

Technical criteria and principles relating to DTT in the band 470 – 694 MHz between the Communications Regulatory Authority of the Republic of Lithuania and the Office of Electronic Communications of the Republic of Poland

1. Preamble

According to the Decision of the European Parliament and of the Council (EU) 2017/899 of 17 May 2017 on the use of the 470–790 MHz frequency band in the Union (Official Journal of the European Union L138/131 of 25 May 2017), the Communications Regulatory Authority of the Republic of Lithuania and the Office of Electronic Communications of the Republic of Poland (hereinafter referred to as the Parties) have concluded these Technical criteria and principles in order to allow the use of the 694–790 MHz (700 MHz) frequency band for terrestrial systems capable of providing wireless broadband electronic communications services by 30 June 2020 (with possible delay for up to two years on the basis of duly justified reasons).

The objective of these Technical criteria and principles is to establish the conditions of use of the frequency band 470–694 MHz for the terrestrial provision of broadcasting services after releasing the frequency range 694–790 MHz.

These Technical criteria and principles completes the negotiation phase which have been launched in order to find a common re-planning solution enabling the use of at least six layers in the frequency band 694–790 MHz in each country, depending on chosen SFN sizes, network structure etc.

2. Changes to the GE06D Plan

In order to re-plan the band 470–694 MHz a number of changes have to be done to the existing GE06D Plan.

2.1 Additions

Allotments listed in Table 1 and Table 2 with the associated reference network (RN) are accepted by the Parties as additions to the GE06D Plan.

Implementation of the allotments shall fulfil the GE06 conformity check, i.e. conditions of Section II of Annex 4 of GE06 Agreement shall be met.

Implementation of the allotments having a “R2” remark followed by ITU symbol of administration in the “Remarks” column requires coordination with the Party indicated in the remark before implementation or notification to the ITU. This remark must also be included in the “t_remarks” field of the corresponding notice recorded in the GE06D Plan.

Each Party shall inform the other Party during one month after each assignment of the closest allotments to the border was brought in to use.

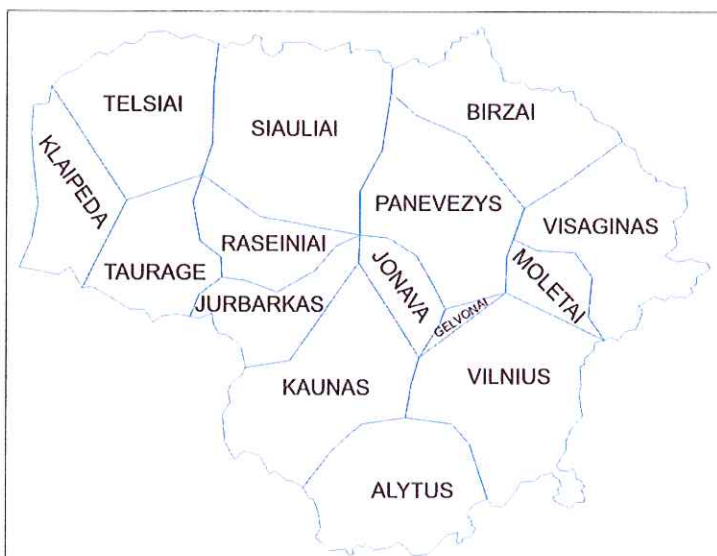
The Assignments in Annex 1 and Annex 2 are to be treated as coordinated and are accepted by the Parties as additions to the GE06D Plan. Values of effective radiated power of assignments are relevant only for directions towards the country of the other Party. The assignments may be recorded in the GE06D Plan and notified to the ITU with different e.r.p. in the azimuths other than those pointing towards the country of the other Party.

