



ORGANIZACION DE LOS ESTADOS AMERICANOS
ORGANIZATION OF AMERICAN STATES

Comisión Interamericana de Telecomunicaciones
Inter-American Telecommunication Commission

**XXIII MEETING OF PERMANENT
CONSULTATIVE COMMITTEE II:
RADIOCOMMUNICATIONS
March 17 to 21, 2014
Cartagena de Indias, Colombia**

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FINAL REPORT

(Item on the Agenda: 7)

(Document submitted by the Drafting Group)

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FINAL REPORT

XXIII MEETING OF PERMANENT CONSULTATIVE COMMITTEE II: RADIOCOMMUNICATIONS (PCC.II)

The XXIII Meeting of Permanent Consultative Committee II: Radiocommunications including Broadcasting was held in Cartagena de Indicas, Colombia, March 17 to 21, 2014.

I. AGENDA ¹

1. Aprobación del temario y del calendario.
2. Designación del Grupo de Redacción del Informe Final.
3. Reunión de los Presidentes de los siguientes Grupos de Trabajo:
 - 3.1. Grupo de Trabajo para la Preparación para las Conferencias Regionales y Mundiales de Radiocomunicaciones.
 - 3.2. Grupo de Trabajo sobre Servicios de Radiocomunicaciones Terrestres Fijos y Móviles.
 - 3.2.1 Sub-grupo de Trabajo de Gestión del Espectro.
 - 3.3. Grupo de Trabajo relativo a Sistemas satelitales para la prestación de servicios fijos y móviles.
 - 3.4. Grupo de Trabajo sobre Radiodifusión.
4. Plan Estratégico del CCP.II.
5. Temario, sede y fecha de la XXIV Reunión del CCP.II.
6. Otros temas.
7. Aprobación del informe final de la XXIII Reunión.

¹ CCP.II-RADIO/doc. 3458/14

II. MEETING OFFICERS

Alternate Chair of PCC.II: Mr. Franklin Merchán Calderon (Colombia)
Executive Secretary of CITEL: Mr. Clovis Baptista (OAS)

Drafting Group:

Chair: Mr. Jorge Guillermo Barrera Medina (Colombia)
Delegates: Mr. Marc Girouard (Canadá)
Ms. Sandra Viviana Rincón Lemus. (Colombia)
Mr. Luis Carlos Galvis (Colombia)
Mr. Alexander Tejada (El Salvador)
Mr. Christine Dilapi (Estados Unidos de América)

III. RESOLUTIONS

PCC.II/RES. 98 (XXIII-14) ²

PROCEDURES FOR PROCESSING APPROVED DOCUMENTS OF PCC.II AND CORRESPONDENCE RECEIVED FROM ADMINISTRATIONS BY THE SECRETARIAT BETWEEN MEETINGS OF PCC.II

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunication (PCC.II),

CONSIDERING:

- a) That the Inter-American Telecommunication Commission (CITEL) as a specialized advisory body of the Organization of Americas States (OAS) in matters of telecommunications, conducts important work of interest to its members;
- b) The need to have efficient procedures that allow PCC.II to produce accurate documents in order to meet the objectives of the Committee;
- c) That the CITEL Secretariat provides essential assistance to the work of PCC.II;
- d) That the CITEL Secretariat may receive correspondence from Member States or other information between meetings of PCC.II related to approved documents,

RECOGNIZING:

That PCC.II/RES. 90 (XXI-13) "INTER-AMERICAN PROPOSALS FOR WORLD RADIOCOMMUNICATION CONFERENCES" establishes the specific procedures for the adoption of Inter-American Proposals (IAP),

² CCP.II-RADIO/doc. 3593/14 rev.1

RESOLVES:

1. That no changes shall be made to the documents approved by a PCC.II Meeting after the closure of that meeting.
2. That documents approved by a PCC.II Meeting shall be made available on the CITELE website no later than two weeks after the closure of that meeting.
3. To instruct the Secretariat to prepare an input document to the next PCC.II Meeting attaching all correspondence from CITELE Members requesting revisions to documents approved by the prior PCC.II Meeting.
4. To instruct PCC.II Chairmen, Coordinators and Rapporteurs to review the accuracy of final documents prior to their presentation for approval.
5. That *resolves* 2 of this Resolution take effect at the beginning of the XXIV meeting of PCC.II.

