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## **OPEN NETWORK PROVISION COMMITTEE**

### **Working Document**

**Subject: Regulatory Treatment of Digital Radio in the Member States -  
Annex (national replies to the digital radio questionnaire)**

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<b>Q</b>	<b>1 REGULATORY FRAMEWORK</b>
A	A. KommAustria-G (KommAustria Act); PrR-G (Private Radio Act); PrTV-G (Private Television Act) For details see 1.1.
B-V <sup>1</sup>	Sources are: the Flemish decrees concerning radio broadcasting and television coordinated on 25/01/95 weblink: <a href="http://www2.vlaanderen.be/ned/sites/media/">http://www2.vlaanderen.be/ned/sites/media/</a> The broadcasting regulation is in general independent of the method of transmission. Only a few regulations are specific for T-DAB( i.e. art. 38 decies §1).
D <sup>2</sup>	For the operation of the network a telecommunication licence of the licence class III is necessary (network operator doesn't mean programme tenderer at the same time). The frequency allocation is made via the Regulatory Authority for Telecommunications and Post (RegTP). The determination of the necessity as well as the programme licencing are made via the individual Bundeslaender .
EIR	No policy decision has yet been taken to introduce digital radio in Ireland.  Early in 2002 the Minister for Arts, Heritage, Gaeltacht and the Islands received a report on the introduction of digital radio in Ireland from an advisory forum which included representatives of public and independent broadcasters along with regulators. The report recommended the development through a planning and consultation process of a framework for the introduction of digital radio in Ireland. The recommendations in the report are being considered by Government at present.
IT	The document which will define the rules for the release of the relevant digital radio licenses and authorisations will be issued by the Italian NRA at the end of September 2002. Three months before (end of June 2002) the Italian NRA will approve the frequency assignment plan for terrestrial digital radio.
L	Existing: a) modified law of 27 July 1991 on electronic media; b) modified law of 21 March 1997 on telecommunications Planned: a) New European regulatory framework to be implemented by 2003 New law on electronic media to be adopted by end 2003
NL	In the Netherlands radio is regulated in the Telecommunications Act and in the Media Act. There is no specific regulatory framework for digital broadcasting.
SV	Digital radio broadcasting in Sweden is regulated in the framework given in The Constitutional Freedom of Expression Act (1991:1469), The Radio and TV Act of 1996 (1996:844) and The Ordinance on Digital Radio Broadcasting (1995:1020). So far only one licence has been awarded: to the public broadcaster (Sveriges Radio, SR). The development of digital radio in Sweden has been slower than expected since the start in 1995. There may be many reasons for this, but to our opinion two major problems have been the lack of receivers at reasonable prices and the lack of private broadcasters and new services in the digital radio offer. We will come back to this in the following answers. An investigation is being carried out at present on the future regulation on digital radio in Sweden. A special investigator has been appointed and his report will be official in mid April 2002. There will probably be another – Parliamentary – committee appointed later this year. This Digital Radio Committee will make its proposals in December 2002. Since many of the questions in this questionnaire will be discussed in the investigation, we have sometimes found it difficult to give an answer to the questions. Telecommunications Act (1993:597) contains provision governing telecommunications activities. Telecommunications activities is defined as conveyance of telecommunications messages via telecommunications networks or the provision of network capacity for such activities. Telecommunications activities does not mean broadcasting of sound radio programmes to the public. The Radio Communication Act contains provisions governing the use of radio waves for communication purposes.

<sup>1</sup> Answers of the Flemish Community.

<sup>2</sup> The German reply is both in English and German (the latter at the end of the Annex). The English text is a rough translation of the original German text.

<b>Q</b>	<b>1.1 Relevant measures (please provide legal/ administrative references and web links if available)</b>
A	As stated in section 2 KommAustria Act the Austrian Communications Authority, KommAustria, has to administer matters pertaining to the regulation of broadcasting. In particular it has to issue broadcasting licences, licences for operating the technical equipment for broadcasting and to supervise private broadcasters. As per Para 21 PrTV-G (Private Television Act) the regulatory authority KommAustria has to work out a concept for the introduction of digital broadcasting in Austria. KommAustria will be supported by the so-called " <a href="#">Digital Platform Austria</a> ". This platform of industry, relevant organisations of the sector and consumer organisations has been founded on 29th January 2002. As per Para 4 Private Radio Act, the admission to operate terrestrial analogue radio programs also authorises the licence holder to disseminate on a trial basis the program approved in the licence for the purpose of testing digital transmission technologies following the permission under the Act by the regulatory authority. Digital Plattform Austria: <a href="http://www.rtr.at/web.nsf/deutsch/Rundfunk~Digitale+Plattform+Austria">http://www.rtr.at/web.nsf/deutsch/Rundfunk~Digitale+Plattform+Austria</a> KommAustria Act (English version): <a href="http://www.bka.gv.at/medien/kogeng.pdf">http://www.bka.gv.at/medien/kogeng.pdf</a> Private Television Act (German version only) <a href="http://www.bka.gv.at/medien/privatfernsehgesetz.pdf">http://www.bka.gv.at/medien/privatfernsehgesetz.pdf</a> Private Radio Act (German version only) <a href="http://www.bka.gv.at/medien/privatradiogesetz.pdf">http://www.bka.gv.at/medien/privatradiogesetz.pdf</a>
D	
EIR	The main piece of legislation for broadcasting is the Broadcasting Act 2001 (No. 4 of 2001) Web Site: <a href="http://www.irlgov.ie/bills28/acts/2001/a401.pdf">http://www.irlgov.ie/bills28/acts/2001/a401.pdf</a>
ES	La Radio Digital (RD) está regulada básicamente por:  <ul style="list-style-type: none"> <li>- Disposición adicional sexta: Requisitos para poder ser titular de una concesión de algún servicio de radiodifusión sonora, de la Ley 31/1987, de 18 de diciembre, de Ordenación de las Telecomunicaciones y Artículo 26: Aplicación con carácter específico para los servicios de radiodifusión sonora;</li> <li>- Disposición adicional cuadragésima cuarta: Régimen jurídico de la radiodifusión sonora digital terrenal y de la televisión digital terrenal de la Ley 66/1997 de Medidas Fiscales, Administrativas y de Orden Social;</li> <li>- Real Decreto 1287/1999, de 23 de julio de 1999, por el que se aprueba el Plan Técnico Nacional de la Radiodifusión Sonora Digital Terrenal;</li> <li>- Orden de 23 de julio de 1999 por la que se aprueba el Reglamento Técnico y de Prestación del Servicio de Radiodifusión Sonora Digital Terrenal.</li> </ul> Páginas web: <a href="http://www.setsi.mcyt.es">www.setsi.mcyt.es</a> . <a href="http://www.mcyt.es">www.mcyt.es</a> . <a href="http://www.rtve.es/dab">www.rtve.es/dab</a>
FIN	<a href="http://www.mintc.fi/www/sivut/english/tele/massmedia/1998_744.htm">Http://www.mintc.fi/www/sivut/english/tele/massmedia/1998_744.htm</a>
IT	The National Allocation Plan foresees the introduction of T-DAB in VHF-III band and in a UHF L-band, and of S-DAB in UHF L-band.
SV	Government Bill on Digital Radio Broadcasting (1994/95:170) <a href="http://riklax.riksdagen.se/htbin/thw/1993/94:K209?\${BASE}=PROPARKIV9495&amp;\${THWIDS}=2.81101679786896474&amp;\${HTML}=PROP_DOK&amp;\${TRIPSHOW}=format=THW&amp;\${THWURLSAVE}=81101679786896474">http://riklax.riksdagen.se/htbin/thw/1993/94:K209?\${BASE}=PROPARKIV9495&amp;\${THWIDS}=2.81101679786896474&amp;\${HTML}=PROP_DOK&amp;\${TRIPSHOW}=format=THW&amp;\${THWURLSAVE}=81101679786896474</a> (only in Swedish!) Telecommunications Act is found (in English) <a href="http://www.pts.se">www.pts.se</a> Radio and Telecommunication Act (also in English) <a href="http://www.rttv.se">www.rttv.se</a> Radiocommunication Act is found on <a href="http://www.pts.se">www.pts.se</a> (not in English) (Radio and TV Act will be available in English within a few weeks at <a href="http://www.rttv.se">www.rttv.se</a> )
<b>Q</b>	<b>1.1.1. Legislative measures (laws, decrees, etc) adopted at national, regional or other level.</b>
A	See 1.1
B-V	The Flemish decrees concerning radio broadcasting and television coordinated on 25/01/9 ,modified by decree of 01/12/2000,foresee that the private national broadcasters can –as soon as it becomes possible – broadcast not only in FM but also terrestrial digital. The Flemish authorities will develop further decisions concerning T- DAB when the available spectrum, also in L-band, is known. The purpose is to come to a maximalisation of T-DAB and a balance between commercial and public initiatives.
D	<u>Federation (telecommunications law):</u> Telecommunications law (TKG) Information and communications service law (IuKDG) frequency range assignment plan ordinance (FreqBZPV) frequency use plan formulation ordinance (FreqNPAV) frequency assigning ordinance(FreqZutV) <a href="http://www.bmwi.de">www.bmwi.de</a> ; <u>Bundesländer (broadcast and/or media law):</u> Radio broadcasting is essentially regulated by the Bundesländer, whereby the individual regulations of the Länder partly clearly differ, so that it's very difficult to give general information about the legal situation. Convention

	on broadcasting convention on media service Radio regulation and/or media laws of the Länder e.g.: <a href="http://www.alm.de">www.alm.de</a>
DK	A: The Danish Radio and Television Broadcasting (Consolidation) Act – Consolidation Act No. 701 of July 15, 2001. The Act can be found in an English version on the homepage of the Ministry of Culture – <a href="http://www.kum.dk">www.kum.dk</a> Paragraph 1 (1) dot 3) allows broadcasters having been licensed under Chapter 5 to provide programme services by satellite or cable systems to areas exceeding a single local area (i.a. DAB-services). Paragraph 1 (1) dot 4) allows broadcasters having been licensed under Chapter 5 a) to provide national and regional terrestrial programme services (i.a. DAB-services). Paragraph 1 (1) dot 5) allows companies, associations etc. having been licensed under Chapter 6 to provide programme services within a local area (i.a. DAB-services). B: The Act on Radiocommunications and Assignment of Radio Frequencies, Act. No. 232 of 5 April 2000. The Act may can be found in an unofficial translation into English on the home page of the National Telecom Agency, <a href="http://www.tst.dk">www.tst.dk</a> .
FIN	No special legislation on digital broadcasting, but Act on Television and Radio Operations is applied even to digital broadcasting. The Government has confirmed a plan on the manner in which certain frequencies are reserved for digital radio broadcasting.
FR	La communication audiovisuelle est régie en France par la loi n°86-1067 du 30 septembre 1986 relative à la liberté de communication. Elle s'applique en particulier à la radiodiffusion sonore. Afin de permettre la mise en place d'expérimentations limitées dans le temps et dans l'espace, dans le domaine des nouvelles technologies, le législateur a adopté, en 1996, une loi (n°96-299 du 10 avril 1996) relative aux expérimentations dans le domaine technologies et services de l'information dérogeant, notamment, au droit commun de la loi de 1986 pour la radio numérique diffusée par voie hertzienne terrestre. S'agissant de la diffusion de programmes radiophoniques en mode numérique sur le câble et le satellite, ces services sont tenus de conclure une convention avec le Conseil supérieur de l'audiovisuel (article 33-1 de la loi de 1986) . Le mode numérique ou analogique de diffusion est indifférent au regard de ce régime.
IT	The reference documents so far issued are: Legge (Law) 31 luglio 1997, n.249 “Istituzione dell'Autorità per le Garanzie nelle Comunicazioni e norme sui sistemi delle telecomunicazioni e radiotelevisivo” Decreto legge 23 gennaio 2001, n. 5 recante "Disposizioni urgenti per il differimento di termini in materia di trasmissioni radiotelevisive analogiche e digitali, nonché per il risanamento di impianti radiotelevisivi" convertito, con modificazioni, dalla legge 20 marzo 2001, n. 66 Decreto legge 23 novembre 2001, n.411 recante “Proroghe e differimenti di termini”, convertito, con modificazioni, dalla legge 31 dicembre 2001, n.463 “Piano Nazionale di Ripartizione delle Frequenze” (National Allocation Plan) issued by the Ministry of communications.
L	Existing reference: modified law on electronic media of 27 July 1991 and a decree on T-DAB will be adopted
NL	Telecommunications Act; NFP (National Frequency Plan) Media Act
NOR	Broadcasting activity is mainly regulated by: Act no. 127 of 4 December 1992 relating to Broadcasting Regulations No. 153 of 28 February 1997 relating to Broadcasting The Telecommunications Act of 23 June 1995 No. 39 English translations are available on the following URLs: <a href="http://www.smf.no/4.1.0.asp">http://www.smf.no/4.1.0.asp</a> <a href="http://www.smf.no/4.2.0.asp">http://www.smf.no/4.2.0.asp</a> <a href="http://www.npt.no/eng/system/html/index.html">http://www.npt.no/eng/system/html/index.html</a>
POR	<a href="#">Basic Telecommunications Legislation Law no. 91/97, of 1/8</a> – Telecommunications Act <a href="#">Decree-Law no. 381-A/97, of 30/12</a> – Regulates the access to the activity of public telecommunications network operator and public use telecommunications service provider <a href="#">Decree-Law no. 290-A/99, of 30/7</a> – Public Telecommunications Networks Regulation <a href="#">Decree-Law no. 290-B/99, of 30/7</a> – Public Telecommunications Services Regulation <a href="#">Activity of Sound Radio Broadcasting Law no. 4/2001, of 23/2</a> – Radio Broadcasting Law – regulates the access to the activity of radio broadcasting and conducting the same on Portuguese territory <a href="#">Administrative Ruling no. 470-B/98, of 31/7</a> - Public Tender for attribution of Licences for Establishment and Provision of Land Digital Radio Broadcasting Networks - T-DAB Terms and Conditions <a href="#">Administrative Ruling no. 470-C/98, of 31/7</a> - Operation of Land Digital Radio Broadcasting Regulation
SV	See above!
UK	UK Broadcasting Act 1996. Of particular relevance are sections 40 to 72.
<b>Q</b>	<b>1.1.2 Implementing/ administrative measures or decisions adopted by the regulator(s).</b>
A	The public service broadcaster ORF is testing DAB-T in two cities.
D	<u>Federation (telecommunications law):</u> In principle: The telecommunication law of 31 July 1996, in force since 01.08.1996 (BGBL I P. 1120) aims at promoting competition in telecommunications and ensuring throughout the

	<p>country appropriate and sufficient services, as well as at specifying a frequency order. The aims of the regulation also cover among other things the ensuring of an effective and interference-free use of frequencies and taking into account the needs of broadcasting (§ 2 paragraph 2 No. 5 TKG) as well. T-DAB is considered as a fundamental innovation in the area of the transmission of radio programmes, because it makes an interference-free and qualitatively high-quality reception within the respective service areas and in the longer term a more efficient use of the tight radio frequencies possible. In the result of the development phase as well as in the course of the accomplished pilot projects it proved that T-DAB can be considered besides the distribution of digitalised radio programmes as being a multimedia service. Since all substantial basic conditions are given, the Regulatory Authority for Telecommunications and Post makes it possible, through assignment of frequencies for T-DAB from the frequency ranges 174 - 230 MHz (volume III, at present predominantly channel 12) and 1452 – 1467.5 MHz (1.5 GHz-range, the so-called L-Band) the construction of the necessary network infrastructure and thus the ordering system in the Federal Republic of Germany. The available frequencies are specified in the updated T-DAB-frequency block distribution plan of the final acts of the T-DAB-Planning meeting of the CEPT (special agreement of the CEPT), Wiesbaden in 1995. The transmission capacities resulting from it are intended for a mixed use. This means that those parts of the transmission capacities, which are not used for the transmission of digital radio programmes in the scope of responsibility of the Länder, are to be used for other services for the public. By it those services are to be understood, which serve the direct operation or the direct programme company for the radio programmes to be transferred. Operating of transmission lines for the transfer of digitalised radio programmes and other services for the public is subject to licence under § 6 paragraph 2 No. 1 c) TKG and is to be assigned to the licence class 3 after § 6 paragraph 1 No. 1 TKG. For further information see Vfg 110/1998 in the Official Journal of the Regulatory Authority (<a href="http://www.regtp.de/reg_tele/start/fs_05.html">http://www.regtp.de/reg_tele/start/fs_05.html</a>) as well as orders for the opening of the individual frequency assigning procedure <a href="http://www.regtp.de/Länder">www.regtp.de Länder</a> invitation to tender of the radio licences according to media law; situation in the individual Länder s. <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a>.</p>
DK	<p>A political agreement dated March 14, 2000 (dealing with the introduction of terrestrial DAB) mentions the timetable for building up the one national and two regional, terrestrial DAB transmission networks, ref. 1.2.1. It also mentions the distribution of the capacity of the DAB-multiplexes between programme providers. Until the regional networks have been established, the Danish national broadcaster, DR, will take up all the capacity in the national DAB-multiplex. After the establishment of the regional networks, part of the capacity in the terrestrial DAB-multiplex (256 Kb/s) will be given to a commercial broadcaster on the basis of a tender. DR will then take up the remaining capacity in the national DAB-multiplex and – except for 256 Kb/s reserved for another commercial broadcaster – the remaining capacity in both regional DAB-networks. Part of the regional capacity allocated to DR will be used for distribution of DR's regional programmes (9 regions). A translation of the agreement into English is not available.</p>
EIR	None at present
ES	<p>- Orden de 24 de agosto de 1999 por la que se establecen las localidades a cubrir en las fases de introducción de la radiodifusión sonora digital terrenal</p> <p>- Orden de 15 de octubre de 2001 por la que se aprueba la planificación de bloques de frecuencias destinados a la radio digital de ámbito local, en régimen de gestión indirecta, correspondiente al Plan Técnico Nacional de Radiodifusión Sonora Digital Terrenal.</p>
FR	<p>Ces nouveaux services sont soumis à autorisation par le Conseil supérieur de l'audiovisuel après procédure d'appel aux candidatures et font l'objet d'une convention fixant leurs principales obligations. Le Conseil supérieur de l'audiovisuel contrôle le respect de la loi et de la convention.</p>
IT	Delibera 435/01/CONS “Approvazione del regolamento relativo alla radiodiffusione terrestre in tecnica digitale”
NL	To be determined.
NOR	n/a
POR	<a href="#">Notice published on the Diário da República no. 175/98 (III Series), of 31/7</a> - Frequencies for the establishment and Provision of Land Digital Audio Broadcasting Networks (T-DAB)
SWE	No relevant
UK	The Radio Authority has derived a full licensing scheme and related regulations, to implement the requirements of the Broadcasting Act 1990 Full details of these are available at <a href="http://www.radioauthority.org.uk">www.radioauthority.org.uk</a> , within the Notes of Guidance for applicants for digital radio licences.
Q	<b>1.2 Scope</b>

D	Digital radio should be introduced firstly additionally to FM-Radio (VHF) and should replace FM-Radio (VHF) on a long-term basis
EIR	Although no timescales are in place for the implementation of Digital Radio initial frequency planning is being undertaken within the context of the CEPT planning meetings for T-DAB.
ES	En la actualidad está regulada la Radio digital en los niveles: nacional, autonómico y local. Falta el régimen concesional de las licencias de ámbito autonómico y local de las Comunidades Autónomas.
L	Legal framework for granting permissions for broadcasting radio programs by digital multiplex
SV	Terrestrial digital radio broadcasting (national and regional). Special regulation for telecom and distribution of frequencies, cf. Above..
<b>Q</b>	<b>1.2.1 Time: expected adoption of foreseen measures. Duration of adopted measures and review provisions.</b>
A	“Digital Platform Austria” has to deliver a digitisation strategy for DVB-T till the end of 2002. This report will be dealing with DAB-T too.
B-V	The Flemish authorities will further develop decisions when the available T-DAB spectrum, also in L-band, is known.
D	<u>Intended measures on federal level:</u> Possibly extension of the Vfg. 110/1998 will be necessary, in order to realise supply requirement exclusively for media and teleservices (2002/2003), gradual further frequency assigning procedure (according to supply requirement); Preparation of frequency assigning procedure for DRM (starting from 2003/2004)
EIR	See 1.2 above
FIN	A reform of communications legislation in July 2002: separate multiplex licenses would be granted to network operators (multiplex) which would sell capacity for service operators providing either television and radio services or different kind of data services. Broadcasters with a programme license granted by Government would be privileged to buy capacity in digital television networks.
FR	Les autorisations expérimentales sont délivrées pour une durée maximale de 5 ans, jusqu'au 1 <sup>er</sup> janvier 2002. La question se pose aujourd'hui de savoir si cette loi doit être prorogée ou s'il convient d'adopter un régime pérenne pour le DAB.
IT	The National Frequency Assignment Plan for T-DAB will be approved by the Italian NRA at the end of June 2002. T-DAB regulatory document to be issued by AGCOM at the end of September 2002. This document will deal with: license and authorisation characteristics and obligations, awarding criteria, financing issues etc.
L	decree to be adopted by end 2002  new law to be adopted by end 2003
NL	The public license is planned to be granted later this year; the commercial licenses in a later stage. An intermediate non commercial period of two or three years is considered.
NOR	No fixed duration, but the regulatory framework is reviewed from time to time.
POR	Duration of the T-DAB licence: 15 years.
SV	See above.
UK	The Radio Authority commenced licensing national and then local digital radio multiplexes from 1997 onwards. There is currently one licensed national commercial digital multiplex and 34 licensed local radio multiplexes, so far covering around 80% and 45% of the United Kingdom population respectively. The current licensing programme is expected to continue for several more years, depending on the availability of spectrum and eventual demand. The Broadcasting Act 1990, Section 67, provides for a review of digital radio broadcasting on or before the 4 <sup>th</sup> anniversary of the day on which the first national multiplex licence is granted, that is to say on or before 15 November 2003.
<b>Q</b>	<b>1.2.2 Media covered: just radio or other communication services (e.g. TV) also. All radio offerings (public/ commercial, AM/FM...) or just part of it.</b>
A	Mainly DVB-T (see 1.2.1)

