Working Group 1
Update on Digital Radio

Background paper: EPRA/2009/03
Prepared by Deirdre Kevin for the EPRA Secretariat
29th EPRA meeting, Tallinn May 6-8 2009

1. Introduction

Although the majority of EPRA members have competences for the licencing and regulation of radio, this topic has, surprisingly, rarely been under discussion at an EPRA meeting. The issue of "Regulation of Radio: Localness, Licensing, Digitalisation" was discussed at the EPRA meeting in Sweden in 2004. Also in the context of a working group in Sofia in 2007, on the status of digital television and radio implementation, the topic was addressed in the context of DTT (DVB-T) developments. Although the current drive throughout Europe is to develop digital television, particularly over DTT, it appears that the focus of many governments, regulators and industry actors is now turning towards the development of digital radio. Although tests have been carried out in many countries using various standards for broadcasting since the late 1990s, this industry is still under developed. The four strongest markets in terms of consumer uptake are Denmark, the UK, Switzerland and Norway (see table 1). The working group in Tallinn will look at the status of digital radio and provide an overview of the barriers, enablers and alternatives for digital radio. This paper is intended to provide some information on the status of digital radio, in particular digital audio broadcasting in the various EPRA member countries, and also to expand on some of the issues to be addressed.

2.   Technology, standards and the switch-off of analogue radio broadcasting

Unlike the situation with terrestrial television broadcasting, for radio there is no planned common European deadline for a switch-over to digital. The French authorities have addressed this issue by legislating on the technology of receivers, as a driver for migration to digital services. Radio has always been an "anytime, anywhere" media, and particularly important as a mobile medium in cars and other vehicles. Of particular importance therefore, are reception devices and devices in cars. The recent French legislation stipulates that by 2013 every radio (including for cars) in France will be capable of receiving digital radio services, with a three step programme to integrate digital radio into all radio receivers. The recent report of the Ofcom in the UK (Digital Radio in Britain) did not put forward a switch-off date but spoke of the need to migrate to digital audio broadcasting in the next ten years. Although a switch-off date would certainly provide some momentum to the uptake of digital radio, there would need to be a significant development in the market. In its report on digital radio, the Swedish RTVV quoted some criteria for switch-off that were noted by the Norwegian ministry: close to 100% of the population should be capable of receiving digital radio; the services should provide added value for the customers. The UK Ministry of Culture report on Digital Britain proposed that no plan for digital migration would be developed before digital radio listening reaches 50%, and the coverage of DAB reaches 90% and all major roads.

In addition, there are no common standards for digital radio broadcasting. There are a variety of standards being used: DAB, DAB+, DMB (mobile television services), DRM and HD radio (see section 7 for a brief glossary on these standards). In addition digital radio services are available over a variety of platforms: the Internet (mainly via the websites of

radio stations), DTT, cable and satellite. These platforms are limited regarding the availability of mobile access to radio. Web radio is available over mobile phone services but the quality of reception is not always very good. DVB-T can be received on portable receivers, car receivers, mobile phones and USB devices, but it's primarily designed for television reception, thus less appropriate for radio, from different aspects. Currently many countries are using the DAB standard, while others have started trials (Czech Republic, Hungary) or are planning to migrate to the DAB+ standard (Germany). The variety of standards also leads to variety of solutions for the end user, with several types of receivers that support different standards. As with digital television set-top boxes, the problem of whether older equipment is capable of receiving the higher standard transmissions is an issue that is bound to arise. As with the choice of MPEG standards for DVB-T, it looks as if those countries that are just starting initiatives in this area will be those more likely to launch with the newer standards. Press and industry comments stress the need for a rapid move to the higher standard of DAB+ (or DMB) as this is argued to provide a better reception quality.

3.   Public Awareness

As with the development of DTT broadcasting, the issue of public awareness can be seen as vital to the take-up services, in particular DAB services. Digital radio offers many advantages: more space for extra radio services due to more efficient use of spectrum; the possibility to add data services such as EPGs which allow a much more sophisticated search for radio stations; and an option to add multimedia content. From the perspective of marketing, it should be noted that the strength of FTA analogue radio services and the variety of content in this platform, reduces the motivation of consumers (and even existing broadcasters) to adopt digital radio.