PCC.II/RES. 99 (XXIII-14) ³**AGENDA, VENUE AND DATE FOR THE XXIV PCC.II MEETING**

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunications (PCC.II),

RESOLVES:

1. To hold the XXIV Meeting of PCC.II in México during the week of 29 September to 3 October 2014.
2. To approve the draft agenda for the XXIV Meeting, that is attached as an Annex.

ANNEX TO RESOLUTION PCC.II/RES. 99 (XXIII-14)

1. Approval of the agenda and calendar.
2. Appointment of the Drafting Group for the Final Report.
3. Meeting of the Working Groups on:
 - 3.1 Working Group on Preparation for Regional and World Radiocommunication Conferences.
 - 3.2 Working Group on Terrestrial Fixed and Mobile Radiocommunication Services.
 - 3.2.1. Sub-working group on Spectrum Management
 - 3.3 Working Group on Satellite Systems to Provide Fixed and Mobile Services.
 - 3.4 Working Group on Broadcasting.

³ CCP.II-RADIO/doc. 3583/14 rev.1

4. PCC.II Strategic Plan.
5. Agenda, Venue and Date of the XXV Meeting of PCC.II.
6. Other matters.
7. Approval of the Final Report of the XXIV Meeting.

DRAFT AGENDAS OF WORKING GROUPS

3.1 Working Group on the preparation of CITELE for Regional and World Radiocommunication Conferences

1. Presentation and approval of the agenda.
2. Working methods.
3. Preparation for the Radiocommunications Assembly (RA-15) and the World Radiocommunication Conference (WRC-15).
4. Other matters.

3.2 Working Group on Terrestrial Fixed and Mobile Radiocommunication Services

1. Approval of the agenda.
2. Report on ITU-R activities.
3. IMT implementation
4. Compatibility studies of broadcasting and mobile services.
5. Current and planned use of the bands 1 350-1 400 MHz and 1 427-1 525 MHz (PCC.II/DEC. 162 (XXII-13)).
6. Sub-Working Group of Spectrum management.
7. Work Plan.
8. Other business.

3.3 Working Group on Satellite Systems to Provide Fixed and Mobile Services

1. Approval of the agenda.
2. Implementation of regulations that facilitate deployment of satellite services.
3. Harmful interference from unauthorized transmissions in satellite networks.
4. C and Ku band use, operation and applications.
5. Existing databases on satellite systems.
6. Operation of satellite services with no authorization.
7. Work Plan.
8. Other business.

3.4 Working Group on Broadcasting

1. Opening remarks.
2. Approval of the agenda.

3. Consideration of the inputs documents on:
 - 3.1 Digital Television.
 - 3.2 Digital Sound Broadcasting.
 - 3.3 Spectrum Usage and New Technologies for Broadcasting.
 - 3.4 Rio Janeiro 1981 Agreement.
4. Review of the Work Plan.
5. Other business.

IV. RECOMMENDATIONS

PCC.II/REC. 43 (XXIII-14)⁴

USE OF THE 1710-1780 / 2110-2180 MHz BANDS IN THE AMERICAS FOR BROADBAND MOBILE SERVICES

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunications (PCC.II),

CONSIDERING:

