

**QUESTIONNAIRE ON SPECTRUM REQUIREMENTS FOR TERRESTRIAL
TELEVISION BROADCASTING IN CONNECTION WITH
WRC-15 AGENDA ITEM 1.2**

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1. A) What standards have you adopted for digital terrestrial television broadcasting?

-DVB-T, DVB-T2

B) Have you started introduction of digital terrestrial television services?

-Yes, the digital transition was completed during 2007

C) If yes, please provide further detail on the number of multiplexes in use, their technical specifications, the percentage of geographic area or population they are intended to cover and the total spectrum use to inform WP 6A.

-See Annex 1

2. A) Have you commenced analogue television switch-off?

-Yes, the analogue switch-off was completed during 2007

B) If you have any such plans, when do you expect to have completed the analogue switch-off process?

-The analogue switch-off was completed during 2007

3. A) What is the percentage of viewer uptake of terrestrial television in your country, including those whose service provider uses terrestrial broadcast re-transmission (e.g. in cable networks)?

-The population coverage is 99.8% for the public service channels and 98% for the commercial channels.

B) If possible, please also provide details of the number or proportion of users who receive television primarily by terrestrial means.

-About 20.5% of the population has either a pay-DTT subscription or receives free-tv primarily by DTT.

4. Indicate how many analogue television transmitters use channels in the frequency sub-band 694-790 MHz (as indicated in Resolution 232 (WRC-12)).

-The analogue transition was completed during 2007 and thus no analogue transmissions are in operation today in the band 470-790 MHz;

5. A) What frequencies/channels are currently used or intended to be used by digital terrestrial television broadcasting in your country? Please distinguish between those in use and those intended to be used.

- See Annex 2. In addition to the listed allotments and channels there are also many low power MFN gap fillers in use throughout Sweden.

B) If allotments/SFNs are in use, a sketch map of frequency allocations could be included, with an accompanying table of allocations, as shown in Annex 2. Otherwise, it might be possible to show main transmitters and channels, grouped in layers, in a table.

- See Annex 2

C) Please indicate how many digital television assignments/allotments use channels in the frequency sub-band 694-790 MHz (as indicated in Resolution 232 (WRC-12))

- In total 97 allotments and 391 assignments use channels in the sub-band 694-790 MHz;

D) How many are in the remaining part of the UHF band

- 224 allotments and 1007 assignments use frequencies in the remaining UHF band 470-694 MHz

6. A) Are those frequency bands also shared with other primary services?

-No

B) If yes, please give details of those systems and their spectrum use.

7. A) Are those frequency bands also shared with secondary services such as PMSE(Programme Making and Special Events), radio astronomy or wind-profile radar?

- Yes, the band is shared with PMSE on secondary basis.

B) If yes, please give details of those systems and their spectrum use.

- PMSE usage is located to white space with requirement of individual licenses. There are no statistics on usage pattern or geographical extent. The maximum channel bandwidth is 200 kHz;

8. A) Do you foresee the adoption or expansion of television services broadcast using second-generation systems such as DVB-T2?

- Two nationwide DVB-T2-multiplexes are almost completely extended to the intended 98% population coverage. No further expansion of DVB-T2-multiplexes is decided as of March 2013. However, upcoming review of the current legislation for content may hold the necessary basic conditions and requirements for an expansion. The next license period begins 1 of April 2014.

B) If yes, please give indicative details of the planned transition, including any simulcast period.

-The extension of the two planned DVB-T2 multiplexes is almost completed. Some of the channels in the two DVB-T2-multiplexes are simulcast HD-versions of SD-channels transmitted in the five DVB-T multiplexes. No decision has been taken as of March 2013 with regard to stopping simulcasting or replacing current DVB-T transmissions with DVB-T2.

9. A) Do you foresee a requirement for new and enhanced services, including HD and 3D television, on the terrestrial television platform?

-Besides the already existing HDTV-service, program companies have shown interest for additional HD channels. However, no political decision has been taken as of March 2013 with regard to an expansion of the HDTV- service in the digital terrestrial network.

B) If yes, please give indicative details of the number and nature of services planned, and if known, the expected timeframe for their introduction.