Table 1. Allotments in Lithuania accepted as additions (ADD) to the GE06D Plan by Polish Party

Channel	Allotment (allotment area)	Reference network	Reference planning configuration	Remarks
22	TAURAGE	RN2	RPC2	R2: POL
22	TELSIAI	RN2	RPC2	R2: POL
22	VILNIUS	RN2	RPC2	R2: POL
22	GELVONAI	RN2	RPC2	R2: POL
23	KAUNAS	RN2	RPC2	
24	PANEVEZYS	RN2	RPC2	
24	TELSIAI	RN2	RPC2	R2: POL
26 ¹	MOLETAI	RN2	RPC2	
26 ¹	GELVONAI	RN2	RPC2	
26	RASEINIAI	RN2	RPC2	
28	KLAIPEDA	RN2	RPC2	R2: POL
32	SIAULIAI	RN2	RPC2	
32	VISAGINAS	RN2	RPC2	
33	BIRZAI	RN2	RPC2	
33 ¹	JURBARKAS	RN2	RPC2	
33 ¹	JONAVA	RN2	RPC2	
35	BIRZAI	RN2	RPC2	
36	SIAULIAI	RN2	RPC2	
36	TELSIAI	RN2	RPC2	
37	SIAULIAI	RN2	RPC2	
37	VILNIUS	RN2	RPC2	
37	GELVONAI	RN2	RPC2	
43 ²	KLAIPEDA	RN2	RPC2	R2: POL
43 ²	TAURAGE	RN2	RPC2	R2: POL
45	ALYTUS	RN2	RPC2	
45 ¹	MOLETAI	RN2	RPC2	
47	JONAVA	RN2	RPC2	
47	PANEVEZYS	RN2	RPC2	
47	GELVONAI	RN2	RPC2	
48	RASEINIAI	RN2	RPC2	

¹ To be introduced into the GE06D Plan as additional sub-areas of the GE06D Plan allotments adopted by RRC06.

² Depends on successful coordination with the administration of Russian Federation



Picture 1. Allotments (allotment areas) in Lithuania

Table 2. Allotments in Poland accepted as additions (ADD) to the GE06D Plan by Lithuanian Party

Channel	Allotment (allotment area)	Reference network	Reference planning configuration	Remarks
21	OLSZTYN	RN1	RPC2	R2: LTU
22	GIZYCKO	RN1	RPC2	R2: LTU
22	SUWALKI	RN1	RPC2	R2: LTU
22	LEBORK	RN1	RPC2	R2: LTU
24 ¹	GDANSK L3	RN1	RPC2	R2: LTU
25	GDANSK	RN1	RPC2	
26	ELBLAG	RN1	RPC2	R2: LTU
26	OSTROLEKA	RN1	RPC2	R2: LTU
26	GIZYCKO	RN1	RPC2	R2: LTU
27	ILAWA	RN1	RPC2	R2: LTU
28	OSTROLEKA	RN1	RPC2	R2: LTU
33	ELBLAG	RN1	RPC2	R2: LTU
33	ILAWA	RN1	RPC2	R2: LTU
42	OSTROLEKA L3	RN1	RPC2	
43	ILAWA	RN1	RPC2	R2: LTU
43 ²	BIALYSTOK	RN1	RPC2	R2: LTU
44	LEBORK	RN1	RPC2	
44	GDANSK	RN1	RPC2	
44	ELBLAG	RN1	RPC2	
45 ^{1,3}	GDANSK	RN1	RPC2	R2: LTU
45	OLSZTYN	RN1	RPC2	R2: LTU
46	SUWALKI	RN1	RPC2	R2: LTU
46	GIZYCKO	RN1	RPC2	R2: LTU
48	KOSZALIN L3	RN1	RPC2	R2: LTU

² Invokes additional limitations on implementation of co-channel allotment in SUWALKI area in relation to GE06D Plan adopted by RRC-06.

¹ Only after coordination of channel 43 or another alternative channel for allotments in KLAIPEDA and TAURAGE areas is successfully completed between the administrations of Lithuanian and the Russian Federation.

³ Implementation cannot be brought into use earlier than 30 June 2020; exact date shall be coordinated at a later stage.



Picture 2. Allotments (allotment areas) in the north-eastern Poland

2.2 Modification

In the process of re-planning, the Polish Party proposed modification of shapes for some of its allotments already recorded in the GE06D Plan.

