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DIRECTORATE-GENERAL FOR COMMUNICATIONS NETWORKS, CONTENT AND TECHNOLOGY

Connectivity

Radio Spectrum Policy Group
RSPG Secretariat

Brussels, 10 February 2021

RSPG21-010 FINAL

RADIO SPECTRUM POLICY GROUP

26th Progress Report of the RSPG Sub-Group

on cross-border coordination

REPORT

RSPG SUB-GROUP

« GOOD OFFICES »

Web-meeting, 10th February 2021

The Sub-Group has held one web-meeting, 14th January, with many exchanges before and after the meeting. The list of participants is attached in annex 1 and the detailed meeting report is attached in annex 3.

1. C band questionnaire results and next steps

The responses were received from 21 EU countries + Switzerland and Turkey.

The good offices reviewed the responses, highlighting the following elements:

- Most administrations having selected a frame structure have opted for the DDSU option (frame A according to ECC Rec. 20(03)). See the map in annex 2.
- Among the countries having selected the other option (DDSUUUUU), (frame B according ECC Rec. 20(03)), Italy has implemented a variant with a time shift, for reasons related to compatibility with incumbent WiMax FWA networks. Italy will cancel this time shift at the latest at the end of 2023 or possibly before if the migration from WiMax to LTE is completed. Until that time, it will not be possible to synchronize networks at the Italian border, even in the case where the neighbour use the same option (eg, FR and SI) and DL blanking feature is likely not to be available since this time shift is very specific to Italy.
- Some administrations have identified as a significant issue the cross-border coordination in case of different frame structure and until the DL blanking feature is available. Some administrations are relying on the operators to identify themselves the solutions to be put in place.
- Among the listed potential solutions:
 - Geographical priority deployment is one of the preferred solution, but this is particularly difficult for small countries (eg, LU, LT, LV) where it may be difficult to differentiate among bordering areas;
 - Preferential blocks appear to be the default solution in case no other solution is available, but yet with significant complexity (increasing with the number of operators) and impact (loss of half of the capacity at minimum);
 - Other solutions (local derogation to the national frame structure and other uplink band) were generally objected but some countries wish to consider them as possible options.

The good offices sub-working group intends to make a regular review of the situation around the countries having implemented the alternative frame structure (DDSUUUUU).

2. Switch-off in Italy of 700 MHz TV transmitters and migration of broadcasting in Croatia below the 700 MHz band

As detailed in annex 3, Croatia finalised the migration of DTT services and released the 700MHz band by 12th November 2020, as scheduled. However, **Italian interference on TV channels below 694MHz is still present, despite switch-off of 200 Italian transmitters in August, as confirmed by measurements and complaints from the consumers.**

In addition, Italy is continuing the process of switching off broadcasting in the 700 MHz band and migration according to their plan. The process will be achieved by 31st of December in the regions of Friuli Venezia Giulia, Veneto, Emilia Romagna 2021 and by April 2022 in the regions of Marche, Abruzzo, Molise and Puglia. **Croatia expressed concerns about the interference which will be suffered in the meantime in the uplink 700 MHz band.**

The EU obligation for Italy, pursuant to the Decision EU 2017/899, is an obligation of results and not only an obligation of means. The Decision (EU) 2017/899 provides a tolerance until mid-2022 but only if, as provided by that Decision, “all necessary steps” are taken “to minimize resulting harmful interference in the affected Member States”. It should be noted that Decision (EU) 2017/899 prescribes not merely “taking steps”, but rather “all necessary steps”, which reinforces the achievement of the result (i.e. minimization of resulting harmful interference). Consequently, if the voluntary scheme proves to be insufficient, other steps should be taken.

There are technical solutions available for Italy to mitigate such interference to broadcasting or to the mobile uplink band:

- Reduction of transmitter power, for example for the remaining interfering regional transmitters
- Shift to other channels, in particular channels 54 to 60 which present lower risk of interference to the 700 MHz band mobile networks (centre gap and downlink band)

Concerning the interference to Croatian TV, the meeting decided that Italy should provide to the next RSPG meeting an initial assessment on whether the process will enable to switch-off all interfering transmitters and, if not, alternative solutions to solve the interference to Croatia.

Concerning the interference to the 700 MHz band, Italy is requested to provide to the next meeting a plan to shift transmitters using the channels 50-53 to other channels.

3. TV, T-DAB and FM interference around Italy

For the details of the interference situation, please refer to the meeting report in annex 3.

