



NRRL

NORSK RADIO RELÆ LIGA

NORWEGIAN SECTION OF THE INTERNATIONAL AMATEUR RADIO UNION

Samferdselsdepartementet

OSLO

DATO: 21. juli 2008

Høringssak – Rapport om Digital Dividende.

Sammendrag:

Norsk Radio Relæ Liga, NRRL, har i det etterfølgende gitt endel synspunkter og merknader til Rapporten om Digital Dividende. Vi bringer dessuten forslag til revurdering av enkelte av arbeidsgruppens forslag hvor det tas hensyn til tidligere beslutninger og tildelinger, og forøvrig den utstrakte bruk som idag skjer i frekvensbåndet 50 – 52 MHz.

I hovedsak påpekes det at

- *den delen av rapporten som gjelder Kringkastingsbånd I (Bånd I) faller utenfor arbeidsgruppens mandat og bør kun fremkomme som betraktninger i et vedlegg til rapporten,*
- *at det i rapporten legges opp til en direktetildeling og forfordeling til Forsvaret som virker meget tvilsom og uheldig i forhold til normal praksis for frekvenstildelinger og i forhold til andre brukere,*
- *at Radioamatørtjenesten i mange år har hatt en frekvenstildeling i hele båndet 50 – 52 MHz, en tildeling som vi anser som meget viktig og som er i aktiv bruk.*

Til slutt ber vi om at enkelte av arbeidsgruppens konklusjoner blir revurdert slik at resultatet blir i overensstemmelse med de tidligere beslutninger og tildelinger som er gjort, og dessuten reflekterer dagens utstrakte radioamatøraktivitet i dette frekvensbåndet. Dersom radioamatørtjenesten i Norge mister denne allokeringen vil dette være svært alvorlig for denne tjenesten, og helt i utakt med hva som tidligere er besluttet nasjonalt, og det som skjer i CEPT og i verden forøvrig.

Innledningsvis vil Norsk Radio Relæ Liga (NRRL) få uttrykke sin tilfredshet over å ha blitt permanent inkludert i Departementets og Post- og teletilsynets lister over høringsinstanser i spørsmål relatert til radio og frekvensbruk. Radio- og frekvensbruk er av grunnleggende interesse for en organisasjon som NRRL og det knytter seg nødvendigvis alltid en sterk interesse til hva som skjer på disse områdene i Norge og i verden forøvrig.

Norsk Radio Relæ Liga (NRRL) er radioamatørens interesseorganisasjon i Norge. Organisasjonens formål er dels å arbeide innad med å styrke samarbeidet og vennskapet mellom radioamatørene og å høyne deres faglige nivå, dels en utadrettet virksomhet med å gjøre amatørradio kjent og ivareta radioamatørens interesser overfor myndighetene. Norsk Radio Relæ Liga er av Justisdepartementet inkludert i listen over frivillige organisasjoner (FORF) som står til rådighet med mannskaper og ressurser til landets redningstjeneste. Det er en sentral oppgave for NRRL å holde nær kontakt med Post- og teletilsynet som er den myndighet som har ansvaret for amatørradio i Norge.

Når det gjelder Rapport Arbeidsgruppe Digital Dividende som er sendt ut på høring, og som dette brevet vil behandle, inneholder denne materiale, forslag og konklusjoner som sterkt berører NRRLs interesser.

Vi viser her spesielt til det som er skrevet som gjelder frekvensbåndet 47 – 68 MHz (Kringkasting Bånd I), hvor det allerede finnes en norsk allokering for Radioamatørtjenesten. Imidlertid har man også merket seg at denne delen av frekvensspekteret ikke inngår i Arbeidsgruppens mandat, ei heller inngår dette frekvensbåndet i EUs RSPGs definisjon av hvilke frekvensbånd som skal regnes med når man beregner Digital Dividende i denne sammenheng. Det er mange land i Europa som fortsatt benytter Bånd I for analog kringkasting, og situasjonen i Norge er derfor ikke å regne som mer spesiell enn andre steder i Europa.

Vi mener det derfor vil være helt galt å regne Bånd I med i den Digitale Dividenden, og at det som gjelder Bånd I kun burde komme som et vedlegg til Rapporten som betraktninger fra Arbeidsgruppen og som en ren tilleggsinformasjon. Anbefalinger fra Arbeidsgruppen for dette frekvensbåndet bør derfor antakelig heller ikke inkluderes i den videre behandling av Rapporten.

Arbeidsgruppen anbefaler dog i høringsutkastets konklusjon at frekvensbåndet 47 – 68 MHz, Kringkastings-Bånd I, direktetildeles Forsvaret etter søknad, med unntak av båndet 66 – 68 MHz som foreslås reservert til fremtidig allmen kringkasting basert på DRM. Det er ikke gitt noen begrunnelse for anbefalingen annet enn at man viser til at Forsvaret har en sterk interesse for fortsatt bruk av dette båndet og ønsker en permanent frekvenstillatelse i båndet (**Kap. 7**).