Allotments listed in Table 3 with their shapes modified into equivalent L3 shapes are accepted by Lithuanian Party. The remarks with respect to Lithuanian entries in the digital Plan (where present) shall be retained after the modification of the allotments. Any future implementation of the allotments having remarks with respect to Lithuanian entries in the digital Plan (denoted by "R2: LTU" in Table 3) requires coordination with the Lithuanian Party before their implementation or notification to the ITU.

Table 3. Allotments in Poland accepted as modification (MODIFY) to the GE06D Plan by Lithuanian Party

Channel	Allotment (allotment area)	Reference network	Reference planning configuration	Remarks
23	OLSZTYN L3	RN1	RPC2	R2: LTU
29	SUWALKI L3	RN1	RPC2	R2: LTU
29	ILAWA L3	RN1	RPC2	R2: LTU
35	BIALYSTOK L3	RN1	RPC2	
48	GIZYCKO L3	RN1	RPC2	R2: LTU

2.3 Suppressions

The allotments in Table 4 and Table 5 and related assignments should be treated as deleted and should have no implementation rights and no protection rights. Each Party shall inform the other Party on the date when its deletions come into effect as soon as it becomes known according to national arrangements. Nevertheless the allotments may be kept in the GE06D Plan, but will have to be modified until 30 June 2022 to carry a remark in "t_remarks" field saying "Deleted: LTU-POL 2017", as a reference to these Technical criteria and principles.

Table 4. Deleted allotments in Lithuania

Allotment (allotment area)	Channel
PANEVEZYS	37
JONAVA	37

Table 5. Deleted allotments in Poland

Allotment (allotment area)	Channel
GDANSK	35, 48 ^{*1}
GIZYCKO	43 ^{*1,2}
ELBLAG	25, 43 ¹ , 45 ²
ILAWA	24, 31 [*]
OLSZTYN	44 ²

¹ Exact date of termination of use shall be coordinated at a later stage however this date cannot be later than 30 June 2022

² The termination of use shall be completed before the beginning of use of the same channels in adjacent new allotments indicated in Table 2

* Allotments will be deleted up to the end of the transition period under condition agreement between Polish and Russian Administrations on replacing channel is reached.

3. The principles concerning the use of the broadcast band

The Parties agreed on the following:

1. Any assignment located inside a co-channel allotment or within 20 km outside the boundary of a co-channel allotment but not associated with that allotment according to the data of the record shall be treated as a contributor to the aggregate interference of the allotment. Contiguous allotments shall be treated as one single (consolidated) allotment for calculation of interference.
2. Interference potential of new allotments bearing remark "R2" in the "Remarks" column of Table 1 and Table 2 is defined by interference potential of the assignments listed in Annex 1 and Annex 2.
3. Each assignment listed in Annex 1 and Annex 2 which is attributed to the allotment as indicated in the "Associated allotment" column shall be recorded in the Plan either as linked assignment or converted assignment with all data necessary for its association with the relevant allotment (allotment ID, SFN IDs, etc).
4. For assignments which are located inside or not further than 20 km outside the boundary of the allotment they are associated with, only protection of the allotment area can be claimed. The coverage of the assignment outside the allotment area will not be protected.
5. The calculation of interference shall be based on the power sum method as described in Section II of Annex 4 to GE06 Agreement.
6. For implementation of the allotments introduced in GE06D Plan by RRC-06, bilateral agreement "Agreement between Lithuania and Poland concerning the use of the broadcast band planned at the RRC 2006 conference", Geneva, 08.06.2006 continues to apply apart from situations when limitations on implementation are imposed according to Annex 1 and Annex 2 of these Technical criteria and principles. In case of consolidated allotment, this provision is applied only for the areas of the consolidated allotment which were introduced in GE06D Plan by RRC-06.
7. Any other future implementation of an allotment or modification of GE06D Plan shall normally be accepted if the cumulative interfering field strength does not exceed the value of $46.2 \text{ dB}\mu\text{V/m} - 6 \text{ dB}$ on the area of any existing co-channel allotment of the other Party taking into account the correction factor $\text{Corr} = 30 \log (f / 650 \text{ MHz})$ due to frequency difference.

