

EXECUTIVE SUMMARY: WorldDMB Global Update

Digital radio broadcasting using the DAB family of standards

Global overview

Digital radio is making significant advances across Europe with national services now firmly established in the UK, Norway, Switzerland, Denmark, Germany and Netherlands – all with coverage levels of over 90%.

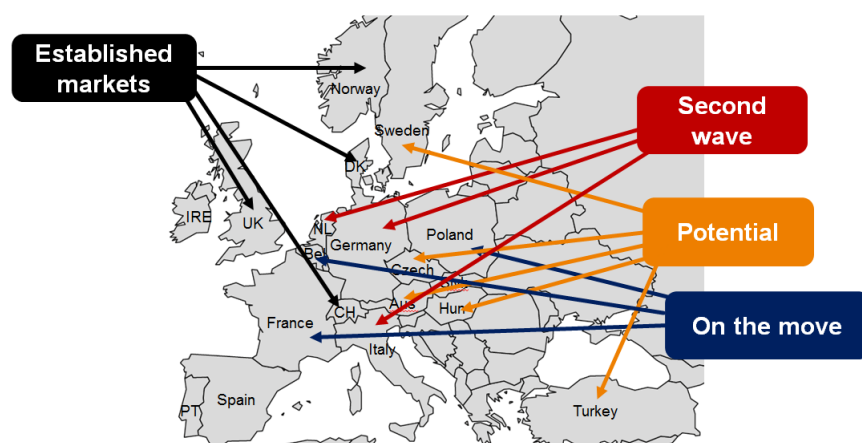
Recent months have seen several important developments for DAB digital radio:

- Norway will switch off FM in 2017
- Switzerland has announced its plans for DSO (Digital Switchover) between 2020 and 2024
- In Germany, following public broadcaster ARD's long term commitment to DAB+ in November 2014, the Ministry for Transport and Digital Infrastructure has made clear its strong support and has established a new cross-industry Steering Board to drive forward the adoption of digital radio
- The UK has launched a major programme to build out national and local DAB coverage, and the licence for a second national commercial multiplex has been awarded, with up to 15 new stations on air in early 2016.
- Denmark has issued a clear roadmap for digital radio, with a transition to DAB+ by end 2016 and a decision on DSO when 50% of listening is digital
- The Netherlands has seen the launch (Sept 2013) and strong marketing of national DAB+ services. The next phase of development takes place in 2015 with the launch of regional services.
- In Italy, in March the regulator AgCom issued licences in three new regions; the coverage of national services is being extended in the South of Italy and Sicily and a plan of frequencies for local digital radio in 40 new regions has been published and AgCom will most likely publish the rules to extend DAB+ services in the new local areas by this summer.
- In France, the regulator CSA has issued a report in favour of digital radio – with plans for services in several new cities (following the launches in 2014 in Paris, Nice and Marseille).
- In Sweden, the Government adviser has proposed a roadmap for DAB+; this roadmap is being reviewed by the Swedish authorities.
- In Poland, Polskie Radio has extended coverage of its DAB+ services to 53%
- In the Asia Pacific region, Australia continues to lead the way – with DAB+ household penetration rising to 23%

Europe

Pan-European support for digital radio is building. The European Broadcast Union (EBU) has called for the adoption of digital broadcast radio across Europe¹ and for the inclusion of digital receivers in all radio devices². At the same time, Government administrations are looking to build cross-border links to develop a European consensus about radio's digital future.

