

Agreement regarding the updated frequency plan for digital sound broadcasting in the frequency band 174-230 MHz between the Administrations of the Slovak Republic and Hungary

Introduction

This document constitutes the bilateral coordination agreement (hereinafter “the Agreement”) relating the updated frequency plan for digital sound broadcasting (DSB) in the frequency band 174-230 MHz (hereinafter “the VHF band III”) between the Administrations of the Slovak Republic and Hungary.

Background

The Administrations of the Slovak Republic and Hungary have adopted decision that the VHF band III will be used for digital sound broadcasting only. Subsequently, Administrations have conducted the conversion of the DTT layer into DAB layers (by splitting a DTT channel into four DAB blocks). These converted DAB layers, along with three DAB layers from GE06 Plan represent the basis of the updated frequency plan for digital sound broadcasting.

The intention during the negotiations, while preparing this Agreement, has been to find a common final planning solution, enabling up to seven nationwide layers in each country, depending on chosen SFN sizes, network structure, assignment parameters etc.

Conclusion

The Administrations of the Slovak Republic and Hungary have successfully completed the bilateral frequency coordination activities in order to implement the relevant re-organisations of the frequency spectrum in the VHF band III, related to achieving mutual compatibility of the spectrum resources to be used in the VHF band III to the best knowledge considering all the planning recommendations, particularly the technical material from the ITU documentations (GE06 Agreement, ITU-R Recommendations).

Working method

Starting point of the re-planning process in the VHF band III was challenging, because the original GE06 Allotment Plan for the VHF band III itself was not fully compatible, as it was not planned for High Power High Tower (hereinafter “HP/HT”) broadcasting networks. For that reason, and in order to establish the updated frequency plan for digital sound broadcasting according to the needs of the Administrations, planning principles for the VHF band III were proposed prior to the coordination negotiations. These planning principles included the following guidelines:

- “4+3” plan approach,
- preservation of equitable access to the spectrum,
- definition of the “2+2” principle,
- division of the layers into two categories: primary and secondary.

The necessity to divide the allotment plan into primary layers and secondary layers stemmed from the fact that in the course of coordination of the updated frequency plan for digital sound broadcasting it was not possible:

- to achieve the agreement on 7 layers for existing HP/HT networks with equivalent technical parameters for both Administrations,
- to re-plan the frequencies in such way to fulfil the needs for the same quality of layers.

In order to achieve the equitable access to the spectrum in the VHF band III, both Administrations have agreed that the updated allotment plan will consist of 4 primary layers and 3 secondary layers. For the purposes of this Agreement, the terms primary layer and secondary layer are defined as the following:

Primary layer

Primary layer offers the possibility to deploy the high-quality DSB nationwide network, which is based on the most significant (core) existing HP/HT transmitters. These core transmitters are agreed by other Administration with requested (or compromise, in certain cases) technical parameters. Transmitters corresponding to the primary layer have the right to claim high level of protection from harmful interference caused by transmitters of other Administration in order to achieve high coverage quality.

The co-block transmitters of an Administration on the same frequency blocks as the primary transmitters of the other Administration are regarded as agreed on a non-interference and non-protection basis. It means that if unexpected interference occurs in the coverage area of the primary layer of one Administration, the other Administration should perform the necessary changes in their networks to eliminate the produced harmful interference. If such unexpected interference cases between the two Administrations occur, both Administrations should

exchange all necessary technical information and carefully examine the causes of the interference.

For primary-primary co-block situations, the Administrations agreed on the parameters during re-planning process. If interference occurs, the Administrations carefully examine the situation and take all efforts to solve the issue in cooperative manner.

Secondary layer

A secondary layer does not guarantee deployment of DSB nationwide network with the same quality parameters (in terms of coverage quality and interference-free environment) as in the case of the primary layer. Under favourable circumstances, core HP/HT transmitters may be employed in the secondary network; however, certain effective radiated power (hereinafter “ERP”) reductions requested by other Administration (necessary for protection of its primary networks) have to be accepted. In interference sensitive cases, the secondary layer has to be deployed by means of different transmitter network topology, even without HP/HT transmitters. Transmitters corresponding to the secondary layer have no right to claim high level of protection from harmful interference caused by transmitters of the other Administration corresponding to its primary layers.

In the case of secondary networks, Administrations have to allow higher level of interference to these networks and accept reduction of coverage area caused by the operation of primary networks of the other Administration.