- a) That there is a need in the Region 2 countries to fulfil the fundamental objectives of universal access and service of our citizens to the Internet and the Information Society as they are a key element for the economic development and advancement of our societies, especially in developing countries;
- b) That mobile connectivity and the resulting capacity requirements are growing exponentially with the increasing adoption of smartphones and other data intensive access devices and there are a significant number of activities to find additional spectrum within countries and regions and also on a global basis;
- c) That it is essential that the use of the bands be harmonized regionally, and wherever possible, globally and it is also very important to consider how these bands that are identified, particularly those that are in the vicinity of existing or other potential bands, can be incorporated to maximize their use, taking into account the requirements of the current users of the frequency bands;
- d) That careful planning of band pairing, duplex spacing, uplinks, downlinks and contiguous channels can increase spectrum efficiency, decrease interference, improve roaming, reduce costs to consumers and provide access to more devices;
- e) That [Recommendation ITU-R M.1036-4](#) “Frequency arrangements for implementation of the terrestrial component of International Mobile Telecommunications (IMT) in the bands identified for IMT in the Radio Regulations (RR)” covers international frequency arrangements for all the bands identified for IMT in the International Telecommunication Union (ITU) Radio Regulations;
- f) That [Recommendation PCC.II/REC. 8 \(IV-04\)](#) “Frequency arrangements for IMT-2000 in the bands 806 to 960 MHz, 1710 to 2025 MHz, 2110 to 2200 MHz and 2500 to 2690 MHz” covers frequency arrangements for the bands 806-960 MHz, 1710-1885 MHz, 1885-2025 MHz, 2110-2200 MHz and 2500-2690 MHz;
- g) That the bands 1770-1780 MHz paired with 2170-2180 MHz are a contiguous extension of the pairing 1710-1770 MHz with 2110-2170 MHz, which are covered in 3GPP Band 10, Arrangement B5 in [Recommendation ITU-R M.1036-4](#), and Arrangement 5 in [Recommendation PCC.II/REC. 8 \(IV-04\)](#),

RECOGNIZING:

- a) That the mobile satellite service operates in the band 2000-2020 MHz/2180-2200 MHz and should be protected from harmful interference from mobile service operations in the adjacent bands;

⁴ CCP.II-RADIO/doc. 3579/14 rev.1

- b) That broadband mobile deployments in the band 1710-1780 MHz/2110-2180 MHz should not cause interference to systems in other countries;
- c) That use of the band 1710-1780 MHz/2110-2180 MHz by broadband mobile services does not preclude use by other services to which these bands are allocated;
- d) That harmonizing the bands 1710-1780 MHz /2110-2180 MHz for the mobile service within Region 2 contributes to the success of mobile broadband deployment by enabling economies of scale and potentially simplifying roaming.

RECOMMENDS:

That CITEL administrations that plan to use the 1710-1780 MHz / 2110-2180 MHz band for broadband mobile services, do so by adding additional contiguous bandwidth as an expansion of the existing bands (1710-1770 MHz / 2110-2170 MHz or 1710-1755 MHz / 2110-2155 MHz in some countries),

**GUIDELINES FOR THE HARMONIZATION OF MEASUREMENT PROCEDURES FOR THE
TECHNICAL VERIFICATION OF SPECTRUM USE FOR COORDINATION IN BORDER
AREAS**

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunication (PCC.II),

CONSIDERING:

- a) That the establishment of harmonized technical procedures for the verification of the spectrum use by administrations would be beneficial for identifying problems of interference in border areas, leading to a solution for said interferences;
- b) That in order to carry out the radio electrical spectrum monitoring and control function in a more efficient manner, it is advisable that the administrations develop harmonized procedures to verify the technical parameters of the spectrum according to the band or service subject of study;
- c) That it is beneficial to harmonize criteria in the region with regards to the way of presenting the results of the interference measurements carried out in border regions, to facilitate understanding of the information exchanged among the administrations in order to a rapid interpretation without difficulties;
- d) That although the methods used to technically verify the spectrum vary according to the services, frequency bands, and the responsible personnel, it is important to establish general guidelines for measuring equipment, configuration and/or operation thereof;
- e) That technological changes favors development of new services and modalities thereof, resulting in the need to doing revisions and updates eventually of the procedures for spectrum monitoring;
- f) That although the region does not suffer from interference events caused by the illegal use of the radio electrical spectrum in border areas, it could be necessary for administrations to establish agreements that allow for solving any potential interference caused by said illegal emissions,

RECOMMENDS:

- 1. That administrations sharing common borders include procedures to identify interference issues as part to their coordination processes.
- 2. That Annex be used as guidance for carrying out the measurement procedure.
- 3. That the procedures described in Annex 1 to this Recommendation, be updated and improved, as necessary, based on contributions of the administrations, considering their experiences and needs both individual and common.