- **For TV interference**, there is **no more interference to channels in operation in neighbouring countries except with Croatia (see above).**
- **For TDAB interference**, the Italian authority in charge with spectrum planning tasks, Agcom, is going to develop a T-DAB plan **as soon as the Adriatic agreement will be signed, hopefully summer time**; all the other agreements were already signed (FRA, CVA, MCO, SUI, AUT, MLT). Italy is going to use only the GE06 rights and additional resources agreed with the

neighbouring countries, meanwhile, some provisional solutions are put in place to mitigate the emission towards Croatia and Slovenia.

For FM interference, the situation is particularly critical with Croatia and Slovenia : no progress even for the priority cases identified by these two countries.

The good offices concluded that there is a need for Italy to define a clear path for solving this long-lasting interference situation, noting the possibility of legal actions (article 45 of the EECC obliges Member states to comply with international agreements, which includes GE84 and Radio Regulations). Based on the previous discussion and on the example of the VHF band, the meeting considered the set of possible actions:

- Italy to include in its internal law, similarly to the VHF band, that AGCOM should define a plan for the FM band only based on Italian international rights
- Italy, Slovenia and Croatia to negotiate a new agreement in the FM band ensuring an equitable access and on optimization of the capacity for each country
- The Plan will result in some FM broadcasters having to move to the T-DAB platform

Italy will investigate this possible way forward and report to the next good offices meeting.

4. Review of the cross-border negotiation with countries outside EU

- **Ukraine/Belarus:** the EC representative informed about the ongoing negotiation with these countries including funding to help migration. Also, the regional spectrum agreement is expected to be signed in the next few months. It will address 5G implementation and interference issues in the 700 MHz and 3.6 GHz bands. The possibility of funding of transition of TV channels from 700 MHz band is still being analyzed by EC.
- **Russian Federation:** the EC representative informed that a meeting in October was cancelled by Russia, but a meeting is now planned in February with the participation of the Russian Minister.
- **Balkans:** No difficulty is expected from non-EU Balkan countries
- **Turkey:** Cyprus informed that the auction for the 700 MHz and 3.6 GHz bands took place on the 17th of December 2020 and it was completed on the same day. All relevant radio spectrum was authorized successfully. However, two points are worrying:
 - The Turkish Cypriots informed Cyprus government that the Channel 53 will not be switched-off for the time being, and until they receive the funding from European Union to deploy a digital TV platform, which may take a long-time and is not guaranteed. Such a use of channel 53 prevents the deployment of 5G services in Cyprus. The EC representative informed the group that this negotiation is ongoing. Cyprus suggests the EC to encourage Turkish Cypriots to use other channel for this analogue TV, as a temporary solution.
 - Turkey is still objecting within the ITU process to the record of the Cyprus assignments and there is no concrete progress at all. The representative of the Turkish administration on this issue, participating as observer, stated that, according to their knowledge, the Northern Part initiated the studies for release of 700 MHz band and negotiations

between the Northern and the Southern parties are ongoing and that their positions are in line with both the technical issues and the principles of the Turkish foreign policy.