Hvordan Forsvarets ønsker har kommet til Arbeidsgruppens kunnskap uten Forsvarets deltagelse i Arbeidsgruppen er ikke dokumentert. Ei heller er det angitt noe behov eller ønsker fra andre aktuelle brukere av båndet, og heller ikke Radioamatørtjenesten har vært konsultert spesielt hva gjelder båndet 50 – 52 MHz.

En slik konklusjon er derfor i realiteten en forhånds-direktetildeling av frekvensbåndet 47 – 68 MHz til Forsvaret, noe som vi i dette tilfellet mener resulterer i en grov forskjellsbehandling og forfordeling til en bruker.

Man skal tillate seg å minne om at Forsvarets frekvensbehov har vært gjenstand for grundig gjennomgang flere ganger over mange år, og de nasjonale såvel som NATOs behov og som

berører Norge har vært imøtekommet (*Se Vedlegg 1, fotnote EU1 til European Common Allocations Table (ECA), og Vedlegg 2, utdrag fra ECA*). Det virker derfor for oss noe underlig at Forsvarets frekvensbehov nå plutselig øker utover de behov som tidligere er fremmet når hele Hæren er redusert til en styrke som snaut dekker halvparten av en normal fotballbane. Behov som måtte være tilstede hos Forsvaret ved operasjoner i andre land må dekkes der frekvensene skal benyttes, ikke i Norge.

Det er imidlertid en kjent sak at Forsvaret ALLTID begjærlig har kastet seg over det som er mulig å tilegne seg av frekvensressurser uansett behov. Det har derfor over mange år vært foretatt en opprydding og sanering av det av Forsvarets frekvensbruk som det ikke har vært dokumenterte behov for. Og som normalt er innen frekvensforvaltning, blir slike tildelinger gjort på basis av veldokumenterte behov fra brukere.

NRRL stiller seg også undrende til at den bruk som allerede er nedfelt i Norsk Frekvenstabell ikke synes å være diskutert i Arbeidsgruppen (*Se Vedlegg 3, Norsk Frekvenstabell*).

Frekvensbåndet 50 – 52 MHz er av spesiell interesse for Radioamatørtjenesten, og norske radioamatører har i mange år hatt tilgang til dette frekvensbåndet med en sekundær status *i forhold til analog fjernsyns-kringkasting*, som er den primære bruker av frekvensbåndet. Forutsetning i forvaltningen ved tildeling i sin tid og forståelsen har hele tiden vært at når analog fjernsyns-kringkasting opphører skal Radioamatørtjenesten i Norge fortsatt ha denne tildelingen, men da gå over til å få **PRIMÆR** status i båndet.

Denne tildelingen er da også innkludert i den norske frekvensallokeringsstabellen og er der faktisk beskrevet med Primær status idet "AMATEUR" er beskrevet med store bokstaver (*Se vedlegg 3*). I den terminologi som anvendes i denne sammenheng betyr dette primær status, noe vi selvfølgelig er meget tilfreds med.

Vi antar dog at Radioamatørtjenestens fortsatte bruk av 50 – 52 MHz likevel bør skje på sekundær basis, i det minste i de områder hvor fjernsynskanal 2 fortsatt er i bruk, inntil frekvensbåndet 50 – 52 MHz endelig blir frigjort for analog fjernsyns-kringkasting pr. 1. januar 2010.

I den norske delen av European Common Allocation table (ECA), hvor det i den norske frekvensallokeringsstabellen innmeldt av PT (*Se Vedlegg 4, utdrag fra European Frequency Information System, (EFIS), den Norske delen av EFIS, og Se Vedlegg 5, utdrag fra EFIS*), er det listet ikke mindre enn fire forskjellige radiotjenester som har allokeringer i båndet 50 – 52 MHz. Som det fremgår av denne tabellen er applikasjonene i Norge angitt til "Amateur og TV analogue terrestrial broadcasting". Dette bekrefter som nevnt foran også det som var intensjonen den gang denne tildelingen til Radioamatørtjenesten ble foretatt, nemlig at når kringkasting en gang i fremtiden forlater Bånd I vil Radioamatørtjenesten bli igjen som den eneste radiotjenesten i segmentet 50 – 52 MHz, og da naturlig nok med primær status i båndet.

Vi velger å se på dette som en ren "arbeidsulykke" i Arbeidsgruppens arbeide og ber om at dette blir korrigert og rettet opp slik at konklusjonen blir i overensstemmelse med de faktiske planlagte forhold og den aktive bruk av båndet som skjer idag.

Selvom det ikke er innfor Radioamatørtjenestens interesseområde kan vi heller ikke unnlate å bemerke at "Meteorologitjenesten" begrenset til "Windprofilers" også er representert med behov i båndet 47 – 68 MHz. Dette vil dreie seg om spesifikke tildelinger i områder ved innflyvning til flyplasser og vil bli anvendt i den grad luftfartsmyndighetene vil gjøre bruk av slike installasjoner. Slike tildelinger vil imidlertid være meget uegnet i segmentet 50 – 52 MHz (*Se Vedlegg 6, Fotnote 5.162A i Radio Reglementet*) og bør naturlig nok unngås der.