⁵ CCP.II-RADIO/doc. 3580/14 rev.1

ANNEX TO RECOMMENDATION PCC.II/REC. 44 (XXIII-14)

GUIDELINES FOR THE HARMONIZATION OF MEASUREMENT PROCEDURES FOR THE
TECHNICAL VERIFICATION OF SPECTRUM USE
FOR COORDINATION IN BORDER AREAS

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1. General Considerations

The International Telecommunication Union (ITU) [Handbook on Spectrum Monitoring](#) contains typical specifications on technical verification receivers and stations, and describes, in a general manner, some of the parameters' configurations it requires to carry out the spectral analysis. However, it is necessary to detail and standardize the minimum configuration and operation conditions for such systems according to the radiocommunication services and the frequency bands to be monitored, as well as, define the procedures to be followed upon verifying occupancy and the technical parameters of the fixed stations that use spectrum in border areas, considering the use of superheterodyne spectrum analyzers.

The above is important, considering, this document seeks to facilitate criteria unification at a regional level for each nation's administrators to adopt common positions and similar procedures that allow for execution of an appropriate technical verification of the spectrum, and in the cases required, facilitate joint study to achieve harmonizing use of the radio electrical spectrum in border areas, thus guaranteeing an efficient solution for interferences in such areas.

2. Terms and definitions

2.1 Antenna

A part of the broadcasting and receiving system designed to broadcast or receive electromagnetic waves.⁶

2.2 HPBW (Half Power Beam Width)

In a radiation pattern the area that has a lobe's maximum, the angle between the two directions in which the radiation intensity is half the maximum value.⁷

2.3 BWFN (Beam Width Between First Nulls)

Taken from its name in English width of the beam between first nulls. The width of the beam between first nulls is approximately half the power beam width.⁸

2.4 Antenna Gain

Ratio, generally expressed in decibels, that must exist between the power required at a reference loss – less antenna's entry point and the power supplied at the entry point of such antenna, so that the two antennas produce the same field power intensity, or the same power flow density, in a single direction at the same distance. Unless otherwise indicated, gain means the antenna's maximum radiation direction. Gain for a specified polarization might eventually be taken into account.

Depending on the selected reference antenna it is possible to differentiate among:

- a) Isotropic or absolute gain (G_i) if the reference antenna is an isotropic antenna isolated in the space;
- b) Gain in relation to a half wave dipole (G_d) if the reference antenna is half wave dipole isolated in space and whose equatorial plane has a given address;
- c) Gain in relation to a short vertical antenna (G_v) if the reference antenna is a rectilinear conductor a lot shorter than a quarter of a wavelength and perpendicular to a perfectly conducting plane containing the given address.⁹

⁶ IEEE Standard Definitions of Terms for Antennas, IEEE STD 145-1993.

⁷ IEEE Standard Definitions of Terms for Antennas, IEEE STD 145-1993.

⁸ J. D. Krauss, ANTENNAS, 2da edición p.p. 27 de Mc Graw Hill.

2.5 Resolution of an antenna

It is defined as the BWFN/2, that is, as the equivalent to half the beam width between first nulls.¹⁰

2.6 Antenna radiation pattern

Spatial distribution of an amount characterizing the electromagnetic field generated by an antenna.¹¹

2.7 Superheterodyne Spectrum Analyzer

2.7.1 RBW (Resolution Band Width)

From its English name the resolution filter's bandwidth, expressed in kHz. (1000, 100, 30, 10, 1). The lower its value the better defined the signals appearing at the entrance of the Spectrum Analyzer are, similarly the lower its value the better the noise floor of the measurement instrument is.