B-V	Public and commercial for T-DAB.
D	It exists a broad consent that DAB should be used primarily for the transmission of radio services. T-DAB is suitable in principle for broadcast, media and teleservices. Content offers under public law and private offers are also covered. (Radio, data services (NPAD, PAD), media services)
DK	In the political agreement on terrestrial DAB, the importance of the introduction of new radio services (audio and text services) is emphasized. A maximum of 10% of the capacity in the DAB-multiplexes may be used for other services than broadcasting.
EIR	Not decided
ES	Servicios de audio y aplicaciones multimedia asociadas: tele-enseñanza, información meteorológica gráfica (mapas), información de tráfico. En la actualidad se emiten programas paralelos (contenidos) a los emitidos en los actuales programas de FM.
FIN	From July 2002, networks legislation covers all communications services. Content regulation is applied only to television and radio programmes.
FR	L'article 3 de la loi du 10 avril 1996 permettait d'autoriser "tout ensemble de services de radiodiffusion sonore et de télévision", ce qui excluait la correspondance privée et incluait, outre le DAB, la télévision numérique par voie hertzienne terrestre (pour laquelle un régime pérenne a depuis été adoptée au sein de la loi du 30 septembre 1986) et la diffusion de programmes en MMDS. L'article 3 permettait également de conclure une convention avec tout service de communication audiovisuelle appartenant à ces ensembles de services, c'est-à-dire, outre les services de radiodiffusion sonore au sens strict en DAB, tout autre service audiovisuel non radiophonique (diffusion de données par exemple).
IT	The regulatory document 435/01/CONS covers both digital TV and digital radio (some preliminary aspects). The T-DAB regulatory document be issued by AGCOM at the end of September 2002 will cover digital radio
L	Existing law covers all radio and TV programs, terrestrial and satellite;  Article 19 of this law covers only terrestrial DAB
NL	At present, licensees will be obliged to use >80% of the digital capacity for the broadcasting of radio programmes during the first six years.
NOR	Abovementioned regulations (Act and regulation on broadcasting) apply to all kinds of broadcasting, both television and radio, and do not distinguish between analogue and digital transmissions. They cover terrestrial, cable and satellite transmissions. There is no distinction between commercial or public broadcasting.
POR	Law no. 4/2001, of 23/2, covers just radio broadcasting activity. Television activity is covered by Law no. 31-A/98, of 14/7.
SV	The framework covers broadcasting of sound radio, public and private. The Telecommunications Act covers telecommunication activities.
UK	The licensing of digital radio in the United Kingdom includes radio services, ancillary services (for example programme related information) and additional services. The national commercial multiplex accommodates existing commercial national radio services, on both AM and FM, and seven new services. The local multiplexes accommodate both commercial and BBC (public) services, AM and FM, as well as extra programme services and data services.
<b>Q</b>	<b>1.2.3 Elements in the value chain: production, transmission, others.</b>
A	Transmission
D	Manufacturers (transmission equipments, terminal equipments, chip manufacturers), network operators, programme service providers, public and private content providers, car industry, modes of transport. (Production (of the contents) is to be treated according to the laws of the Länder. The Federal law regulates the transmission service).
DK	According to the political agreement DR is responsible for building up the networks. Broadcast Danmark (a transmission company owned by DR and the other Danish public service broadcaster TV 2) will be in charge of the technical distribution of the signal. The practical administration of the capacity in the DAB-multiplexes etc. is to be

	agreed upon between DR and the commercial broadcasters.
EIR	Not decided
ES	Mayor facilidades en la producción a través de sistemas informáticos y mayor calidad en la transmisión de señales digitales. En España se ha asignando un espectro radioeléctrico específico para las emisiones de radio digital.
FIN	Transmission
FR	Le sens de la question n'apparaît pas clairement.
IT	435/01/CONS has identified three different value chain operators: content provider network provider service provider
L	Broadcasting and transmission
NL	Market driven
NOR	n/a
POR	All the elements in the radio value chain are covered. Production of the contents, digitalisation, codifying, multiplexing, transport and terrestrial broadcasting.
SV	Transmission
<b>Q</b>	<b>1.2.4 Transmission networks: terrestrial, satellite, internet, other.</b>
A	Mainly terrestrial
B-V	The actual transmission network for DAB is the terrestrial network (T-DAB).
D	The distribution of the programmes and data services is operated terrestrial, the supply of the programmes and services can be ensured via different possibilities such as Internet (for services), satellite, microwave links or fixed line connections, no DBSS. Up to now only terrestrial DAB is relevant for the telecommunications regulation in Germany.
DK	Radio is also being transmitted in digital from satellite and distributed through cable networks.
EIR	See 1.2 Above
ES	En España únicamente se transmite en redes terrenales.
FR	La loi du 30 septembre 1986 s'applique à la radiodiffusion sonore par câble et par satellite ; la loi du 10 avril 1996 à la radiodiffusion sonore diffusée par voie hertzienne terrestre en mode numérique.
IT	Both terrestrial and satellite digital radio services are foreseen in the National Allocation Plan (PNRF).
L	The law covers transmission by terrestrial networks, satellite or cable. Different procedures are foreseen depending on transmission mode. Specific procedures for digital transmissions are only foreseen for terrestrial networks because of the necessity to select channels to be included in a multiplex.
NL	Terrestrial, satellite, internet
NOR	(See 1.2.2)
POR	Terrestrial and Internet
SV	The terrestrial network today covers app. 35% of the population. Broadcasting over the Internet (web radio) exists. There are at least between 50 – 100 Swedish web radio stations (no licence required).
UK	All the digital services licensed by the Radio Authority are terrestrially broadcast, deploying the Eureka 147 system. Some services which are carried on the digital radio multiplexes are also rebroadcast over cable and satellite, and for these a separate licence must be obtained from the Radio Authority. UK commercial radio companies believe that,

	where they can afford it, they need to be available on all current platforms, including satellite and internet. However, having said that, they maintain that radio's strength lies, in large part, in its portability and ease of access. Digital radio services thus need to be available via terrestrial wireless transmissions.
<b>Q</b>	<b>1.2.5 Reception modes: fixed, portable, mobile, all.</b>
A	All
B-V	All reception modes
D	All receiving modes with regard to digital radio are intended to be provided in the same high quality, also cables
DK	The Danish terrestrial network is designed for all reception modes.
EIR	See 1.2 Above
ES	En España se contempla en los tres modos se reciba la señal de radiodigital a través de la red terrenal.
FIN	Not defined.
FR	Tous les modes de réception sont concernés, pourvu que la diffusion emprunte, pour le terrestres, des bandes de fréquences affectées à des usages de radiodiffusion.
IT	All
L	All; reception modes do not depend on regulation but on market developments
NL	All
NOR	No distinction made between reception modes.
POR	All
SV	Reception in all categories.
UK	All reception modes are possible for these services Eureka 147 transmissions are robust in all modes and provide excellent reception in cars.
<b>Q</b>	<b>1.2.6 Services: broadcasting content, technical services, data. Free-to-air or pay services, interactive or not, etc.</b>
A	This subject will be discussed within the Digital Platform.
B-V	Broadcasting content is the most important service.
D	s. <a href="http://www.digitalradio.de">www.digitalradio.de</a> and annex 1 According to the present situation through T-DAB primarily radio offers are spread. The offers are not interactively laid out and are for the user free of charge. Data services will be offered primarily in the form of traffic references.
DK	The terrestrial DAB-network will primarily be used for free to air broadcasting services, ref. 1.2.2.
EIR	No decisions taken
ES	En la actualidad únicamente se emite en abierto. Se contempla que en un futuro cercano se emitan servicios de pago interactivos (N-PAD).
FIN	(from July 2002) A programme license granted by Government is needed to operate radio broadcasting as well as a network license is needed to provide network services in a digital multiplex. For data services, no license is needed.
FR	La loi permet de diffuser tous ces services,, même si en pratique les opérateurs ont jusqu'à présent essentielleent privilégié des services de radiodiffusion sonore gratuits.

IT	All
L	Terrestrial: priority for free to air radio , other services and data not excluded.
NL	Free to air radio content. Other services up to the market
NOR	Telecommunications Act deals mostly with the technical aspects, Broadcasting Act mostly with content.
POR	Mostly free-to-air services, included broadcasting content, technical services and data
SV	All kinds of services are possible for digital radio broadcasting, also data services as long as it is defined as broadcasting of sound radio programmes to the public. Today only free-to-air.
UK	Radio broadcasters in the UK are used to providing free-to-air broadcast radio services. At this stage, all services whether broadcasting, technical or data are free-to-air, and have no in-built interactivity. These currently form the mainstay of their digital offering. However, UK commercial radio broadcasters note the impressive content investment in the process of being made by BBC Radio. The commercial sector needs to respond by developing other offers that utilise data transmissions and return paths. This will be particularly important as DAB chips become available inside mobile phones. Major manufacturers are beginning to incorporate these in prototype models and we believe that significant quantities will be available to the public in mid to late 2003.
<b>Q</b>	<b>1.3 Aims, targets, deadlines, etc</b>
D	Establishment of a new future-safe radio system (seen on a long-term basis as the replacement from FM-Radio (VHF)), until 2010 it is expected that the majority of the users/households will use digital radio In addition to the above the aims of the conversion to DAB are: optimal use of the frequency resources, more favourable distribution costs for the individual programmes, possibility for merging of radio offers into convergent applications
EIR	No policy decision has yet been taken to introduce digital radio in Ireland.
ES	Aplicación multimedia de tele-enseñanza prevista para finales de 2002. Aplicación multimedia de datos meteorológicos y de tráfico prevista para finales de 2003.
FR	??????????
IT	Digital switchover is foreseen only for digital terrestrial television (2006). Bands foreseen for digital radio in the Italian National Allocation Plan are different to the bands reserved to FM analogue radio.
L	No regulatory targets or deadlines. Expectations: -terrestrial DAB possibly by end of 2002 or later -satellite: digital radio is already operative on geostationary satellites for fixed reception; (non-geostationary) satellites may be dedicated to digital radio for mobile reception in cars by 2005 -DRM: possible as of market readiness expected for 2004 (medium waves, short waves)
NL	No fixed deadlines yet; Parliament requested “speedy introduction”
SV	Coverage 1998-2001: 85 % of the population with one national multiplex and 35 % of the population with four regional multiplexes in three major and one regional city. Political decision in 2001 (implying that SR must decrease its costs for digital broadcasting while a special investigation and parliamentary committee on digital radio is working, during 2002) gave as a result a decreased coverage: Coverage 2002: 35 % of population with one national multiplex. No coverage with regional multiplexes.
UK	As far as the UK commercial radio industry is concerned, its aims and targets are in the process of re-appraisal thanks to an economic downturn and the slow process by which receivers are designed, produced, shipped and made available to retailers. However, there is every reason to be optimistic about progress in 2002, particularly towards the end of the year. The Digital Radio Development Bureau is the promotion and investment engine that is owned jointly by Commercial Radio with the BBC. It is tasked to “accelerate and co-ordinate the process by which DAB becomes a mass market product.”. This involves co-ordinated on-air marketing and investment in product. Taking DRDB’s plans alongside those that have been disclosed to us by manufacturers, we are confident that somewhere in the order of 200,000 receivers will be made available to listeners across Christmas 2002.
<b>Q</b>	<b>1.3.1 Digital switchover strategies: target dates, requirements regarding population and/ or territory coverage, incentives, simulcast requirements, etc. Duration of simulcast phase, financing of simulcast (analogue and</b>

	<b>digital) during this phase.</b>
A	All these subjects will be discussed within the Digital Platform.
D	The existing situation of FM-Radio (VHF) at the market does not permit neither for consumers nor for content tenderers any short and/or medium-term substitutable introduction of digital radio. With regard to the necessary acceptance by the consumer it should be priority given clearly to a market-driven and complementary introduction of digital radio. Thus for example from the industry developed and in the trade combined receivers present (FM and DAB) support this desired approach in very descriptive kind. Conditions for a successful establishment of digital radio are thereby contents (radio broadcasting + data services), which represent a recognisable auxiliary benefit for the consumer. The future availability of additional covering, which makes the creation of an offer possible, which extends far over the illustration of the previous FM-Bouquets, leads on a long-term basis into a substitution of the similar radio system under circumvention of emotionalised discussions. This should be achieved on a long-term basis within the next 15 years. For institutes under public law the subsidisation of the Simulcast operations will be made via broadcasting fees. Private service providers will be supported by the responsible media institutes of the Länder. Exact statements about scope and duration of the support for private service providers are to be inquired over the individual media institutes of the Länder.. The scarcity of frequencies in the FM-frequency is terminated by transfer onto digital radio. The legal conditions for that switch-over have been already partially set. Thus there is in the frequency assigning regulation of the federation a rule in § 8 paragraph 3, according to which frequencies for the FM-radio are to be revoked until at the latest 2015. Media law regulations of the countries for basic supply are formulated in § 52a paragraph 2 in the newest broadcast convention that the so called basic supply on arbitrary transmission ways can be established.
DK	The terrestrial DAB-networks are built to cover all Denmark (the national multiplex) and the western and eastern part of Denmark, respectively (the two regional multiplexes). Target dates: Regarding the establishment of the networks: The terrestrial DAB-networks are to be completed and in use before April 1 <sup>st</sup> , 2003 (the national network) and April 1 <sup>st</sup> , 004 (the regional networks). (The political agreement mentions October 1 <sup>st</sup> , 2002 and October 1 <sup>st</sup> , 2003 respectively, but a delay of app. half a year is expected and accepted by the parties behind the agreement.) DR has announced completion of most of the nationwide transmitter network in summer 2002 and completion of the regional network in 2003. The tender of capacity for a commercial (digital only) DAB-broadcaster is planned to be held this autumn (2002). No simulcast is required. Both DR and the commercial (both analogue and digital) broadcaster are being given a transmission capacity that allows them to simulcast their analogue programmes, but the capacity may be used for other digital radio services. According to the political agreement on terrestrial DAB, analogue transmission of national and regional radio services is expected to stop within 10-15 years (from 2000).
EIR	To be decided
ES	En España se está transmitiendo en simulcast (FM - RD) debido a que no se justifica una inversión en contenidos diferentes a los emitidos en FM, por el déficit de usuarios y falta de receptores.
FIN	Analogue licenses expire in the end of 2006. No final decision is taken.
FR	Le régime du hertzien terrestre étant encore expérimental, la question du switchover n'est pas pertinente en France. En outre, ces expérimentations doivent intervenir "sur un site géographique limité".
IT	Digital switchover is foreseen only for digital terrestrial television (2006). Regarding simulcast, terrestrial radio bands are separate between digital and analogue services.
L	Target dates: No regulatory target dates; to be decided by the market. Main analogue frequencies assigned until 2010.  Financing of simulcast: financial support of simulcast expenses for the introduction of T-DAB is envisaged
NL	In progress; digital switchover for TV first priority
NOR	The regulatory framework does not demand specific digital switchover or simulcast requirements.
SV	No decisions! (See A 1.)
UK	At this stage in the development of digital radio, no undertaking has been given regarding potential switchover dates. Both the Government and the Radio Authority's view are that the shift from analogue to digital will be at best medium term. However, the legislation requires that a review of take-up is undertaken four years after the launch of the first national multiplex (by November 2003) This review could identify the criteria which might apply to permit such a switch, as one of the ways of encouraging the move from analogue to digital and boosting the digital radio industry. This review will examine the number of receivers in the marketplace and the percentage of households who

	are able to listen to digital radio both at the time of the examination and looking forward UK commercial broadcasters believe that simulcast requirements and incentives are well catered for in existing UK legislation. We find that, as sets improve, coverage difficulties diminish although we accept that further infill transmitters will be necessary over the coming years. Clearly, financing of simulcast transmissions are met out of analogue advertising revenues. We envisage this continuing for at least the next three years and probably longer. CRCA believes that switchover from analogue to digital radio is unlikely to happen all at once across the nation. There may be cases for different switchover dates in various regions. We think it unlikely that <u>all</u> analogue radio transmissions will cease in the foreseeable future. Low-powered stations and those serving remote areas may increase in number and may not be suitable for DAB transmissions.
<b>Q</b>	<b>1.3.2 Other relevant elements in the legal/ administrative measures.</b>
DK	Commercial DAB-broadcasters will have to pay a (presently unknown) fee for the license to broadcast terrestrial DAB-services. In the political agreement it is stated that no fee should be paid before 2005.
FR	Le caractère expérimental du régime juridique retenu portait sur la novation tendant à autoriser un ensemble de services utilisant la même fréquence. Pour le régime de contenu en revanche, les dispositions sont inchangées par rapport à celles auxquelles sont soumis les services de radio de la bande FM, qu'il s'agissait d'ailleurs simplement de rediffuser en mode numérique.
L	Implications of new regulatory framework on electronic communications will have to be assessed. With only one public radio station, public broadcasting cannot play the role of a frontrunner.
NL	FM radio license policy and procedures enjoy political priority at present
NOR	n/a
SV	See A 1.
UK	The Broadcasting Act 1996 gave existing analogue licence holders the opportunity of an automatic renewal of their licences if they were committed to providing a digital radio service on a relevant multiplex. This has proved a significant incentive in encouraging the participation in digital radio of existing established service providers.
<b>Q</b>	<b>1.4 Technical issues</b>
A	The public service broadcaster ORF is testing DAB-T in two cities.
D	Goal: creation and application of recognised international standards with Europe-wide conversion
IT	The Comitato per lo Sviluppo dei Sistemi Digitali has analysed three different aspects regarding T-DAB: Services (including multimedia and interactivity) Planning and coverage aspects Network architectures for contribution and distribution networks, analysis of technical features of digital data receivers.
L	It appears that for Luxembourg the T-DAB model with multiplexes and a transmission network common to several channels is not optimal. Broadcasters would prefer to be able to decide on an individual basis on quality, price and regional coverage of the network and on the timing. They have however created a common structure to coordinate their plans and have confirmed their will, in principle, to go ahead with T-DAB. A mobile operator has also shown interest in operating a network.
SV	(Answers based on information obtained by broadcasters)
UK	All the necessary information is set out in notes of guidances published on the radioauthority website. The principle technical issue for commercial radio digital broadcasters is the amount of spectrum made available. Currently it seems that only 75% of the country's geographical area can be covered by terrestrial digital radio transmissions. We think we need to move towards 95% quite rapidly from 2005 onwards and hope that L-Band and more Band 3 will enable us to achieve this. We understand that the necessary L-Band will be made available and we hope this answers much local need. It's power restrictions made it unsuitable for wide coverage areas, however.
<b>Q</b>	<b>1.4.1 Standards mandated or encouraged for programmes and data: DAB, DRM, telematics standards, etc.</b>
A	T-DAB, DRM under discussion