While consumers now have a variety of means of reception for digital radio, as noted above, most of these are fixed rather than mobile services. Marketing campaigns have taken place in Norway. A major marketing campaign was also carried out on TV and radio by the public service broadcaster in Denmark. A major marketing campaign is planned in Germany for the launch of services in 2010. The DAB project in Finland ran from 1998 to 2005 and was ended at this time due to a low level of sales of DAB receivers, highlighting the need for promotion of the services. Since then, the Finnish market is relying on DVB-T for digital radio, but it is not received in cars.

Alongside promoting the use of digital radio, some of the more established markets will have additional problems if a move is made to a better quality technology such as DAB+. Consumers will need to upgrade technology, and suitable technology will need to be available in cars and other vehicles. DAB+ receivers will be able to receive DAB broadcasts but DAB receivers will not be able to receive DAB+ broadcasts.

4.   Status of Digital Radio

The table overleaf provides an overview of the current status of digital radio development and is derived from a variety of official and industry sources. It shows, in particular, the four markets that have strongest development with from 15-30% household penetration of services (Denmark, UK, Switzerland and Norway). It is hoped that there will be feedback on the most recent developments from participants in the group. For example, in the case of Germany, although a major launch of DAB+ services has been planned various analysts and experts are sceptical as to whether DAB broadcasting will be successful. Similarly the recent DAB+ tender in Israel received no submissions from applicants, perhaps reflecting a reluctance to invest in, and commit to an as yet undeveloped market.

Table 1: Digital Radio Services and Trials Overview (developed markets on top)

Country	Launch	No. of MUX	No. of radio services	Coverage	Household penetration	Public/ Private	Standards	Recent developments
Denmark		1 national	18	90%	30%	Public (some private)		
United Kingdom	2005 (1995 trials)		415	90%	29,7%		DAB	
Switzerland		4	35	90%	20%			Tender launch 2008
Norway		2 national, 2 regional	26	80%	15%	Public (some private)	DAB (DMB trials)	
Austria	Trials ended 2008		(12)	19%		Public/ private		Working Group launch 2009
Belgium Flanders	1997	1	9	100%		Public	DAB	Tender for 2nd DAB MUX March 09
Belgium Walloon		1	6	100%		Public		
Croatia	1997			20%		Public		
Finland	1998-2005							Services ended 2005
Czech R.	2007 trials		5	12%		Public/ Private	DAB and DAB+	
Estonia	2000 trials		4					
France	1996-2005 DAB tests.	1 national 30 regional	113	20%		Public/ Private	DRM, DMB, DAB, DAB+	Tender launched 2008. DMB and DRM selected as standards.
Germany		15 regional 5 local	120	85%		Public/ Private	DAB (DAB+, DRM+ trials)	Plans for major launch of DAB+ services 2010
Hungary	trials	I	4			Public	DAB and DAB+	Launch of tender for nat MUX DAB+ 2008
Ireland	2007 trials	2	21	44%		Public/ Private		
Israel		1		85%				DAB+ tender ended on March 2009 with no applications.
Italy	trials		73 DAB	75%			DAB, DAB+, DMB	Launch of tender for licenses 2008
Lithuania	2001	1	6	15%		Public		
Malta	2008	1	48				DAB+	New services being licensed
Netherlands		3	9	70%		Public		2 DAB MUX tender 2009.
Poland			5	5%		Public		
Portugal	1998	1	6	75%		Public		
Spain	1998	5 (3 national, 2 regional)	29	52%				
Sweden	1995		7	35%				DAB	Agreement to move to DAB+
Slovenia	1998 trials					Public	DAB	

Data from countries varies in date, from second half of 2008 to early 2009. Sources: World DAB Forum; EPRA member reports; Ofcom Radio in Digital Britain submission; Swedish RTVV Future of Radio report; Digital Radio Ireland website; DAB Switzerland website;