2.7.2 VBW (Video Band Width)

From its English name Video filter bandwidth, the lower its value the cleaner the width trace can be seen.

2.7.3 SPAN

It defines the range of the spectrum recorded by the spectrum Analyzer.

2.7.4 SWEEP TIME

Sweep trace speed, it depends on the SPAN, RBW and VBW

2.8 Low noise amplifier (LNA)

2.8.1 NOISE FIGURE

Ratio between the Signal Power Ratio vs. Noise Power at the input, compared to the Signal Power Ratio vs. Noise Power at the Output.¹²

2.9 Sensitivity

The sensitivity of a technical spectrum verification receiver is defined as the minimum signal (μV) voltage at the input of the technical verification receiver that allows demodulation and audible listening of the received signal.¹³

An audible signal's minimum level may be determined by measurement the signal/interference ratio including noise and distortion (SINAD).

⁹ Recommendation ITU-R V.573-5 Radio communication Vocabulary.

¹⁰ J. D. Krauss, ANTENNAS, 2da edición p.p. 27 de Mc Graw Hill.

¹¹ IEEE Standard Definitions of Terms for Antennas, IEEE STD 145-1993.

¹² Harald Friis (Friis, H.T. Noise Figures of Radio Receivers, Proceeding of the IRE, Julio, 1944, pages. 419-422.

¹³ Report ITU-R SM.2125-1, Parameters and measuring procedures on the stations and receivers for technical verification on decametric / metric / decimetric wave bands.

2.10 Analyzer's Noise Floor

It refers to the level given in dBm showing the spectrum analyzer once it has been configured for measurement and before connecting the antenna.

2.11 Geo - Referencing

Correlating the measurement point with the geographical coordinates of the site, it is important to consider the DATUM the coordinates are recorded with.

2.12 Intervisibility

Intervisibility is the ability to observe in a direct visual line (without obstructions) from a position on the surface of the earth to another, taking into account the land and the obstacles between them. For the case of technical verification is a type of line of sight with a measurement point and that also has to take into account the height at which the measurement system antenna is located.

3. Planning and Pre Engineering for Technical Verification of Spectrum Use

3.1 Preferred parameters of the Basic Measurement Systems

In order to establish the minimum specifications that basic measurement systems should have in order to comply with this Recommendation, the following minimum requirements are provided below:

- System sensitivity between -90 and -130 dBm isotropic depending on the type of service to be evaluated.
 - To improve sensitivity in the systems, it is recommended to have a characterized pre – amplifier (LNA), that has a noise figure less than or equal to 3 dB, with a minimum gain of 20dB.
- Frequency operating range according to the operation band of the service to be evaluated.
- Equipment calibrated according to a manufacturer's recommendation.
- Characterized antennas with answer charts in Frequency vs. Gain or antenna factor
- Characterized (LNA) Pre – amplifier, of low noise level (a noise figure lower than 4 dB) of 20 to 40 dB gain according to the sensitivity of the systems to be implemented in the band of interest, typically for broadcasting measurements a preamplifier is not necessary. Low - loss interconnection wires between the antenna and the analyzer, which has been characterized according to the frequency.
- 5 to 60 degree resolution according to the BWFN of the test antenna. It does not apply when using an omnidirectional antenna.
- Signal characterization as per the Recommendations given by the ITU and the Frequency Allocation Chart.