4. Revision

These Technical criteria and principles shall be revised (if required) after the coordination of the re-planning solution is completed with the administration of the Russian Federation. The revisions shall be aimed at solutions for those allotments (allotment areas) and assignments with respect to which uncertainty due to coordination with third party was identified in these Technical criteria and principles. Each Party shall notify the other Party about the completion of such coordination and the requirement for revision together with concrete proposal. Once such requirement is expressed, the other Party shall consider the proposal in a non-discriminatory way applying the same criteria used during development of this re-planning solution. During the process of revision, each Party have the right to withdraw from these Technical criteria and principles on reasonable grounds subject to one year's notice.

In other cases revision to these Technical criteria and principles can only be made by mutual written consent.

5. Enter into force

These Technical criteria and principles will enter into force upon the signature of both Parties.

Place Warsaw

Date December 12th 2017

For the Communications Regulatory Authority of
the Republic of Lithuania



Mindaugas Žilinskas

Place Warsaw

Date December 12th 2017

For the Polish Office of Electronic Communication



Wiktor Sęga

Annex 1

Lithuanian assignments accepted by Polish Party

Channel	Assignment	Associated allotment	Longitude	Latitude	e.r.p. (dBW)	H _{eff max}	Polar	Antenna (D / ND)
22	TAURAGE	TAURAGE	+0221557	+551556	40	220	H	D: 260°/-3dB
22	MAZEIKIAI	TELSIAI	+0222020	+561810	38	107	H	ND
22	PLUNGE	TELSIAI	+0215227	+555625	37	160	H	D: 240°/-2dB
22	SKUODAS	TELSIAI	+0213146	+561541	36	99	H	D: 230°/-3dB
22	TELSIAI	TELSIAI	+0221221	+555846	40	140	H	ND
22	VILNIUS	VILNIUS	+0251257	+544116	46	368	H	ND
23	JURAGIAI	KAUNAS	+0234740	+544806	44	264	H	ND
24	PAZAGIENIAI	PANEVEZYS	+0242308	+554146	45	116	H	ND
24	MAZEIKIAI	TELSIAI	+0222020	+561810	40	107	H	ND
24	PLUNGE	TELSIAI	+0215227	+555625	42	160	H	ND
24	SKUODAS	TELSIAI	+0213146	+561541	39	99	H	ND
24	TELSIAI	TELSIAI	+0221221	+555846	45	140	H	ND
26	RASEINIAI	RASEINIAI	+0230824	+552157	46	150	H	ND
28	GIRULIAI	KLAIPEDA	+0210549	+554606	44	228	H	ND
28	NIDA	KLAIPEDA	+0205957	+551818	38	97	H	D: 190°-210°/-2dB
32	IGNALINA	VISAGINAS	+0261032	+552016	38	132	H	ND
32	SVENCIONYS	VISAGINAS	+0260953	+550751	40	119	H	ND
32	UTENA	VISAGINAS	+0253438	+553025	42	132	H	ND
32	VISAGINAS	VISAGINAS	+0262552	+553640	40	223	H	ND
33	JONAVA	JONAVA	+0241458	+550410	40	93	H	ND
33	JURBARKAS	JURBARKAS	+0224608	+550513	44	92	H	ND
34	KAUNAS	—	+0235619	+545248	35	102	H	ND
36	BUBIAI	SIAULIAI	+0230847	+555110	45	252	H	ND
36	JONISKIS	SIAULIAI	+0233431	+561245	42	118	H	ND
36	N.AKMENE	SIAULIAI	+0225217	+561905	42	56	H	ND
36	MAZEIKIAI	TELSIAI	+0222020	+561810	40	107	H	ND
36	PLUNGE	TELSIAI	+0215227	+555625	45	160	H	ND
36	SKUODAS	TELSIAI	+0213146	+561541	39	99	H	ND
36	TELSIAI	TELSIAI	+0221221	+555846	45	140	H	ND
37	BUBIAI	SIAULIAI	+0230847	+555110	43	252	H	ND