D	No legal establishment, spectral mask (e.g. in accordance with EUREKA 147) must be ensured. The basis : ETSI EN 300,401 Radio Broadcasting systems; Digital Audio Broadcasting (DAB) to mobile, portable and fixed receivers ETSI TS 101, 756 Digital Audio Broadcasting (DAB); Registered Tables ETSI TR 101 496-1 Digital Audio Broadcasting (DAB); Guidelines and rules for implementation and operation; Part 1: system outline ETSI TR 101 496-2 Digital Audio Broadcasting (DAB); Guidelines and rules for implementation and operation; Part 2: system features ETSI TR 101 496-3 Digital Audio Broadcasting (DAB); Guidelines and rules for implementation and operation; Part 3: Broadcast network Services/ensemble supply : ETSI EN 300, 797 Digital Audio Broadcasting (DAB); Distribution interfaces; Service transport interface (STI) ETSI EN 300, 798 Digital Audio Broadcasting (DAB); Distribution interfaces; Digital baseband In-phase and Quadrature (DIQ) interface ETSI ETS 300, 799 Digital Audio Broadcasting (DAB); Distribution interfaces; Ensemble Transport Interface (ETI) data service minutes: ETSI EN 301, 234 Digital Audio Broadcasting (DAB); Multimedia Object Transfer (MOT) protocol ETSI IT 201, 735 Digital Audio Broadcasting (DAB); Internet Protocol (IP) datagram tunnelling; and/or: ETSI TS 101, 735 Digital Audio Broadcasting (DAB); Internet Protocol (IP) datagram tunnelling ETSI TS 101, 759 Digital Audio Broadcasting (DAB); data Broadcasting - Transparent Data Channel data services: ETSI TS 101 498-1 Digital Audio Broadcasting (DAB); Broadcast website; Part 1: user application specification ETSI TS 101 498-2 Digital Audio Broadcasting (DAB); Broadcast website; Part 2: basic profile specification ETSI TS 101,499 V1.1.1 Title: Digital Audio Broadcasting (DAB); MOT Slide show; Users Application Specification
EIR	To be decided
ES	Estándares utilizados en DAB: MUSICAM (MPEG) Se contempla separación de transmisores de hasta 90 Km con potencia de emisión de 1 KW de PRA. Se contempla un campo mínimo utilizable de 58 dBu Se contempla un BER inferior a $1 \times 10^{-4}$ Las bandas de frecuencia desde el bloque 5A al bloque 13F Anchura de banda 1,536 MHz Se contempla separación de transmisores de hasta 90 Km con potencia de emisión de 1 KW de PRA. Gama de frecuencias: Banda III: 174-240 MHz (en pasos de 16 KHz). Sensibilidad: Banda III: entre -90 y -94 dBm. Respuesta en frecuencia: de 10 Hz a 20 KHz. Relación señal/ruido: entre 72 y 92 dB Distorsión armónica total: inferior a 0.006%. Modos de funcionamiento: Modos DAB I, II, III, IV. Conmutación DAB --FM Pantalla de cristal líquido para la visualización de ficheros gráficos.
FIN	No mandatory standards.
FR	Il n'y a aucune mesure d'ordre réglementaire fixant des standards ou des normes techniques concernant la radio numérique en France. Dans le cadre de la loi sur les expérimentations, les appels aux candidatures du CSA prévoyait l'utilisation de la norme DAB-Eureka 147.
IT	T-DAB standard for digital terrestrial radio S-DAB standard for digital satellite radio
L	Standards are not mandated by law; the use of relevant European or ITU standards is encouraged.
NL	Eureka 147 DRM?
NOR	Standard mandated: DAB
POR	The only mandated standard is EN-300-401 for T-DAB
SV	There is no mandating of standards for digital radio. The public radio broadcaster (SR) and the network operator (Teracom) have voluntarily taken a position in favour of DAB (or other standards adopted by ETSI), but do not exclude the possibility of using other systems for specific purposes. DRM could be of interest for international broadcasting. Within the DVB-T standard there may also be a possibility to broadcast multi-channel sound. It is uncertain whether DAB will include such a service at a reasonable price. SR wants to be able to use any standardized service. At the same time it does not want to take on to broadcast certain, or all, standardized services just in order to increase market for certain manufacturers. SR uses the following services today: Almost all signalling och SI, mentioned in the WorldDAB Forums "Functionality Paper" Sound services: Stereo, mono Message channel PAD: DRC, DLS, XPAD (MOT) MSC Data: BWS (Broadcast Web Site), TPEG And in the future, most likely: EPG (Electronic Programme Guide) XML-based services, developed within the WorldDAB TF Mobile Other services based on file transfer, especially sound files (mp3, RA)

UK	CRCA believes that, to a large extent, "technical quality" standards will be dictated by what consumers want. Poor audio quality will not win listeners.
<b>Q</b>	<b>1.4.2 Service requirements imposed or encouraged: minimum bit rate, ratio content/ data, etc.</b>
A	Not yet decided.
D	No legal establishment "minimum bit rate" depends on the application: - mobile or stationary usable... - data extent - max. cycle time - average access time, etc.. As rough orientation for the customary services are considered: 2... 128 kbps ratio content (in the sense of key contents) basic contents of an offer should be more quickly available, as "edge contents". Here comes the keyword priority management into the play (thus more frequent and quicker sending for important content areas). Examples of key contents: - entrance site in html-service ("base.html") - html-text-sites are more important than embedded diagrams to dispatch (additionally much smaller and therefore it is simpler to send it frequently)
DK	Ratio content/data: a maximum of 10% may be used for other services than broadcasting, see also 1.2.2
EIR	No decisions taken at present
FIN	n.a.
IT	Under study
L	Not foreseen by present regulation; to be decided.
NL	Ratio: radiocontent /data 80/20 for the first 6 years
NOR	n/a
POR	A minimum of 96 capacity units (c.u.) in a total of 144 c.u. granted to each audio programme/broadcaster in the multiplex (6x144 = 864 c.u.) is imposed to the T-DAB network
SV	The broadcasters want to decide for themselves which capacity they want to allocate for each service/channel. There should be a freedom for the broadcaster to design each service, related to the specific requirements for that service. The use of the expression "minimum bit rate" in licences may be necessary if several broadcasters have to share the capacity in one multiplex. The minimum bit rate for each service/channel should not be less than 224 kbit/s. The relationship between sound and data should be regulated as little as possible. Otherwise there is a risk for problems with interpretation of which regulation shall be applicable.
UK	Consumers will eventually decide what is best. At the moment, in the UK, only up to 20% of a digital radio multiplex's bit rate can be used for non-audio services. This is currently sufficient for the non-audio data services which are currently at an early stage. Again, as digital terrestrial radio takes off, it will become clearer what aspects of the various digital radio services available consumers find most useful and attractive.
<b>Q</b>	<b>1.4.3 Transmission: signal strength, electromagnetic interference, other.</b>
A	All values according to the provisions of Wiesbaden agreement, DRM not decided
D	The regulations according to the agreement of Wiesbaden in 1995 are to be used. ETSI: EN 300, 401 TR 101495 TR 101496 TR 101758 ITU: Bs.774-2, BO.789, BS.1114, BO.1130 : In order to ensure availability in the area (99% probability of place), there will be a minimum equivalent "electrical field strength" demanded: In volume III (see also TR 101758) is > 38 dBµV/m. in 1.5 m ue. G. On the topic electromagnetic interference: (See EN 300401)
DK	Eureka 147 is the standard encouraged for T-DAB. Eureka 147 Spectrum Mask (case1) provisionally mandated as limit for unwanted radiation. Transmitter equipment is provisionally required to follow ETS 300 401. Long time requirements are under consideration.
EIR	The values determined within CEPT and the Wiesbaden Agreement will be used in planning.
FIN	Not defined.
FR	La planification est de la compétence de l'autorité de régulation du secteur audiovisuel: le Conseil supérieur de l'audiovisuel.

IT	The technical parameters are those contained in the Wiesbaden Agreement 1995.
L	to be determined in accordance with international regulations as far as necessary
NL	46 Db $\mu$ V/m 1,5 mtrs. High minimum equivalent field strength. 1V max due to EMC measures. Additional indoor TV cable should be 60 Db screened.
NOR	“Regulations of 18 September 1998 relating to technical requirements for T-DAB broadcasting-transmitters” have detailed rules on this subject.
POR	Minimum usable field strength of 58 dB $\mu$ V/m
SV	Current network planning has been made for mobile reception outdoors with relatively good aerial (car radio reception). Indoor reception is for that reason not satisfactory in urban areas without increasing the number of transmitters, especially for transmitting data services that are more sensitive to interference. These problems seem to occur only in the urban areas.
UK	UK Commercial Radio recommends avoiding trying to cram too many multiplexes on the same frequency into a limited geographical area. This focus on low transmission power levels, greatly increases transmission cost and makes transmissions less reliable.
<b>Q</b>	<b>1.4.4 Receivers: requirements imposed or encouraged.</b>
A	As available and produced by industry.
D	No legal establishment See: EN 50, 248 IEC 62,104
DK	CE marking required.
EIR	No decisions taken
IT	no
L	No specific requirements for Luxembourg
NOR	n/a
SV	(See also 1.4.1 above) Some receivers do not meet the requirements of certain standards in all aspects. The ETSI "Guidelines" (ETSI TR 101 496) have solved many but not all problems with how the standard (ETSI EN 300 401) should be applied. There still seems to be uncertainty on how some services are to be presented in a DAB-receiver (e.g. slide show). SR would like DRC (Dynamic Range Control) to be implemented more complete in the receivers, especially for portable and fixed reception. DAB-receivers often contain complex algorithms for synchronizing, demodulation and decoding. Different receivers seem to handle interference in different ways. The problems can be difficult to detect, even for the manufacturers themselves.
UK	No requirements are imposed or encouraged in respect of receivers . It is important to digital service providers that receivers are able to make easy use of programmes and services. Constant dialogue with manufacturers is vital. This is undertaken in the UK by contacts with manufacturers via Digital One (the national commercial multiplex), DRDB and WorldDAB.
<b>Q</b>	<b>1.5 Planning</b>
A	All questions relation to planning will be discussed within the Digital Platform.
B-V	The conversion of T- DAB allotments in band III in assignments is going on. Additional allotments in L-band will be planned during the conference at Maastricht in June 2002.
D	>From a short until medium-term there is a federal development of the DAB of distribution networks (national), as well as the creation of further covering intended. Actually a replacement from FM-Radio (VHF) is aimed at on a long-term basis through digitally radio.
EIR	It is intended to plan for services at both a national and regional level. Currently there are 2 frequency blocks in band III allocated to Ireland for T-DAB. Once decisions are taken concerning proposed coverage areas, number of

	multiplexes etc. more detailed frequency planning will need to be undertaken.
IT	The plan for T-DAB will be approved by the Italian regulatory Authority within the end of June 2002.
L	Overall planning has to be decided. Nevertheless, at present we foresee 2-3 T-DAB multiplexes and we foresee satellite and DRM transmissions
SV	VHF Band III, from 215 to 240 MHz
UK	Planning is undertaken by the Radio Authority. Any tension between the broadcaster and the regulator, just as it is in the analogue world, is mainly caused by the need for good, robust coverage and the conflicting requirement to re-use spectrum elsewhere for other aspirant broadcasters.
<b>Q</b>	<b>1.5.1 Territorial coverage.</b>
A	Two T-DAB coverages on the basis of regions, one on a local basis to be planned in Maastricht in June 2002.
B-V	It is foreseen that the frequency blocks 12A and 6C cover the whole Flemish community and that 11B and 11C cover regional areas of the Flemish community. For the future T-DAB allotments in L-band (Maastricht 2002) the aim is that each provincial area (i.e. respectively West-Vlaanderen, Oost-Vlaanderen, Vlaams-Brabant, Antwerpen and Limburg) is covered by an allotment.
D	Federally with the regional (Länder) and local covers See: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a> (Fundamental telecommunication law establishment in accordance with supply obligation with regard to the market penetration and economy: not territorially, but in relation to the population of the supply area: after 3 years 80 %, after 5 years 90% and after 8 years 95 %.)
DK	See 1.3.1.
EIR	See 1.5 Above
ES	En la actualidad la cobertura es del 50% de la población. Está prevista una cobertura del 80% de la población para mediados de 2006. Cobertura que abarca las 52 provincias.
FIN	For instance, Southern part of Finland (ca. 50 % of the population)
FR	La loi d'expérimentation impose la couverture d'un territoire bien délimité.
IT	The coverage will be non less than 60% of the national territory. The increase of the coverage will be obtained with stations not included in, but compatible with the plan that will be authorized to the operators according to their needs or obligations.
L	T-DAB: - Coverage of Luxembourg territory by Luxembourg T-DAB multiplexes to be widely decided by market actors, i.e. network operator and radio stations - coverage of Luxembourg territory by neighbouring countries multiplexes would be welcomed. DRM: regional coverage Satellite: European coverage
NL	Planned twice national coverage (one national multiplex and one composed of two regional multiplexes) and two regional coverages Band III and 1 time national L-band.
NOR	n/a
POR	90% of terrestrial coverage by 2006
SV	App. 35% of the population.
UK	The national radio multiplex licensed by the Authority and operated by Digital One launched with coverage of 65% of the population of Great Britain, as promised in its licence application. It is developing its transmitter network to provide coverage of 86% of Great Britain by the end of 2002. The Radio Authority expects that the local digital multiplexes which it has so far either licensed or announced its intention to licence will enable coverage of 80% of the United Kingdom, with 63% receiving two local regional multiplexes. UK commercial analogue radio, national, local and regional covers most of the country. Clearly, we wish digital terrestrial transmissions to match or exceed this coverage.

Q	<b>1.5.2 Spectrum: frequencies reserved for digital radio services. Sharing between: radio services, radio and other communication services, operators. Frequency planning (e.g. SFN, MFN). Spectrum capacity reserved for data. Other.</b>																					
A	TV channel 12 and L-Band																					
B-V	Cf. 1.5.1 12A and 6C: target is the coverage of the whole Flemish Community 11B and 11C: regional coverage future L-band allotments: target is that each new allotment is covering on provincial area of the Flemish community. The planning will be done at the Maastricht conference(June 2002. Planning is for SFN.																					
D	Fundamental priority to the broadcasting to practise in individual cases by responsible Bundesland. Afterwards establishment of capacity shares for broadcast, media and teleservices. For T-DAB up to now exclusively SFN-planning See also: www.atlas-digital-radio.de and/or annex 1																					
DK	Reserved: 174 – 235 MHz (Shared with other services). 1452 –1492 MHz (Shared with other services) Please refer to CEPT Wiesbaden Agreement 1995 and Bonn Agreement 1996, CEPT Rec. T/R 52/02, RR Res. 528, WRC-92. Planned: 231,728 – 233,264 MHz, 226,592 - 228,128 MHz, 219,584 – 221,120 MHz.																					
EIR	See 1.5 Above																					
ES	<p>a) En España se contempla la compartición con otros servicios de radio digital y FM.</p> <p>b) En la actualidad existen las siguientes redes:</p> <table border="1"> <thead> <tr> <th>RED</th> <th>COBERTURA</th> <th>DESCONEXIÓN</th> </tr> </thead> <tbody> <tr> <td>FU-E</td> <td>Nacional</td> <td>NO</td> </tr> <tr> <td>MF-I</td> <td>Nacional</td> <td>Provinciales</td> </tr> <tr> <td>MF-II</td> <td>Nacional</td> <td>Provinciales</td> </tr> <tr> <td>FU-CCAA</td> <td>Autonómica</td> <td>NO</td> </tr> <tr> <td>MF-CCAA</td> <td>Autonómica</td> <td>Provinciales</td> </tr> <tr> <td>-----</td> <td>Local</td> <td>NO</td> </tr> </tbody> </table> <p>c) Frecuencias reservadas para los servicios de radio digital</p> <p>Las bandas de frecuencia desde el bloque 5A al bloque 13F</p> <p>d) Reserva de capacidad para datos es del 20%.</p>	RED	COBERTURA	DESCONEXIÓN	FU-E	Nacional	NO	MF-I	Nacional	Provinciales	MF-II	Nacional	Provinciales	FU-CCAA	Autonómica	NO	MF-CCAA	Autonómica	Provinciales	-----	Local	NO
RED	COBERTURA	DESCONEXIÓN																				
FU-E	Nacional	NO																				
MF-I	Nacional	Provinciales																				
MF-II	Nacional	Provinciales																				
FU-CCAA	Autonómica	NO																				
MF-CCAA	Autonómica	Provinciales																				
-----	Local	NO																				
FIN	Currently frequencies for T-DAB are assigned only from band 174-240 MHz and no allocations exists in L-band. SFN topology is used.																					
FR	Les blocs DAB ont été planifiés conformément à la planification de Wiesbaden et dans la bande 1452-1467,5 MHz																					
IT	According to the national allocation plan, the band of frequencies reserved to the T-DAB are the channel 12 (223-230 MHz) in the band VHF III and the portions of band L planned at the Wiesbaden Conference 1995 and that will be planned at the forthcoming Maastricht Conference (June 2002). A portion of band L is reserved to S-DAB. The above bands are exclusively allocated to the T-DAB. The networks planned will be SFN and/or k-SFN in the VHF band and k-SFN in the L band. The spectrum capacity reserved for data will be decided in the rules that will be issued after the approval of the plan. However, according to the law 66/2001, a minimum of 5 audio channel is reserved in each multiplex.																					
L	<p>Terrestrial DAB: 1 bloc in VHF-Band (this bloc will be used essentially for sound radio services); 1-2 blocs in L-Band. Preference for SFN.</p> <p>The band 1467.5-1492 MHz as allocated by the ITU for broadcasting satellite services (BSS) through ITU-R S5.345 for digital audio broadcasting is in principle reserved for S-DAB services, with the possible exception of 1 DAB block in the range LJ to LL expected to be identified for possible future Third Priority T-DAB services. The use of this band by S-DAB services is in general subject to relevant satellite system operators completing international and national frequency coordination with Luxembourg and other relevant countries and taking into account the relevant regulation framework at a CEPT and EU level. There is a need at CEPT and EU level to enable harmonised S-DAB access in the band 1467.5-1492 MHz.</p>																					
NL	No sharing on radio system level. Combined SFN and MFN involved																					
NOR	Spectrum allocated for DAB transmissions: VHF:174-240MHz UHF: 1452-1492 MHz																					

POR	216-230 MHz; 1452-1467,5 MHz. Sharing between T-DAB and fixed services in L-BAND. Frequency planning: SFN and MFN of SFN's Spectrum capacity reserved for data: a maximum of 48 c.u. per program/broadcaster
SV	VHF Band III, from 215 to 240 MHz There is no spectrum capacity reserved for data in broadcasting.
UK	The frequencies currently reserved for digital radio services currently are 217.5 to 230 MHz (Blocks 11B to 12D).
<b>Q</b>	<b>1.5.3 Multiplexes: number, territorial coverage, programmes per multiplex, multiplex allocation and sharing.</b>
A	Not yet decided.
B-V	Cf. 1.5.2.
D	T-DAB: Currently 2 multiplexes per area, supply of population shares (s. 1.5.1), about 6 programmes per 864 CU. See also: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a>
DK	One multiplex with nationwide coverage. One regional multiplex covering Jutland. One regional multiplex covering Funen, Zealand, and Bornholm.
EIR	See 1.5 Above
ES	<p><u>RED</u>                      <u>PROGRAMAS DESCONEXIÓN</u></p> <p>FU-E                      6 (4 Radio Nacional de España + 2 Concurso)      NO</p> <p>MF-I                      6 (2 Radio Nacional de España + 4 Concurso)      Provinciales</p> <p>MF-II                      6 (Concurso)                      Provinciales</p> <p>FU-CCAA                6 (3 Comunidades Autónomas + 3 Concurso)      NO</p> <p>MF-CCAA                6 (3 Comunidades Autónomas + 3 Concurso)      Provinciales</p> <p>-----                    6 (Concurso)                      NO</p>
FIN	1 national, 1 regional (capital area)
FR	3 blocs ont été assignées dans les villes de Paris, Lyon, Nantes, Marseille et Toulouse représentant 20 % du territoire environ. Entre 5 et 7 programmes étaient autorisés par bloc.
IT	It will be decided in the rules that will be issued after the approval of the plan.
L	T-DAB: Terrestrial multiplexes for DAB: 2-3; Territorial coverage: national; Programmes per multiplex: 6 or 7 for the VHF multiplex, not decided for L band multiplexes
NL	See 1.5.1. In total 6 multiplexes. The amount of programs per multiplex is up to the quality demands of the market.
NOR	n/a
POR	<ul style="list-style-type: none"> <li>1 Multiplex. National coverage. 6 Programmes. 3 Secondary channels reserved for the public radio broadcasting service programmes and the remaining 3 to be allocated to the T-DAB broadcasters programmes in equal, non-discriminatory and proportional conditions.</li> </ul>
SV	1 national and 19 regional frequency blocks, allocated to radio. The national block is a single frequency net. National block has 6 programmes. The regional blocks, public broadcaster has 1-2 programmes, the rest are supposed for private broadcasters. Spectrum is available for at least another national block in the VHF Band III.
UK	The details of the multiplexes licensed by the Radio Authority, their coverage and the programmes on each can be found at <a href="http://www.radioauthority.org.uk">www.radioauthority.org.uk</a> Territorial coverage will vary depending whether the multiplex is local, regional or national. Any fit and proper person can own a multiplex in the UK including overseas investors. The majority shareholders in existing UK radio multiplexes tend to be commercial radio companies. They are responsible for recruiting services to them and each multiplex tends to broadcast anything between 7 and 10 different audio services.
<b>Q</b>	<b>1.6 Financing issues: publicity, subsidies, pay services, other</b>
A	Business models are under discussion