Next meeting

The next meeting is planned as a web-meeting on 6th May

ANNEX 1

List of Participants

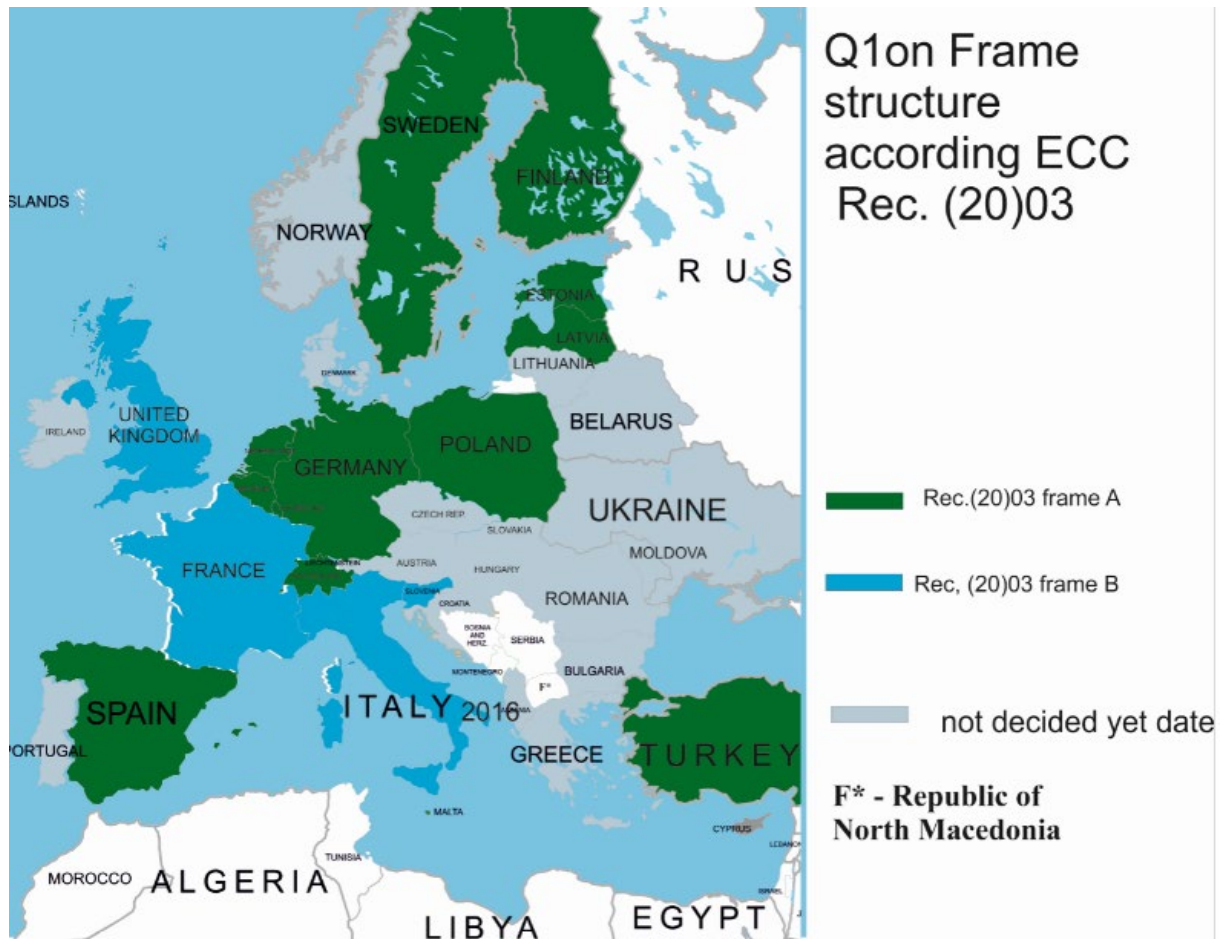
Meeting 14/01/2021

Name	Country
Ernst Cerny (AT)	Austria
Thomas Weber (AT)	Austria
Jakob Gschiel (AT)	Austria
Danijel Vidakovic (HR)	Croatia
Luka Vujevic (HR)	Croatia
Georgios Komodromos (CY)	Cyprus
Julija Varnaite-Kamstra (CNECT)	EC
Paul Lippens de Cerf (EC)	EC
Tom Wikström (FI)	Finland
Eric Fournier (FR)	France
Laura Recuero Virto (France)	France
Raphael Le Hegarat (FR)	France
Elena Nanou (EL)	Greece
Emilia Ulelay (HU)	Hungary
Donato Margarella (IT)	Italy
Katia Marcantonio (IT)	Italy
Umberto Mascia (IT)	Italy
Dainis Valdmanis (LV)	Latvia
Mindaugas Žilinskas (LT)	Lithuania
Adrian Galea (MT)	Malta
Amadeo Vella (MT)	Malta
Dan Ioan Constantinescu (RO)	Romania
Igor Funa (SI)	Slovenia
Miljenko Pintar (SI)	Slovenia
Jeanette Wännström (SE)	Sweden

ANNEX 2

Response to the additional questionnaire on synchronization in the 3.6 GHz band

5G NR Frame structure options in Europe



ANNEX 3

REPORT

RSPG SUB-GROUP

« GOOD OFFICES »

Web-meeting, 14th January 2021**1. C band additional questionnaire results and next steps**

The co-rapporteurs presented the summary of the additional questionnaire responses, as well as the map illustrating the responses on the frame structure which will be used in each country.

23 responses have been received. All EU MS have responded except AT, BE, PT, DK, EL and IE. Switzerland and Turkey have also responded.