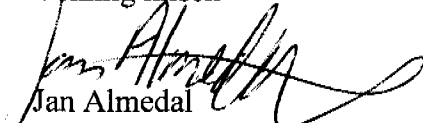
Landmobile tjenester er også listet i tabellen. Dette har sin årsak at man i CEPT i sin tid laget frekvensplaner for hvordan Bånd I og III også skulle kunne utnyttes for Landmobile tjenester på harmonisert vis innen CEPT. Det var UK som i sin tid tok dette initiativet, men det viste seg å være svært liten interesse for slik anvendelse, og CEPT Rekommendasjonen (*Se Vedlegg 7, CEPT Redkommendasjon T/R 25-06*) er implementert i kun syv CEPT administrasjoner. Norge har ikke implementert denne Rekommendasjonen. (*Se Vedlegg 6, fotnote 5.164 til Radio Reglementet*).

"Land Mobile" allokeringen kan dekke Forsvarets eventuelle bruk av båndet 47 – 68 MHz, og har derved forsåvidt en misjon (Forsvaret er som kjent ingen Radiotjeneste, men en bruker). Som tør være kjent, vil frekvensbånd tildelt Radioamatørtjenesten bli disponert av Forsvaret i tilfelle av krig og krisesituasjoner når Radioamatørtjenesten ikke lenger er tillatt brukt. Dette gir Forsvaret en ekstra frekvensreserve i slike situasjoner, og har alltid vært en del av Norsk beredskapsplanlegging.

Vi ber derfor om at Rapporten blir endret slik at Radioamatørtjenesten figurerer i frekvensbåndet 50 – 52 MHz slik det idag står i den Norske Frekvensallokeringsstabellen som referert til foran, med intensjon om å endre denne allokeringen fra Sekundær til Primær status når analog fjernsynskringkasting avvikles i dette frekvensbåndet pr. 1. januar 2010.

Da dagens nasjonale frekvensallokeringsstabell inneholder kun to applikasjoner, analog fjernsynskringkasting og Radioamatørtjenesten ber vi om at dette opprettholdes og at man også unngår tildelinger til Radiolokasjonstjenester (Wind profilers) av hensyn til de vanskeligheter som vil oppstå ved at denne tjenesten og Radioamatørtjenesten i såfall må dele frekvensbånd. Dette vil kunne ha store sikkerhetsmessige konsekvenser.

Vennlig hilsen



Jan Almedal
Generalsekretær NRRL

EU-footnotes included in the European Common Allocation Table

<i>EU-foot-number</i>	<i>EU-footnote text</i>
EU1	Within the frequency band 20-108 MHz the common military tuning range is 30-87.5 MHz, however, some equipment types use the lower (20 MHz) and upper (108 MHz) limits, regulated on a national basis. The harmonised military bands are:- 30.30-30.50 MHz; 32.15-32.45 MHz; 41.00-47.00 MHz; 73.30-74.10 MHz; 79.0-79.70 MHz. When providing for additional requirements, further blocks of frequencies should be spread out over the whole common military tuning range in order to supply frequencies for frequency hopping equipment and to support a larger force (corps size, three divisions). This should be done by the national frequency management organisation(s) concerned.
EU2	Civil-military sharing
EU3	CEPT administrations are urged to take all practical steps to clear the band 47-68 MHz of assignments to the broadcasting service. The broadcasting assignments according to Stockholm Agreement 1961 shall be protected.
EU4	CEPT administrations are urged to take all practical steps to clear the band 68 - 73 MHz of assignments to the broadcasting service. The broadcasting assignments according to the Final Acts of the Special Regional Conference, Geneva, 1961 shall be protected.
EU5	In parts of this band aeronautical stations and aircraft stations may utilise 8.33 kHz channel spacing for non secure communications requirements
EU6	The mobile-satellite service is limited to low earth orbiting satellites
EU7	This band can also be used by low capacity fixed links in rural areas on a national basis. These links need to be coordinated with mobile service and require full protection.
EU8	Any use of low capacity fixed links shall be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service
EU9	This band is included in the Regional Radio Conference planned for 2004/2006 for the revision of the European Broadcasting Agreement, Stockholm 1961
EU10	The mobile service in the harmonised military band 225 - 400 MHz generally comprises land, air maritime and satellite mobile applications
EU12	The applicable RR S5 footnotes remain in force. Administrations are however urged to aim for the fullest possible harmonisation with the ITU Table of Allocations and ECA
EU13	CEPT Administrations are urged to take all practical steps to clear the band 645-960 MHz of the assignments to the aeronautical radionavigation service by the year 2008.
EU14	Radiolocation limited to military requirements for naval ship borne radars
EU15	In the frequency band 1350-2690 MHz tactical radio relay systems should be capable of tuning over the full range of this band. Requirements for tactical radio relay should be met from the following sub-bands: 1350-1400 MHz; 1427-1452 MHz; 1492-1525 MHz; 1660-1670 MHz; 1675-1710 MHz; 1785-1800 MHz; 2025-2110 MHz; 2200-2290 MHz; 2520-2575 MHz; 2615-2670 MHz. Tactical radio relay systems may operate in the bands 2520-2575 MHz and 2615-2670 MHz provided that they shall not cause harmful interference to terrestrial UMTS/IMT-2000 and do not claim protection from them. The common requirement of 2 x 45 MHz for tactical radio relay for cross/near border operations and exercises should be met from 2025-2110 MHz and 2200-2290 MHz and in particular the bands 2025-2070/2200-2245 MHz
EU15A	Use of the band by the mobile service is limited to tactical radio relay applications
EU16	On the introduction of IMT-2000, the fixed service will become secondary in appropriate parts of the band
EU16A	Use of the band by the mobile service is limited to tactical radio relay and SAP/SAB applications
EU17	In the sub-bands 3400 - 3410 MHz, 5660 - 5670 MHz, 10.36 - 10.37 GHz, 10.45 - 10.46 GHz the amateur service operates on a secondary basis. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these sub-bands in such a way as to facilitate the reception of amateur emissions with minimal power flux densities.
EU17A	Use of the band by the mobile service is limited to SAP/SAB applications
EU18	This aeronautical radionavigation band shall be subject to further study to ascertain future requirements and developments.
EU19	This band is allocated to the radio astronomy service. CEPT administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations in this and adjacent bands can cause serious harmful interference
EU20	This fixed service band is designated for common use by civil and non civil users. Any user priorities in respect of preferred channels or sub-bands are to be determined after discussions between interested parties
EU21	Not used

