INFORMATION NOTE

Digital Audio Broadcasting in Finland and Sweden

1. Background

1.1 The Panel on Information Technology and Broadcasting, at its meeting on 9 January 2006, requested the Research and Library Services Division to provide information on the development of digital audio broadcasting (DAB) in Finland and Sweden. Finland and Sweden launched their respective DAB services in the 1990s, employing the T-DAB (terrestrial digital audio broadcasting)[1] technology for transmission of the digital services. In 2005, Finland closed down its T-DAB transmission network and Sweden announced to freeze expansion of its T-DAB network.[2]

1.2 The purpose of this information note is to provide the Panel with information on the development of DAB in Finland and Sweden, including the setback in the roll-out of T-DAB networks in these two countries.

2. Development of digital audio broadcasting in Finland

2.1 DAB was introduced in Finland in 1998, when the national public service broadcaster, YLE, launched the first digital channel using the T-DAB technology to broadcast news and current affairs radio programmes. As a state-owned broadcasting company, YLE subsequently launched its second and third digital channels in 1999, and further expanded its T-DAB network in the ensuing years to cover 40% of the Finnish population through operating two multiplexes[3], one national and one regional.

---

1 T-DAB is a technology for digital terrestrial radio broadcasting, as against the conventional analogue "amplitude modulation" (AM) and "frequency modulation" (FM) technologies. T-DAB is also known as digital audio broadcasting or DAB in Finland and Sweden. In order to avoid confusion, the term "T-DAB" is used consistently throughout this information note.

2 See European Radiocommunications Office (2005).

3 The T-DAB technology enables a number of signals or streams of information to be digitally combined and transmitted as a single, complex signal (known as "multiplex") over one frequency block. A multiplex is able to carry several stereo and/or mono radio channels, as well as data and multimedia services.

2.2 According to YLE, the development of the T-DAB technology in Finland has not proliferated as expected. YLE was the only T-DAB broadcaster in the country, as the costs of setting up a new radio distribution network had held back private investment in T-DAB. In addition, only a few hundred digital radio receivers were sold in Finland due to the lack of affordable models available for consumers. Against the above background, YLE decided to suspend distribution of its digital radio services by the T-DAB technology at end-2005. Nevertheless, YLE states that it may resume T-DAB transmission if international developments lead to the adoption of the technology as a pan-European distribution standard.

2.3 After the closure of its T-DAB network, YLE has continued its DAB services via digital television and the Internet. YLE is now exploring what appropriate multimedia distribution technology could be employed for the transmission of its digital services. New possible technologies considered by YLE include DVB-H (Digital Video Broadcasting – Handheld) and DMB (Digital Multimedia Broadcast).[4]

3. Development of digital audio broadcasting in Sweden

3.1 DAB was launched in Sweden in 1995, when the national public service broadcaster, Swedish Radio, was licensed to operate trial broadcasting with the T-DAB technology. Swedish Radio has been the only T-DAB broadcaster in Sweden since then, as no commercial licences have hitherto been issued by the Swedish government for T-DAB transmission.[5]

3.2 Swedish Radio originally provided its DAB services through two multiplexes: one national and one regional. The coverage was 85% of the Swedish population for national transmission and 35% for regional transmission. In 2002, Swedish Radio cut back its T-DAB transmission to four major cities in response to the government's decision to reduce the amount of funding allocated for DAB services. The cutback in digital transmission resulted in only 35% of the Swedish population being able to access DAB services and the incentive for people to buy a digital radio receiver decreased accordingly.

---

[4] DVB-H is a technical specification for bringing broadcast services to handheld receivers, whereas DMB is a digital transmission system for sending data, and radio and TV programmes to mobile devices such as mobile phones. See Wikipedia (2006).

[5] According to the Ministry of Education, Research and Culture, commercial radio operators have chosen not to participate in T-DAB as they consider the economic conditions are not sufficiently favourable for the launch of the technology in Sweden.

3.3 In 2002, the Swedish government initiated an inquiry into the prospects for DAB in the country. The first stage of the inquiry was concluded in April 2002, resulting in the setting up of a parliamentary committee to conduct a comprehensive analysis and present a position on the future of digital radio in Sweden. In February 2004, the parliamentary committee presented a report proposing a gradual expansion of the T-DAB technology and provision of incentives for the private radio industry to initiate digital broadcasting. The report also added that the transition from analogue FM radio to digital radio would probably take 15 years.

3.4 However, the Swedish government announced in December 2005 that it decided not to consider the expansion of the T-DAB technology and the switching from analogue FM radio to T-DAB. As such, the Swedish government has rejected the proposed gradual transition from FM broadcasting to T-DAB and the long-term goal of full digital switch-over as suggested by the parliamentary committee.

