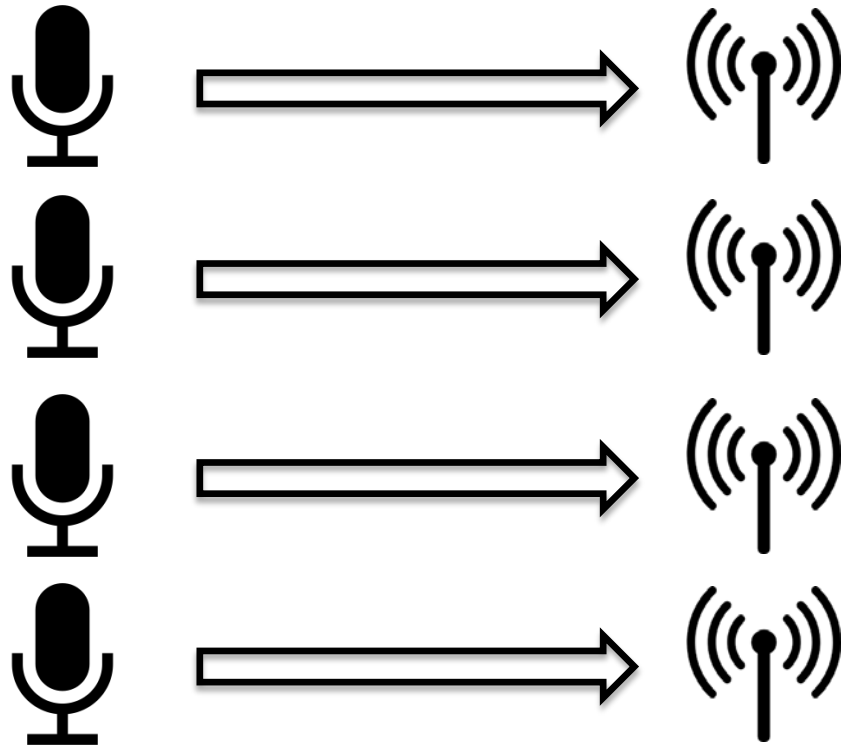
Digital Radio



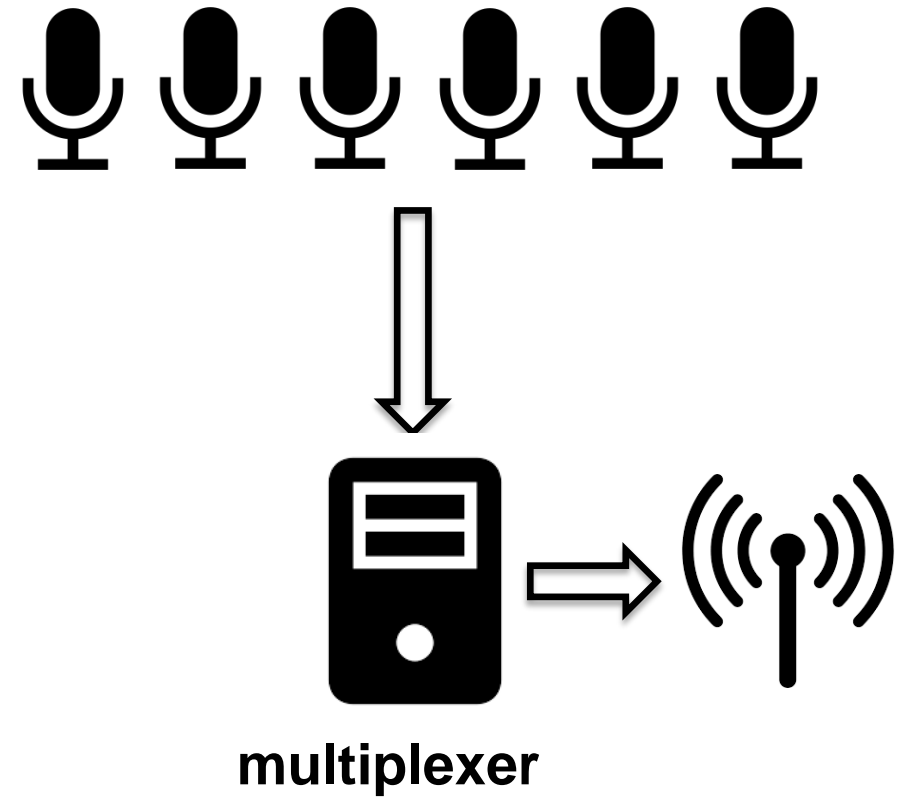
15 radio stations = 1 frequency used (total multiplex bandwidth 1.536 MHz)