European Common Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
48.5 - 50 MHz					
BROADCASTING	LAND MOBILE				
5.162A	5.162A EU2				
5.164	5.164 EU3				
	Defence systems	EU1			
	Non specific SRD				Non specific SRD in 49.5-50 MHz
	PMR		ERC REC T/R 25-08	EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	Single frequency applications
	Wind profiler radars				In the range 46-68 MHz. Geographical sharing with other services
50 - 51 MHz					
BROADCASTING	LAND MOBILE				
	Amateur				
5.162A	5.162A EU2				
5.164	5.164 EU3				
	Amateur applications			EN 301 783	
	Defence systems	EU1			
	PMR		ERC REC T/R 25-08	EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	Single frequency applications
	Wind profiler radars				In the range 46-68 MHz. Geographical sharing with other services
51 - 52 MHz					
BROADCASTING	LAND MOBILE				
	Amateur				
5.162A	5.162A EU2				
5.164	5.164 EU3				
	Amateur applications			EN 301 783	
	Defence systems	EU1			
	PMR		ERC REC T/R 25-08	EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	Single frequency applications
	Wind profiler radars				In the range 46-68 MHz. Geographical sharing with other services

Vedlegg 21.

Norsk allottering Norsk bruk.Vedlegg 3.

48.500 - 50.000 (MHz)	BROADCASTING	Analog bildekringkasting, hovedsender	TV ch2, 47 - 54 MHz
Fotnote(r): 164 162A	RADIOLOCATION	METEOROLOGY	Windprofiler, 46 - 68 MHz, ITU RR 5.162A.
Vis tillatelser	LAND MOBILE		
Vis ledige frekvenser			
50.000 - 51.000 (MHz)	BROADCASTING	Analog bildekringkasting, hovedsender	TV ch2, 47 - 54 MHz
Fotnote(r): 164 162A	AMATEUR	AMATEUR	
Vis tillatelser	RADIOLOCATION	METEOROLOGY	Windprofiler, 46 - 68 MHz, ITU RR 5.162A.
Vis ledige frekvenser	LAND MOBILE		
51.000 - 52.000 (MHz)	BROADCASTING	Analog bildekringkasting, hovedsender	TV ch2, 47 - 54 MHz
Fotnote(r): 164 162A	AMATEUR	AMATEUR	
Vis tillatelser	RADIOLOCATION	METEOROLOGY	Windprofiler, 46 - 68 MHz, ITU RR 5.162A.
Vis ledige frekvenser	LAND MOBILE		
52.000 - 54.000 (MHz)	BROADCASTING	Analog bildekringkasting, hovedsender	TV ch2, 47 - 54 MHz
Fotnote(r): 164 162A	METEOROLOGICAL AIDS	METEOROLOGY	Windprofiler, 46 - 68 MHz, ITU RR 5.162A. ALWIN wind profiler 53.5MHz, Andoeya raketttskytefelt, 35 kW e.r.p.
Vis tillatelser	LAND MOBILE		
Vis ledige frekvenser	RADIOLOCATION		
54.000 - 61.000 (MHz)	BROADCASTING	Analog bildekringkasting, hovedsender	TV ch3, 54 - 61 MHz
Fotnote(r): 164 162A	RADIOLOCATION	METEOROLOGY	Windprofiler, 46 - 68 MHz, ITU RR 5.162A.
Vis tillatelser	LAND MOBILE		
Vis ledige frekvenser			
61.000 - 68.000 (MHz)	BROADCASTING	Analog bildekringkasting, hovedsender	TV ch4, 61 - 68 MHz
Fotnote(r): 164 162A	RADIOLOCATION	METEOROLOGY	Windprofiler, 46 - 68 MHz, ITU RR 5.162A.
Vis tillatelser	LAND MOBILE		
Vis ledige frekvenser			
68.000 - 70.450 (MHz)	MOBILE	PMR/PAMR	PMR, Norwegian channel plan applied. (68.0 - 73.0 MHz)
Vis tillatelser			
Vis ledige frekvenser			
70.450 - 74.800 (MHz)	MOBILE except AERONAUTICAL MOBILE	PMR/PAMR	PMR, Norwegian channel plan applied. (68.0 - 73.0 MHz)
Fotnote(r):			