3.5 According to the Swedish government, the T-DAB technology is being used in many other European countries with limited success. Indeed, there are a number of different technical standards available or currently being developed for distribution of digital radio services. As such, there is no reason for Sweden to choose any particular technology for future radio distribution. In addition, while the T-DAB technology provides a wider choice of radio services to listeners, the Swedish government considers that there is no basis for arguing that more channels would lead to more widespread radio listening.

3.6 Furthermore, the cost of replacing the analogue radio receivers currently in use is another concern for the Swedish government to switch off the FM network. At present, there are about 25-30 million analogue radio receivers in Sweden, which would not work under the digital environment. In addition, the Swedish government is not prepared to bear the costs of running the FM and T-DAB networks in parallel, whereby identical audio services could be broadcast to both analogue and digital radio receivers.

3.7 As further explained by the Swedish government, its decision to freeze investment in T-DAB does not mean exclusion of any form of digital radio distribution. It has commissioned the Radio and TV Authority, the state licensing and supervisory authority in the media field, to study the development of DAB in Scandinavia and around the world. The study will take three years, and the Radio and TV Authority will produce a final report and recommendations on the long-term development of digital radio in Sweden.

3.8 The government's decision on the T-DAB technology has not affected the provision of DAB services by Swedish Radio, as the national public service broadcaster has decided to maintain the services in 2006. However, Swedish Radio has not decided whether to continue the services in 2007. Meanwhile, it is broadcasting and testing different technologies for digital transmission, including podcasting[6], DVB-H and DMB.

Prepared by Michael YU
22 June 2006
Tel: 2869 9695

[6] Podcasting is the method of distributing multimedia files, such as audio programmes or music videos, over the Internet using the formats appropriate for playback on mobile devices and personal computers.

References

1. European Radiocommunications Office. (2005) *Status of the Implementation of T-DAB in the CEPT Area*. Available from: http://www.ero.dk/BEFA0060-25E4-45B5-9F6A-9B960060F1E4?frames=no& [Accessed 16 June 2006].

2. Government Offices of Sweden. (2005) *Digital Radio and Television*. Available from: http://www.sweden.gov.se/sb/d/3011/a/19028 [Accessed 16 June 2006].

3. Ministry of Education, Research and Culture. (2006) *Fact Sheet: Digital Radio Distribution.* Available from: http://www.sweden.gov.se/content/1/c6/05/58/18/8676a777.pdf [Accessed 16 June 2006].

4. Nordic Digital Radio Development: No Agreement on Common Standard. (2005) *Nordic Media Policy.* Available from: http://www.nordicom.gu.se/eng_mt/minletter.php?id=48 [Accessed 16 June 2006].

5. Peter Fleming Consulting. (2006) *Status of DAB Around the World.* Available from: http://www.cab-acr.ca/english/research/06/sub_mar1506_app_g.pdf [Accessed 16 June 2006].

6. Swedish Radio. (2004) *Press Release: Swedish Parliamentary Committee Approves Expansion of Digital Radio*. Available from: http://www.worlddab.org/images/SwedishParliament_feb04.pdf [Accessed 16 June 2006].

7. Swedish Radio. (2005) *Government Turns Down DAB Proposition.* Available from: http://www.sr.se/cgi-bin/mall/artikel.asp?ProgramID=2205&Artikel=555676 [Accessed 16 June 2006].

8. Wikipedia. (2006) *Digital Audio Broadcasting*. Available from: http://en.wikipedia.org/wiki/Digital_audio_broadcasting [Accessed 16 June 2006].

9. World DAB Forum. (2005) *Swedish Government Denies Radio Industry Call for DAB Expansion.* Available from: http://www.worlddab.org/images/WorldDAB-Sweden-final.pdf [Accessed 16 June 2006].

10. World DAB Forum. (2006a) *Status of DAB: Finland.* Available from: http://www.worlddab.org/cstatus.aspx [Accessed 16 June 2006].

11. World DAB Forum. (2006b) *Status of DAB: Sweden.* Available from: http://www.worlddab.org/cstatus.aspx [Accessed 16 June 2006].

12. YLE. (1998) *Press Release: YLE Introduced DAB Broadcasts in October 1998.* Available from: http://www.yle.fi/fbc/media/1-99/yledab.html [Accessed 16 June 2006].

13. YLE. (2005) *Press Release: YLE Abandons DAB Radio Pilot.* Available from: http://www.yle.fi/fbc/press_abandondab.shtml [Accessed 16 June 2006].