10. A) Are there plans in your country to launch more multiplexes in the future?

- No such plans as of March 2013.

B) If yes, how many more and when? Please also indicate the expected timeframe for their introduction.

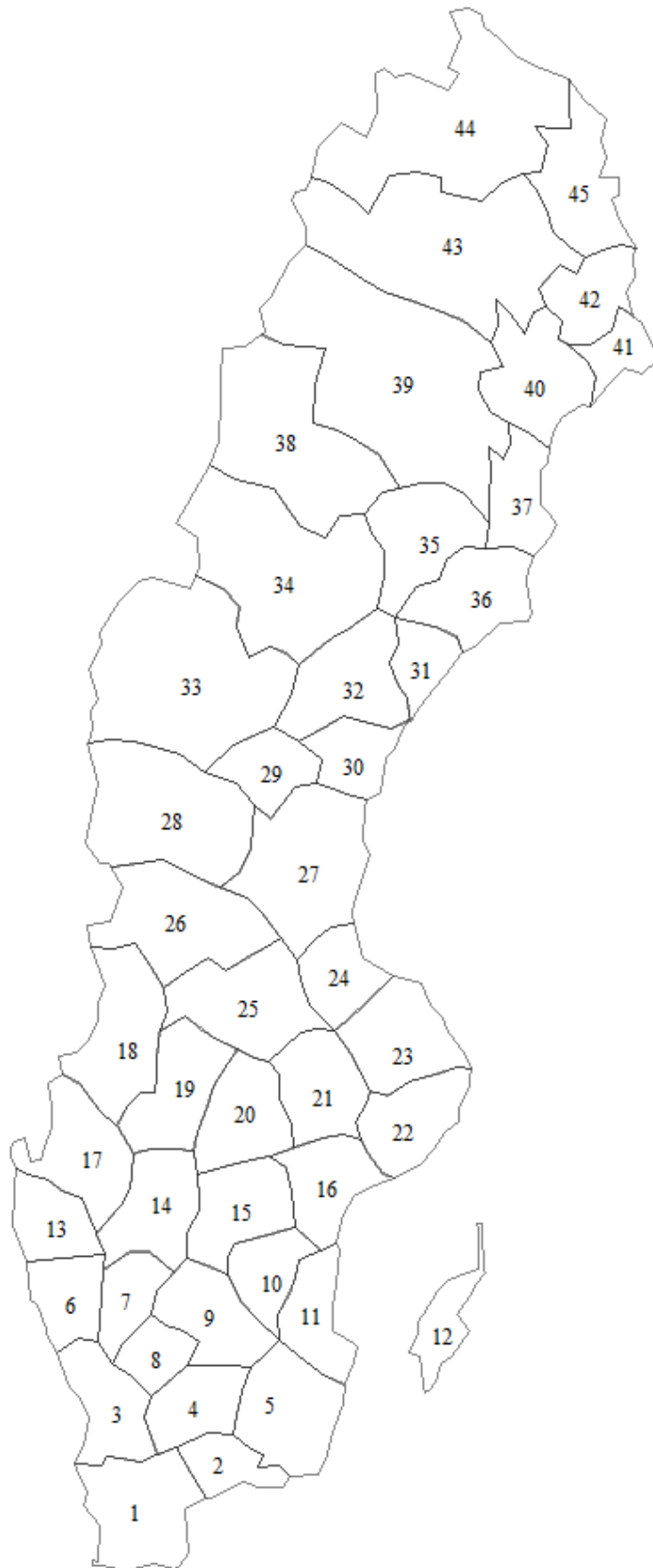
11. A) What is the amount of spectrum you foresee that will be required for terrestrial television broadcasting, if plans in Questions 8, 9 and 10 are to be supported, and services identified in Questions 6 and 7 are to be taken into account? Please indicate the modes of transmission that will be used, and timeframes.

As of March 2013 there are no decisions taken with regard to any change of the spectrum allocated to digital terrestrial television in Sweden. The amount of spectrum required for future DTT is subject to governmental and authority decisions, this including number of multiplexes, transmission techniques, number of SD and HD channels and regional transmissions etc. The outcome of such decisions could lead to an increase as well as a decrease of the amount of spectrum required for the DTT service.