Figure 1: Digital radio in Europe



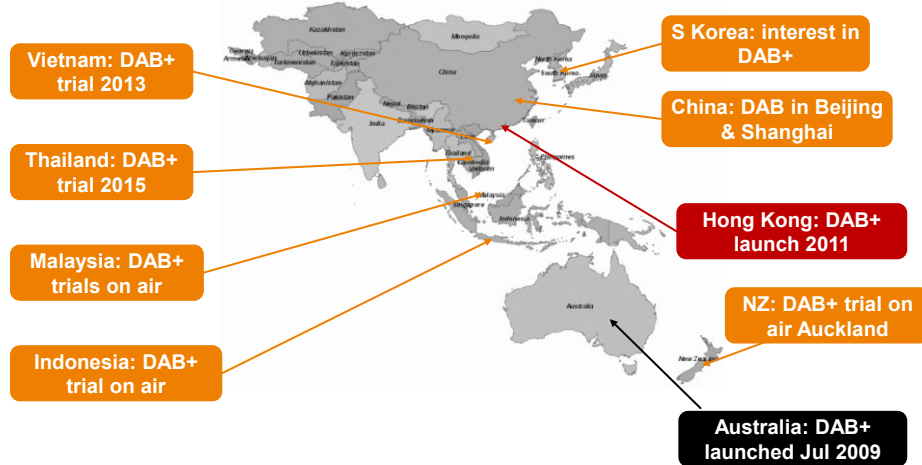
¹ Recommendation R138 <https://tech.ebu.ch/docs/r/r138.pdf>

² <http://www3.ebu.ch/cms/fr/sites/ebu/contents/programming/radio/digital-radio/welcome-page/about-euro-chip.html>

Asia Pacific

In Asia Pacific, a similar pattern is emerging. Australia successfully launched DAB+ in 2009, followed by Hong Kong in 2011. Several other markets, including Thailand, Malaysia, Indonesia and Vietnam are now investigating digital radio options. WorldDMB has organised workshops in each of these countries.

Figure 2: Digital radio in Asia Pacific



Digital Switch-Over

Several European markets are considering their long term plans for broadcast radio, including potential Digital Switch-Over scenarios. Norway is the first country to confirm a DSO date (2017); and Switzerland is planning for DSO in 2020-24. WorldDMB has established a working group focused on DSO – the aim being to co-ordinate activities and share best practice. Meetings are attended by representatives from Czech Republic, Denmark, Germany, The Netherlands, Norway, Poland, Sweden, Switzerland and The United Kingdom.

Automotive

WorldDMB has established an automotive taskforce, focused on persuading car manufacturers to install digital radio as standard across Europe and beyond. In Norway 63% and the UK 65% of new cars come with DAB/DAB+ and with territories with digital radio now accounting for 50% of all new car sales in Europe (60% if Italy is included), the time is right to focus on this area.

Figure 3: Percentage share of European new car sales in markets with DAB / DAB+



Marketing and Receiver Specifications

These DSO and automotive initiatives are being supported by closer co-operation between broadcasters and industry focused on the marketing of digital radio and receiver specifications.

An informal group has been established to encourage the sharing of ideas in the areas of branding and promotion. Digital radio is fighting for attention in a world increasingly dominated by players of global scale, e.g. Apple and Google – the aim of these “sharing” initiatives is to help strengthen DAB’s positioning as an international standard. This is particularly important when addressing vehicle manufacturers and the smartphone industry.

In parallel, a group has been established to discuss the creation of consistent receiver specifications in different countries. This is building on work already undertaken in the UK and Germany. Consistent specifications are important for receiver

manufacturers. They also offer countries the opportunity to use schemes, such as the UK's Digital Tick, as a means of demonstrating that receivers are future-ready.

Europe – listed in alphabetical order by stage of development (Established, New, Markets on the move and Potential)

Established markets

Denmark: population 5.6 million

Current position

- DSO when 50% listening is digital, transition to DAB+ by end 2016
- New licences will be available by end 2015
- DAB coverage: 98%
- DAB receiver penetration: more than 45% of households
- 28% of radio listening is digital (Source: DR Media Research)

Prospects

- A roadmap published by the Ministry of Culture (29 April 2015) says FM band be considered closed when at least 50% of radio listening is on digital platforms.
- There is a plan to build a new regionalised multiplex for commercial radio – launching in late 2015 or early 2016.
- No later than 2016, the national single-frequency DAB block now used by public service broadcaster DR will be swapped for two DAB regional frequency blocks presently employed for a single commercial multiplex.
- The proposed frequency swap will also mark the switch-over of all Danish DAB transmissions to DAB+. This increases the total transmission capacity of Danish Radio enough to migrate its nine regional FM-only stations to DAB+, and allow the commercial multiplex to develop further and expand with more national channels.