RESSURSER

Nummer

Frekvenser

Domenenavn

RESSURSER : Frekvenser : Frekvenssøk

Søk i Norsk frekvensplan

Frekvensbånd mellom 30-300 MHz (VHF)


Søk

Page:

Frekvensbånd	Norsk Allokering	Norsk Bruk	Merknad	Dokumenter
30.005 - 30.010 (MHz)	MOBILE			
Vis tillatelser				
Vis ledige frekvenser				
30.010 - 37.500 (MHz)	NOT CATEGORIZED	Radiostasjon for forskning eller lignende	Meteor detection radar, Andøya raketttskytefelt, 32.55 MHz. Til 01.01.2008.	ERC/DEC(01)11 ERC/REC 70-03
Vis tillatelser				
Vis ledige frekvenser				
	NOT CATEGORIZED	Radiostasjon for forskning eller lignende	Meteor detection radar, Ramfjordmoen, 30.250 MHz. Til 01.01.2006.	
Vis tillatelser				
Vis ledige frekvenser				
	NOT CATEGORIZED	Radiostasjon for forskning eller lignende	Meteor detection radar, Longyearbyen, Svalbard, 31.0 MHz. Til 01.01.2005.	
	MOBILE	MODEL CONTROL	Radio control, model cars 34.8 - 34.9 MHz ERC REC 70-03, Radio control, model planes 35.0 - 35.2 MHz. ERC REC 70-03, Radio control, model boats 35.3 - 35.4 MHz. ERC REC 70-03, ERC DEC (01)11, 35.005-35.305 MHz are allocated in Norway	
37.500 - 38.250 (MHz)	RADIO ASTRONOMY			
Fotnote(r): 149				
Vis tillatelser				
Vis ledige frekvenser				
38.250 - 39.986 (MHz)	MOBILE			
Vis tillatelser				
Vis ledige frekvenser				
39.986 - 40.020 (MHz)	MOBILE			
	SPACE RESEARCH			
Vis tillatelser				
Vis ledige frekvenser				
40.020 - 40.660 (MHz)	MOBILE	RADIO MICROPHONES	Wireless microphone for hearing aid 40.050 - 40.550 MHz	

Vedlegg 4.

ERO Frequency Information System

SEARCH					COMPARE		HELP
General	Allocations	Applications	Documents	Interfaces	Allocations	Applications	

General Search for Spectrum Utilisations

Frequency Range: 50 to 52 MHz Frequency Table: Norway Search

Results from the ERO Frequency Database:


FREQUENCY BAND	ALLOCATIONS	APPLICATIONS
50.0 - 51.0 MHz	BROADCASTING LAND MOBILE Amateur Radiolocation	Amateur TV analogue (terrestrial)
51.0 - 52.0 MHz	BROADCASTING LAND MOBILE Amateur Radiolocation	Amateur TV analogue (terrestrial)

[1. - Europe (ECA) - (50 - 52 MHz)] [2. Norway (50 - 52 MHz)]

ERO cannot be held responsible for any wrong information in the EFIS system.

Vedlegg 5.

ERO Frequency Information System

SEARCH					COMPARE		HELP
General	Allocations	Applications	Documents	Interfaces	Allocations	Applications	

General Search for Spectrum Utilisations

Frequency Range: 50 to 52 MHz Frequency Table: - Europe (ECA) - Search

Results from the ERO Frequency Database:

FREQUENCY BAND	ALLOCATIONS	APPLICATIONS
50.0 - 51.0 MHz	LAND MOBILE Amateur	PMR/PAMR (40.7 - 74.8 MHz) Wind profilers (46.0 - 68.0 MHz) Defence systems (47.0 - 73.3 MHz) Amateur (50.0 - 52.0 MHz)
51.0 - 52.0 MHz	LAND MOBILE Amateur	PMR/PAMR (40.7 - 74.8 MHz) Wind profilers (46.0 - 68.0 MHz) Defence systems (47.0 - 73.3 MHz) Amateur (50.0 - 52.0 MHz)

External Link

[1. - Europe (ECA) - (50 - 52 MHz)]