The “2+2” principle means that in case of DTT frequencies in the original GE06 Plan, where the frequency distribution is not or not fully compatible and re-planning of frequencies were not possible, the Administrations agreed that 2 DAB frequencies from the available 4 from 7 MHz DTT channel could be used as primary resource for one Administration (and may be used as secondary for the other Administration) and the other 2 DAB frequencies for the other Administration. With this kind of division of the spectrum, it is possible to ensure equitable access to the spectrum in a compromised manner.

Both Administrations submitted their requirements to various working groups (including other relevant Administrations, because of the domino effect in frequency planning), dealing with the re-planning of the VHF band III or with implementation of the GE06 Plan for digital TV broadcasting.

The submission of the requirements has been followed by an analysis of the compatibility of the requirements by both Administrations. This analysis was the basis for the development of a common frequency plan containing the most feasible solution across frequency coordination area of the Administrations of the Slovak Republic and Hungary. Hence, the development of the updated frequency plan for digital sound broadcasting has been an iterative process as:

- the modifications to the proposals have been evaluated taking national requirements into account,
- frequency coordination areas of neighbouring countries have also been considered.

Results of the activities

With this Agreement, the Administrations of the Slovak Republic and Hungary establish the updated frequency allotment- and assignment plan.

Allotment plan, Single Frequency Network (SFN) Areas

Allotment plan (illustrated in ANNEX 1 and ANNEX 2) represents the Single Frequency Network (SFN) Areas.

The Single Frequency Network (SFN) Areas serve as an illustration of the frequency distribution of the proposed assignments and their coverage areas.

The compatibility assessment of the Single Frequency Network (SFN) Areas using the Reference Networks and the Reference Planning Configurations as defined for allotments in the GE06 Agreement were not carried out in the re-planning process.

Assignment plan

The Agreement refers to the technical parameters of assignments, which are listed in ANNEX 3 and ANNEX 4 (assignment plan) and are attached in electronic notice files (ITU TerRaSys):

- "Assignments_HNG_550_20230720.txt" for the Administration of Hungary,
- "SVK_DAB_assignment_plan_209_2023-08-03.txt" for the Administration of the Slovak Republic.

With this Agreement, the assignments are bilaterally coordinated between the Administrations of the Slovak Republic and Hungary in accordance with the Article 4 of the GE06 Agreement.

In the course of the implementation of DAB networks additional transmitters, especially gap-fillers are expected to be deployed in the future. These transmitters need to be coordinated according to the Article 4 of the GE06 Agreement.

Subsequent activities

The current GE06 Plan will be updated by the Administrations.

Administrations agreed that they will not object notification requests of assignments - which are in line with this Agreement - submitted to the ITU as standalone Assignments, linked SFNs or stemming from conversion of GE06 allotments as appropriate in the application of the Article 4 of GE06 Agreement.

After the DAB assignments derived from DTT GE06 allotments/assignments have successfully entered the GE06 Plan, the original DTT allotments/assignments in the GE06 Plan shall be sent to the ITU for withdrawal within a 3-month period.

Regarding the Single Frequency Network (SFN) Areas the Administrations agreed on the following statements:

- the Single Frequency Network (SFN) Areas of this Agreement shall be submitted to the ITU GE06 Plan using the allotment format as defined in the ITU and shall not be rejected by the Administrations,
- the original GE06 allotments which do not fit into the frequency plan according to this Agreement will be adjusted accordingly,
- this Agreement states that, upon modifying the GE06 Plan, the remarks field of the allotment data sheet notification sent to the ITU shall contain the following: "Regulated by bilateral Agreement between HNG and SVK, 2023" noting that this Agreement contains the appropriate rights of these allotments.

Administrations have no rights to claim the protection from harmful interference caused by transmitters of other Administration outside allotment.

All future national deployments and refinements of the broadcasting networks in the VHF band III, which may be prove to be necessary, given the possibility of changing demands in broadcasting, will be done by both Administrations in accordance with the Article 4 of the GE06 Agreement.

Entry into force

This Agreement will enter into force upon the signature of the paper version of this Agreement by the two Parties.

Language of the Agreement

This Agreement is prepared in English in two originals. Each Administration holds one original.

Place: Bratislava

Date: _____

For the Administration of the Slovak Republic

Place: Budapest

Date: _____

For the Administration of Hungary

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