Norway: population 5.1 million

Current position

- Criteria for DSO have been achieved and DSO is set for 2017
- DAB coverage: 99.5%
- DAB receiver penetration: 58% of households
- Rapid growth follows launch of new digital only station (P1+) in September 2013
- Over 70% of all available car models in Norway offer DAB as standard or optional. The 20 most sold car models in Norway all offer DAB+ as standard or optional. 63% of new cars have DAB.
- There are approximately 3 million cars in Norway, and over 500,000 of these have a DAB radio.
- Digital listening: in Q1 2015, 57% of daily listeners were using a digital device, of that 38% were using DAB (TNS Gallup Digital Radio Survey Q1 2015)
- Ownership of DAB; 58% of all Norwegian households now own one or more DAB-radios (house/car/cabin type). (TNS Gallup Digital Radio Survey Q1 2015)
- Road tunnels: Coverage not completed, but Norwegian road authorities say that all relevant tunnels will have DAB by 2017.
- Local radio: Most Norwegian local radios may continue to transmit on FM for 5 years after 2017. These are outside of the urban areas. 23 local radios will not get their FM licence extended after 2017, however 22 of these are also on DAB+ today. Government support for building local DAB+ infrastructure is under study.

Prospects

- DSO will start in 2017, as the following conditions have now been met:
 1. Public broadcaster must achieve coverage of 99.5% by 2015. Commercial broadcasters on the national network #1 are required to reach 90% of the population.
 2. 50% of listeners must daily use a digital platform before 2015.
 3. There must be reasonably priced, reliable in-car adaptors on the market by 2015. Installers must be widely available.
 4. Added value for the listeners.
- The Ministry of Culture has assessed that these requirements have been met

Switzerland: population 8.1 million

Current position

- DAB coverage: indoor 98%; outdoor 99% - all main tunnels fitted by 2016 - 2019
- Over 60 services available depending on the region – German, French and Italian
- All stations are on DAB+
- 45% of new cars come with DAB+ as standard
- Industry and regulator have handed over to Government a detailed switchover plan
- Nearly 2 million DAB+ digital radio receivers have been sold to date

Prospects

- Industry and the Swiss regulator have announced plans for digital switchover to take place between 2020 and 2024. This will be preceded by a four year marketing campaign to prepare audiences for the switch.
- Coverage of highway tunnels will be finished in 2018/2019

United Kingdom: population 64.1 million

Current position

- National coverage of DAB: 95% of population (rising to 97% by end 2015)
- DAB receiver penetration: 49% of households (RAJAR Q1 2015)
- Digital listening: 39.6% share of total listening (RAJAR Q1 2015)
- Cars: 65% of new car registrations have digital radio as standard (CAP/SMMT Q1 2015). Over 4 million cars on the road are able to receive digital radio (15% of all cars). Digital listening in car is 52%, 16% of hours in-car (RAJAR Q1 2015)

Prospects

- Government has stated “the future of radio is digital”
 - The criteria for setting a date for DSO are:
 1. Digital listening to account for 50% share of all listening hours
 2. Digital coverage for national services must be comparable to FM and local DAB should cover 90% of the population as well as major roads.
 - Current trends suggest the 50% digital listening target will be achieved in 2017
 - A second national commercial multiplex has been awarded, with up to 15 new stations on air in Spring 2016
 - Following commitment to build 162 new DAB transmitters for national BBC services and 182 new transmitters for local DAB services, coverage targets are expected to be achieved by the end of 2016.
 - The digital radio tick mark, which indicates “future ready” devices has been set up and is managed by Digital Radio UK
 - A target date for DSO of ~2020 may be feasible.
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New markets

Germany: population 80.6 million

Current position

- Launched DAB+ in August 2011
- Combined coverage of the ARD (regional) and the national multiplexes is 83.2% of the area and 91.1% of the population. The ARD multiplexes cover 75% of the area and 86% of the population. The national multiplex currently covers 63% of the area and 77% of the population.
- 7.7% of the German population now own an average of 1.7 DAB sets (TNS Infratest 2014).
- Sales of digital radios in Q1 2015 were up 75% year on year (source: GfK) while sales of FM-only devices decrease continuously year on year.