Distribution

Analogue Radio (AM/FM)



Digital Radio (DAB+)



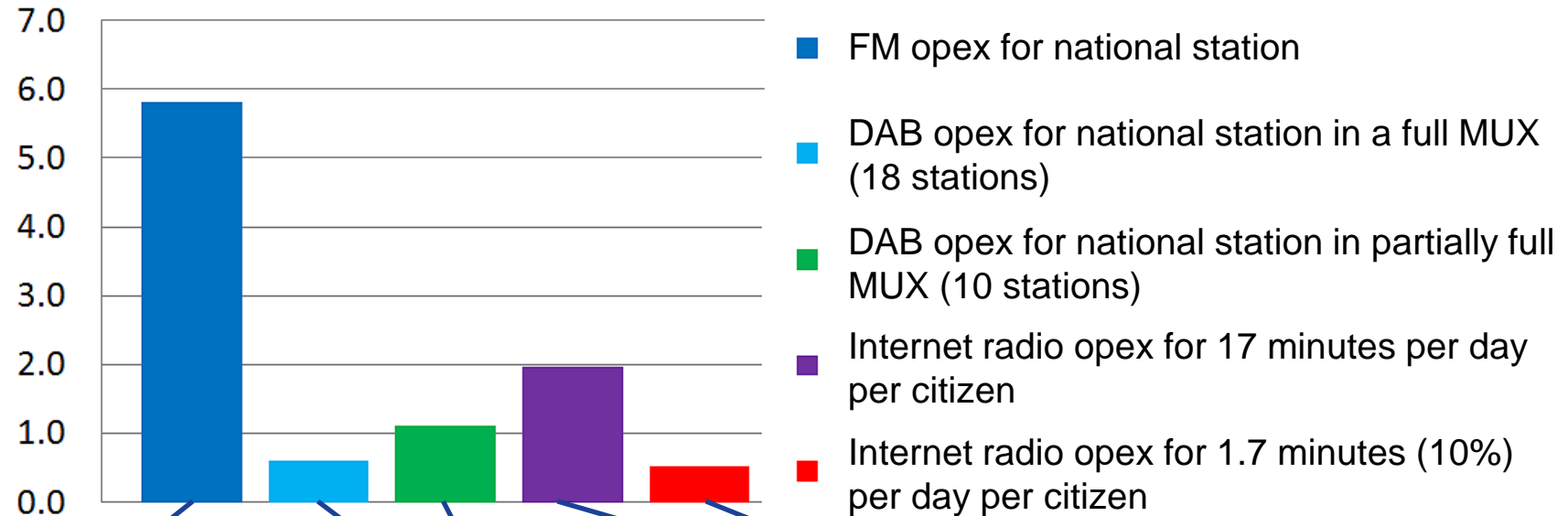
Additional services

- **Slideshow:** Dynamic images, either running as part of a carousel or triggered alongside audio content (e.g. current song, current show, advert)
- **Service and Programme Information:** Forward and Backward programme information, station logos and branding, descriptions
- **Traffic and Travel:** TPEG delivers traffic, incident, condition information
- **Emergency Warning:** Possibility to trigger devices to receive emergency broadcasts, show slides, scroll messages
- **Private Applications:** Carriage of arbitrary data – “bandwidth as a service”, e.g. bus stop information, OTA update for automotive information

What does DAB+ offer?