ANNEX 1

Country	No of multiplexes	System & Modulation	FEC	GI	Reception Mode	Capacity per multiplex	Current precentage polulation coverage	Intended percentage population coverage	Content per multiplex	Total capacity	Total spectrum bandwidth used or intended for implementation	Additional comments
S	1	DVB-T; 64QAM	2/3; 3/4	1/4; 1/8	FX	22.4 Mbit/s; 22.1 Mbit/s	99.8%	99.8%	5 SD MPEG2	≈181 Mbit/s	≈388.5 MHz	Public service with regional content
S	1	DVB-T; 64QAM	2/3; 3/4	1/4; 1/8	FX	22.4 Mbit/s; 22.1 Mbit/s	98%	98%	7 SD MPEG2			Commerical channels with regional content
S	1	DVB-T; 64QAM	2/3; 3/4	1/4; 1/8	FX	22.4 Mbit/s; 22.1 Mbit/s	98%	98%	9 SD MPEG2			Commercial channels with regional content
S	1	DVB-T; 64QAM	2/3; 3/4	1/4; 1/8; 1/32	FX	22.4 Mbit/s; 22.1 Mbit/s; 24.1 Mbit/s	98%	98%	8 SD MPEG2; 8 SD MPEG4			
S	1	DVB-T; 64QAM	2/3; 3/4	1/4; 1/8; 1/32	FX	22.4 Mbit/s; 22.1 Mbit/s; 24.1 Mbit/s	98%	98%	3 SD MPEG2; 10 SD MPEG4			
S	1	DVB-T2; 256QAM	2/3; 3/4	1/16; 1/8	FX	36.6 Mbit/s; 37.1 Mbit/s	≈98%	98%	5 HD MPEG4			Public service and commercial channels with regional content
S	1	DVB-T2; 256QAM	3/5; 2/3; 3/4	19/256; 1/8	FX	30.8 Mbit/s; 31.6 Mbit/s; 32.5 Mbit/s	≈98%	98%	1. 3 HD MPEG4; 1 SD MPEG4			

ANNEX 2



Allotments in use

Area	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6	Layer 7
1	33	43	25	41	22	30	10
2	27	24	42	55	26	30	8
3	21	28	38	45	47	32	7
4	40	49	34	37	39	57	8
5	45	28	46	21	53	47	8
6	30	27	46	40	43	33	9
7	44	54	29	42	55	36	41
8	26	56	52	60	48	58	7
9	22	23	35	33	51	25	6
10	29	55	50	56	59	49	6
11	26	34	24	30	40	43	57
12	41	44	48	37	58	51	9
13	23	28	31	25	56	53	9
14	37	24	32	34	57	60	47
15	27	40	21	42	52	39	53
16	36	46	60	28	54	32	5
17	26	22	35	25	56	49	-
18	36	39	50	53	47	60	7
19	33	23	30	42	40	27	59
20	35	29	25	49	55	58	48
21	37/44	31	22	34	58	51	57
22	23	42	56	50	55	59	53
23	40	21	43	26/49	33/48	58	6/52
24	27	24	32	30	46	50	9
25	47	52	43	41	54	60	28
26	22	25	35	42	44	51	38
27	29/31	44/49	34	39	23	53	6/60
28	21	24	46	41	36	59	32
29	42	37	57	28	55	52	22
30	47	27	30	43	56	58	50
31	23	21	34	25	42	29	39
32	46	24	31	26	44	49	59
33	27	45	58	53	54	56	48
34	37	40	51	41	50	57	30
35	45	53	22	28	48	58	38
36	47	50	56	36	52	60	39
37	23	26	49	43	59	46	6
38	33	43	36	46	56	60	49
39	21	24	30	34	42	57	51
40	36	39	47	32	38	52	56
41	35	29	60	55	50	58	27
42	45	48	60	55	50	58	27
43	33	26	40	28	46	43	22
44	39	35	32	49	42	29	44
45	34	23	31	37	54	47	51

channel in sub-band 694-790 MHz