5. Pushing forward the development: obstacles and enablers

- A recent submission on this issue of the Ofcom in the UK stressed several important factors for the development of digital radio, which included: the need for the involvement of a variety of industry actors in order to **provide an attractive range of services**, (in particular commercial services to balance those provided by the BBC). The concept of **added value of services** has also been stressed by the Norwegian Ministry responsible for development of digital radio (RTVV report).
- the need to **address the costs for smaller media outlets, and local and community radio** services for upgrading to digital services (Ofcom report, and noted as an issue for commercial services in Denmark). Also of importance are the **costs for commercial radio to broadcast simultaneously on FM and DAB**, one of the factors leading to the end of broadcasts in Finland;
- likewise there are concerns regarding the **costs for public service** to digitise radio services with the German KEK recommending less investment in this in 2008 (German EPRA national report October 2008).
- As noted already, the French have legislated regarding the development of digital radio receivers, as one method of pushing forward the development and take-up of these services, by **placing a deadline on the availability of digital receivers especially in cars**. According to the report of the Swedish authority, the European car industry is assuming that DAB+ receivers will be standard in cars from 2012 (RTVV, p 60);
- **upgrading to DAB+** (or other high quality standards) as soon as possible, in order to provide better reception and greater channel capacity, as is the plan of the German regional governments to roll out national services in DAB+ standard from 2010, and also as agreed by the Swedish radio industry;
- the need to continue **simultaneous FM broadcasting** in the short to medium term (Swedish radio report);
- the importance of **establishing a task force** to coordinate the various stakeholders, improve the quality of development of services, promote public awareness, and plan for migration to digital (as suggested by the UK Ministry of Culture in its recent report);

6. Questions to be addressed

The working group will address the following issues:

- Considering the alternatives for digital radio (notably internet radio, and radio via DVBT), is it necessary and valid to launch an independent infrastructure for digital radio?

- Is there a need for a common approach and standardisation in Europe regarding digital radio? What are the problems with the lower standards of DAB versus the new DAB+standard? Are there policies regarding end receivers, particularly mobile (in cars etc.)?

- Would a fixed European switch-off date for AM/FM broadcasting and migration to digital radio help to develop the market (as has been the case for DTT)?

- Who could be the main stakeholders to foster and push digital radio forward (e.g. public broadcasters, mobile operators, governments) and what their incentives are?

- Have there been initiatives regarding public awareness campaigns and information campaigns promoting digital radio?

7. A brief glossary on the standards relevant to digital radio

DAB: Digital Audio Broadcasting: a method for the digital transmission of radio signals for mobile reception, developed by EUREKA project 147.

DAB$^+$: Update based on the new audio coding technology HE-AAC v2 (also known as AAC+ or MPEG-4).DAB$^+$ is backwards compatible to the current DAB standard. DAB, DAB$^+$ and DMB are all part of the Eureka-147 family of standards.

DAB$^+$ upgradeable: a DAB receiver is called DAB $^+$ upgradeable if it can be upgraded via USB to a DAB $^+$ receiver.

DMB: Digital Multimedia Broadcasting: method for the digital transmission of multimedia signals (especially video services) for mobile reception. DMB is part of the same family of standards as DAB and DAB$^+$. Digital Multimedia Broadcasting (DMB) is a video and multimedia technology based on DAB. DMB is currently the world's most successful mobile TV standard.

DRM: Digital Radio Mondiale (DRM) is the universal, openly standardised, digital radio system for short-wave, medium-wave and long-wave - digital radio for the radio frequencies below 30MHz (that is the AM frequency band). It has been endorsed by the ITU.

DRM +: is the project to extend the DRM standard to higher frequencies in the broadcasting bands between 30 and up to 108 MHz ; primarily Band I and Band II (i.e. the FM band also).

HD Radio: the standard commonly used in the USA allows the transmission of AM and FM radio with simultaneous analogue and digital transmission.

Sources:
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