37	JONISKIS	SIAULIAI	+0233431	+561245	42	118	H	ND
37	N. AKMENE	SIAULIAI	+0225217	+561905	42	56	H	ND
37	VILNIUS	VILNIUS	+0251257	+544116	45	368	H	ND
43*	GIRULIAI	KLAIPEDA	+0210549	+554606	39	228	H	ND
43*	NIDA	KLAIPEDA	+0205957	+551818	38	97	H	ND
43*	TAURAGE	TAURAGE	+0221557	+551556	46	220	H	D: 150°/-2.5dB; 160°-170°/-4.5dB; 180°/-4dB; 190°/-3.5dB
45	ALYTUS	ALYTUS	+0240023	+542346	43	142	H	ND
45	DRUSKININKAI	ALYTUS	+0235935	+535950	40	125	H	ND
45	LAZDIJAI	ALYTUS	+0232952	+541258	40	98	H	ND
45	VARENA	ALYTUS	+0243411	+541319	40	60	H	ND
45	MOLETAI	MOLETAI	+0252440	+551318	45	143	H	ND
47	KEDAINIAI	PANEVEZYS	+0235910	+551554	33	112	H	ND
47	PAZAGIENIAI	PANEVEZYS	+0242308	+554146	43	116	H	ND
47	UKMERGE	PANEVEZYS	+0244936	+551341	33	178	H	ND
47	VIESINTOS	PANEVEZYS	+0245853	+554132	30	196	H	ND
48	GIRULIAI	—	+0210549	+554606	29	228	H	ND
48	RASEINIAI	RASEINIAI	+0230824	+552157	47	150	H	ND

* Subject to successful coordination with the administration of the Russian Federation. Otherwise, channels 45, 24, 27 shall be treated as an alternative, provided that changeover (if required) shall be coordinated at a later stage under the same criteria. In case of neither of those channels are successfully coordinated, another solution shall be found through the process of revision of these Technical criteria and principles.