A perspective: radio distribution cost analysis (source: EBU)

OpEx comparison in M\$



FM is by far the most expensive distribution technology

Due to multiplex technology, DAB is inexpensive. In the best case it could be 10 times cheaper than FM

The expense for internet distribution is highly variable and can easily grow larger than DAB, similar to FM

Brand extensions for Southern Cross Austereo

FM Parent station



FM Parent station



DAB+ Sub brands



DAB+ Sub brands



Over 60 million
receivers sold

Available from EUR 20 OR 30 SGD

Automotive brands fitting DAB+



DS AUTOMOBILES



HOLDEN



HONDA



HYUNDAI



INFINITI.

ISUZU



JAGUAR

Jeep



MASERATI



mazda



Mercedes-Benz



MITSUBISHI



PEUGEOT



RENAULT



SEAT

ŠKODA



TOYOTA



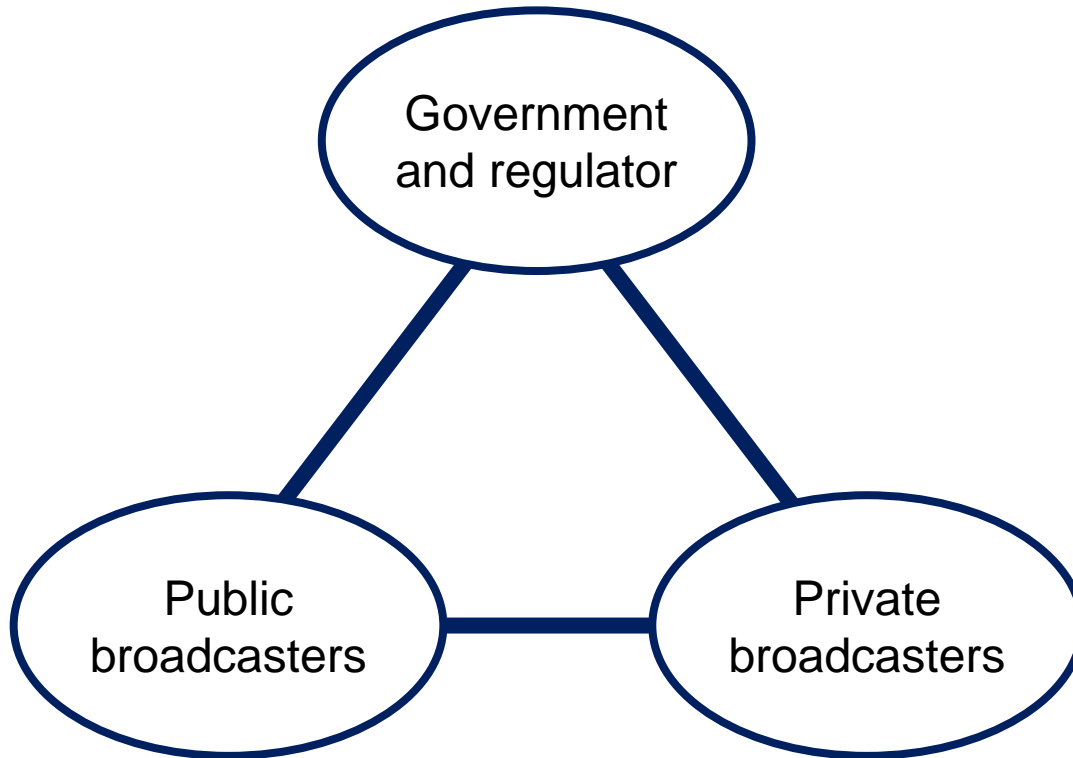
UD TRUCKS



How to get started with DAB+

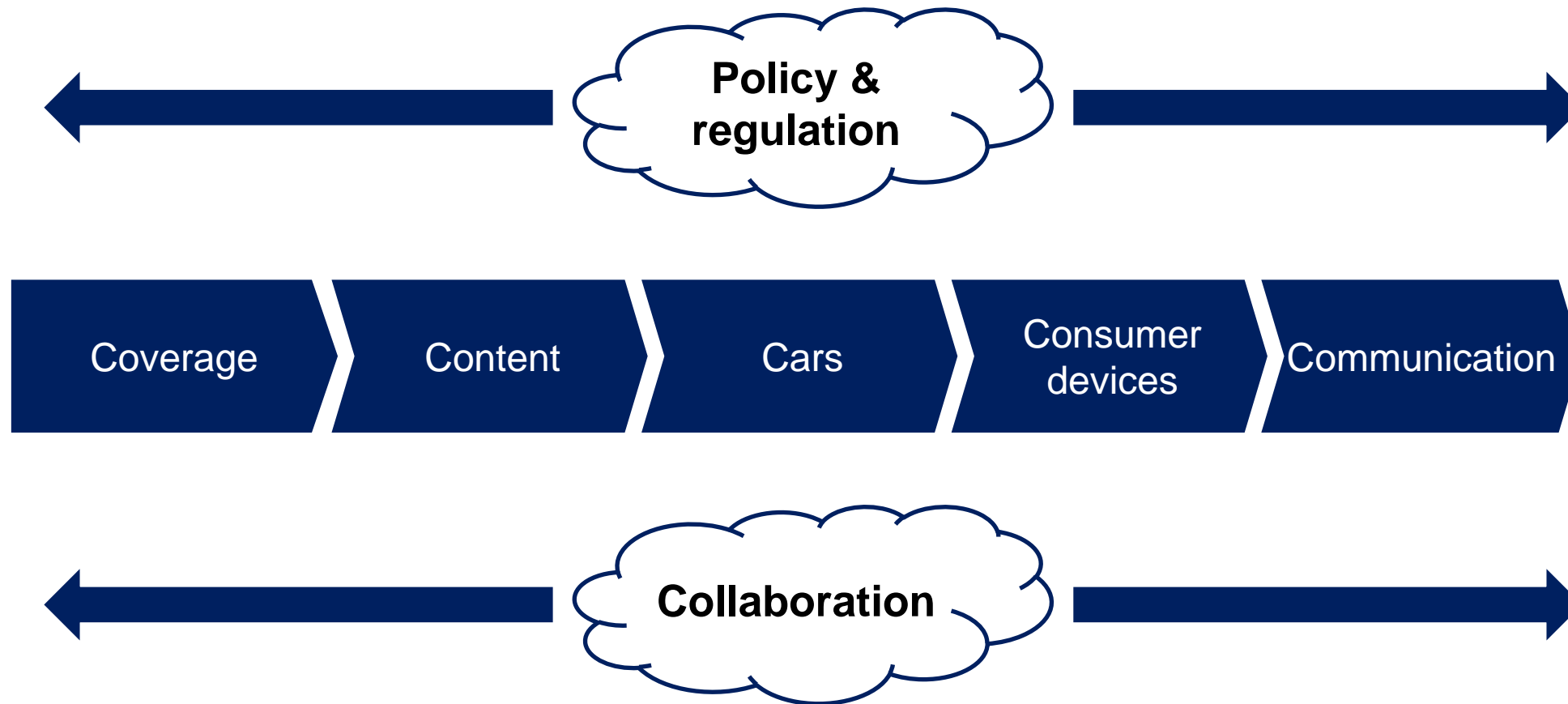
Collaboration between stakeholders is essential

Digital radio partnerships



- 1 Policy commitment and regulatory frameworks
- 2 Collaborate on technology – compete on content
- 3 Joint industry body to develop strategy and marketing plans

Keys to success: the “five Cs”



Conclusions

- 1 DAB+ is core future platform for radio in Europe and Asia Pacific
- 2 It has clear benefits for broadcasters, listeners and society
- 3 The template for success is well established – now is the time to move