Prospects

- In November 2014, the ARD confirmed its long term commitment to DAB+ as a core element of its radio distribution strategy and highlighted the need for the co-operation of policy makers, regulators and private broadcasters to help secure this digital future.
- In April 2015 the German Ministry for Transport and Digital Infrastructure made clear its strong support for DAB+ and has proposed the establishment of a new steering group with broad representation from all stakeholders. The first meeting of this group is on 17th June.

- The coverage of the national DAB+ network in Germany will be significantly expanded over the next eighteen months.

Netherlands: population 16.8 million

Current position

- DAB+ launched in Sept 2013
- National coverage of DAB+: >95% population coverage
- 28 national services: 18 commercial (9 digital-only), 10 public (5 digital-only).
- On 15 March 2015 3 regional public stations started broadcasting on 9Dsouth (South-west Netherlands).
- On 1 May 2015 9 regional public stations started broadcasting in one or more multiplexes: 6B (7 regional public), 7A (3 regional public) and 9D-north (2 regional public), from 1 September 2015, 8A (6 regional public) will be switched on. From that date all regional public station will be available in DAB+.
- On 1 September 2015 a range of local commercial services (25) will be added to the regional multiplexes 6B, 7A, 8A, 9D-N, and 9D-S.
- Joint marketing campaign “let’s get digital” launched Q2 2014 supported by public and commercial broadcasters and the Ministry of Economic Affairs.

Prospects

- By September 1st 2015 21 services (from 13 regional public stations) will be on air and the regional commercial services will start in all allotments.
- 2016: review on the development of digital radio.
- Depending on success of digital radio, DSO is possible – with potential date of 2023.
- Important indicators: >50% of households own a digital radio and developments in other European countries.
- Public broadcaster NPO will switch off AM on the 1st September 2015 and use DAB+ instead of AM for broadcasting NPO Radio 5.

Markets on the move

Belgium: population 11.2 million

- Currently one nationwide layer in operation, comprising two regional public multiplexes – one for the Northern, Dutch speaking, part (>95% DAB coverage of North population) and one for the Southern, French speaking, part (90% DAB/DAB+ outdoor coverage of South population).
- North (Flanders + Brussels): Launch on May 20th, 2015 of a second layer in DAB+ in Brussels and the surrounding area (25% coverage of the North population) with 7 commercial radio stations as a first step in a community-wide deployment. This brings the total to 7 DAB+ channels (commercial broadcasters), 9 DAB channels (Flemish public broadcaster VRT) and one DAB+ trial channel (VRT). A data channel for traffic information is present (TPEG) on the public multiplex.
- South (Wallonia + Brussels): 7 DAB channels (5 from the French speaking public broadcaster RTBF and 2 from the German speaking BRP), 3 DAB+ trial channels (RTBF) and a data channel for traffic information (TPEG) on the public multiplex. Public funding has been requested to support the updating of the current RTBF DAB/DAB+ network and to launch a second layer, in order to ensure indoor coverage of Brussels and Wallonia for both public and private broadcasters, The aim is to launch in 2017.

France: population 66.0 million

- Digital radio broadcast launched in Paris, Nice and Marseille in June 2014 with services available at launch (Paris, Marseille) or from September 2014 (Nice).
 - 100+ Commercial and Community radio services
 - all of the services on DAB+ but one
- In January 2015 the CSA published a report outlining its support for digital radio. The CSA’s report includes plans to issue licences in several new cities, such as Lyon, Nantes, Strasbourg and Lille in 2015.
- In May 2015 the CSA will launch a public consultation into the deployment of DAB+ in the metropolitan areas of France. Areas under consideration are Nantes, Lyon, Strasbourg, Lille, Bethune-Douai-Lens, Valenciennes, Mulhouse, Metz, Nancy, Bayonne, Le Havre, Brest, Grenoble, Bordeaux, Toulouse Rennes, Clermont-Ferrand, Montpellier and Toulon Rouen.