D	Different (also mixed) financing models are conceivable. Pay services are still not available but are expected for "premium services", also in connection with GSM/UMTS-networks (convergence of Broadcast and individual services) institutes under public law: be entitled for the financing of the prices, partly financed by advertisements Private service providers: promoted by media institutes of the Länder (during the Simulcastphase), afterwards financed by advertisements to a large extent. Services (NPAD): during the Simulcastphase partly promoted (no network costs), afterwards financing models are aimed at both over Conditional Acces and over advertisement
EIR	No decisions have been taken
ES	En la actualidad no hay ningún proyecto para publicitar ni subvencionar relacionado con la RD. La Administración española delega estas atribuciones a los actuales concesionarios.  La Administración pública, ante el retraso de la RD se está planteando la necesidad de desarrollar programas alternativos tendentes a promocionar el uso del nuevo servicio de RD dentro de los radiodifusores públicos.
IT	Under study
NL	To be determined
SV	See 2.5!
<b>Q</b>	<b>1.6.1 Business models encouraged or discouraged in the Member Sates (indicate how): retain existing financial model (financing through advertising), or introduce new models like pay-radio services, partial financing through data services, etc.</b>
D	About the topic "Data services" see annex 2 (power point presentation)
DK	This aspect is not contemplated in the regulation
FIN	For instance, only public service operations.
FR	Aujourd'hui la radio est un média gratuit financé par la publicité et par des systèmes de soutiens spécifiques pour ce qui est des radiapos associatives. Des décrets fixent le régime de la publicité (durée, secteur interdits...).
IT	The model foresees the separation of three different value chain operators: content provider network provider service provider in order to have a wider diversification in the value chain with respect to the vertical model
L	T-DAB: For the first bloc priority is given to a number of free to air radio programmes. The main financing source will probably be advertising; but this is not prescribed by the law; delivery of data for mobile reception (for example as download for GSM or 3G) might be an additional financing source  S-DAB: pay radio will be probably be part of revenue model, but this is not prescribed by law.
NL	To be determined
NOR	The Norwegian Broadcasting Corporation Ltd. (NRK- the national public-service broadcaster), activities are financed by licence fees and sales revenues. Advertising cannot finance their transmissions. The other two privately owned DAB-licencees may be financed by advertising.
SV	Since only the public broadcaster is licensed, no business models are encouraged or discouraged. SR is not allowed to have advertising (only sponsoring). No pay-radio services have been launched.
UK	The legislation and the Radio Authority in the UK have given commercial radio reasonable freedom to attempt pay services and partial financing through data services. Currently, until such services reach greater maturity, revenue is likely to flow through advertising and (probably increasing) sponsorship. Pay services may enable commercial radio to compete with state radio's high cost services but currently all commercial services are free-to-air.
<b>Q</b>	<b>1.6.2 How increased programme competition (arising from the development of digital radio networks) is/will be dealt with?</b>
D	The enlargement of the programme offer to be expected represents a crucial increase in value under the aspect of the variety of DAB. It is to be expected that it comes to a stronger separation of the programmes, how the programme

	number increase will affect the economy of the individual programmes remains unclear.
DK	Will be welcomed.
ES	En España se está transmitiendo en simulcast (FM - RD) debido a que no se justifica una inversión en contenidos diferentes a los emitidos en FM, por el déficit de usuarios y falta de receptores. En el Foro de la Radio Digital se está llevando a cabo un estudio de mercado en el que se analizarán los programas y contenidos de interés para el público en este medio.
FIN	n.a.
FR	n.a.
IT	It is expected that the separation of the value chain will allow new entrants.
L	T-DAB: Regarding its small advertising market, Luxembourg is sensible to this item, although the law doesn't cover it. Increased competition in the domestic market is often considered as having a negative impact because of the difficult economic situation of existing domestic radio stations. Pluralism is considered to be more important than competition.
NL	The commercial parties are allowed free competition.
NOR	n/a
SV	N. a.
UK	When terrestrial digital radio is successful in the UK, there will be a greater number of competing services in every area than ever before. To fund this activity, commercial radio will need to increase its share of advertising and sponsorship markets. It also seeks to create larger companies, better able to provide a variety of services. In order to do this it has asked for changes in current ownership rules. And the Government is proposing to liberalise the ownership rules in the draft communications bill.
<b>Q</b>	<b>1.7 Content issues: copyright, cultural aspects, other</b>
IT	Under study
L	T-DAB: Priority should be granted to the existing national programs/channels
SV	In the Radio and TV Act (1996:844) there are general provisions on radio content, e.g. rules for advertising and sponsoring. There is also a list of terms/conditions that may be laid down in the broadcasting licence. The terms/conditions have to be agreed to by the licence holder.
<b>Q</b>	<b>1.7.1 How many services are licensed?</b>
A	None until now.
D	See: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a> and annex 1
DK	Till now only DR has begun terrestrial DAB-transmissions. DR needs no license and is presently using "their" capacity, at their own discretion, please also refer to 1.1.2. DR has according to the political agreement an obligation to not only simulcast their analogue programmes but also to provide new digital radio services. Presently DR broadcasts the following services (from 3 SFN transmitters): DR1: Debate, culture, news (simulcast of FM programme – 128 kb/s) DR2 Music: Classical music, jazz (simulcast of FM programme – 192 kb/s) DR3: Pop, rock, entertainment (simulcast of FM programme – 128 kb/s) DR4 Regional: Regional programmes (simulcast of FM programme2 – 2*128 kb/s) Special: Weather news, news in foreign languages etc. (simulcast of AM programmes – 64 kb/s) DR Nyheder Online: A 24 hour news service (only DAB – 64 kb/s) Demokratikanal: Transmissions from the Parliament etc. (only DAB – 64 kb/s) SKUM: Non-stop pop music (only DAB – 128 kb/s) Pplus: Selected non-music programmes in blocks of 8 hours, repeated three times a day (only DAB – 128 kb/s) Two more digital radio services will be licensed later.
FIN	The Finnish Broadcasting Company (does not need a license) simulcasts its 4 analogue radio channels in digital form and has 3 solely digital radio channels

FR	En numérique, la loi sur les expérimentations a permis d'autoriser environ 25 programmes différents. Toutefois, les émissions ne sont plus aujourd'hui toujours assurées.
IT	Radio and data services.
L	T-DAB: No licences have been issued; number of future licences to be determined
NL	There will be 1 license for public broadcasting, 1 for nation-wide commercial broadcasting and 2 for non-nation-wide commercial broadcasting. Later there will be numerous licenses for digital broadcasting on a regional/local basis in the L-band. Actual number of services will depend on licensees' business cases.
NOR	In addition to NRKs DAB- services, two private services are licensed.
SV	For the moment only the public broadcaster (SR) has been licensed for one national multiplex and parts (25-40%) of a regional multiplex.
UK	At time of writing there are more than 200 stations on DAB digital radio. There are 10 national commercial radio digital stations, 7 BBC national stations (including 2 digital only services). Seven of the commercial national services are only available on digital platforms and the BBC will launch 3 more digital only stations by the end of the year. For details see <a href="http://www.radioauthority.org.uk">www.radioauthority.org.uk</a>
Q	<b>1.7.2 Are there "community" radio services? What kind of licence are they granted? Are there specific measures to encourage such non-for profit services?</b>
D	In Baden-Württemberg there is a non-commercial local radio licensed, in order to receive the growth prospects of this form from citizen radio in DAB. Further citizen radios are at present not represented in DAB.
DK	Most of the present terrestrial DAB capacity will be given to DR, allowing for only two commercial radio services. DR will be transmitting all their regional services in DAB, when the regional networks are established. Local radio (both commercial and non-commercial) can so far only be transmitted in analogue due to lack of T-DAB spectrum.
EIR	Currently community type services are franchised by the Broadcasting Commission of Ireland and it is to be expected that the needs of this type of service will need to be addressed in the development of digital radio.
FIN	No.
FR	Il existe en France des radios dites communautaires. Il existe un fonds de soutien aux radios associatives pour celles qui remplissent des conditions liées à un seuil de publicité.
IT	Currently under study (to be defined in the next regulatory document)
L	There are presently no advantages for this type of radio stations with regard to digital broadcasting
NL	In the Netherlands there are more than 300 community radio stations in the air and/or on cable. All in the air stations will eventually have to migrate to DAB. Community radio stations are protected by the law and subsidised by the local government.
NOR	There are no local DAB radio services.
SV	For the moment there are no community radio services in digital – only in analogue.
UK	Government and Radio authority have decided to consider a third tier of radio which will be non profit distributing and which is currently in a pilot stage in the UK. Like commercial small stations these new stations will not want to be excluded from digital multiplexes when and if listeners begin to prefer digital to analogue services. The Radio Authority is currently experimenting with Access Radio services, and these 15 pilot stations are intended to provide a possible model for legislation for non-profit distributing radio services. Access Radio licensees would not be excluded from holding or operating a digital licence, but this would be likely to depend upon the deployment of L-band for additional digital radio services. Furthermore, all commercial radio stations in the UK have some "community" objectives. These can range from community of interest (for example Jazz listeners) to a geographical community. There are commercial stations serving both large and small geographical communities. They are funded mainly by advertising and sponsorship but some are subsidised in part by donations from a supportive audience. An example would be Premier Radio in London which provides the entire capital with Christian programming.

<b>Q</b>	<b>1.7.3 Legal and regulatory frameworks for radio contents (national song quota, pluralism of the news...)?</b>
B-V	(art. 38 octies §1) In the programmes of the private national radio broadcasters the presence of Dutch songs must be guaranteed. In the information programmes of the broadcasters the principles of the deontology of the press (neutrality) independence of the editorial staff must be guaranteed.
D	The media laws of the Länder foresee with partially different developments that the distributed programmes must correspond to the requirement of the variety (service provider variety, format differentiation local/regional identity).
DK	These issues are not regulated. One of the commercial broadcasters will probably have to meet some obligations in relation to news services as part of the T-DAB licensing requirements.
EIR	The normal legal and commercial arrangements for copyright would apply
FIN	Act on Television and Radio Operations apply (also for digital radio contents, see 1.1 and 1.1.1). Analogue radio licenses may also contain some content regulation. For example local analogue radio licenses state that programmes shall promote local culture , see <a href="http://www.mintc.fi/www/sivut/english/tele/massmedia/index.html">http://www.mintc.fi/www/sivut/english/tele/massmedia/index.html</a> No direct quotas issued There are no digital radio licences at the moment
FR	La loi de 86 impose aux radios des obligations de programmations de chansons d'expression française (40 %, la convention pouvant moduler cette proportion dans les limites posées par la loi). La loi pose un principe général de pluralisme des informations (pluralisme interne)
IT	Currently under study (to be defined in the next regulatory document)
L	No quotas; pluralism has to be observed in public service; other requirements might result from beauty contest
NL	The legal framework for the content of radio programmes is covered by the Media Act.
NOR	The legal framework does not deal specifically with radio content, but the awarded licences have more detailed conditions.
POR	<a href="#">Law no. 4/2001, of 23/2</a> – Radio Broadcasting Law – regulates the access to the activity of radio broadcasting and conducting the same on Portuguese territory, establishing its terms and conditions, in conjunction with the Constitution Act.
SV	Within the license for SR (public broadcaster) there are, among other things, terms on the radio content. Some examples: The broadcaster shall aim at providing a pluralism of views of opinion and different interests regarding religion, culture and science. It shall also supply the audience with high quality varied radio programmes in the Swedish language and take care of the Swedish culture.
UK	There are no positive programme requirements in UK legislation regarding the content of private radio stations. However, each station's licence includes details of the Format promised at the time of application, and the Broadcasting Act 1990, Section 106, imposes upon the regulator a duty to secure the character of this service. There are no 'quality' thresholds as such in digital licences. A multiplex owner must deliver the formats he promised to the Radio Authority. . There are ownership restrictions applied to local radio in the UK which, even if relaxed in forthcoming communications legislation, will continue to ensure plurality of news and opinions..
<b>Q</b>	<b>1.7.4 Copyright for music?</b>
D	See: directives GEMA <a href="http://www.gema.de">www.gema.de</a>
DK	According to the general copyright regulation. See the Danish Consolidated Copyright Act in English version on the home page of the Ministry of Culture ( <a href="http://www.kum.dk">www.kum.dk</a> ).
FIN	Under the Finnish Copyright Act, a person who has created an artistic work has the exclusive right to control the work by making copies of it and by making it available to the public. The copyright owner's permit is therefore always required when a copyright work is publicly used. The user must pay compensation for the use of the work Teosto, Finnish Composers' Copyright Society administers the copyright of Finnish creators of music. Teosto also represents foreign owners in Finland, and vice versa. The copyright owners Teosto represents are: composers, lyric writers, arrangers and music publishers. Teosto is a non-profit, non-governmental organisation Teosto's web site is <a href="http://www.teosto.fi">www.teosto.fi</a>

FR	Les radios n'ont pas à obtenir l'autorisation de diffuser des œuvres que l'auteur a déjà mis à la disposition du public. Le système mis en place par la Société de Perception de la Rémunération équitable correspond au prélèvement d'une part du chiffre d'affaire des radios le droit de représentation de l'œuvre. Les sommes sont ensuite redistribuées entre les auteurs du répertoire.
IT	Currently under study (to be defined in the next regulatory document)
L	Yes
NL	Copyright issues in relation to simulcasting of analog and digital programmes are being studied.
NOR	Copyright regulation is not specific for digital radio. General regulation will apply.
SV	In the Copyright Act (1960:729) there are provisions on copyright protection for music and other protected works.
UK	The CRCA has negotiated most music copyright with the major copyright agencies. A new licence has been agreed between CRCA and PPL (Phonographic Performance Limited, representing artists and record producers) which requires a single small payment for new digital services which will only be exceeded once the agreed percentage of advertising income exceeds it. A similar agreement with PRS (Performing Rights Society, representing composers and arrangers) will be agreed very soon.
<b>Q</b>	<b>1.8 Additional information and comments on regulatory issues</b>
IT	N/a
POR	Other entities to be consulted, namely for media and content issues: Alta Autoridade para a Comunicação Social (AACS) – High Authority for the Mass Media Instituto da Comunicação Social (ICS) – Mass Media Institute
SV	An investigation is being carried out at present on the future regulation on digital radio in Sweden. A special investigator has been appointed and his report will be official in mid April 2002. There will probably be another – Parliamentary – committee appointed later this year. This Digital Radio Committee will make its proposals in December 2002.
<b>Q</b>	<b>2 LICENSING</b>
A	See 1.1.
B-V	Regulation concerning licensing will be developed by the Flemish authorities when the available frequency spectrum for T-DAB is known. In Flanders the VCM (Vlaams Commissariaat voor de Media) gives the broadcasting licences.
DK	No licenses (for commercial broadcasters) have been issued yet – the answers below are based upon the statements in the political agreement on DAB.
ES	En la actualidad está regulada la Radio Digital en los niveles: nacional, autonómico y local. Falta del régimen concesional de las licencias de ámbito autonómico y local de las Comunidades Autónomas
SV	Taking into account the above-mentioned investigations, it is difficult to give further details on the applicable licensing regime for digital radio in Sweden. We can only refer to what has happened up to today.
UK	Full details available on the authority website.
<b>Q</b>	<b>2.1 Awarding process</b>
A	Regarding all questions under point 2 (licensing) it has to be stated that nothing is decided for DAB-T for the time being.
EIR	No decision has been made on the awarding process
ES	1. <u>Concurso</u> convocado mediante: <ul style="list-style-type: none"> <li>- Resolución de 31 de julio de 1999 para la adjudicación por concurso público de <u>10 concesiones</u> para la explotación del servicio público de radiodifusión sonora digital terrenal, resuelto mediante Resolución de 10 de marzo de 2000.</li> </ul>

	<p>2. <u>Concurso</u> convocado mediante:  Resolución de 10 de marzo de 2000 para la adjudicación de 2 <u>concesiones</u> para la explotación del servicio público de radiodifusión sonora digital terrenal, resuelto mediante Resolución de 13 de diciembre de 2000.</p>
IT	Currently under study (to be defined in the next regulatory document)
NL	Commercial licenses will be granted by means of a beauty contest.
SV	The public broadcaster has been awarded a licence more or less “automatically”. For private broadcasters, an awarding process was launched in 1996, which was interrupted due to that applicants withdrew their applications. The process consisted of the following moments: Announcing of available licences Applications to the Radio and TV Authority Assessments of the applications with respect to; financial capacity, ownership structure, local programmes, diversity in programmes, requests for capacity, ambition to introduce new services (PAD and non-PAD) Radio and TV Authority made recommendations to the Government
UK	Full details of the process of awarding digital radio multiplex and sound programme service licences are set out in the Notes of Guidance available on the Radio Authority’s website.
Q	<b>2.1.1 Authorities involved at national, regional or other level (please provide legal/ administrative references and web links if available). Co-ordination procedures (if applicable).</b>
A	KommAustria <a href="http://www.rtr.at/web.nsf/deutsch/Ueber+Uns~KommAustria?OpenDocument">http://www.rtr.at/web.nsf/deutsch/Ueber+Uns~KommAustria?OpenDocument</a>
D	<u>Telecommunications law:</u> Licences after § 6 TKG: RegTP frequency assigning after § 47 TKG: RegTP <a href="http://www.regtp.de">www.regtp.de</a> <u>Media law:</u> Responsible Land authorities (Land -, senate chancelleries, Land media institutes) e.g.: <a href="http://www.alm.de">www.alm.de</a>
DK	The commercial DAB-broadcasters will be licensed by the Danish Radio and Television Board according to the Danish Broadcasting Act
EIR	The Broadcasting Commission of Ireland (BCI) is responsible for awarding sound Broadcasting contracts. ( <a href="http://www.bci.ie">www.bci.ie</a> ). The Office of the Director for Telecommunications Regulation ( <a href="http://www.odtr.ie">www.odtr.ie</a> ) issues the Wireless Telegraphy Licenses to the BCI.
ES	El Gobierno español (Secretario de Estado de Telecomunicaciones y para la Sociedad de la Información) tiene la competencia para otorgar las concesiones de los programas en los múltiplex de ámbito nacionales.  Los Gobiernos de las Comunidades Autónomas tienen las competencias para otorgar las concesiones de los programas de los múltiplex regionales y locales.
FIN	Government grants multiplex licenses in autumn 2002.
FR	Le Conseil supérieur de l'audiovisuel délivre les autorisations et conclut les conventions.
IT	Italian NRA /Autorità per le Garanzie nelle Comunicazioni: AGCOM) Ministry of communications Regions
L	T-DAB: Authorities: licences for broadcasters will be granted by the government on the proposal of the Minister responsible for media policy after consultation of the Independent Broadcasting Commission.  Legal/adm. reference: article 19 of the modified law on electronic media of 27 July 1991
NL	Coordination is applicable
NOR	The authorities involved with DAB-licensing are on national level: Ministry of Cultural- and Church Affairs <a href="http://www.odin.dep.no/kkd/">http://www.odin.dep.no/kkd/</a> The Mass Media Authority <a href="http://www.smf.no">http://www.smf.no</a>

	Norwegian Post and Telecommunications Authority <a href="http://www.npt.no">http://www.npt.no</a>
POR	The Member of the Government responsible for the area of Communications was responsible for the granting of the licence for the operation of the DAB terrestrial network, having Autoridade Nacional de Comunicações – ANACOM (National Communications Authority) <sup>3</sup> provided the technical analysis of the proposals made in the framework of the beauty contest. Alta Autoridade para a Comunicação Social - AACS (High Authority for the Media) is responsible for granting licences and authorizations for conducting the radio broadcasting activity.
SV	The Government decides on awarding licences for digital radio, both national and regional/local. The Radio and TV Authority handles applications and makes recommendations to the Government on the awarding of licences. The Post and Telecom Agency handles frequency planning and licences for transmitter use. The Agency also awards necessary licences for telecommunications activities. <a href="http://www.pts.se">www.pts.se</a>
UK	Radio authority
<b>Q</b>	<b>2.1.2 Licensees: multiplex operators, service operators, other.</b>
D	<u>Telecommunications law:</u> Operators of transmission ways frequency users <u>Media law:</u> content providers (except teleservices)
DK	Licences will be given to programme providers.
EIR	None at present
ES	Adjudicación de 12 concesiones para emitir en radio digital terrenal.  Las emisiones regulares comenzaron el 30 de septiembre de 200 en Madrid y Barcelona.  La radio pública (RADIO NACIONAL DE ESPAÑA) tiene asignadas, por Real Decreto, 6 programas para sus diferentes contenidos: 2 en red con desconexiones (MF-1), 4 en la red sin desconexiones (FU-E) de ámbito nacional.  Existe también un múltiplex regional sin desconexión y otro con desconexión provincial para cada Comunidad Autónoma, y múltiplex locales en cada Comunidad Autónoma.  Los Entes Públicos de cada Comunidad Autónoma tienen reservadas hasta tres programas en cada uno de los múltiplex regionales.
FR	En DAB, les autorisations sont délivrées à une même personne pour un ensemble de services et les conventions conclues avec chaque éditeur de service.
IT	As for digital terrestrial television different operators are foreseen (content, service and network operators).
L	T-DAB: Licences will be granted to broadcasters; authorisation for network/multiplex operator.
NL	Licences will be issued to consortia which are selected by means of the beauty contest. Consortia will consist of at least multiplex operators, service providers and network providers.
NOR	Licences are only granted to broadcasters. No multiplex-licences are issued.
POR	RDP – Radiodifusão Portuguesa, S.A. was awarded with the unique licence to operate the multiplex.
SV	Only licences for broadcasters have been awarded - no licences for multiplex operators.
UK	More details on the RA website.

<sup>3</sup> ANACOM is the continuation of the ICP's corporate entity and with the new statute is released from its previous legal status as a public institute, to become a public corporation endowed with administrative and financial autonomy and its own assets.