ERO cannot be held responsible for any wrong information in the EFIS system.
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- 5.152 Additional allocation: in Armenia, Azerbaijan, China, Côte d'Ivoire, Georgia, Iran (Islamic Republic of), Kazakhstan, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 14 250-14 350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW. (WRC 03)
- 5.154 Additional allocation: in Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 18 068-18 168 kHz is also allocated to the fixed service on a primary basis for use within their boundaries, with a peak envelope power not exceeding 1 kW. (WRC 03)
- 5.155 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 21 850-21 870 kHz is also allocated to the aeronautical mobile (R) services on a primary basis. (WRC 03)
- 5.155A In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the use of the band 21 850-21 870 kHz by the fixed service is limited to provision of services related to aircraft flight safety.
- 5.155B The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.
- 5.156A The use of the band 23 200-23 350 kHz by the fixed service is limited to provision of services related to aircraft flight safety
- 5.157 The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.
- 5.162A Additional allocation: in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, Finland, France, Ireland, Iceland, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Norway, the Netherlands, Poland, Portugal, Slovakia, the Czech Republic, the United Kingdom, the Russian Federation, Sweden and Switzerland the band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution 217 (WRC-97).
- 5.163 Additional allocation: in Armenia, Azerbaijan, Belarus, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Rep., the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 47-48.5 MHz and 56.5-58 MHz are also allocated to the fixed and land mobile services on a secondary basis. (WRC 03)
- 5.164 Additional allocation: in Albania, Germany, Austria, Belgium, Bosnia and Herzegovina, Botswana, Bulgaria, Côte d'Ivoire, Denmark, Spain, Estonia, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libyan Arab Jamahiriya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, Syrian Arab Republic, the United Kingdom, Slovenia, Sweden, Switzerland, Swaziland, Chad, Togo, Tunisia, Turkey and Serbia and Montenegro the band 47-68 MHz, in Romania the band 47-58 MHz, in South Africa the band 47-50 MHz, and in the Czech Rep. the band 66-68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the band. (WRC 03)
- 5.174 Alternative allocation: in Bulgaria, Hungary and Romania, the band 68-73 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions in the Final Acts of the Special Regional Conference (Geneva, 1960). (WRC-03)
- 5.175 Alternative allocation: in Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting service on a primary basis. The services to which these bands are allocated in other countries and the broadcasting service in the countries listed above are subject to agreements with the neighbouring countries concerned.
- 5.176 Additional allocation: in Australia, China, Korea (Rep. of), the Philippines, the Dem. People's Rep. of Korea, Estonia (subject to agreement obtained under No. 9.21) and Western Samoa, the band 68-74 MHz is also allocated to the broadcasting service on a primary basis.
- 5.177 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Latvia, Moldova, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 73-74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. 9.21. (WRC 03)
- 5.179 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, China, Georgia, Kazakhstan, Lithuania, Moldova, Mongolia, Kyrgyzstan, Slovakia, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 74.6-74.8 MHz and 75.2-75.4 MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only. (WRC 03)
- 5.180 The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons. Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.
- 5.184 Additional allocation: in Bulgaria and Romania, the band 76 - 87.5 MHz is also allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).

Recommendation T/R 25-06 (Odense 1986)

PLANNING PARAMETERS TO ASSIST THE EFFICIENT AND EFFECTIVE UTILISATION OF SHARED FREQUENCY BANDS WHICH ARE ALLOCATED TO THE BROADCASTING SERVICE (TELEVISION) AND THE LAND MOBILE SERVICE, USING ASSIGNMENTS WHICH OVERLAP A TELEVISION CHANNEL (TELEVISION BANDS I AND III ONLY)

Recommendation proposed by the "Radiocommunications" Working Group T/WG 3 (R)

Text of the revised Recommendation adopted by the "Telecommunications" Commission:

"The European Conference of Postal and Telecommunications Administrations,

considering

- (a) that the WARC (Geneva 1979) in the table of frequency allocations (Article 8) allocated the band 47 to 68 MHz (Band I) on a primary basis to the broadcasting service,
- (b) that the WARC (Geneva 1979) in the table of frequency allocations (Article 8) allocated the band 174 to 230 MHz (Band III) on a primary basis to the broadcasting service,
- (c) that the WARC (Geneva 1979) allocated the band 47 to 68 MHz on a permitted basis under certain conditions to the land mobile service in those countries listed in Radio Regulation 554,
- (d) that the WARC (Geneva 1979) allocated the band 174 to 230 MHz on a permitted basis under certain conditions to the land mobile service in those countries listed in Radio Regulation 621 and 622,
- (e) that the Regional Agreement (Stockholm 1961) contains procedures for the introduction of stations of services other than broadcasting,
- (f) that Bands I and III are extensively used by a number of CEPT countries for television broadcasting,
- (g) that in some countries Band I and/or Band III will continue to be used exclusively for television broadcasting for the foreseeable future; whilst in other countries sharing between the land mobile and broadcasting services in Band I and/or Band III has existed for some considerable time,
- (h) that CEPT Recommendation T/R 72-01 E confirms that frequencies below 960 MHz are particularly suitable for the land mobile service and recommends the consideration of a reduction in spectrum available for the broadcasting service,
- (i) that although some Administrations have already introduced land mobile services into these bands, there is a requirement for coordination procedures to facilitate the development of frequency assignment plans and equipment specifications,
- (j) that some CEPT Administrations have already concluded bilateral special agreements in accordance with Article 7 of the Radio Regulations based on the parameters detailed in the Annexes to this Recommendation,
- (k) that the future enhancement of television broadcasting systems and the development of land mobile systems with different modes of transmission does not today permit the establishment of appropriate protection criteria,