The configuration Recommendation an operator of the basic measurement system has to take into account in order to perform the technical verification of the radio electrical spectrum is shown below:

From 510 kHz to 1800 kHz, Sound Broadcasting Service in Amplitude Modulation (AM)

RBW_{Max}: 300 Hz

VBW_{Max}: Automatic depending on the RBW (preferably 1 to 3 ratio)¹⁴

Sweep Time: Automatic depending of the RBW and VBW

Span: 40 kHz

¹⁴Recommendation ITU-R-SM-443-4

Trace: 10 on Average

The previous definition was made based on the use of a laboratory that observed the behavior of an amplitude modulation signal in the band 810 kHz, using standard spectrum analyzers from brands generally used in the region, such as: Rohde&Schwarz, Anritsu, Hewlett Packard and Agilent.

VHF and UHF Analogue and Digital Television Broadcasting Service
From 54 MHz to 88 MHz, 174 MHz to 216 MHz, 470 MHz to 806 MHz

RBW_{Max} : 3 kHz

VBW_{Max} : Automatic depending on the RBW (preferably 1 to 3 ratio)

Sweep Time: Automatic depending on the RBW and VBW

Span: Minimum value in Megahertz as observed in the channeling of the standard adopted by each administration.

Trace: 10 on Average

Sound Broadcasting Service in Frequency Modulation FM
From 88 MHz to 108 MHz,

RBW_{Max} : 3 kHz

VBW_{Max} : Automatic depending on the RBW (preferably 1 to 3 ratio)

Sweep Time: Automatic depending on the RBW and VBW

Span: 500 kHz

Trace: 10 on Average

Point-to-point digital and analogue radio electric relays service in SHF microwave bands
From 3,6 to 4,2 GHz, 4,4 to 5,0 GHz, 5,725 to 6,425 GHz, 5,725 to 7,1 GHz, 7,1 to 7,750 GHz, 7,725 to 8,5 GHz, 10,5 to 10,68 GHz, 10,7 to 11,7 GHz, 12,75 to 13,25 GHz, 14,4 to 15,35 GHz, 17,7 to 19,7 GHz and 21,2 to 23,6 GHz

RBW_{Max} : 30kHz

VBW_{Max} : 30kHz

SPAN: Minimum value in Megahertz as observed in the channeling adopted in the frequency band attribution chart of each administration.

Trace: 4 on Average

3.2 Types of measurement to be performed

As a general rule, the types of measurements to be performed may be classified as follows:

Azimuth: Measurements that have been programmed to determine the degree of occupancy in a range of interest of the radio electrical spectrum, by characterizing the results in the interest band at a 360 degree interval. It is recommended that the degree spacing be less than half the center of the BWFN of the test antenna, although it is possible to define other spacing according to the testing scenario and the additional requirements of the measurement; this type of measurements is widely used for point to point links since it allows for frequency reuse analysis in case the band has great occupancy; verification is always performed on vertical and horizontal polarity. Using the antenna position engine with a remote control is OPTIONAL.

Time: Measurements programmed to determine the degree of occupancy in a range of interest of the radio electrical spectrum and characterize measurements in the band of interest. Measurements can be programmed in time intervals, which can be minutes, hours or days; this type of measurement is very useful when evaluating signals whose presence is not constant in time; for example the PTT (*Push to talk*) systems, typically use non – directive test antennas with omnidirectional radiation patterns.

Azimuth – Time: Measurements programmed to characterize directive measurements and which are permanent in time, for example, *Spread spectrum* and *frequency hopping* Systems.

Technical parameter infraction: Verifying several carriers during a time interval defined by the user, using easy to define reference masks that evaluate the bandwidth and power characteristics of the measurements of interest, whenever any of the boundaries that have been set up is exceeded the signals are recorded in an alarm file and sent through various means to the party interested.

3.3 Configuration of the basic measurement system

Receiving system configuration must allow for maximum resolution of the signals as well as an appropriate noise floor according to the type of signal being measured with the instrument. If a spectrum analyzer is used it has to conform to Recommendations ITU-R SM.377-4 and ITU-R SM. 378-7, which refer to minimum accuracy both in frequency and in measurement the field intensity.