<b>Q</b>	<b>2.1.3 Procedure: call for tenders, beauty contest, etc.</b>
D	<u>Telecommunications law:</u> For licences: procedures of application <u>For frequency assignment:</u> 1. Stage: procedure of application, 2. Stage: bidding procedure (if are more frequencies requested than available) <u>Media law</u> Selective procedures in case of too many applicants through beauty-contest, whereby aspects of the variety are crucial (see above 1.7.3). There exist partly priority regulations for analogue distributed programmes. The broadcasting under public law has a large requirement for supply.
DK	Rules regarding the tender of capacity for the two commercial broadcasters have not been settled yet.
FIN	Beauty contest
FR	La procédure est celle de l'appel aux candidatures organisé par le CSA qui sélectionne les opérateurs en fonction de critères prévus par la loi. En matière de DAB, outre les critères de sélection traditionnels prévus pour la radio analogique, la loi du 10 avril 1996 en ajoutait d'autres tenant, par exemple, au caractère innovant de l'expérimentation.
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: Beauty contest for broadcasters
NL	Beauty contest
NOR	Procedure for licensing: "Beauty contest".
POR	The licence for the establishment and supply of terrestrial digital audio broadcasting (T-DAB) was granted through a beauty contest.
SV	The awarding process for private broadcasters has been described above (A 2.1). A licence for telecommunications activities is awarded after an open tender procedure if the frequency spectrum, which can be allotted to the activity concerned, is not sufficient for granting licences to all who wish to pursue such an activity. Otherwise a licence should be granted unless the applicant is not capable of pursuing the activity on a permanent basis and with adequate capacity and quality.
UK	Digital multiplex licences are awarded for twelve years, with the option of effectively automatic renewal for a further twelve years. Digital sound programme service licences are awarded sine die.
<b>Q</b>	<b>2.1.4 Price.</b>
D	<u>Telecommunications law/media law:</u> Fee and contribution regulation (en) Consideration of the development costs (in particular simulcast-operation) in course of the fee calculation
DK	No fees have been settled yet, ref. 1.3.2.
FIN	No price (except for administrative fees)
FR	L'utilisation des fréquences audiovisuelles est gratuite en France.
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: licences will probably be free of charge
NL	To be determined
NOR	No licence fees.
POR	No special fee for the T-DAB licence, although a guarantee deposit was established in the total amount of 13.000.000\$00 (€ 64.843,73), being released (until 4/5 of the total) during five years, in line with the compliance of the licence conditions. However, the licensee has to pay the administration fee for the grant of the licence, as well as an annual fee according to the legal regime (Decree-Law no. 381-A/97, of 30/12).
SV	No licence fee is charged for the broadcasting licences. An application fee is charged for the telecommunications activities. An annual fee of 12 500 SEK ( EUR 1400) is charged for use of transmitter with a transmission power over

	0,5 kW. For transmitters under 0,5 kW the fee is 7200 SEK (=EUR 800).
<b>Q</b>	<b>2.2 Licences' characteristics</b>
EIR	No decisions have been taken on the license characteristics
IT	Currently under study (to be defined in the next regulatory document)
SV	Since only one licence yet has been awarded (to public broadcaster SR) it is difficult to describe how new licences will be formulated. Licences for private broadcasters will typically be less detailed and include fewer terms/conditions, especially regarding radio content.
<b>Q</b>	<b>2.2.1 Scope: transmission/ multiplex, broadcasting content, technical services, data (associated to or independent from broadcasting content), other. (Specify the types of transmission, content, services, etc covered)</b>
D	Licence only for the operating of transmission ways, additionally frequency assignment (bound to the site) with frequency uses with establishment of the characteristic features. Other establishments (in particular contents) will be exclusively regulated by the media laws of the Länder.
DK	According to the political agreement on DAB, the commercial DAB-broadcasters: shall be established in Denmark shall broadcast DAB a considerable part of the day shall broadcast daily news shall – as far as news and current affairs are concerned – be objective and impartial.
FR	Les conventions ont pour objet de déterminer les règles de contenu applicables aux services de radiodiffusion sonore. Parmi ces règles, on mentionnera : le principe de la responsabilité éditoriale pour les délits de presse, le régime de la publicité, les quotas de chanson française.
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: Licences will be granted for individual radio programmes which may be accompanied by data;
NL	Not yet determined
NOR	The licences cover these topics: broadcasting content, ownership regulation, and limitations of use for other activities than broadcasting.
POR	Digitalisation, codifying, multiplexing, transport and broadcasting of the signal of the terrestrial digital audio broadcasting service.
SV	The broadcasting licence is granted according to the Radio and TV Act, which only covers broadcasting (of radio and TV programmes). A licence for private broadcasters would probably include an obligation to co-operate with other licensees on technical issues, e.g. who should be multiplex operator. The use of capacity for PAD or non-PAD is not regulated. For telecom services, a licence according to the Tele Act is required.
<b>Q</b>	<b>2.2.2 Territory covered.</b>
D	Dependent on the respective supply requirement of the countries, altogether repeated cover of the Federal Republic. See also: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a>
DK	All Denmark
FR	En DAB, la loi du 10 avril 1996 mentionne simplement "un site géographique limité."
IT	See answer 1.5.1 (accordance to law 249)
L	T-DAB : National territory, but no minimum coverage fixed up to now; coverage might be criterion for beauty contest
NL	Pending on licence type (national, regional or local)
NOR	Licence is nationwide.

POR	90% of territorial coverage by 2006
SV	Public broadcaster: One multiplex with national coverage, parts (25-40%) of one regional multiplex in each region (19 regions in Sweden).
UK	Depends on each multiplex
<b>Q</b>	<b>2.2.3 Length and renewal.</b>
D	Licences are granted in principle for an unlimited period, frequency assignments: T-DAB: 15 years Duration of the media law licences/assignments is different, on average approximately 8 years.
DK	According to the political agreement on DAB licenses will be given for a period of 5 years.
FIN	Programme licenses: Maximum period of 10 years. May be renewed. Multiplex license: Maximum period of 20 years. May be renewed.
FR	En DAB, durée maximale de cinq ans, non renouvelable.
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: Length has still to be decided; licences are granted for a limited period with a possibility of be renewal
NL	15 years; renewal to be determined
NOR	Licences are granted for a period of 10 years. One of the terms specify that renewal is normal, but renewal is not automatic. It depends on the licencees fulfillment of conditions set in law, regulations and licence.
POR	15 years (ending at 8/6/2014).
SV	Public broadcaster: 1 January 2002 – 31 December 2005. Automatically renewed if not cancelled no later 31 December 2003 by the Government.
UK	Digital muxes :12 years with option for automatic renewal for 12 more years Digital sound programmes : indefinite (sine die)
<b>Q</b>	<b>2.2.4 Spectrum granted.</b>
D	In accordance with user-specific requirements
DK	According to the political agreement on DAB a capacity of 256 kb/s is granted each commercial broadcaster, ref. 1.1.2.
FR	???
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB : One frequency bloc will be shared by selected broadcasters; the bandwidth will depend on the requirements of the candidates.
NL	5 x 1,5 Mhz, not all national
NOR	Licences were granted within the VHF-frequency spectrum, it is a share of the capacity in a nationwide network.
POR	BLOCK 12B
SV	One national multiplex (TV-channel 12). Parts of one regional multiplex. VHF band III, channel 12 and 230-240 MHz. Spectrum is available for at least another national block in the VHF Band III. Spectrum for another 4 blocks is now available in the "L-Band", range LE-LH.
<b>Q.</b>	<b>2.3 Awarding criteria</b>

DK	No criteria have been settled yet besides what is mentioned in 2.2.
EIR	To be decided
ES	<ul style="list-style-type: none"> <li>- Características del despliegue de los servicios, de las coberturas previstas y de los plazos para alcanzarlas.</li> <li>- Detalle de los planes de desconexión territorial.</li> <li>- Definición de las estrategias básicas, tanto comerciales como financieras, para promocionar entre el conjunto de los usuarios españoles la obtención de los equipos receptores necesarios para recibir los nuevos servicios de la DAB.</li> <li>- Un análisis del volumen de mercado esperado, los elementos fundamentales del plan de marketing y la estrategia de atención al cliente.</li> <li>- Los elementos clave en cuanto a la posición competitiva de la DAB frente a otras modalidades de servicios de radiodifusión sonora.</li> <li>- Resumen del Plan Financiero y de Negocio</li> <li>- Resumen del empleo inducido por la DAB en España.</li> <li>- Factores críticos y riesgos relevantes identificados por el licitador en cuanto al desarrollo de la DAB en España, así como propuestas para sortearlos o minimizarlos.</li> <li>- La capacidad para satisfacer las diversas demandas y los plurales intereses del público podrá ser demostrada de varias formas, como por ejemplo, por los diferentes tipos de programas que vayan a ser emitidos, como los deportivos, los informativos, los documentales, etc, así como por las características y estilos de programación de forma que vayan dirigidos a determinados segmentos de población, como por ejemplo la infancia o la juventud y la tercera edad.</li> <li>- Se valorará positivamente el carácter formativo de las emisiones y programas, de tal modo que sus contenidos contribuyan a mejorar los conocimientos de los oyentes sobre la economía nacional e internacional, el medio ambiente, los problemas financieros jurídicos, etc.</li> <li>- Finalmente, los licitadores, teniendo en cuenta los aspectos globales de su oferta detallados en los apartados siguientes, deberán resumir las razones por las que, a su juicio, la adjudicación a ellos de los programas, permitirá desarrollar en España de forma exitosa la radiodifusión sonora digital terrenal.</li> </ul>
FR	En DAB : Critères traditionnels de la radio : respect du pluralisme, expérience acquises, partage des ressources publicitaires, etc. Critères additionnels tenant au caractère innovant de l'expérimentation et à l'intérêt pour le public. Câble et satellite : aucune procédure d'autorisation (pas de sélection), simple procédure de conventionnement.
IT	Currently under study (to be defined in the next regulatory document)
NL	Not yet determined
POR	Beauty contest.
SV	See answer to Q 2.1: financial capacity, ownership structure, local programmes, diversity in programmes, requests for capacity, ambition to introduce new services (PAD and non-PAD) A licence for telecommunications activities is awarded after an open tender procedure if the frequency spectrum, which can be allotted to the activity concerned, is not sufficient for granting licences to all who wish to pursue such an activity. Otherwise a licence should be granted unless the applicant is not capable of pursuing the activity on a permanent basis and with adequate capacity and quality.
<b>Q</b>	<b>2.3.1 Relationship between analogue and digital radio licenses (e.g. automatic extension).</b>
D	None! (Independent licencing procedures) for media law see above 2.1.3
FIN	No automatic extension.
FR	EN DAB : convention nouvelle pour tout service de radio, y compris son simulcast.
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: Priority for 6 existing national analogue radio programs
NL	Not yet determined

NOR	One licensee had an analogue nationwide licence that was given priority in the digital network.
POR	Automatic extension
SV	For the moment there is no such relationship. The issue must, however, be relevant to the ongoing investigation on digital radio.
UK	Analogue independent national radio stations are 'must-carry' services for the national commercial digital multiplex. Local BBC analogue services are also 'must-carry' on local commercial digital multiplexes. Local analogue commercial services are not 'must-carry', but (as set out above) such stations receive an automatic extension of their analogue licence for a further eight years if they are committed to provide a digital service on a relevant multiplex.
<b>Q</b>	<b>2.3.2 Market structure considerations: balance between public and commercial broadcasters, priority to existing players or new entrants, monopoly or other competition law considerations, etc.</b>
D	<u>Telecommunications law:</u> Competition is aimed at, in practice DT AG as well as common subsidiaries with respective land broadcasting corporation and/or state media institute and if necessary other partners. <u>Media law:</u> Länder (users) specify the number of programme places. Licensing priorities in the Bundesländer are different. Criteria in Bavaria: modernism of the programme, attractiveness of the contents, economic load-carrying capacity of the company for the licensing periods.
FIN	The public service company has the right to carry out radio broadcasting without a license on the frequencies which have been reserved for its use in the plan for the use of frequencies. Licenses for commercial broadcasters have not yet been granted.
FR	DAB : Droit de priorité pour l'attribution des fréquences au service public
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: Priority to existing national stations
NL	One multiplex to public broadcasters, remainder commercial. Criteria etc. for selection to be determined.
NOR	The public-service broadcaster was given priority in the licencing process by two-thirds of the capacity.
SV	In the Government Bill on digital radio it was pointed out that both public and private broadcasters should be offered to take part. Public broadcasters were to be given preference. Among the applicants for "private licences" there were both existing players and new entrants.
<b>Q</b>	<b>2.3.3 Media ownership and plurality considerations.</b>
B-V	Restrictions on media ownership are not specific for T-DAB.
D	Media concentration right in the area of radio broadcasting is determined by the individual Länder partly with very different approaches.
FR	Le respect du pluralisme est un des critères d'attribution des autorisations d'usage de fréquences par le CSA. Dispositif anti-concentration radio : la population recensée dans les zones desservies par les différentes stations d'un même éditeur ne doit pas dépasser 150 millions d'habitants, DAB exclu.
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: External pluralism might be a selection criterion. Ownership restrictions on the existing programmes which have a priority. S-DAB: No ownership constraints for S-DAB
NL	To be determined
NOR	The licences state that an owner cannot possess more than one third of the holdings. The licence cannot be transferred to others.
SV	As mentioned above, one of the criteria in the awarding process was ownership structure to that extent that, if there

	was a competition on available licences, no one should be awarded more than one licence.
UK	The Radio Authority and Commercial Radio are in broad agreement about how to maintain plurality but de-restrict media ownership. The Radio Authority are in favour of maintaining a “three plus one” rule into the digital age. This rule, which is more relaxed than that which legislation currently requires, seeks to ensure that in any local area there are at least three commercial local radio service providers plus one State radio provision.
<b>Q</b>	<b>2.4 Licensing obligations.</b>
DK	See answers above
EIR	To be decided
IT	Currently under study (to be defined in the next regulatory document)
SV	Again, it is difficult to describe the obligations in general since only one licence has been granted.
<b>Q</b>	<b>2.4.1 Infrastructure roll-out, targets (e.g. in terms population and/or territory coverage).</b>
D	Fundamental establishment in accordance with supply obligation: Not territorially, but in relation to the population of the supply area: After 3 years 80 %, after 5 years 90% and after 8 years 95 %.
FIN	Regulations relating to territory coverage may be issued.
IT	Currently under study (to be defined in the next regulatory document)
L	No targets fixed, but national coverage can be realised in VHF band with a few transmitters.
NL	To be determined
NOR	The licences state that the transmissions must cover the entire population. This is however a long term objective.
POR	The target is 90% of territorial coverage by 2006
SV	The issue will be analysed by the Digital Radio Committee (see above 1.8).
UK	See above in connection with the national digital radio multiplex. There are no overall roll-out targets or requirements for local services, other than those which might derive from individual area licence processes
<b>Q</b>	<b>2.4.2 Provision of certain programmes, contents or services (‘must carry’ obligations). Development of new programmes, contents or services.</b>
D	It is settled in the law of Länder currently in different ways. Must-carry are in each case the land related under public and mostly also a selection of the land related private programmes.
FIN	Regulations may be issued. Must carry obligations are applied to public service and nation-wide commercial radio channels
IT	Currently under study (to be defined in the next regulatory document)
L	T-DAB: to be decided; Probably obligations on programme content will result from beauty contest. Must carry obligations result from the procedure: licences are granted to the broadcasters for selected programmes. However the new law which is presently being prepared will probably foresee a model where a licence is granted to a network operator and broadcasters will be granted a right of access to the network, resulting in a must carry obligation for the network operator.
NL	Media law for public programmes, commercial free to market ideas. See also 1.2.2 and 1.4.2.
NOR	Some of the licences have public-service obligations related to news and current-affairs programmes, childrens programmes, programmes for ethnic minorities, religious programmes etc.

POR	Simulcasting of analogue programmes
SV	None
UK	There are no statutory or regulatory requirements in these areas. However, multiplex licences are advertised on a competitive basis, and among the criteria for selecting between applicants is the extent to which the services proposed broaden the range of digital radio provision in each locality. There is also a statutory obligation on the Radio Authority to encourage a broad range of services (Broadcasting Act 1990 Section 85).
<b>Q</b>	<b>2.4.3 Analogue/ digital simulcast requirements.</b>
D	At present no express regulation.
IT	See answer 1.3.1 Currently under study (to be defined in the next regulatory document)
L	Not foreseen
NL	To be determined
NOR	No simulcast requirements.
POR	A minimum of 96 capacity units (c.u.) in a total of 144 c.u. granted to each audio programme/broadcaster in the multiplex (6x144 = 864 c.u.)
SV	No explicit requirements. However, the public broadcaster also has a licence for analogue radio broadcasting.
UK	The only simulcast requirements are those relating to the must-carry national commercial radio services, where 80% of the material must be simulcast. Independent local radio stations achieve automatic licence renewal through providing a service on a relevant multiplex even if this is not a simulcast of the service they are providing within the relevant locality.
<b>Q</b>	<b>2.4.4 Other commitments required.</b>
IT	Currently under study (to be defined in the next regulatory document)
L	To be decided
NL	To be determined
NOR	n/a
SV	Coverage, minimum number of hours broadcasting/day
<b>Q</b>	<b>2.4.5 Limits imposed on licensees</b>
IT	Currently under study (to be defined in the next regulatory document)
NL	To be determined
NOR	n/a
SV	Private: ownership restrictions?
<b>Q</b>	<b>2.4.6 Conditions for renewal.</b>
D	<u>Telecommunication law for frequency assignment</u> : Renewed execution of a frequency assignment procedure <u>Media law</u> : After the end of the licence/assigning renewed bidding procedure.
IT	Currently under study (to be defined in the next regulatory document)
L	To be decided.

NL	To be determined
NOR	See above, 2.2.3.
SV	The current licence for the public broadcaster will automatically be renewed, if the Government does not cancel it no later than 31 December 2003. General regulation of licence periods and renewal are included in the
UK	Details of the duration of the renewal of national and local radio multiplexes are set out in Section 58 of the Broadcasting Act 1996.
<b>Q</b>	<b>2.5 Financing issues: publicity, subsidies, pay services, other</b>
EIR	To be decided
L	T-DAB: Subsidies are envisaged for financing simulcast period. It is expected that radio programmes will be financed by advertising.
NL	Public license subsidised; commercial through publicity
NOR	No subsidies from the government. Pay-services are not regulated in the licence.
POR	The following monthly price ceilings were set for each secondary channel to be used by radio broadcasters. The prices vary evolve from 1.356.000\$00 (€ 6.763,70), in 1999, to 6.942.000\$00 (€ 34.626,55), in 2013. This price can be reviewed 5 years after the grant of the licence.
SV	No Government subsidies have been granted, except for some extra contribution to SR. No pay services are offered.
UK	As stated earlier, Commercial Radio believes that the main source of revenue for digital services will remain advertising and sponsorship although the balance between the two may change. During the current period, revenues from analogue broadcasts are paying for both digital infrastructure and digital content.
<b>Q</b>	<b>2.6 Practical experience</b>
D	<p><b><u>Saxony-Anhalt:</u></b></p> <p>A DAB Regulator exists in the Land of Saxony-Anhalt since April 1999. At present the following digital radio programmes are broadcast country-wide:</p> <ul style="list-style-type: none"> <li>• skirt Land Saxony-Anhalt (radio SAW)</li> <li>• Project 89.0 digitally (Hit-Radio breaking into)</li> <li>• MDR-Klassik</li> <li>• Germany radio Berlin</li> <li>• Deutschlandfunk</li> </ul> <p>Beyond that the media institute assigned recently a licence for a digital radio programme in long wave for the DRM-Standard to the European broadcast and television GmbH Europe 1 to Saxony-Anhalt (MSA).</p> <p>Different data services (traffic and weather information, airport and railway information) continue to be available throughout the country and locally parallel to the radio programmes available in Saxony-Anhalt.</p> <p><b><u>Bavaria:</u></b></p> <p>The regulator was created in the Land of Bavaria in April 1999. Meanwhile 35 digital radio programmes are transmitted: In the country-wide network 7 (Bayern 2 radio, Bayern 3, Bayern 4 Klassik, Bayern 5 up-to date, Bayern mobil, radio Galaxy, skirt antenna). In the local networks of Munich, Ingolstadt, Nuremberg and Augsburg 7 additional programmes are received. Besides, DeutschlandRadio broadcasts its two programmes Deutschland Funk and Deutschland Radio in all local networks.</p>
DK	DR is presently broadcasting DAB from 3 transmitters. Very few receivers are in operation, however, and only few receivers are for sale in the shops, if any.
EIR	None