recommends

1. that CEPT Administrations intending to use parts or all of Bands I and III for the land mobile service shall seek to enter into agreements with each Administration concerned,
2. that in developing such an agreement the provisions of the Radio Regulations shall apply, taking into account the categories of services and allocations specified in Article 8 of the Radio Regulations (Geneva 1982). Such an agreement shall take into account broadcasting stations agreed in accordance with the procedures contained in the Regional Agreement (Stockholm 1961),
3. that in developing an agreement to protect the broadcasting service CEPT Administrations shall, where possible, use the parameters detailed in Annex 1 taking account of the television channel arrangements, the television system and whether the television network is existing or planned,
4. that in developing an agreement to protect the land mobile service CEPT Administrations shall, where possible, use the parameters detailed in Annex 2,
5. that such methods as described in paragraphs 3 and 4 above shall take into account the terrain features to calculate the required separation distances between the stations of the two services,
6. that to ease interservice compatibility problems and to facilitate the future coordination of land mobile services, consideration should be given to harmonise frequency assignment plans to the greatest extent possible, taking account of the situation that a number of Administrations will continue to utilise Bands I and/or III for television broadcasting for the foreseeable future,
7. that urgent consideration shall be given to a study of the subjective effect of interference to television reception from multiple interference sources,
8. that CEPT Administrations should establish coordination procedures, if necessary, as part of the bilateral or multilateral agreements,
9. that the present and future sharing criteria shall not preclude either the introduction of enhancements to broadcasting systems, or the introduction of new types of land mobile systems.”

Annex 1

**PARAMETERS RELATING TO THE PLANNING OF THE BROADCASTING SERVICE
(TELEVISION) IN SHARED FREQUENCY BANDS (BANDS I AND III)
IN RESPECT OF INTERFERENCE FROM THE LAND MOBILE SERVICE**

1. The median field strength for which protection against interference is provided in planning should never be lower than 48 dB ($\mu\text{V/m}$) for Band I and 55 dB ($\mu\text{V/m}$) for Band III.

Different values of protected field strength may be agreed between Administrations.

2. The television services protection ratio shall be as detailed in CCIR Report 306-4 (Geneva 1982) and Recommendation 418-3 (Geneva 1982) or any modification thereto, for the case of a CW signal interference and non-controlled conditions.
3. The value of the protected field strength shall not exceed the value mentioned in paragraph 1 above as a consequence of the utilisation by the land mobile service. The value of the protected field strength shall be calculated as follows:
 - a) The interference potential of a land mobile base station shall be determined by the concept of a "nuisance field". The nuisance field is calculated from:

$$F = E(50, T) + A + B$$

where

$E(50, T)$ is the field strength (dB $\mu\text{V/m}$) of the interfering transmitter exceeded at 50% of the locations for T% (between 1 and 10% (*)) of the time with a receiving antenna height of 10 m, determined from CCIR Recommendation 370-4 (Geneva 1982) and Report 239 (Geneva 1982) or any modification thereto.

Effective transmitting antenna heights of less than 0 metre are to be disregarded. For effective antenna heights of less than 37.5 metres, the corrections given in the Final Acts of the Regional Administrative Radio Conference for the Planning of VHF Sound Broadcasting (Region 1 and Part of Region 3 (Geneva 1984)) shall be used.

A is the protection ratio (in dB) determined in accordance with paragraph 2 above, B is the antenna discrimination factor. This shall be 15 dB in the case where the broadcasting emission is horizontally polarised, and for the case where the broadcasting emission is vertically polarised, the curves given in CCIR Recommendation 419 (Geneva 1982) shall apply.

- b) The effect of multiple interference arising from base stations operating at the same site shall be calculated by means of the power sum method:

$$E_o = \sqrt{\sum_{i=1} (F_i)^2}$$

where F is the nuisance field arising from the i-th interfering transmitter expressed in $\mu\text{V/m}$.

- c) The nuisance field arising from base stations operating at different sites together with the multiple interference from base stations operating at the same site shall be multiplied by means of the simplified multiplication method (see CCIR Report 945, Geneva 1982). Calculations shall include all land mobile base stations within an appropriate coordination distance to be agreed between Administrations. Typically this would be of the order of 300 km.
- d) Depending on the actual circumstances, other methods of multiple interference calculations currently under study may be more appropriate.
- e) The nuisance field from mobile stations could be assumed to be around 20 dB less than the nuisance field arising from the corresponding base stations.

(*) The precise figures for T within this range shall be agreed between Administrations

Annex 2

**PARAMETERS RELATING TO THE PLANNING OF THE LAND MOBILE SERVICE
IN SHARED FREQUENCY BANDS (BANDS I AND III)
IN RESPECT OF INTERFERENCE FROM THE BROADCASTING SERVICE**

1. The minimum protected median field strength (dB μ V/m) for the land mobile service is:

Band I 13 dB

Band III 22 dB

Different values of protected field strength may be agreed between Administrations.