Practically speaking, for a spectrum analyzer, of the super heterodyne type, measurement in real time parameters RBW, VBW and SPAN which are the ones impacting the noise floor and signal resolution should not be greater than the following values: $RBW \leq 30$ kHz. ; $VBW \leq 100$ kHz, $SPAN \leq 300$ MHz. The important thing is to comply with global sensitivity of the system and keep the SIN Spectrum Analyzer calibrated at all times (a message reading “UNCAL” or any other equivalent indication should not appear in the screen).

4. Technical Verification of Spectrum Use

A measurement plan is scheduled and geo – location of the measurement point is defined as a preliminary stage based on the pre – engineering information. To do this, it is necessary to pinpoint the geographical location of the site on a map and as much as possible, an intervisibility analysis.

Upon arriving at each site, the leading technician who is responsible for the monitoring unit needs to identify the most appropriate point to perform the measurement and, depending on the band to be studied, the technician needs to decide whether it is necessary to climb the tower or not, in case said tower does exist.

Once the measurement point has been defined, it needs to be documented in a geo – referenced manner (by recording the reference geodetic datum used to collect the coordinates) and by making note of the stations visible in the line of sight from the chosen point. If there are a large number of these stations, they have to be documented by grouping them in blocks and identifying them in some intelligible manner (for example by using letters from A to Z or clockwise from north). For each site a log containing the relevant data for the record analysis must be made.

Once the monitoring system has been deployed, the scheduled measurement plans must be performed. If the analysis includes FBAC (Frequency Band Attribution Chart) full-scale bands which typically correspond to ≥ 500 MHz bandwidths, spectrum samples must be sequentially in order to maintain an appropriate resolution of the signals and the sensitivity required, and preferably, by computerized means,

consolidate the sequenced samples in just one graph that allows for observing full – scale bands of the spectrum.

4.1 Defining measurement procedures

Measurement procedures are a fundamental element for good practices standardization and accreditation in the spectrum's technical validation, the measurement standards will be very useful since they will allow for improvement and optimization of resources in the following technical tasks:

- Occupation measurements
- Technical parameters validation
- Validation of availability of spectrum's bands
- Interferences problems resolution
- Measurement of Electromagnetic Radiations RNI

Each of the indicated technical tasks must include detailed guidelines on the best practices to undertake each one of the measurements, which must include people in charge, incoming documents, outgoing documents, among others, pursuant to the quality recommendations stated for that purpose.

4.2 Management and analysis of the spectrum's technical verification results

When several spectrum measurements are performed, a homogeneous configuration of the equipment is recommended, as well as it is recommended to store records in the database.

The database must record each one of the measurements per site, which can be queried through filters such as site, frequencies or dates for a quick frequencies availability analysis, using channeling from the National Frequency Allocation Table adopted by the country where the measurement is performed.

A recommendation regarding the content of the technical report that an administration needs to take into account is provided below so it can be easily understood by other administrations.

5. Submission of Results

The recommended structure a spectrum's administration's agency should take into account to make a technical report which submits measurements made in the field, so that it can be easily understood by other administrations is as follows:

1. Introduction
 - Indicates why the measurement is being made and who participates in the measurement
 - Purpose of the measurement
 - Date of field measurements and names of those who participated in the measurement, in the results analysis and signature of the engineer who approved the study. The engineer who approves the study must be able to prove that his/her title is recognized in the country in which the study is approved; for instance, through a professional registration number from the engineer agency or association from his/her country or with an apostille of the degree if the degree is from a country different from the country where the report is approved.
2. Description of the measurement site: Documentation as mentioned in section 3.2, including complementary, relevant information such as photographic record and details of possible obstacles regarding the intervisibility of the measurement point.
3. Submission of monitoring plan.

- Indicate bands, type of measurement (azimuth, time, etc.) and configuration of the verification system.
- 4. Special considerations
- 5. Graphical information of records of measurement results.
- 6. Analysis of the results, band per band
- 7. Conclusions
- 8. Recommendations
- 9. Attachments
- 9.1. Appendix I; Valid Calibration Certificates of the Spectrum Analyzer.
- 9.2. Appendix II: Characterization of antennas, cables and LNA.