Italy: population 59.8 million

- Three regular national (two commercial and one public) and 12 regular regional multiplexes on air or planned (Trentino – on air, Alto Adige – on air, Valle D’Aosta – planned, Piemonte – planned, Umbria – planned, Lazio – on air). Coverage is 68% of the population including 4500km of motorways. 200 car models in Italy come with DAB+ as standard.
- Regular services started December 2012 in the Trentino region.
- In May 2015, AGCOM announced their [plan](#) of frequencies for local digital radio in 40 new regions. AgCom has completed the public consultation for the definition of the local coverage areas in Italy. AgCom will most likely publish the rules to extend DAB+ services in the new local areas by this summer.
- In December 2014, AGCOM published Resolution Number 602/14 which outlines the rules for three new regions to be covered by DAB+ digital radio - in the regions of Valle d’Aosta, Torino & Cuneo Province in Piedmont and Umbria. The Italian Ministry of Communication assigned on the 9th of March 2015 the frequency blocks of public, private and local operators for these regions.
- Club DAB Italia and Rai have announced a network extension plan to be completed within 2015. EuroDAB was awarded the second national commercial licence in 2014 (in Trentino).
- A heavyweight industry-funded advertising campaign to promote digital radio to consumers, retailers, car vendors, car dealers and other stakeholders has been under way for over a year.

Poland: population 38.5 million

- Regular multiplexes launched by Polskie Radio so far in Poland’s 18 largest cities and surroundings.
 - Current national population coverage is 53.8%.
 - Services in a further four cities are to be launched by July 2016.
 - A public information campaign from Polskie Radio started in 2015. KRRiT (the National Broadcasting Council of Poland) has launched a website dedicated to digital radio broadcasting.
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Potential markets

Austria: population 8.5 million

- Digital Radio Austria (Verein Digitalradio Österreich) will start a DAB+ pilot operation (with around 12 private stations) on 28 May 2015. Two transmitters will operate as a single frequency network, with one transmitting a 10kW signal and the other 7kW ERP. This test mode is scheduled to last a year and should be extended to a regular transmission.

Czech Republic: population 10.5 million

- Coverage of DAB is currently 58%, with 29 DAB+ services in Band III and L-Band. 12 unique programmes are on air.
- On March 5th 2015 Czech Radio introduced a detailed seven-step plan for its transition to digital radio. The broadcaster will showcase its commitment to going digital by launching a new experimental digital radio service for Prague, reaching 17% of the national population.

Gibraltar: population 30,000

- DAB+ ensembles operate on Blocks 12B and 12C from December 2012. Four Simulcast DAB+ services from the public broadcaster are currently on air and population coverage is 90%.

Hungary: population 9.9 million

- Hungary has chosen DAB+ for its digital radio standard, and there is currently a test multiplex on air broadcasting seven DAB+ radio programs to the Budapest area.

Ireland: population 4.6 million

- National Public Broadcaster RTÉ operates a full-service Multiplex covering 52% of the population in the main cities.
- Commercial trials are on air in Dublin, Cork and the South-East of the country carrying a mix of simulcast and exclusive services.
- Over 400,000 devices have been sold to date and household penetration is 12%.

- Legislation has been in place since 2009 to enable commercial broadcasters to engage with DAB but the broadcasting regulator has not addressed the issue of establishing a regulatory framework to date. It is expected that Ireland will adopt the DAB+ standard.

Latvia: population 2.0 million

- There is one trial local multiplex on air in which covers the capital city, Riga. There are two DAB+ services on air, one is a simulcast and one is exclusive to DAB+. DAB+ population coverage of Latvia is 32%.
- Currently broadcasters in Latvia are awaiting final approval from The National Electronic Mass Media Council (NEPLP) before they can start regular DAB+ transmissions in Riga.

Malta: population 0.4 million

- Over 40 services on the two national multiplexes which include unique digital only stations, MOT, EPG and DLS applications giving 100% coverage.
- By the end of 2012, over 25% of Maltese radio listeners were tuning in via DAB+.