IT	Trials are actually in progress in Italy by public radio operators and private operators (also under form of consortium)
SV	The major problem – and the reason why digital radio not has been a success in Sweden – is of course the lack of receivers at reasonable prices. Though broadcasting of digital radio has been carried out since 1995 the number of receivers sold is still only some thousand. Another problem has been that no new services have been introduced in the digital radio offer – so far only the public broadcaster has been licensed and it has only retransmitted existing services/channels (with a few exceptions).
UK	Both Commercial and BBC Radio appreciate that neither side of the industry can afford to go it alone in the early stages of establishing digital radio. Listeners need to be able to access their favourite current stations but also need to be enticed by a variety of stations that are not available via analogue means. To this end, it has been necessary to establish an organisation which rises above the day-to-day, intense competition that exists between individual commercial players and between the commercial sector and the State sector. Both State and commercial radio broadcasters have, so far, avoided major subsidy of digital receiving devices. The jointly owned Digital Radio Development Bureau, however, has introduced an airtime bank and other methods by which manufacturers and retailers can be persuaded to support digital radio. Throughout this year, the BBC will be launching new, national, well-funded digital radio services. It is important that these should not only appeal to listeners sufficiently to persuade them to buy digital radio receivers. Currently there are too few available in the marketplace at the right price. The Digital Radio Development Bureau is considering what to do about this.
<b>Q</b>	<b>2.6.1 Licenses awarded or to be awarded.</b>
D	Licence allocation and frequency assignments take place federally, gradual additional procedures for additional supply requirement See: <a href="http://www.regtp.de/reg_tele/start/fs_05.html">www.regtp.de/reg_tele/start/fs_05.html</a>
DK	See answers above
IT	N/a
L	Not licences awarded
NL	Soon the request from the public broadcaster shall be rewarded with a license.
NOR	Two licences are awarded: P4 Radio Hele Norge ASA Radio 2 Digital AS
POR	RDP – Radiodifusão Portuguesa, S.A. was awarded with the unique licence to operate the multiplex.
SV	See above (public broadcaster). Licences to private broadcasters are likely to be issued within the next few years.
UK	Current information on the multiplex licences awarded and the sound programme services and other services carried on them are available on the Radio Authority's website
<b>Q</b>	<b>2.6.2 Complaints or difficulties encountered. Useful lessons.</b>
D	Too expanded supply requirements can lead to economic loads of the operator of transmission ways
DK	Main difficulty at this time seems to be the lack of DAB receivers at an affordable price.
FIN	Commercial operators have been prudent to start.
IT	N/a
L	Commercial viability of T-DAB questioned if simulcast period too long.  Diverging interests of private stations which should share a multiplex (concerning coverage, quality and cost.  Reluctance by authorities to subsidise launch without reasonable perspective of medium term viability
NOR	n/a

SVE	One complaint that has been raised is that only licence for a public broadcaster has been awarded. It has been claimed that the introduction of digital radio would have been easier if there were more services on air already from the beginning. The private broadcasters have argued for a better overall market co-operation when taking the step over to digital. In this co-operation all parties should be involved: public broadcasters, private broadcasters, regulators and politicians. Such a joint action is necessary for a successful switchover to digital radio. A clear regulatory framework for digital radio broadcasting is also important, both for the broadcasters and the regulators.
Q	<b>2.7 Additional information and comments on licensing issues</b>
FIN	It seems that at least some radio operators would be interested in operating in the digital terrestrial television networks.
IT	N/a
POR	RDP - the T-DAB licensee – is also the public radio broadcasting service operator, therefore operating the 3 public radio broadcasting service programmes for which were reserved 3 secondary channels of the multiplexer.
SV	N. a.
Q	<b>3 POLITICAL STRATEGY AND ENCOURAGEMENT MEASURES</b>
A	All the following questions will be discussed within the Digital Platform (see 1.1.).
EIR	No policy decision has yet been taken to introduce digital radio in Ireland. Government is at present considering report of advisory group on the introduction of digital radio.
IT	Currently under study (to be defined in the next regulatory document)
SV	The political strategy when laying down the legal framework for digital radio in 1995 was that the activities were “on trial” and should be carried out in some strategic areas of Sweden (major cities). After a couple of years there should be an evaluation and the Parliament was to be given the opportunity to take up a definite position on the introduction of digital radio. No financial encouragement was given (see above 2.5).
Q	<b>3.1 Past and ongoing activities.</b>
EIR	See section 3 above
IT	Currently under examination.
SV	As mentioned above under 1.8 a special investigator has been appointed to investigate the conditions for digital radio in Sweden.
Q	<b>3.1.1 Political initiatives, action plans, specific promotion schemes, encouragement measures (e.g. subsidies or other support), etc developed by public authorities (alone or in collaboration with market players) or the industry. In particular (but not only), those actions aimed at raising consumer awareness and interest. Also incentives for operators to go digital, e.g. through licensing conditions or material incentives. (Please provide references and web links if available.)</b>
D	Initiative digital broadcasting (IDB): president: Federal Ministry for Economics and Technology vice president: countries representatives among others from the federation and the Länder, broadcasting, content providers, network users, device industry, trade creation of progress reports (starting scenario 2000) and recommendations to the presentation at decision advisory bodies
DK	The transmission to DAB is initiated by the politic agreement on DAB and the obligation for DR to develop new digital radio services. Besides it is intended to be a market led process. Frequencies in the 1,5 GHz band for regional T-DAB coverage has been planned in order to provide capacity for commercial T-DAB services, but coordination has up to now been blocked by neighbouring countries. A solution is hoped for at the Maastricht planning meeting in June 2002. No further initiatives from the Ministry of Culture are planned for the moment – the marketing of DAB will primarily be the responsibility of DR, other DAB broadcasters and the manufacturers of DAB-receivers.
EIR	See section 3 above
FR	Dans le cadre de programmes de recherche et de développement, une aide financière est apportée par l’Etat à

	l'expérimentation de projets innovants dans le domaine de la radiodiffusion numérique et du multimédia.
IT	Currently under examination.
L	T-DAB: For several years discussions of authorities with broadcasters have taken place. Subsidies to help financing the simulcast period have been foreseen in the budget but not spent.
NL	A non-commercial, experimental period prior to the actual granting of licenses is considered. Market players invited to issue plans for introduction.
NOR	No public promotion schemes, subsidies or other encouragement measures are planned.
SV	See above.
<b>Q</b>	<b>3.1.2 Critical assessment of the above, especially regarding the role and contribution from public authorities. Impact evaluation. Positive and/ or negative experiences. Identified factors for success and mistakes to avoid. Obstacles encountered or foreseen. If applicable, solutions implemented or envisaged (regulatory, promotional or other).</b>
D	The present main problem of DAB is the too small market acceptance. A cause for this is to be seen that an increase in value for the citizen is only with difficulties recognisable, in any case in the measure that the necessary market penetration seems attainable in the desired time.
ES	<p>En la corta vida de la RD en España, la radio pública y los nuevos radiodifusores están dando pasos acelerados para implantar la nueva tecnología. Sin embargo, los radiodifusores comerciales tradicionales son reacios a implantar de forma acelerada la RD porque tienen que realizar fuertes inversiones además de asumir los cambios de un negocio que hasta la fecha les ha sido muy rentable.</p> <p>Otra de las tendencias que se aprecian en el mercado es la disposición de los radiodifusores a buscar alianzas estratégicas con los operadores de red.. El uso generalizado de los soportes multimedia ha provocado que los radiodifusores abandone progresivamente la explotación directa y exclusiva de las frecuencias o redes y busquen alianzas estratégicas con quienes poseen la infraestructura de transmisión que permiten ampliar el negocio de la radio.</p> <p>A partir de ahora se inicia una fase de implementación del parque de receptores que no sólo implica un cambio tecnológico sino que conlleva un cambio de estrategia de la oferta de servicios y de consumo: junto a la señal de audio las empresas suministran servicios de valor añadido. La tecnología digital está produciendo la convergencia de los terminales de recepción: los aparatos portátiles con una tecnología flexible capaz de integrar los nuevos cambios y demandas.</p>
IT	Currently under examination.
L	T-DAB: non-evolutive standard (in comparison to DVB)  S-DAB: Risk of shortage of spectrum availability
NOR	n/a
POR	The spectrum was reserved in time, the licence has been granted in 1999 and the network/service is already there, covering more than 50% of the population. The main obstacle is still the lack of terminal receivers, not available in a massive and affordable way.
SV	See above
<b>Q</b>	<b>3.2 Suggestions for future national strategy and EU co-ordinated action.</b>
B-V	EU can encourage the exchange of legislative measures and experiences between member states.
D	See starting scenario 2000 (BMW documentation) (annex 3 (German) and 4 (English) in particular points: 3 (aims and fundamental establishments) 3.1.4 (running out of analogue radio transmission) as well as 5 (starting scenario 2000) 5.1.2 (development plan). Information about the coordinated actions of the EU are to be found at generally under <a href="http://www.worlddab.org">www.worlddab.org</a>
DK	No suggestions

L	<p>As T-DAB does not seem to be an optimal technology for Luxembourg, alternatives such as DRM and S-DAB should also be encouraged in order to facilitate migration towards digital sound broadcasting. A review of the T-DAB transmission standard could also be helpful.</p> <p>However Luxembourg would welcome a coordinated action on EU level to favour introduction of digital radio in Europe including different technologies (improved T-DAB, DRM, T-DVB, S-DAB).</p> <p>EU initiatives should emphasize the interest of the availability of digital radio services across national boarders.</p> <p>In particular for satellite digital radio services, there is a need for an EU-coordinated policy, as these services are European rather than national services.</p>
NL	To be discussed
NOR	n/a
POR	Industrial policy to implement a mass market terminal production.
SV	<p>One important issue when formulating the strategy for digital radio is of course the use of one standard for the transmission. In Sweden, there seems to be a consensus among the broadcasters and operators that the DAB-standard (Eureka 147) is the best solution. To get the necessary industrial investments started among the manufacturers of receivers, it could be valuable with some kind of common position from the Member States and the Commission in support of DAB as the common European standard for digital radio. One could perhaps compare to the way things have been handled with the issue of TV-standards and interoperability (DVB-MHP), with an obligation for MS to "encourage" the use of DVB-MHP. In addition to this one might add that there is a Swedish DABForum, which is a non-profit organization for broadcasters, operators, manufacturers and others who want to promote digital radio development in Sweden. Link to website: <a href="http://www.dabforum.nu/">http://www.dabforum.nu/</a></p>
UK	<p>The UK CRCA is an enthusiastic member of WorldDAB. Its Chief Executive is Vice President of the organisation and Chairman of its European Committee. You will not be surprised, therefore, to hear how important it believes EU coordinated action will be. The UK is very aware of its overall un-importance to brown goods manufacturers. Unless other Member States participate in the provision of digital radio services, Eureka 147 digital terrestrial transmissions will not become popular with listeners. We appreciate that every country has different priorities. Many are better blessed with FM spectrum and with geographical territory than the UK, for example. Nevertheless, we believe many of the inducements offered by the UK Government have been very helpful and we also believe that radio will be almost entirely digital in 20 or so years time.</p>
<b>Q</b>	<b>4 MARKET ASPECTS</b>
A	All the following questions will be discussed within the Digital Platform (see 1.1.).
D	"Contents" are and remain national/regional/local first, but will be expected also throughout Europe (growing Europe-wide mobility, supply with national content also in other states). The industry (receivers) needs urgently a penetrable European market, in order to be able to offer attractive device prices to consumers in each individual market. In the case of comparable number of items full-digital devices are expected more cheaply than similar devices (like other technologies along Analogue/digital transmission).
DK	See answers above.
SV	<p>(Answers based on information obtained from the broadcasters) In general: Because of the lack of co-ordinated actions from the market players, and because of the lack of licensed private broadcasters, the Swedish digital radio market has not developed normally. The market situation (low interest for DAB, few available receivers etc.) is as a result of this. To achieve a successful introduction of digital radio it is necessary to have: A common regulatory framework for the digital radio market A large bouquet of digital radio services (both existing analogue and new) Good geographical coverage Receivers at reasonable prices</p>
UK	CRCA recognises that we cannot expect Government to market digital radio on our behalf and that there is a good deal of risk that needs to be accepted prior to any profit becoming likely.
<b>Q</b>	<b>4.1 Coverage areas: planned and already achieved. Types of programmes. Data services offered.</b>
B-V	In frequency block 12 A the public broadcaster VRT is broadcasting 7 programmes and one 'special service'. The degree of coverage is 90 % of the Flemish community and the target is 100%.
D	See <u>distribution</u> <a href="http://www.digitalradio-info.de/verbreitung/">http://www.digitalradio-info.de/verbreitung/</a> See <u>programme</u> <a href="http://www.digitalradio-info.de/programme/">http://www.digitalradio-info.de/programme/</a> data services as for example under

	<a href="http://www.bayerndigitalradio.de/programm/index_programm1-2.htm">http://www.bayerndigitalradio.de/programm/index_programm1-2.htm</a>
DK	Please refer to 1.5.2, 1.5.3 and 3.1.1. National coverage expected mid 2002, regional coverage expected in 2003.
EIR	No services implemented to date or planned for the immediate future. Current legislation requires the BCI to consult prior to deciding on franchise areas.
ES	En España está prevista disponer de una cobertura del 50% de la población para mediados de 2002, y de una cobertura del 80% de la población para mediados de 2006. Cobertura que abarca las 52 provincias.
NL	<u>Non yet</u>
NOR	Coverage is about 50-60 % of the population.
POR	<u>Planned coverage</u> Coverage of the continental territory by the end of 2004 and of the Autonomous Regions until the end of 2006, according to the following calendar: 1999 - continental coast between Braga and Setúbal, namely Lisboa, Porto and the highway axe between Braga and Setúbal; 2000 - all the continental coast between Valença e Vila Real de Santo António; 2001 - main itineraries (Lisbon/Elvas, Aveiro/Vilar Formoso and Braga/Valença); 2003 - all the regional centres; Azores Region - Pico and Graciosa in 2002, Terceira in 2003, Faial in 2004, São Jorge in 2005, S. Miguel and Flores in 2006; Madeira Region – Porto Santo in 2001 and Madeira in 2004. <u>Coverage achieved</u> See <a href="#">RDP's web site</a> . <u>Programmes already available</u> Antena 1 – Main RDP channel, including news, sports, music and other public interest contents. Antena 2 – Cultural RDP channel, including classical music, jazz, poetry, literature and other contents of cultural interest. Antena 3 – Youth RDP channel, including, namely, new wave music.
SV	2002: the national multiplex covers app. 35% of the population Programmes: Simulcasting of the public broadcasters (SR) programmes – P1, P3, P4. Digital only programmes: P2 Music, P3 Star, P6 and P7. Data service SR+ (broadcast, web, BWS) and PAD, see also 4.4 below. TPEG included on experimental basis.
UK	Details of coverage areas, types of programmes and services offered are all included in the Radio Authority's website at <a href="http://www.radioauthority.org.uk">www.radioauthority.org.uk</a> . The Radio Authority will have something to say about coverage areas. They have responded to our request to advertise quickly and we are grateful. We have insufficient spectrum to allow all current radio companies to participate and to allow all parts of the country to benefit from digital radio. This needs to be put right. As far as types of programmes go, commercial radio multiplexes are broadcasting a variety of new music programming targeted at different interests and age groups and are also providing new sources of news, plays and books. Many of these services are at a very basic stage. It is difficult to get the balance right between additional expenditure on content and additional audience available to listen via reasonably low-cost sets. The principle provider of non-audio data services is Digione, a project owned and developed jointly by Capital Radio and UBC Limited.
<b>Q</b>	<b>4.2 Terminals: variety, availability, prices.</b>
D	See <u>Receiver</u> <a href="http://www.digitalradio-info.de/receiver/geraete.php">http://www.digitalradio-info.de/receiver/geraete.php</a> Receivers (inclusive chips for convergence products such as PDA, PC) are present, variety increases, market penetration began. Price for example for DAB-Autoradio is approx. 500 € (in comparison with analogue equipment with comparable equipment), prices for first Portabels: 150 €
DK	No information available.
FIN	Available in hifi shops
IT	- Survey and research achieved in the Comitato per I Sistemi Digitali has shown that there are 4 categories of digital radio terminals: In-car radio Home Hi-Fi radio PC based solutions Portable radio Products are available from manufacturers but they are scarcely available in the distribution market. Prices are decreasing and for each of the above mentioned categories the starting prices are the following: In-car radio (400/500 Euro) Home Hi-Fi radio (200/600 Euro) PC based solutions (300/400 Euro) Portable radio
NOR	Number of terminals/receivers sold is very limited, approximately 3000. Mostly mobile units are sold. Prices are regarded as high and availability is limited.
SV	Many companies have launched more or less prototype terminals, but very few are available on the market and even fewer have been sold (some thousand?). The prices are rather high – around € 750 for in-car equipment.
UK	This is an important year in the UK. The manufacturers agree that we have got the content as right as we reasonably can without there being sufficient sets in the market and most of them would agree that coverage is reasonably robust. There are some excellent receiver ideas waiting to come to market as evidenced at the recent major electronic consumer exhibition in Hanover. Principal amongst these are DAB receivers combined with other facilities such as

	MPEG3. In addition the inclusion of DAB chips in prototype mobile phones may well be a very significant development. DAB's "one-to-many" benefit offers huge opportunities to those able to provide a back channel via telephony. Currently receiver prices are too high. The DRDB was able to market a £99 radio immediately prior to Christmas which was a successful stunt. It may well be that the DRDB will need to arrange for the provision to retailers of non-subsidised but still low-cost receivers until such time as the promised new product from many manufacturers finds its way into the shops.
<b>Q</b>	<b>4.3 Marketing strategies: initiatives from network operators, broadcasters, content providers, manufacturers and other private players.</b>
B-V	Cf. A 4.1
D	IMDR (Initiative Marketing Digital Radio) members: all digital radio transmission network providers in Germany, manufacturers of terminal equipments, Programm providers and manufacturers of transmission and receiving systems and/or DAB-Systemkomponenten goal is: consistent introduction of digital radio into the German market by common type appearance (logo), information campaign and sales (among other things print, radio, on-line one) target group: trade, programme providers, journalists, decision makers, consumers transmission network operators regional marketing under taking into account the parameters set by the terminal industry of the Land: press releases fairs programme providers: circuit from Radiospots profit plays editorial reporting Regional marketing actions (transmission network operators, industry, trade)
ES	Creación del Foro de la Radio Digital en España (1998): su objetivo es impulsar el desarrollo de la radio digital en España. Este Foro está formado por radiodifusores públicos y privados, por los operadores de redes y por los fabricantes de equipos emisores y receptores. Las Administraciones Públicas, tanto la Central como la Autonómicas – también participan en los trabajos del Foro como miembros consultivos sin derecho a voto.
IT	Start of trials. Creation of consortia.
L	Terrestrial: Existing broadcasters show interest in starting digital transmissions of existing analogue programmes and seek marketing alliance with automobile retailers.  Mobile communications operator shows interest in T-DAB frequencies with the aim of transmitting content to handies with integrated T-DAB receivers, either 2G or more probably 3G.  Satellite: In Luxembourg, SES Global / SES-Astra already provide satellite radio services via various geostationary FSS satellites to fixed users via DTH-TVROs and via cable head-ends. Another company based in Luxembourg, Global Radio SA, plans to offer S-DAB services from year 2005 on a European basis via a BSS(S) system with a target market in the mobile and vehicular sector as well as in the home market.
NL	Associations are starting to get organized. Tests are in development for IP tunnelling.
NOR	n/a
POR	The T-DAB operator is making a campaign, namely on the analogue radio system (MW and FM), trying to rise the awareness of the DAB system and pushing the adoption of this solution by the consumers.
SV	No or little marketing initiatives while waiting for the above mentioned investigation on digital radio. SR wants to start new digital services/channels to attract audiences, also planning to increase coverage for national multiplex to 85% of population.
UK	There are a number of individual initiatives from network operators and broadcasters. The UK manufacturing base in brown goods is not huge although the UK is home to some vibrant software writers. The national commercial radio multiplex company (Digital One) has stimulated the market greatly by co-funding the development of a UK based chip. It has now been joined by three others, all of which offer the opportunity for genuine portability through their reduced power requirements and through their massively reduced size. The DRDB coordinates the advertising packages broadcast by commercial radio and the promotional time given by BBC Radio services. It works hard to ensure that the message being given to consumers is consistent whether by public or commercial broadcasters.
<b>Q</b>	<b>4.4 Convergence: e.g. considerations about merging digital radio with other transmission technologies.</b>
D	In certain areas (data services) the combination of DAB with other digital technologies such as GSM, GPRS or UMTS (for the back channel) appears quite meaningful and promising. (See Annex2 "UMIS", "MOS") New possible use are expected by the association of Broadcast with personal communication, which leads to the advancement of both complementary transmission ways. Priorities: information, traffic, mobile Internet.