The sub-group reviewed the responses and highlighted the following elements:

- Most administrations having selected a frame structure have opted for the DDDSU option (frame A according ECC Rec. 20(03)).
- Among the countries having selected the other option (DDDSUDDDD), (frame B according ECC Rec. 20(03)). Italy has implemented a variant with a time shift, for reasons related to compatibility with incumbent WiMax FWA networks. Italy will cancel this time shift at the latest at the end of 2023 or possibly before if the migration from WiMax to LTE is completed. Until that time, it will not be possible to synchronize networks at the Italian border, even in the case where the neighbour use the same option (eg, FR and SI) and DL blanking feature is likely not to be available since this time shift is very specific to Italy.
- Some administrations have identified as a significant issue the cross-border coordination in case of different frame structure and until the DL blanking feature is available. Some administrations are relying on the operators to identify themselves the solutions to be put in place.
- Among the listed potential solutions:
 - Geographical priority deployment is one of the preferred solution, but this is particularly difficult for small countries (eg, LU, LT, LV) where it may be difficult to differentiate among bordering areas
 - Preferential blocks appear to be the default solution in case no other solution is available, but yet with significant complexity (increasing with the number of operators) and impact (loss of half of the capacity at minimum)
 - Other solutions (local derogation to the national frame structure and other uplink band) were generally objected but some countries wish to consider them as possible options.

The good offices sub-working group intends to make a regular review of the situation around the countries having implemented the alternative frame structure (DDDSUDDDD).

2. Switch-off in Italy of 700 MHz TV transmitters and migration of broadcasting in Croatia below the 700 MHz band.

Migration of broadcasting in Croatia below the 700 MHz band and remaining interference to TV in Croatia,

Italy provided to Croatia and the group on 3rd of November 2020 the list of transmitters which had been switched-off and which are relevant to Croatia (ie, in the coordination area).

However, Croatia confirmed that interference on TV channels below 694MHz from Italy is still present, despite switch-off of 200 Italian transmitters in August, as reported by Italy. This was confirmed by measurement results sent on 15th October 2020, and by recent measurements and complaints from the consumers on the terrain.

Croatia finalised the migration of DTT services and released the 700MHz band by 12th November 2020, as scheduled. From that date there is no DTT simulcast ("old" DVB-T networks + "new" DVB-T2 network) in Croatia, just new DVB-T2 networks are in operation (using some new channels below 694MHz, e.g. ch23 in region D5, ch22, ch35 in D7 and ch21 in D9). There is information from certain regions (e.g. Istria region and some parts of Dalmatia) that a lot of households have problems with reception. In respect to that, the solution is that Italy stops operation on reported channels (21, 22, 23, 27, 28, 29, 33, 34, 35, 39, 41, 43 and 45) along the Adriatic coast.

Italy explained that, as already envisaged at the previous good offices meeting, a special decree regarding a scheme of compensation for the local broadcasters that will release in advance the channels will enter into force in the next few days (<https://www.mise.gov.it/index.php/it/198-notizie-stampa/2038544-dm-19-agosto-2019-nuovo-calendario-rilascio-banda-700mhz>). Once the Decree is entering into force, the regional broadcasters wishing to benefit from the compensation scheme will have 60 days to release the channels.

However, Croatia and the EC representative pointed out that this is remaining a voluntary process and it does not guarantee the result, notably that sufficient number of regional broadcaster will apply to the process. Potential remaining TV transmitters will only switch-off mid-2022.

Italy stated that they are quite optimistic about the success of the process, and they are expecting that sufficient regional broadcasters will apply. hA first feedback could be given from Italy within one month.

Croatia stressed that there is a need for Italy to provide clear and precise information on which transmitters are switched off, with the concerned channels, so that the assessment on the interference can be clearly evaluated. Italy will provide this latest information on migration process before the next RSPG meeting.

Interference from Italy to the 700 MHz band

Italy confirmed that the switch-off process in the 700 MHz band regarding the channels 50-53 is continuing satisfactorily, in the northern part of Italy. In addition, on 17th of November 2020, MISE published the roadmap regarding the switch-off of the channels 50-53 operating in the Sicilian provinces of Agrigento, Caltanissetta, Catania, Enna, Ragusa, Siracusa,

Trapani

(https://www.mise.gov.it/images/stories/normativa/determina_date_specifiche_1_fase_2021.pdf). The switch off must be done in the period 1-30 June 2021 and the procedure has been coordinated with the Administration of Malta.