Annex 2

Polish assignments in accepted by Lithuanian Party

Channel	Assignment	Associated allotment	Longitude	Latitude	e. r. p. (dBW)	H _{eff max}	Polar	Antenna (D / ND)
21	OLSZTYN / Pieczewo	OLSZTYN	+0203105	+534511	50	386	H	D: 40°/-5dB; 50°-70°/-8.5dB
22	GIZYCKO / Milki	GIZYCKO	+0215043	+535617	50	358	H	D: 10°-30°/-11dB; 40°/-9dB; 60°/-3dB
22	SUWALKI / Krzemianucha	SUWALKI	+0225222	+541145	43	295	H	D: 0°/350°/-11dB; 10°/-11.5dB; 20°/-8dB; 60°-70°/-3dB
22	LEBORK / Skorowo Nowe	LEBORK	+0172954	+542942	40	155	H	ND
23	ELBLAG / Jagodnik	OLSZTYN L3	+0192937	+541224	40	244	H	ND
23	ILAWA / Kisielice	OLSZTYN L3	+0191307	+533649	45.4	327	H	ND
24 ²	GDANSK / Jaskowa Kopa	GDANSK L3	+0183606	+542200	35.4	174	H	D: 30°/-6dB; 40°/-8dB; 50°-60°/-10dB; 70°/-3.5dB; 80°/-4dB; 90°/-5dB; 100°/-2.5dB
24 ²	GDANSK / Chwaszczyno	GDANSK L3	+0182609	+542710	50	453	H	D: 40°/-15dB; 50°-60°/-11.5dB; 70°/-13dB; 80°/-10.5dB; 90°/-7.9dB; 100°/-7.7dB
24 ²	GDYNIA / Oksywie	GDANSK L3	+0183210	+543245	39	98	H	D: 40°-50°/-5dB; 60°/-5.9dB; 70°/-17dB; 80°/-7.8dB; 90°/-4.5dB; 100°/-0.9dB
25	GDANSK / Chwaszczyno	GDANSK	+0182609	+542710	50	453	H	D: 40°/70°/-13dB; 50°-60°/-11.5dB; 80°/-10.5dB; 90°/-7.9dB; 100°/-7.7dB
26	ELBLAG / Jagodnik	ELBLAG	+0192937	+541224	40	244	H	ND
26	GIZYCKO / Milki	GIZYCKO	+0215043	+535617	50	358	H	D: 10°-40°/-2dB; 50°-80°/-5.5dB
26	OSTROLEKA / Lawy	OSTROLEKA	+0213742	+530442	47.8	131	H	ND
27	ILAWA / Kisielice	ILAWA	+0191307	+533649	50	327	H	ND
28	ROZAN	OSTROLEKA	+0212401	+525302	37.8	106	H	ND
28	OSTROLEKA / Lawy	OSTROLEKA	+0213742	+530442	47.8	131	H	ND
33	ILAWA / Kisielice	ILAWA	+0191307	+533649	50	327	H	ND
35	LOMZA / Szosa Zambrowska	BIALYSTOK L3	+0220539	+530940	37	124	H	D: 0°/-0.1dB; 20°/-0.3dB; 30°/-1dB; 40°/-1.9dB; 50°/-3.6dB; 60°/-5.9dB
35	CZYZE	BIALYSTOK L3	+0232507	+524504	37	114	H	D: 0°/-13dB; 10°/-11.8dB; 20°/-8.6dB; 30°/-5.7dB; 40°/-3.7dB; 330°/-9.7dB; 340°/-10dB; 350°/-11.4dB
35	TUOSL	BIALYSTOK L3	+0214436	+532239	30	64	H	D: 0°/-0.9dB; 10°/-0.4dB; 20°/-0.2dB; 40°/-0.1dB; 50°/-0.3dB; 60°/-0.5dB; 70°/-1dB; 340°/-2.1dB; 350°/-1.4dB
42	OSTROLEKA / Lawy	OSTROLEKA L3	+0213742	+530442	47.8	131	H	ND
42	ROZAN	OSTROLEKA L3	+0212401	+525302	44.8	106	H	ND
43	ILAWA / Kisielice	ILAWA	+0191307	+533649	50	327	H	ND
43 ¹	BIALYSTOK / Krynice	BIALYSTOK	+0230136	+531353	50	381	H	D: 30°-50°/-3dB
43	SUWALKI / Krzemianucha	SUWALKI	+0225222	+541145	43	295	H	D: 60°/-1.5dB; 70°/-2dB
44	ELBLAG / Jagodnik	ELBLAG	+0192937	+541224	40	244	H	ND
44	GDANSK / Chwaszczyno	GDANSK	+0182609	+542710	50	453	H	D: 40°/70°/-13dB; 50°-60°/-11.5dB; 80°/-10.5dB; 90°/-7.9dB; 100°/-7.7dB
44	LEBORK / Skorowo Nowe	LEBORK	+0172954	+542942	40	155	H	ND


 8

45 ^{2,3}	GDANSK / Chwaszczyno	GDANSK	+0182609	+542710	50	453	H	D: 40°/70°/-13dB; 50°-60°/-11.5dB; 80°/-10.5dB; 90°/-7.9dB; 100°/-7.7dB
45	OLSZTYN / Pieczewo	OLSZTYN	+0203105	+534511	50	386	H	ND
46	GIZYCKO / Milki	GIZYCKO	+0215043	+535617	50	358	H	D: 0°-20°/-8dB; 340°/-4dB; 350°/-6dB
46	SUWALKI / Krzemianucha	SUWALKI	+0225222	+541145	43	295	H	D: 310°-350°/-7dB
48	LEBORK / Skorowo Nowe	KOSZALIN L3	+0172954	+542942	40	155	H	ND

¹ Valid only together with limitations on co-channel assignment "SUWALKI / Krzemianucha" as indicated in the table.

² Only after coordination of channel 43 or another alternative channel for allotments in KLAIPEDA and TAURAGE areas is successfully completed between the administrations of Lithuanian and the Russian Federation.

³ The date of entry into operation cannot be earlier than 30 June 2020; exact date shall be coordinated at a later stage.