Monaco: population 38,000

- On 28 April 2014, Monte Carlo Radiodiffusion began a trial of 8 DAB+ services in the Principality of Monaco covering the Principality and the coastal areas of France from Menton to Cap d'Antibes. There are currently 11 DAB+ audio services on air.

Romania: population 19.9 million

- A trial DAB multiplex broadcasts four radio services from public broadcaster Radio Romania in Bucharest.

Slovenia: population 2.1 million

- Slovenia's public broadcaster, RTV Slovenia's DAB trial completed Nov 2013. The trial covered the capital city of Ljubljana and central Slovenia and coverage was 22.5%.
- AKOS; Agency for Communication Networks and Services of the Republic of Slovenia has published starting points for the DAB+ network and media public tenders (one network with national coverage). The actual tenders shall be published soon after the finalised text is prepared.

Spain: population 47.3 million

- A total of 18 regular DAB services and one DAB+ test service are on air. Population coverage is currently 20%.
- Spanish Broadcaster Radio Maria started DAB+ test transmissions in Madrid and Barcelona in December 2014.

Sweden: population 9.6 million

- On 2 October 2014 the Swedish Broadcasting Authority awarded 21 national and 4 local / regional commercial radio licences for DAB+. Licences are valid until September 2022 and broadcasting is to begin no later than October 2015.
- In December 2014, the Digital Radio Industry Co-ordinator (appointed by the Government) issued proposals for DAB+, including a roadmap for a Digital Switch-over from 2022 to 2024.
- In April 2015 the Swedish Audit Office presented a report on digital switchover. The report reviewed the technical and economic impact of the digitisation of radio in Sweden and presented somewhat negative conclusions. Broadcasters (all in favour of DAB+) are currently in discussions with Government about the report and the implications for radio in Sweden.

Asia Pacific and Rest of World - listed in alphabetical order by stage of development (Established, New, Markets on the move and Potential)

Established markets

Australia: population 23.1 million

Current position

- Launched 2009 – with services in five major cities: Sydney, Melbourne, Brisbane, Perth and Adelaide (65% of population, 94% of roads in the five metropolitan cities with DAB+ have coverage).
- DAB+ receiver penetration: 23.3% of households in the five cities. 300+ different DAB+ devices on sale. 153k cars with DAB+ as standard have been sold. Over 1,900,000 devices with DAB+ have been sold including line fit automotive sales.

- DAB+ listening: 24.2% of total listening
- Trial services taking place in Darwin and Canberra (extended until 30 June 2015)
- Automotive line-fit as standard in 10% of new cars. 24 Vehicle Manufacturers now include DAB+. Vehicle Manufacturers are promoting DAB+ in marketing collateral and publicity as a selling tool. New vehicle aftermarket products are available starting from 119 Australian Dollars.
- Published a guide to launching a DAB+ trial.

Prospects

- Twelve on channel repeaters to address coverage gaps, continue to be rolled out across the five mainland capital cities which currently have a single high powered transmission (to address coverage gaps).
- Commercial Radio Australia (CRA) and the public broadcasters are working with the Federal Government on a timetable for regional roll out.
- CRA has developed a “best practice” automotive document which addresses some of the implementation/User Interface issues that have been evident in some of the earlier models.

Hong Kong: population 7.2 million

- Regular DAB+ services launched in August 2011. Population coverage is currently 82.8% with the inauguration of a new gap-filler station in November 2014. Another gap-filler station will be put into use in June 2015 taking the coverage up to 84.1% of the population. More than 350,000 devices have been sold.
- There is one regular national multiplex with a total 17 DAB+ audio services on air, four of which are simulcast and 13 exclusive services.

Potential markets

Brunei: population 0.4 million

- In 2007 RTB (Radio Television Brunei, the public and main broadcaster) began a DAB trial, originally to last for five years to include simulcast services. Five RTB stations currently broadcast on DAB in Brunei.
- A task force has been set up within RTB, which is working closely with AITI (Authority for Info-communications Technology Industry of Brunei) on the plans for a commercial launch.