2. Calculations shall be carried out using Recommendation 370-4 (Geneva 1982) or any modification thereto. Appropriate figures for 10% time and 50% of locations shall be used.

3. The protection ratio shall be 10 dB.

4. The power of L/SECAM, B/PAL and I/PAL television signals, measured in a reference bandwidth of 7 kHz shall be assumed to be contained within the masks detailed in Figures 1 (T/R 25-06), 2 (T/R 25-06) and 3 (T/R 25-06) of this Annex.

These masks shall not constitute a restriction on the spectral content of the signal of the television service operating within its authorised characteristics, which shall be agreed between the concerned Administrations.

5. The values of antenna discrimination for horizontally polarised broadcasting emissions shall be:

18 dB for base stations

5 to 8 dB for mobile stations

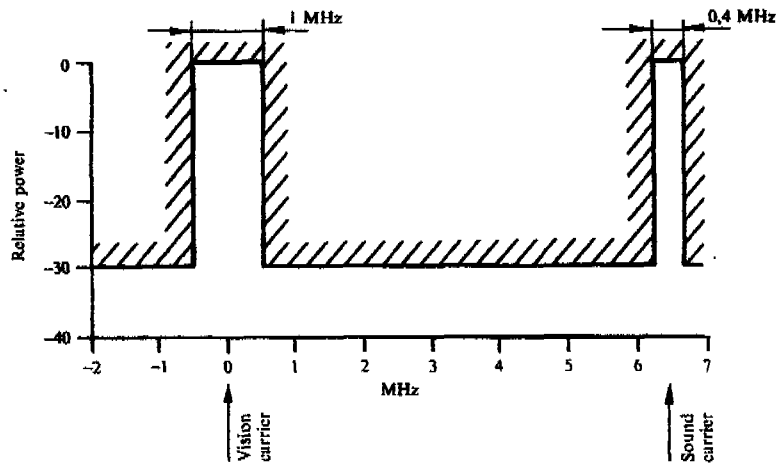


Figure 1 (T/R 25-06). Mask for an L/SECAM television signal.

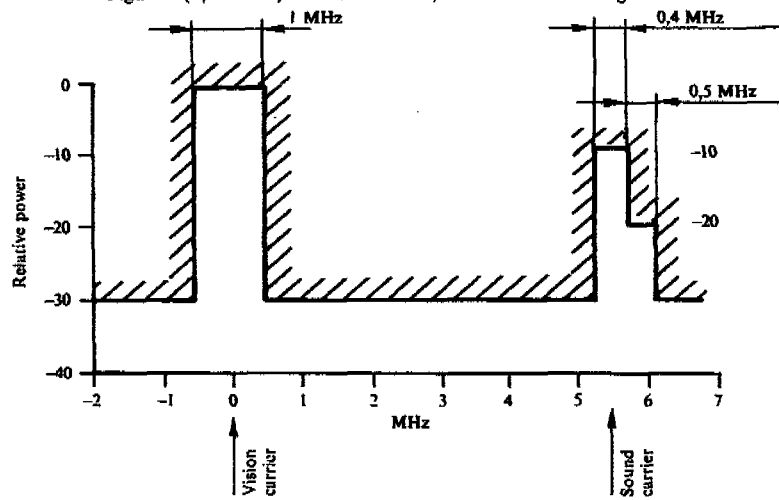


Figure 2 (T/R 25-06). Mask for a B/PAL television signal.

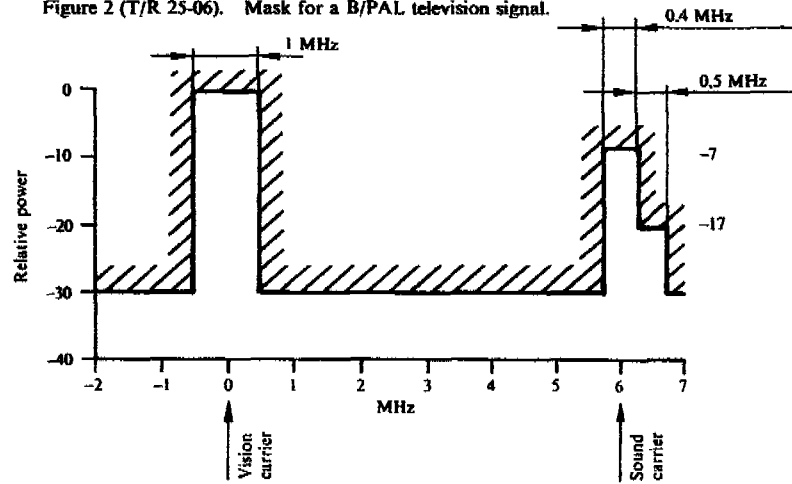


Figure 3 (T/R 25-06). Mask for an I/PAL television signal.

Edition of September 15, 1988