On the other hand, the process of switch off/switch on in the regions of Friuli Venezia Giulia, Veneto, Emilia Romagna will be achieved by 31st of December 2021 in these areas and by April 2022 in the regions of Marche, Abruzzo, Molise and Puglia.

Croatia reminded that, with channels 50 – 52 still operational in Italy, as well as the rest of the 700 MHz band, interfering field strength level are in the range of 60 – 80 dBuV/m. Due to that, Croatia expressed concerns about the interference, particularly to uplink, when MNO will start deployment in the 700 MHz band after authorizations have been granted in June 2021.

Way forward on the interference to Croatian TV and to the 700 MHz band

The EC representative stated that the EU obligation for Italy, pursuant to the Decision EU 2017/899, is an obligation of results and not only an obligation of means. He reminded that the Decision (EU) 2017/899 provides a tolerance until mid-2022 but only if, as provided by that Decision, “all necessary steps” are taken “to minimize resulting harmful interference in the affected Member States”. It should be noted that Decision (EU) 2017/899 prescribes not merely “taking steps”, but rather “all necessary steps”, which reinforces the achievement of the result (i.e. minimization of resulting harmful interference). Consequently, if the voluntary scheme proves to be insufficient, other steps should be taken.

From a technical perspective, it was pointed out that there are solutions available to Italy to mitigate the interference:

- Reduction of transmitter power, for example for the remaining interfering regional transmitters
- Shift to other channels, in particular channels 54 to 60 which present lower risk of interference to the 700 MHz band mobile networks (centre gap and downlink band)

Concerning the interference to Croatian TV, the meeting decided that Italy should provide to the next RSPG meeting an initial assessment on whether the process will enable to switch-off all interfering transmitters and, if not, alternative solutions to solve the interference to Croatia.

Concerning the interference to the 700 MHz band, Italy is requested to provide to the next meeting a plan to shift transmitters using the channels 50-53 to other channels.

The RSPG secretariat will be requested to include a specific item on the RSPG Agenda to address the matter.

3. Review of the interference cases around Italy

UHF

Countries other than Croatia (see above) confirmed that they currently do not experience any television interference problems.

VHF

The Adriatic and Ionian group met on 4th of December 2020. By 21st of December 2020, the concerned countries exchanged some essential data with the aim to do an automatic sharing of the blocks in Band III. Matrix of compatibility and proposal of new plan is under development. The next webmeeting is expected to take place shortly, but the final signature is more likely for summer time, given also the domino effects to be analysed by individual countries.

The new project of Monte Porzus provided by Italy was validated and accepted by SI and HR and the Italian broadcaster already put on air the new project before the end of 2020 on the block 7C.

Moreover, in Umbria, where HRV claimed some interference coming from the block 10A, Italy proposed on 17th of November 2020 to SI and HR to use the block 10D instead of the block 10A for 4 transmitters located in Umbria. SI and HR, with email dated 19-11-2020 and 23-11-2020, gave to Italy their agreement. The broadcaster will put on air the block 10D shortly and Italy will report it to the good offices as soon as the date is known.

Slovenia explained that they still suffer from other interference notably on channel 12C and reports of harmful interference have been sent to the Italian administration in November - interfering levels exceed 70 dBuV/m.

Croatia explained that reports of harmful interference (ch: 12A, 12B, 12C, 12D and 10A) have been sent to the Italian administration in November - interfering levels exceed 70 dBuV/m, which causes serious problems for putting into operation commercial DAB service scheduled for May/June 2021.

It remains unchanged that the Italian authority in charge with spectrum planning tasks, Agcom, is going to develop a T-DAB plan as soon as the Adriatic agreement will be signed; all the other agreements were already signed (FRA, CVA, MCO, SUI, AUT, MLT). Italy is going to use only the GE06 rights and additional resources agreed with the neighbouring countries. Meanwhile, as done for Monte Porzus and Umbria, solutions to mitigate the emission towards Croatia and Slovenia should be investigated by Italy.

FM

Italy reported that:

- the discussion is continuing with France about Bonifacio

- Italy has studied possible mitigation (reduction of power) for the FM transmitters power affecting Malta. The results of Maltese measurements are being analysed and Italy would be keen in having also some measurements in winter time to understand the seasonal impact.
- Italy stated that there was not much progress on the Adriatic side. Concerning the court case where an Italian broadcaster complained about interference from Slovenia on a Slovenian channel 88.6 MHz (GE-84), Slovenia officially confirmed that they would be keen in identifying any solution which would be in conformity with international agreements.