China: population 1.3 billion

- DAB is on air in two cities (Beijing and Guangdong in Band III). Population coverage is 3%. Coverage in Beijing is 20 million people and in Guangdong tbc.
- Beijing: 17 radio services (13 of which are simulcast), four video services, and one Push Radio service, two other data services by Beijing Jolon (commercial broadcaster) on Band III. Beijing Communication Radio is broadcasting traffic information on DAB via TPEG.

Chinese Taipei: population 23.3 million

- Digital radio services have been launched in Chinese Taipei. A DAB single frequency network (SFN) trial is operated by SuperFM (the commercial broadcaster) and covers major cities including Taipei and New Taipei. Coverage is currently at about 21% of the population or about 5 million people.

Indonesia: population 249.9 million

- A decree issued by Ministry of Communication and Informatics Republic of Indonesia (MCIT) states that Indonesia will use DAB+ as its official digital platform on Band III.
- Since August 2013, a DAB+ trial undertaken by the Ministry of Communication and Informatics (MCIT), public broadcaster RRI and the radio broadcasters association has been on air in Jakarta. This trial is to help prepare regulation for digital radio broadcasting (e.g. frequency planning) and broadcasting business models. The first stage of the trial is in Jakarta only – with future plans for RRI to develop its coverage and number of programmes.
- In September 2014, RRI with the support of MCIT will perform an evaluation of the transmitter and coverage in the Jakarta area.

Kuwait: population 3.4 million

- Following a DAB trial that has been on-going in Kuwait City since March 2007 by the public broadcaster Kuwait Radio, preparations are now under way for the second phase of the trial. A decision regarding commercial roll out is expected once all the trials have been completed. Population coverage is currently 90%.

Malaysia: population 29.7 million

- A trial local multiplex was on air in Kuala Lumpur broadcasting 12 DAB+ simulcast services (7 from RTM and 5 from commercial stations). The trial has been suspended since August 2014.

New Zealand: population 4.5 million

- One trial local multiplex is on air and covers Auckland and central Wellington. Population coverage is 22% and content is currently broadcast in a mixture of DAB and DAB+ formats.

South Africa: population 52.9 million

- DAB was adopted as a South African standard by the South African Bureau of Standards (SABS) in 2005.
- Telecommunications & Postal Services Republic of South Africa published a 'National Integrated ICT Policy Review Report' in March 2015. In the report the panel recommends that:
 - The ICASA decision not to make a determination on the switch off of AM and/or FM signals be endorsed, and that the licensing of DRM and DAB services must be facilitated in parallel.
 - Government, together with other stakeholders, must in the meantime focus on trialling technologies, developing a licensing framework, setting aside spectrum, encouraging take-up of receivers (in motor vehicles and in houses) and actively promoting awareness of the technology.
 - ICASA must establish a standard stipulating that all imported devices should have digital radio receivers.
- A licence for a high powered DAB+ trial has been granted to the SABC by the regulator ICASA. The trial which will run for a period of 12 months commenced on the 3rd November 2014 and Sentech is the signal distributor. The licence was applied for by the SADIBA/NAB Digital Radio DAB+ Trial Working Group. 21.5% of the population will be covered by 18 radio channels allowing 40 radio services from the public, commercial and community sectors to participate.
- The Joint SADIBA/NAB Digital Radio DAB+ trial Working Group is currently meeting on a regular basis with members from the automobile manufactures to encourage their participation by providing a number of vehicles fitted with OEM DAB+ receivers.

South Korea: population 49.8 million

- A DAB+ trial on Channel 10B has been on air in Seoul since December 2013. Between four and eight channels are broadcast at 2Kw power. The trial was approved by the Korean Communications Commission (KCC). The tests are performed by Electronics and Telecommunication Research Institute (ETRI), and the process and results of the test are governed by digital radio committee which has members from government, broadcasters, receiver manufacturers, research institutes, and universities.