DK	Not considered at this time due to unavailability of national service.
FIN	The Finnish Broadcasting Company broadcasts its digital radio channels also in digital television network Also satellite digital radio channels are broadcasted in digital television network
FR	Diverses technologies permettant aujourd'hui la diffusion numérique de services de radio : DAB terrestre et satellite, DRM, DVB-T, DVB-S ou encore UMTS. Il est encore trop tôt pour conclure quelle sera la technologie qui pourra s'imposer dans le futur
IT	Knowledge of product trials to combine GSM return links for interactivity.
L	Interest of mobile operators
NL	A project is starting for testing to combine C2000 applications with T-DAB
NOR	n/a
SV	Today SR co-ordinates web-publishing with the PAD and non-PAD activities (SR+). This will be developed further. Example of content: news, programme guide, downloadable programmes (Real Audio-files). In the future: use of interactive terminals with return channel through GSM/GPRS. Also introducing IP-based services.
UK	The Radio Authority acknowledges that there are some converged characteristics within digital radio. The availability of some such services on cable and satellite platforms is on,e example. Nevertheless, it is the Radio Authority's view that by 2010 at least 80% of radio listening will continue to be to terrestrially delivered services, that is to say both analogue and digital. In the light of the disappointingly slow increase in the availability of digital radio receivers the very restrictive roll-out of broadband within the UK and the slowing in the take-up of digital television services with their concomitant ability to receive digital audio channels, that estimate – made two years ago – now seems something of an underestimate. Terrestrially delivered radio services are likely to remain dominant for the foreseeable futureWe believe digital radio chips will find themselves in many other kinds of devices, particularly mobile phones and probably set-top boxes. There are already plans to bring digital radio with MPEG3 recording capacity to market this year. Convergence is therefore inevitable and in the interests of both radio and other transmission technologies that do not have the ability to reach a mass audience easily
Q	<b>4.5 Satellite and terrestrial digital radio: prospects for competition/ complementarity between the respective business models.</b>
D	The geographical location of D would require expensive LEO-Satellite-Systems with additional terrestrial distribution structures in urban areas, which would be eligible for financing over Pay-Services only, which do not appear promising again in the national broadcast landscape (pay TV s.). At the moment there are no Sat-Systems recognisable.
DK	International S-DAB and national/regional T-DAB services are expected to complement each other in the future. A requirement for a national S-DAB service has not been identified in Denmark, however. Due to the present lack of frequencies for T-DAB for national services, Denmark support the reallocation of spectrum from S-DAB to T-DAB.
EIR	S-DAB is regarded as more suitable for International and possibly national services. The main interest in radio in Ireland is in terrestrial services at both a national and local level. To date no interest has been expressed in the provision of S-DAB services.
FR	Le développement de la radiodiffusion numérique pourrait être un mixte entre la radiodiffusion par satellite (S-DAB) complémentaire et la radiodiffusion terrestre (T-DAB) chacune des technologies pour les vanantages qu'elle présente (couverture pour le satellite, zone urbaine et quantité de programlmes pour le terrestre) permettant ainsi à une partie importante des services liés au DAB d'accéder au niveau européen, comme cela est en cours dans le reste du monde, à une masse critique de consommateurs susceptibles d'intéresser notamment les constructeurs automobiles
L	While terrestrial digital broadcasting could respond to the needs of local and regional broadcasting, satellite digital radio would be more suitable for national radio programmes of large or medium sized countries (national and regional spot beams) and for international sound radio transmissions. The latter could be made of thematic pay radio, programmes targeting an international audience and national programmes which want to reach their nationals living abroad or travelling.  Both offers will be complementary, satellite being a good means for radio to pass national boarders as opposed to T-DAB.  With regard to S-DAB platforms (which is an electronics communication network), it is necessary to ensure that

	<p>adequate spectrum is allocated / designated at an EU and CEPT level to enable and facilitate effective and viable competition between at least two S-DAB platforms in the 1.4 GHz BSS(S) bands offering transnational, pan-European and supra-national digital radio services (which is an electronic communications service).</p> <p>In this regard, it should be noted that the provision of satellite digital radio services (i.e S-DAB) requires established primary ITU allocations to the BSS(S). Given the very long lead times required to agree to establish or modify relevant ITU BSS(S) allocations at ITU WARC/S / WRCs, the existing ITU allocations to the BSS(S) should be respected at an EU level and any changes to spectrum access at a EU level for T-DAB and S-DAB services should only be implemented after a balanced, proportionate and transparent evaluation of relevant requirements for both T-DAB and S-DAB services at a Community level.</p>
NOR	n/a
SV	No major interest for satellite digital radio. Satellite can be used as a complement to terrestrial – to cover large areas at low cost. Larger interest for terrestrial – regional and local broadcasting.
UK	<p>The WorldDAB organisation is funding a separate study into the complementarity and competition between satellite and terrestrial digital radio. Satellite radio operators wish to cover larger areas than terrestrial ones do. By and large, radio is a national, regional or local experience. It does not travel well between countries who speak different languages. Satellite radio may therefore well suit the United States where is no particularly good record of publicly funded, public service broadcasting and no history of genuine national radio as there are in most European countries. On the other hand, Pan European radio services may be seen by some as a means of drawing European countries closer together. We think this may be true of television where different soundtracks can accompany the same picture but not of radio. As we understand it, the main European satellite radio protagonists are proposing targeting each national grouping within Europe rather than attempting to provide a Pan European service. We can understand why. We do not, however, think that satellite technology provides the benefits of terrestrial digital transmission. Radio via cable and satellite is already widely available in European homes. Any radio transmission system outside these platforms must be able to make radio available easily and portably no matter where the listener may be either outside the home and in the car or outside the home and not moving. To achieve this, satellite radio has to have terrestrial repeaters. Without them, it will be extremely difficult to receive satellite radio output where most people live in heavily built-up areas. We also believe that the technology used by satellite and terrestrial broadcasters should be identical. Not to use the same technology means that a host of receivers in the marketplace all of which do different things. No doubt, in the fullness of time, it might be cost effective to produce receivers that will do everything but, at the moment, this is not the case. We do not object to the ambitions of satellite broadcasters but we do not think that either they or the misunderstandings that can sometimes arise surrounding them should be allowed to denigrate the robustness and desirability of terrestrial transmission using Eureka DAB technology.</p>
	<b>OTHER ISSUES (new fields can be added here if necessary)</b>
L	<p>With a population of less than 450.000, Luxembourg is not a critical market which could play a decisive role for the success for digital radio in Europe. Luxembourg has a number of specificities which explain that terrestrial DAB may not be an optimal technology:</p> <ul style="list-style-type: none"> <li>• There is only one public radio station. It would have to share a multiplex with private stations. There would not be a large basic offer provided by public broadcasters in Luxembourg which would help to develop the market.</li> <li>• The needs of existing stations with regard to network quality, network costs and territorial coverage are diverging. The sharing of a network and a multiplex by different broadcasters raises difficulties.</li> <li>• The advertising market is small and private radio stations do not earn much money. They have no capacity to finance analogue/digital simulcast over time.</li> <li>• Luxembourg listeners are used to listen to foreign radio stations. With T-DAB however natural overspill is reduced. Luxembourg would wish neighbouring programmes to cover Luxembourg territory and/or foreign programmes to join a Luxembourg multiplex. But who would pay for transmission costs?</li> <li>• Luxembourg has a number of very small non profit local radio stations. They cannot afford joining a digital multiplex.</li> <li>• As a complement or an alternative Luxembourg looks at satellite to provide an offer of international programmes and services and of foreign national radio programmes thanks to natural overspill of national spot beams. Luxembourg looks as well towards DRM which might allow radio stations to accommodate their own transmission network in conformity with their needs and to allow reception of foreign broadcasts as well as transborder broadcasting.</li> </ul> <p>Considering regulatory issues, Luxembourg will have to make sure that its legislation on digital radio is compatible with the new European regulatory framework on electronic communications.</p>

## RESPONSE IN GERMAN:

<b>1</b>	<b>Q</b>	<b>REGULATORY FRAMEWORK</b>
	A	Für den Netzbetrieb ist eine Telekommunikationslizenz der Lizenzklasse III erforderlich (Netzbetreiber ist nicht gleichzeitig Programmanbieter). Die Frequenzvergabe erfolgt durch die Regulierungsbehörde für Telekommunikation und Post (RegTP). Die Bedarfsfeststellung sowie die Programmlizensierung erfolgt durch die einzelnen Bundesländer (Bedarfsträger).
<b>1.1</b>	<b>Q</b>	<b>Relevant measures (please provide legal/ administrative references and web links if available)</b>
	A	
1.1.1	Q	Legislative measures (laws, decrees, etc) adopted at national, regional or other level.
	A	<p><b><u>Bund (telekommunikationsrechtlich):</u></b></p> <p>Telekommunikationsgesetz (TKG) Informations- und Kommunikationsdienstegesetz (IuKDG)</p> <p>Frequenzbereichszuweisungsplanverordnung (FreqBZPV) Frequenznutzungsplanaufstellungsverordnung (FreqNPAV) Frequenzzuteilungsverordnung (FreqZutV)</p> <p><a href="http://www.bmwi.de">www.bmwi.de</a>:</p> <p><b><u>Bundesländer (rundfunk- bzw. medienrechtlich):</u></b></p> <p>Hörfunk ist im Wesentlichen durch die Bundesländer geregelt, wobei sich die einzelnen Regelungen der Länder z.T. deutlich unterscheiden, so dass allgemeine Angaben zur Rechtslage nur schwer möglich sind.</p> <p>Rundfunkstaatsvertrag Medien dienstestaatsvertrag Landesrundfunkgesetze bzw. Landesmediengesetze</p> <p>z. B.: <a href="http://www.alm.de">www.alm.de</a></p>
1.1.2	Q	Implementing/ administrative measures or decisions adopted by the regulator(s).
	A	<p><b><u>Bund (telekommunikationsrechtlich):</u></b></p> <p>Grundsätzlich:</p> <p>Mit dem seit dem 01.08.1996 geltenden Telekommunikationsgesetz vom 31. Juli 1996 (BGBl. I S. 1120) ist bezweckt, durch Regulierung im Bereich der Telekommunikation den Wettbewerb zu fördern und flächendeckend angemessene und ausreichende Dienstleistungen zu gewährleisten, sowie eine Frequenzordnung festzulegen. Die Ziele der Regulierung umfassen u. a. die Sicherstellung einer effizienten und störungsfreien Nutzung von Frequenzen auch unter Berücksichtigung der Belange des Rundfunks (§ 2 Abs. 2 Nr. 5 TKG).</p> <p>T-DAB gilt als grundlegende Innovation im Bereich der Übertragung von Hörfunkprogrammen, weil er einen störungsfreien und qualitativ hochwertigen Empfang innerhalb der jeweiligen Versorgungsbereiche und längerfristig eine effizientere Nutzung der knappen Funkfrequenzen ermöglicht.</p> <p>Im Ergebnis der Entwicklungsphase sowie des Verlaufs der durchgeführten Pilotprojekte erwies es sich, daß T-DAB über die Verbreitung von digitalisierten Hörfunkprogrammen hinaus als multimedialer Dienst betrachtet werden kann.</p> <p>Da alle wesentlichen Rahmenbedingungen gegeben sind, ermöglicht die Regulierungsbehörde für Telekommunikation und Post, mit der Zuteilung von Frequenzen für T-DAB aus den Frequenzbereichen 174</p>

		<p>- 230 MHz (Band III, derzeit vorwiegend Kanal 12) und 1452 - 1467,5 MHz (1,5 GHz-Bereich, sog. L-Band) den Aufbau der erforderlichen Netzinfrastruktur und damit den Regelbetrieb in der Bundesrepublik Deutschland. Die zur Verfügung stehenden Frequenzen sind in dem fortgeschriebenen T-DAB-Frequenzblockverteilungsplan der Schlußakten der T-DAB-Planungstagung der CEPT (Besondere Vereinbarung der CEPT), Wiesbaden 1995, festgelegt. Die sich daraus ergebenden Übertragungskapazitäten sind für eine Mischnutzung vorgesehen. Dies bedeutet, daß diejenigen Anteile der Übertragungskapazitäten, die nicht für die Übertragung digitaler Hörfunkprogramme im Zuständigkeitsbereich der Länder genutzt werden, für andere Dienstleistungen für die Öffentlichkeit genutzt werden sollen. Darunter sind Dienstleistungen zu verstehen, die nicht der unmittelbaren Betriebsabwicklung oder der unmittelbaren Programmbegleitung für die zu übertragenden Hörfunkprogramme dienen.</p> <p>Das Betreiben von Übertragungswegen zur Übertragung von digitalisierten Hörfunkprogrammen und anderen Diensten für die Öffentlichkeit ist nach § 6 Abs. 1 Nr. 1 TKG lizenzpflichtig und nach § 6 Abs. 2 Nr. 1 c) TKG der Lizenzklasse 3 zuzuordnen.</p> <p>Näheres siehe Vfg 110/1998 im Amtsblatt der Regulierungsbehörde (<a href="http://www.regtp.de/reg_tele/start/fs_05.html">http://www.regtp.de/reg_tele/start/fs_05.html</a>) sowie Verfügungen zur Eröffnung der einzelnen Frequenzzuteilungsverfahren</p> <p><a href="http://www.regtp.de">www.regtp.de</a></p> <p><b><u>Länder</u></b></p> <p>medienrechtliche Ausschreibung der Hörfunklizenzen; Stand in den einzelnen Ländern s. <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a>.</p>
1.2	Q	<b>Scope</b>
	A	Digital Radio soll zunächst additiv zu UKW eingeführt werden und langfristig UKW ersetzen
1.2.1	Q	Time: expected adoption of foreseen measures. Duration of adopted measures and review provisions.
	A	<p><b><u>Vorgesehene Maßnahmen auf Bundesebene:</u></b></p> <p>Eventuell Erweiterung der Vfg. 110/1998 erforderlich, um Versorgungsbedarf ausschließlich für Medien- und Teledienste zu realisieren (2002/2003), sukzessive weitere Frequenzzuteilungsverfahren (nach Versorgungsbedarf);</p> <p>Vorbereitung von Frequenzzuteilungsverfahren für DRM (ab 2003/2004)</p>
1.2.2	Q	Media covered: just radio or other communication services (e.g. TV) also. All radio offerings (public/ commercial, AM/FM...) or just part of it.
	A	<p>Es besteht ein breiter Konsens, dass DAB primär für die Übertragung von Hörfunkdiensten genutzt werden soll. T-DAB eignet sich grundsätzlich für Rundfunk, Medien- und Teledienste.</p> <p>Öffentlich-rechtliche und private Inhaltsangebote werden abgedeckt. (Radio, Datendienste (NPAD,PAD), Mediendienste)</p>
1.2.3	Q	Elements in the value chain: production, transmission, others.
	A	<p>Hersteller (Sendeequipment, Endgeräte, Chiphersteller), Netzbetreiber, Programmanbieter, öff. u. private Contentanbieter, Automobilindustrie, Verkehrsträger.</p> <p>(Die Produktion (der Inhalte) ist länderrechtlich zu behandeln. Bundesrechtlich zu regulieren ist die Übertragungsdienstleistung).</p>
1.2.4	Q	Transmission networks: terrestrial, satellite, internet, other.
	A	<p>Die Abstrahlung der Programme und Datendienste erfolgt terrestrisch, die Zuführung der Programme und Dienste kann über verschiedene Möglichkeiten wie z.B. Internet (für Dienste), Satellit, Richtfunk oder feste Leitungsverbindungen sichergestellt werden, kein DBSS.</p> <p>Bisher ist für die telekommunikationsrechtliche Regulierung in Deutschland nur terrestrisches DAB relevant.</p>

1.2.5	Q	Reception modes: fixed, portable, mobile, all.
	A	Alle Empfangsarten sind bei Digital Radio in gleichbleibend hoher Qualität vorgesehen, auch Kabel
1.2.6	Q	Services: broadcasting content, technical services, data. Free-to-air or pay services, interactive or not, etc.
	A	s. <a href="http://www.digitalradio.de">www.digitalradio.de</a> und Anlage 1  Nach derzeitigem Stand werden über T-DAB primär Hörfunkangebote verbreitet. Die Angebote sind nicht interaktiv ausgelegt und für den Nutzer kostenlos. Datendienste werden primär in Form von Verkehrshinweisen angeboten.
<b>1.3</b>	<b>Q</b>	<b>Aims, targets, deadlines, etc</b>
	A	Etablierung eines neuen zukunftssicheren Hörfunksystems (langfristig gesehen die Ablösung von UKW), bis 2010 wird erwartet, dass Mehrheit der Nutzer/Haushalte Digital Radio nutzt  Daneben sind die Ziele der Umstellung auf DAB: optimale Nutzung der Frequenzressourcen, günstigere Verbreitungskosten für die einzelnen Programme, Möglichkeit zur Einbindung von Hörfunkangeboten in konvergente Anwendungen
1.3.1	Q	Digital switchover strategies: target dates, requirements regarding population and/ or territory coverage, incentives, simulcast requirements, etc. Duration of simulcast phase, financing of simulcast (analogue and digital) during this phase.
		Die bestehende Situation von UKW am Markt, sowohl bei Konsumenten als auch Contentanbietern erlaubt keine kurz- bzw. mittelfristige substitutionierende Einführung von Digital Radio. Im Hinblick auf die notwendige Akzeptanz beim Konsumenten ist einer marktgetriebenen und komplementären Einführung von Digital Radio eindeutig Vorrang zu geben. So unterstützen beispielsweise die von der Industrie entwickelten und im Handel befindlichen kombinierten Empfänger (UKW und DAB) diese angestrebte Vorgehensweise auf sehr anschauliche Art. Voraussetzung für eine erfolgreiche Etablierung von Digital Radio sind dabei Inhalte (Hörfunk + Datendienste), die für den Konsumenten einen erkennbaren Zusatznutzen darstellen. Die zukünftige Verfügbarkeit zusätzlicher Bedeckungen, die die Schaffung eines Angebots ermöglicht, das über die Abbildung des bisherigen UKW-Bouquets weit hinausreicht, führt langfristig in eine Substitution des analogen Hörfunksystems unter Umgehung emotionalisierter Diskussionen. Langfristig sollte dies innerhalb der nächsten 15 Jahre erreicht werden. Für öffentlich-rechtliche Anstalten erfolgt eine Subventionierung des Simulcastbetriebes über die Rundfunkgebühren. Private Anbieter werden durch die zuständigen Landesmedienanstalten unterstützt. Genaue Aussagen zu Umfang und Dauer der Unterstützung für private Anbieter sind über die einzelnen Landesmedienanstalten zu erfragen. Der Ausbau von UKW-Versorgungen wird beendet. Die Knappheit von Frequenzen im UKW-Bereich wird durch Transfer auf DigitalRadio beendet.  Die rechtlichen Voraussetzungen für den switch-over sind zum Teil geschaffen. So findet sich in § 8 Abs. 3 Frequenzuteilungsverordnung des Bundes eine Regelung, wonach Frequenzen für den UKW-Hörfunk bis spätestens 2015 widerrufen werden sollen.  Medienrechtliche Regelungen der Länder zur Grundversorgung sind im neuesten Rundfunkstaatsvertrag (§ 52a Abs. 2) so gefasst, dass die so genannte Grundversorgung auf beliebigem Übertragungsweg hergestellt werden kann.
1.3.2	Q	Other relevant elements in the legal/ administrative measures.
	A	
<b>1.4</b>	<b>Q</b>	<b>Technical issues</b>
	A	Ziel: Schaffung und Anwendung anerkannter internationaler Standards mit europaweiter Umsetzung
1.4.1	Q	Standards mandated or encouraged for programmes and data: DAB, DRM, telematics standards, etc.
	A	Keine rechtlichen Festlegungen, spektrale Maske (z. B. gemäß EUREKA 147) muss eingehalten werden  <b>Die Grundlage:</b>

ETSI EN 300 401 Radio Broadcasting Systems;  
Digital Audio Broadcasting (DAB) to mobile, portable and fixed receivers  
ETSI TS 101 756  
Digital Audio Broadcasting (DAB);  
Registered Tables  
ETSI TR 101 496-1  
Digital Audio Broadcasting (DAB);  
Guidelines and rules for implementation and operation;  
Part 1: System outline  
ETSI TR 101 496-2  
Digital Audio Broadcasting (DAB);  
Guidelines and rules for implementation and operation;  
Part 2: System features  
ETSI TR 101 496-3  
Digital Audio Broadcasting (DAB);  
Guidelines and rules for implementation and operation;  
Part 3: Broadcast network

**Dienste/Ensemblezuführung:**

ETSI EN 300 797  
Digital Audio Broadcasting (DAB);  
Distribution interfaces;  
Service Transport Interface (STI)  
ETSI EN 300 798  
Digital Audio Broadcasting (DAB);  
Distribution interfaces;  
Digital baseband In-phase and Quadrature (DIQ) interface  
ETSI ETS 300 799  
Digital Audio Broadcasting (DAB);  
Distribution interfaces;  
Ensemble Transport Interface (ETI)

**Datendienstprotokolle:**

ETSI EN 301 234  
Digital Audio Broadcasting (DAB);  
Multimedia Object Transfer (MOT) protocol  
ETSI ES 201 735  
Digital Audio Broadcasting (DAB);  
Internet Protocol (IP) datagram tunnelling;  
bzw:  
ETSI TS 101 735  
Digital Audio Broadcasting (DAB);  
Internet Protocol (IP) datagram tunnelling  
ETSI TS 101 759  
Digital Audio Broadcasting (DAB);  
Data Broadcasting - Transparent Data Channel

**Datendienste:**

ETSI TS 101 498-1  
Digital Audio Broadcasting (DAB);  
Broadcast website;  
Part 1: User application specification  
ETSI TS 101 498-2  
Digital Audio Broadcasting (DAB);  
Broadcast website;  
Part 2: Basic profile specification  
ETSI TS 101 499 V1.1.1  
Title: Digital Audio Broadcasting (DAB);  
MOT Slide Show;  
User Application Specification

