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

Ministry of Communications and Informatization of the Republic of Belarus,
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1 a) What standards have you adopted for digital terrestrial television broadcasting?

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

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.

A proposed format for detailed responses is provided in Annex 1.

Reply:

a) DVB-T, DVB-T2

b) Yes, with 2005

c) detailed responses is provided in Annex 1

2 a) Have you commenced analogue television switch-off?

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

Reply:

a) No

b) 15 June 2015

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)?

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

Reply:

a) –

b) Coverage of the population terrestrial TV:

- One program - 99.72%;

- Two programs - 97.98%;

- Three programs - 91.78%;

- Four programs - 81.22%;

- Five or more programs - 63.97%;

- Digital format - 95.65%.

Number of subscribers to cable television - 1 895 091 (as of 01.01.2012)

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

b) How many are in the remaining part of the UHF band.

Reply:

a) 16 analogue television transmitters

b) 123 analogue television transmitters use channels in the frequency sub band 470-694 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.

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.

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)**, and

d) How many are in the remaining part of the UHF band.

Reply:

a) Used - 21, 25, 32, 34, 40, 41, 42, 43, 44, 46, 48, 49, 50, 51, 56, 57, 58, 59.

Intended to be used from 2013 year - 23, 26, 29, 30, 31, 33, 35, 36, 37, 38, 39, 47, 52, 53

b) Shown in Annex 2

c) 10 digital television allotments (24 assignments)

d) 15 digital television allotments (36 assignments)

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

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

Reply:

a) Yes

b) Technical characteristics of aeronautical radionavigation service systems are given in Recommendation ITU-R M.1830

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?

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

Reply:

a) Yes

b) 774 – 782 MHz

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

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

Reply:

a) Yes

b) The first layer will be in the standard DVB-T, the second and third layers are implemented in the standard DVB-T2 in the first half of 2013

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

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

Reply:

a) Yes

b) 2 national multiplex HDTV in 2016

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

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

Reply:

a) Yes

b) It is planned that the implementation time will be linked to the transition from analog to digital television broadcasting, as well as with the transfer of the released analog transmitting equipment to digital broadcasting. Since 2015.

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.
If appropriate, a suggested form to express these requirements is shown in Annex 3.

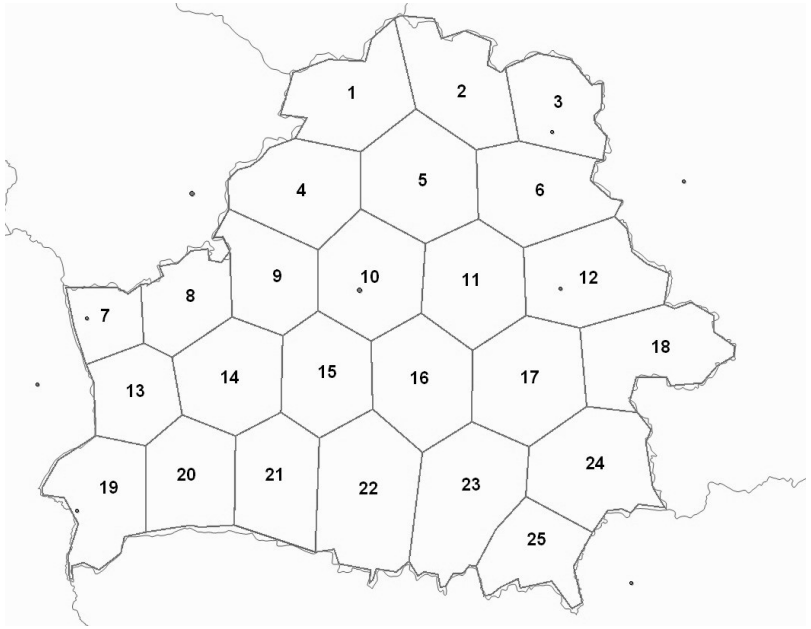
Reply:

a) Shown in Annex 3.

ANNEX 1

Country	**No of multi-plexes**	**System & modulation**	**FEC**	**GI**	**Reception mode**	**Capacity per multiplex (Mb/s)**	**Current percentage population coverage**	**Intended percentage population coverage**	**Content per multiplex**	**Total capacity (Mb/s)**	**Total spectrum bandwidth used or intended for imple-mentation (MHz)**	**Any additional comments (e.g. duration of licences)**
BLR	1	DVB-T, 64-QAM	3/4	1/4	Fixed	22.9	95.65%	99.2%	8 SD H.264	112.9	256	Multiplex with a public television program package.
	1	DVB-T2, 256-QAM	3/4	1/16	Fixed	45	23.0%	up to 80 %	16 SD H.264			Multiplexes with commercial programs from February 2013
	1	DVB-T2, 256-QAM	3/4	1/16	Fixed	45	22.0%	up to 80.0%	16 SD H.264			Multiplexes with commercial programs from February 2013

ANNEX 2



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

ANNEX 3

Country	No of Multi-plexes	System & Modulation	FEC	GI	Reception Mode 1	Capacity per multi-plex (Mb/s)	Current Percentage Population Coverage	Intended Percentage Population Coverage	Content per Multiplex	Total Capacity (Mb/s)	Total Spectrum Bandwidth needed (MHz)[2]	Content per Multiplex
BLR	1	DVB-T, 64-QAM	3/4	1/4	Fixed	22.9	95.65%	99.2%	8 SD H.264	239	296	Multiplex with a public television program package.
	2	DVB-T2, 256-QAM	3/4	1/16	Fixed	45	23.0%	up to 80 %	16 SD H.264			Multiplexes with commercial software from 2013
	2	DVB-T2, 256-QAM	3/4	1/16	Fixed	45	0%	up to 70%	6 HD H.264			Multiplexes with commercial software from 2013
	20	DVB-T2, 64-QAM	4/5	1/8	Fixed	36.1	0%	up to 50%	10SD+1HD H.264			Regional multiplexes in 2015

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[1] Eg Fixed, Portable outdoor/Mobile, Portable indoor

[2] Refer Sections 2 and 3 on page 1 of this circular.