Croatia and Slovenia

The two countries reported that there is no progress at all on any FM priority case. There is no result nor information on the progress to resolve interference, for example for the first priority case for Croatia Biokovo 89.7 MHz. The situation remains unchanged, no interference was eliminated yet although during the previous meetings two FM co-channel transmitters (Play Capital and Radio Kiss) were identified to be migrated to another channel or switch-off.

The good offices reminded the importance for Italy to find solutions for the priority cases of Slovenia and Croatia. Italy committed to report to the next meeting how they addressed such cases.

The EC representative reminded that Article 45 of the EEC obliges Member states to comply with international agreements, which includes GE84 and Radio Regulations.

Slovenia stressed that ITU Radio Regulations stipulate that any frequency recorded in the Master register shall be taken into account and protected.

Croatia and Slovenia asked Italy whether conformity with GE84 will be ensured once the future VHF TDAB plan will be implemented, enabling as generally stated previously by Italy to move part of the FM broadcasters to T-DAB. Italy responded that it is not possible to commit in such a way

It was stressed that there is a need to define a clear path for solving this long-lasting interference situation, noting the risk of legal actions. Based on the previous discussion and on the example of the VHF band, the meeting considered the set of possible actions:

- Italy to include in its internal law, similarly to the VHF band, that AGCOM should define a plan for the FM band only based on Italian international rights
- Italy, Slovenia and Croatia to negotiate a new agreement in the FM band ensuring an equitable access and on optimization of the capacity for each country
- It is understood that the Plan will result in some FM broadcasters having to move to the T-DAB platform

Italy will investigate this possible way forward and report to the next meeting.

Malta

With regards to the interference situation between Malta and Italy on the VHF FM band, no new positive developments can be reported. Malta provided a table comprising an update to the interference situation on a per frequency basis.

France

France, explained that the Italian proposal was to replace the existing antenna by 3 antennas of the same type in Hotel Genovese, accepting the frequency shift from 88.3 to 88.4 MHz. France has some doubt about the feasibility of this project from administrative point of view, due to the fact the location is in an historic area and some other players we obliged to moved from this site. The risk is being assessed by the editor (NRJ group) before continuing or not in this direction. The proposal done by France was a joint measurement campaign in 88.4 MHz from Monte Corbu (new site location) to assess the coverage in Corsica and the level of interference in Sardinia. This proposal was refused by the Italian administration in October 2020. Therefore, at this stage, French administrations is waiting the answer from the editor (NRJ group) regarding what could be the next steps regarding the two options.

Italy noted the need for this internal investigation before the matter can be progressed.

4. Cross border negotiations with countries outside EU

- Ukraine/Belarus: the EC representative informed about the ongoing negotiation with these countries including funding to help migration. Also, the regional spectrum agreement is expected to be signed in the next few months. It will address 5G implementation and interference issues in the 700 MHz and 3,6 GHz bands. The possibility of funding of transition of TV channels from 700 MHz band is still being analyzed by EC. Russian Federation: the EC representative informed that a meeting in October was cancelled by Russia, but a meeting is now planned in February with the participation of the Russian Minister.
- Balkans: As stated at the previous meeting, no difficulty is expected from non-EU Balkan countries
- North Africa: No information
- Turkey: Cyprus informed that the auction for the 700 MHz and 3.6 GHz bands took place on the 17th of December 2020 and it was completed on the same day. All relevant radio spectrum was authorized successfully. However, two points are worrying:
 - The Turkish Cypriots informed Cyprus government that the Channel 53 will not be switched-off for the time being, and until they receive the funding from European Union to deploy a digital TV platform, which may take a long-time and is not guaranteed. Such a use of channel 53 prevents the deployment of 5G services in Cyprus. The EC representative informed the group that this negotiation is ongoing. Cyprus suggests the EC to encourage Turkish Cypriots to use other channel for this analogue TV, as a temporary solution.
 - Turkey is still objecting within the ITU process to the record of the Cyprus assignments and there is no concrete progress at all. The representative of the Turkish administration on this issue, participating as observer, stated that, according to their knowledge, the Northern Part initiated the studies for release of 700 MHz band and negotiations between the Northern and the Southern parties

are ongoing and that their positions are in line with both the technical issues and the principles of the Turkish foreign policy.

5. Date of next meeting

The next RSPG “good offices” meeting is planned as a web-meeting on 6th May (9H30-12H30).