Thailand: population 67.0 million

- Thailand is currently developing policy. Thailand previously had plans to roll-out digital radio in 2015 preceded by a year-long DAB+ trial. However these plans have been delayed. The Thai regulator, NBTC, is working on the technical aspects to determine how many licences would be made as well as how to launch the multiplexes. Thailand's digital radio will be provided on Band III and the number of digital radio licences should be enough to cover the existing radio broadcasters. Thailand also proposes that in the future Community radio should be on low power FM.
- NBTC has consulted with automotive and OEMS manufacturing vehicles in Thailand to equipped to Digital Radio receivers in automotive in Thailand, radio receiver manufacturers for sourcing Digital Radio receivers. Most of them are ready to support trial/launching on digital radio broadcasting services once NBTC announces roadmap development plan.
- In 2014, NBTC has signed an MOU on a digital radio trial with eight major broadcasters (Royal Thai Armed Forces, Royal Thai Army, Royal Thai Navy, Royal Thai Air Force, Royal Thai Police, Public Relations Department, The Secretariat of The House of Representatives and MCOT) to conduct a yearlong trial of DAB+ digital radio services in Thailand.
- NBTC, together with ITU jointly organized workshop 'NBTC/ITU Workshop on Roadmap for Introduction of Digital Terrestrial Radio Services in Thailand' in December 2014, to introduce Digital Radio technologies, services and a roadmap to all stakeholders.

Tunisia: population 10.9 million

- The National Office of Broadcasting (ONT) invested in a pilot DAB trial from 2008 - 2010. The trial covered the areas of Greater Tunis, the good Cap and areas close to the governorate of Bizerte.
- In March of 2013 the Arab States Broadcasting Union held a DAB+ digital radio workshop in Tunis supported by Italian Public Broadcaster RAI. Following this workshop and with the help of RAI, ONT set up a DAB+ trial using a 500W transmitter from an Italian manufacturer. The ONT DAB trial is still in operation but is no longer supported by RAI.
- The parameters of the current DAB+ trial are as follows:
 - DAB allotments have been assigned in Channels 10 and 12
 - 68dbmV/m field strength chosen for portable indoor reception

United Arab Emirates: population 9.4 million

- 4 DAB+ channels are being broadcasted live across Abu Dhabi as part of the trials GatesAir is running with Abu Dhabi Media. The trial period will be 90 days to start then it is expected to be extended.
- Two Broadcasting Operators of the United Arab Emirates, Arabian Radio Network Dubai and UAE Radio & TV Ajman successfully completed test / trials for T-DAB+ technology in cities of Dubai and Ajman during March 2014 - February 2015. The main purpose was to test the technology for coverage and reception quality. The trial results are very promising. The Telecom Regulatory Authority (TRA) UAE in consultation with all the stakeholders is currently working to prepare a roadmap for introduction of commercial digital radio services in the country in future.

Vietnam: population 89.7 million

- Public broadcaster, Voice of Vietnam trialled DAB+ in Jul 2013. The roadmap for digital broadcasting radio and TV 2020 was granted by the Prime Minister in 2009. Currently VOV is working on a comprehensive project on improving national digital radio transmission until 2020 and anticipates that the roadmap for radio will come after that of television which will be completed on 2025. Currently no services are on air.

About WorldDMB

WorldDMB is the global industry forum for DAB digital radio, facilitating dialogue on all aspects of the implementation of broadcast digital radio based on the DAB / DAB+ standards, from planning and technology right through to consumer marketing, and everything in between. WorldDMB has over 87 members from 27 countries from across all sectors of the industry - regulators, public and private broadcasters, network planners, receiver, chip, car and professional equipment manufacturers and national rollout bodies.

About DAB+ digital radio

There is growing momentum towards the rollout of DAB/DAB+ digital radio across Europe, Asia Pacific, Arab States and South Africa. Over 30 million domestic and automotive DAB/DAB+ receivers have now been sold – with annual sales almost doubling in the last four years. Digital radio has reached a tipping point in Europe with well over 90% network coverage now available in the UK, Switzerland, Norway, Denmark, the Netherlands and Germany, and 65% in Italy. The first countries have confirmed Digital Switchover dates and political commitment towards digital radio is building in many other markets. DAB+ digital radio offers significant benefits to broadcasters and listeners. The technology is tried and tested. Now is the time to embrace the opportunity.