1.4.2	Q	Service requirements imposed or encouraged: minimum bit rate, ratio content/ data, etc.
	A	Keine rechtlichen Festlegungen  <b>"minimum bitrate"</b> hängt von der Anwendung ab: - mobil oder stationär nutzbar, ... - Datenumfang - max. Zykluszeit - durchschnittliche Zugriffszeit, usw. Als grobe Orientierung für die bisher üblichen Dienste gilt: 2...128 kbps  <b>ratio content (im Sinne von Schlüsselinhalt)</b> Kerninhalte eines Angebotes sollten schneller verfügbar sein, als "Rand-Inhalte". Hier kommt das Stichwort Prioritäts-Management ins Spiel (also häufigere und schnellere Aussendung für wichtige Content-Bereiche). Beispiele für Schlüsselinhalt: - Einstiegsseite in einen html-Dienst ("base.html") - html-text-Seiten sind wichtiger als eingebettete Grafiken (außerdem viel kleiner und daher einfacher häufig zu versenden)
1.4.3	Q	Transmission: signal strength, electromagnetic interference, other.
	A	Die Regelungen nach Abkommen Wiesbaden 1995 sind anzuwenden.  ETSI: EN 300 401 TR 101495 TR 101496 TR 101758 ITU: Bs.774-2, BO.789, BS.1114, BO.1130 : Um Verfügbarkeit im Raum (99% Ortswahrscheinlichkeit) zu gewährleisten, wird eine minimale äquivalente "electrical field strength" gefordert: Im Band III (siehe auch TR 101758) ist das >38 dBµV/m. in 1,5 m ü. G. Zum Thema electromagnetic interference: (Siehe EN 300401)
1.4.4	Q	Receivers: requirements imposed or encouraged.
	A	Keine rechtlichen Festlegungen  Siehe: EN 50 248 IEC 62 104
<b>1.5</b>	<b>Q</b>	<b>Planning</b>
	A	Kurz bis mittelfristig ist der bundesweite Auf- und Ausbau der DAB Versorgungsnetze (national), sowie die Schaffung weiterer Bedeckungen vorgesehen. Langfristig wird de facto eine Ablösung von UKW durch Digital Radio angestrebt.
1.5.1	Q	Territorial coverage.
	A	Bundesweit mit regionalen (Länder) and lokalen Abdeckungen Siehe: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a>  (Grundsätzliche telekommunikationsrechtliche Festlegungen gemäß Versorgungsverpflichtung unter Berücksichtigung der Marktdurchdringung und der Wirtschaftlichkeit : Nicht territorial, sondern in Bezug auf die Bevölkerung des Versorgungsgebietes: Nach 3 Jahren 80 %, nach 5 Jahren 90 % und nach 8 Jahren 95 %.)
1.5.2	Q	Spectrum: frequencies reserved for digital radio services. Sharing between: radio services, radio and other communication services, operators. Frequency planning (e.g. SFN, MFN). Spectrum capacity reserved for data. Other.
	A	Grundsätzlicher Vorrang des Rundfunks, im Einzelfall durch zuständiges Bundesland auszuüben. Danach Festlegung von Kapazitätsanteilen für Rundfunk, Medien- und Teledienste.  Für T-DAB bisher ausschließlich SFN-Planung

		Siehe auch: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a> bzw. Anlage 1
1.5.3	Q	Multiplexes: number, territorial coverage, programmes per multiplex, multiplex allocation and sharing.
		T-DAB: Zurzeit 2 Multiplexe pro Gebiet, Versorgung von Bevölkerungsanteilen (s. 1.5.1), etwa 6 Programme pro 864 CU.  Siehe auch: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a>
<b>1.6</b>	<b>Q</b>	<b>Financing issues: publicity, subsidies, pay services, other</b>
	A	Verschiedene (auch gemischte) Finanzierungsmodelle sind denkbar. Pay services noch nicht vorhanden, werden erwartet für „premium services“, auch in Verbindung mit GSM/UMTS-Netzen (Konvergenz von Broadcast und Individual-Diensten)  Öffentlich rechtliche Anstalten : gebührenfinanziert, teilweise werbefinanziert  Private Anbieter : gefördert durch Landesmedienanstalten (während der Simulcastphase), danach größtenteils werbefinanziert.  Dienste (NPAD): während der Simulcastphase teilweise gefördert (keine Netzkosten), danach sind Finanzierungsmodelle sowohl über Conditional Acces als auch über Werbung angestrebt
1.6.1	Q	Business models encouraged or discouraged in the Member States (indicate how): retain existing financial model (financing through advertising), or introduce new models like pay-radio services, partial financing through data services, etc.
	A	Zum Thema „Data Services“ siehe Anlage 2 (Power Point Präsentation)
1.6.2	Q	How increased programme competition (arising from the development of digital radio networks) is/will be dealt with?
	A	Die zu erwartende Vergrößerung des Programmangebotes stellt unter dem Aspekt der Vielfalt den entscheidenden Mehrwert von DAB dar. Es ist zu erwarten, dass es zu einer stärkeren Verspartung der Programme kommt, wie sich die Programmzahlvermehrung auf die Wirtschaftlichkeit der einzelnen Programme auswirken wird, bleibt abzuwarten.
<b>1.7</b>	<b>Q</b>	<b>Content issues: copyright, cultural aspects, other</b>
	A	
1.7.1	Q	How many services are licensed ?
	A	Siehe: Siehe: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a> und Anlage 1
1.7.2	Q	Are there “community” radio services ? What kind of licence are they granted ? Are there specific measures to encourage such non for profit services ?
	A	In Baden-Württemberg ist ein nichtkommerzielles Lokalradio lizenziert, um die Entwicklungsmöglichkeiten dieser Form von Bürgerradio in DAB zu erhalten.  Weitere Bürgerradios sind derzeit nicht in DAB vertreten.
1.7.3	Q	Legal and regulatory frameworks for radio contents (national song quota, pluralism of the news...) ?
	A	Die Landesmediengesetze sehen mit zum Teil unterschiedlichen Ausprägungen vor, dass die verbreiteten Programme dem Gebot der Vielfalt entsprechen müssen (Anbiervielfalt, Formatdifferenzierung lokale/regionale Identität).
1.7.4	Q	Copyright for music ?

	A	Siehe : Richtlinien GEMA www.gema.de
1.8	Q	<b>Additional information and comments on regulatory issues</b>
	A	
2	Q	<b>LICENSING</b>
	A	
2.1	Q	<b>Awarding process</b>
	A	
2.1.1	Q	Authorities involved at national, regional or other level (please provide legal/ administrative references and web links if available). Co-ordination procedures (if applicable).
	A	<p><b><u>Telekommunikationsrechtlich:</u></b></p> <p>Lizenzen nach § 6 TKG: Reg TP  Frequenzzuteilungen nach § 47 TKG: Reg TP</p> <p><a href="http://www.regtp.de">www.regtp.de</a></p> <p><b><u>Medienrechtlich:</u></b></p> <p>Zuständige Landesbehörden (Staats-, Senatskanzleien, Landesmedienanstalten)</p> <p>z. B.: <a href="http://www.alm.de">www.alm.de</a></p>
2.1.2	Q	Licensees: multiplex operators, service operators, other.
	A	<p><b><u>Telekommunikationsrechtlich:</u></b></p> <p>Betreiber von Übertragungswegen  Frequenznutzer</p> <p><b><u>Medienrechtlich:</u></b></p> <p>Inhalteanbieter (außer bei Telediensten)</p>
2.1.3	Q	Procedure: call for tenders, beauty contest, etc.
	A	<p><b><u>Telekommunikationsrechtlich:</u></b></p> <p>Für Lizenzen: Antragsverfahren</p> <p><u>Für Frequenzzuteilungen:</u></p> <p>1. Stufe: Antragsverfahren,  2. Stufe: Ausschreibungsverfahren (wenn mehr Frequenzen beantragt wurden als verfügbar sind)</p> <p><b><u>Medienrechtlich</u></b></p> <p>Auswahlverfahren bei Bewerberüberschuss durch beauty-contest, wobei Aspekte der Vielfalt entscheidend sind (s.o. 1.7.3). Zum Teil existieren Vorrangregelungen für analog verbreitete Programme. Der öffentlich-rechtliche Rundfunk hat einen weitgehenden Versorgungsanspruch.</p>
2.1.4	Q	Price.
	A	<b><u>Telekommunikationsrechtlich/ Medienrechtlich:</u></b>

		Gebühren- und Beitragsverordnung(en) Berücksichtigung der Entwicklungskosten (insbesondere simulcast-Betrieb) bei der Gebührenbemessung
<b>2.2</b>	<b>Q</b>	<b>Licences' characteristics</b>
	A	
2.2.1	Q	Scope: transmission/ multiplex, broadcasting content, technical services, data (associated to or independent from broadcasting content), other. (Specify the types of transmission, content, services, etc covered)
	A	Lizenz nur für das Betreiben von Übertragungswegen, Frequenzuteilungen zusätzlich (standortgebunden) bei Frequenznutzungen mit Festlegung der kennzeichnenden Merkmale.  Andere Festlegungen (insbesondere Inhalte) ausschließlich medienrechtlich durch Bundesländer.
2.2.2	Q	Territory covered.
	A	Abhängig vom jeweiligen Versorgungsbedarf der Länder, insgesamt mehrfache Abdeckung der Bundesrepublik.  Siehe auch: <a href="http://www.atlas-digital-radio.de">www.atlas-digital-radio.de</a>
2.2.3	Q	Length and renewal.
	A	Lizenzen grundsätzlich unbefristet,  Frequenzuteilungen: T-DAB: 15 Jahre  Dauer der medienrechtlichen Zulassungen/Zuteilungen unterschiedlich, im Schnitt rund 8 Jahre.
2.2.4	Q	Spectrum granted.
		Gemäß anwendungsspezifischen Erfordernissen
<b>2.3</b>	<b>Q</b>	<b>Awarding criteria</b>
	A	
2.3.1	Q	Relationship between analogue and digital radio licenses (e.g. automatic extension).
	A	Keine!  (Unabhängiges Lizenzierungsverfahren)  für Medienrecht s.o. 2.1.3
2.3.2	Q	Market structure considerations: balance between public and commercial broadcasters, priority to existing players or new entrants, monopoly or other competition law considerations, etc.
	A	<b><u>Telekommunikationsrechtlich:</u></b>  Wettbewerb wird angestrebt, in der Praxis DT AG sowie gemeinsame Tochtergesellschaften mit jeweiliger Landesrundfunkanstalt bzw. Landesmedienanstalt und ggf. anderen Gesellschaftern.  <b><u>Medienrechtlich:</u></b>  Länder (Bedarfsträger) legen Anzahl der Programmplätze fest. Lizenzierungsschwerpunkte in den Bundesländern unterschiedlich. Kriterien in Bayern: Neuartigkeit des Programms, Attraktivität der Inhalte, wirtschaftliche Tragfähigkeit des Unternehmens für den Lizenzierungszeitraum.
2.3.3	Q	Media ownership and plurality considerations.

	A	Medienkonzentrationsrecht im Bereich des Hörfunks ist von den einzelnen Ländern mit zum Teil sehr verschiedenen Ansätzen geregelt.
<b>2.4</b>	<b>Q</b>	<b>Licensing obligations.</b>
	A	
2.4.1	Q	Infrastructure roll-out, targets (e.g. in terms population and/or territory coverage).
	A	Grundsätzliche Festlegungen gemäß Versorgungsverpflichtung: Nicht territorial, sondern in Bezug auf die Bevölkerung des Versorgungsgebietes:  Nach 3 Jahren 80 %, nach 5 Jahren 90 % und nach 8 Jahren 95 %.
2.4.2	Q	Provision of certain programmes, contents or services ('must carry' obligations). Development of new programmes, contents or services.
	A	Landesrechtlich z.T. unterschiedlich geregelt. Must-carry sind in jedem Fall die landesbezogenen öffentlich-rechtlichen und zumeist auch eine Auswahl der landesbezogenen privaten Programme.
2.4.3	Q	Analogue/ digital simulcast requirements.
	A	Derzeit keine ausdrückliche Regelung.
2.4.4	Q	Other commitments required.
	A	
2.4.5	Q	Limits imposed on licensees
	A	
2.4.6	Q	Conditions for renewal.
	A	<b><u>Telekommunikationsrechtlich für Frequenzzuteilung:</u></b>  Erneute Durchführung eines Frequenzzuteilungsverfahrens  <b><u>Medienrecht:</u></b>  Nach Ablauf der Lizenz/Zuteilung erneutes Ausschreibungsverfahren.
<b>2.5</b>	<b>Q</b>	<b>Financing issues: publicity, subsidies, pay services, other</b>
	A	
<b>2.6</b>	<b>Q</b>	<b>Practical experience</b>
	A	<b><u>Sachsen-Anhalt:</u></b>  DAB-Regelbetrieb findet in Sachsen-Anhalt seit April 1999 statt. Derzeit werden folgende Radioprogramme landesweit digital ausgestrahlt:  <ul style="list-style-type: none"> <li>• Rockland Sachsen-Anhalt (Radio SAW)</li> <li>• Project 89.0 digital (Hit-Radio Brocken)</li> <li>• MDR-Klassik</li> <li>• DeutschlandRadio Berlin</li> <li>• Deutschlandfunk</li> </ul> Darüber hinaus hat die Medienanstalt Sachsen-Anhalt (MSA) vor Kurzem eine Lizenz für ein Radioprogramm über die digitale Langwelle im DRM-Standard an die Europäische Rundfunk- und Fernseh GmbH Europa 1 vergeben. Weiterhin sind in Sachsen-Anhalt verschiedene Datendienste (Verkehrs- und Wetterinformationen,

		<p>Flughafen- und Bahninformationen) landesweit und lokal parallel zu den Hörfunkprogrammen verfügbar.</p> <p><b>Bayern:</b></p> <p>Der Regelbetrieb in Bayern wurde im April 1999 eröffnet. Mittlerweile sind 35 Digital-Radio-Programme auf Sendung: Im landesweiten Netz sind 7 (Bayern 2 Radio, Bayern 3, Bayern 4 Klassik, Bayern 5 Aktuell, Bayern Mobil, Radio Galaxy, Rock Antenne), in den lokalen Netzen München, Ingolstadt, Nürnberg und Augsburg sind zusätzlich nochmals je 7 Programme zum empfangen. Daneben strahl DeutschlandRadio seine beiden Programme Deutschland Funk und Deutschland Radio in allen lokalen Netzen aus.</p>
2.6.1	Q	Licenses awarded or to be awarded.
	A	<p>Lizenzvergabe und Frequenzuteilungen bundesweit erfolgt, sukzessive zusätzliche Vorgänge für zusätzlichen Versorgungsbedarf</p> <p>Siehe: <a href="http://www.regtp.de/reg_tele/start/fs_05.html">www.regtp.de/reg_tele/start/fs_05.html</a></p>
2.6.2	Q	Complaints or difficulties encountered. Useful lessons.
	A	Zu ausgedehnte Versorgungsanforderungen können zu betriebswirtschaftlichen Belastungen des Betreibers von Übertragungswegen führen
<b>2.7</b>	<b>Q</b>	<b>Additional information and comments on licensing issues</b>
	A	
<b>3</b>	<b>Q</b>	<b>POLITICAL STRATEGY AND ENCOURAGEMENT MEASURES</b>
	A	
<b>3.1</b>	<b>Q</b>	<b>Past and ongoing activities.</b>
	A	
3.1.1	Q	Political initiatives, action plans, specific promotion schemes, encouragement measures (e.g. subsidies or other support), etc developed by public authorities (alone or in collaboration with market players) or the industry. In particular (but not only), those actions aimed at raising consumer awareness and interest. Also incentives for operators to go digital, e.g. through licensing conditions or material incentives. (Please provide references and web links if available.)
	A	<p>Initiative Digitaler Rundfunk (IDR):</p> <ul style="list-style-type: none"> <li>▪ Vorsitz: Bundesministerium für Wirtschaft und Technologie</li> <li>▪ stellv. Vorsitz: Länder</li> <li>▪ Vertreter u.a. von Bund und Ländern, Rundfunk, Contentanbieter, Netzbetreiber, Geräteindustrie, Handel</li> <li>▪ Erstellung von Sachstandsberichten (Startszenario 2000) und Empfehlungen zur Vorlage bei Entscheidungsgremien</li> </ul>
3.1.2	Q	Critical assessment of the above, especially regarding the role and contribution from public authorities. Impact evaluation. Positive and/ or negative experiences. Identified factors for success and mistakes to avoid. Obstacles encountered or foreseen. If applicable, solutions implemented or envisaged (regulatory, promotional or other).
	A	Das derzeitige Hauptproblem von DAB ist die zu geringe Marktakzeptanz. Eine Ursache hierfür wird darin gesehen, dass für den Bürger ein Mehrwert nur schwer erkennbar ist, jedenfalls nicht in dem Masse, dass die erforderliche Marktdurchdringung in der gewünschten Zeit erreichbar scheint.
<b>3.2</b>	<b>Q</b>	<b>Suggestions for future national strategy and EU co-ordinated action.</b>
	A	<p>Siehe Startszenario 2000 (BMW i Dokumentation) (Anlage 3 (deutsch) und 4 (englisch))</p> <p>insbesondere Punkte:</p> <p>3 (Zielvorstellungen und grundsätzliche Festlegungen)</p>

		3.1.4 (Auslaufen analoger Hörfunkübertragungen) sowie 5 (Startszenario 2000) 5.1.2 (Ausbauplan). Informationen zu EU koordinierten Aktionen allgemein unter <a href="http://www.worlddab.org">www.worlddab.org</a>
<b>4</b>	<b>Q</b>	<b>MARKET ASPECTS</b>
	A	„Inhalte“ sind und bleiben zunächst national/regional/lokal , werden aber auch europaweit erwartet (wachsend europaweite Mobilität, Versorgung mit nationalem Content auch in anderen Staaten). Die Industrie (Empfänger) braucht zwingend einen durchgängigen europäischen Markt, um Verbrauchern in jedem einzelnen Markt attraktive Gerätepreise anbieten zu können. Bei vergleichbarer Stückzahl werden volldigitale Geräte billiger als analoge Geräte erwartet (wie andere Technologien mit Analog/Digital-Übergang).
<b>4.1</b>	<b>Q</b>	<b>Coverage areas: planned and already achieved. Types of programmes. Data services offered.</b>
	A	<u>Verbreitung</u> siehe <a href="http://www.digitalradio-info.de/verbreitung/">http://www.digitalradio-info.de/verbreitung/</a> <u>Programm</u> siehe <a href="http://www.digitalradio-info.de/programme/">http://www.digitalradio-info.de/programme/</a> <u>Datendienste</u> beispielhaft unter <a href="http://www.bayerndigitalradio.de/programm/index_programm1-2.htm">http://www.bayerndigitalradio.de/programm/index_programm1-2.htm</a>
<b>4.2</b>	<b>Q</b>	<b>Terminals: variety, availability, prices.</b>
	A	<u>Receiver</u> siehe <a href="http://www.digitalradio-info.de/receiver/geraete.php">http://www.digitalradio-info.de/receiver/geraete.php</a>  Empfangsgeräte (incl. Chips für Konvergenzprodukte wie PDA, PC) sind vorhanden, Vielfalt nimmt zu, Marktpenetration hat begonnen. Preis z.B. für DAB-Autoradio ca. 500 € (wie mit Analoggerät mit vergleichbarer Ausstattung), Preise für erste Portabels: 150 €
<b>4.3</b>	<b>Q</b>	<b>Marketing strategies: initiatives from network operators, broadcasters, content providers, manufacturers and other private players.</b>
	A	IMDR (Initiative Marketing Digital Radio) <ul style="list-style-type: none"> <li>▪ Mitglieder: alle Digital Radio Sendernetzbetreiber in Deutschland, Endgerätehersteller, Programmanbieter und Hersteller von Sende- und Empfangs-anlagen bzw. DAB-Systemkomponenten</li> <li>▪ Ziel konsequente Einführung von Digital Radio in den deutschen Markt durch gemeinsamen Markenauftritt (Logo), Informationskampagne und Aktionen (u.a. Print, Radio, Online)</li> <li>▪ Zielgruppe: Handel, Programmanbieter, Journalisten, Entscheidungsträger, Konsumenten</li> </ul> Sendernetzbetreiber <ul style="list-style-type: none"> <li>▪ regionales Marketing unter Berücksichtigung der Parameter im Bundesland</li> </ul> Endgeräteindustrie: <ul style="list-style-type: none"> <li>▪ Pressemitteilungen</li> <li>▪ Messen</li> </ul> Programmanbieter: <ul style="list-style-type: none"> <li>▪ Schaltung von Radiospots</li> <li>▪ Gewinnspiele</li> <li>▪ redaktionelle Berichterstattung</li> </ul> Regionale Marketingaktionen (Sendernetzbetreiber, Industrie, Handel)
<b>4.4</b>	<b>Q</b>	<b>Convergence: e.g. considerations about merging digital radio with other transmission technologies.</b>
	A	In bestimmten Bereichen (Datendiensten) erscheint die Kombination von DAB mit anderen digitalen Technologien wie GSM, GPRS oder UMTS (für den Rückkanal) durchaus sinnvoll und erfolgversprechend. (Siehe Anlage2 „UMIS“, „MOS“)  Durch die Verbindung von Broadcast- mit Individualkommunikation werden neuartige Nutzungsmöglichkeiten erwartet, die zur Weiterentwicklung von beiden komplementären Übertragungswegen führen. Schwerpunkte: Information, Verkehr, mobiles Internet.
<b>4.5</b>	<b>Q</b>	<b>Satellite and terrestrial digital radio: prospects for competition/ complementarity between the respective business models.</b>

	A	Die geografische Lage von D würde aufwendige LEO-Satelliten-Systeme mit zusätzlichen terrestrischen Verteilstrukturen in urbanen Gebieten erfordern, die nur über Pay-Services finanzierbar wären, die wiederum in der nationalen Rundfunklandschaft nicht erfolgversprechend erscheinen (s. Pay-TV). Z.Zt. keine Sat-Systeme erkennbar.
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