V. DECISIONS

PCC.II/DEC. 165 (XXIII-14)¹⁵

CURRENT STATUS OF THE EXCHANGE AND BLOCKING OF INFORMATION OF TERMINAL MOBILE EQUIPMENT REPORTED STOLEN AND/OR LOST

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunications (PCC.II),

DECIDES:

1. To request the Member States to fill out the survey provided as Annex hereunder, based on Resolution CITELE RES. 68 (VI-14) of the VI Regular Meeting of the CITELE Assembly, for the purposes of streamlining the collection of information about the status of the technological measures to counteract the theft of handheld devices.
2. To appoint Mr. Hugo Romero (hugo.romero@crcom.gov.co) from the administration of Colombia to compile the results of the survey.
3. To instruct the administration of Colombia to submit the results of the survey to the XXIV Meeting of the Permanent Consultative Committee I (Telecommunication/Information and Communication Technologies) (PCC.I).

ANNEX TO DECISION PCC.II/DEC. 165 (XXIII-14)

CURRENT STATUS OF THE EXCHANGE AND BLOCKING OF INFORMATION OF TERMINAL MOBILE EQUIPMENT REPORTED STOLEN AND/OR LOST

Country: _____

Name of the person filling out the form: _____

Entity/Institution: _____

Contact Information:

Telephone: _____ E-mail: _____

Please fill out the following tables regarding the connection status to the GSMA IMEI Database and the blocking of IMEIs from other countries in the GSM mobile operators of your country.

Table 1: Information concerning all the mobile operators of your country.

Number of GSM Operators	
Number of operators connected to GSMA IMEI DB	
Number of connected operators blocking IMEIs from other countries	
Number of operators not connected to GSMA IMEI DB	

¹⁵ CCP.II-RADIO/doc. 3578/14 rev.1

Number of Virtual Mobile Operators (VMO)	
Are VMOs compelled to block IMEIs reported stolen and/or lost through your network operator?	
Is there any regulation ruling on the exchange and national blocking (IMEI reported inside the country)? (YES/NO)	
Is there any regulation ruling on the international exchange and blocking (Blocking of IMEIs from other countries) (YES/NO)	
Are duplicate IMEIs being blocked? (YES/NO)	
Are there any actions in place involving manufacturers of equipment with regards to the IMEI duplication or alteration? (YES/NO)	
Please provide a brief description of the actions with manufacturers if yes	

Table 2: Detailed information by mobile operator of your country.

	OPERATOR 1	OPERATOR 2	OPERATOR 3	OPERATOR n
Name of GSM Operator				
Connected to GSMA IMEI DB (YES/NO)				
Connection date (mm/yyyy)				
Blocks IMEI from other countries (YES/NO)				
Operators of other countries whose IMEIs are blocked (provide a list)				

PCC.II/DEC. 166 (XXIII-14)¹⁶

REQUEST FOR THE UPDATE OF INFORMATION ABOUT ALLOCATION AND USES OF BANDS 4/6 GHZ, 10/14 GHZ Y 20/30 GHZ

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunication (PCC.II),

DECIDES:

1. To request the CITEL Secretariat to distribute the document CCP.II-RADIO/doc. 3497/14, which contains the preliminary report developed based on the Decision PCC.II/DEC. 157 (XXI-13) concerning the allocation and use of the following frequency bands:

- i. 3400 – 4200, 4500 – 4800, 5850 – 6425 and 6725 – 7025 MHz
- ii. 10.7 – 12.2, 12.75 – 13.25 and 13.75 – 14.5 GHz
- iii. 17.7 – 21.2 and 27.5 – 31 GHz

¹⁶ CCP.II-RADIO/doc. 3571/14 rev.1

2. To request the administrations that have not submitted the updated information about these bands, to submit it to Mr. Mr. Hugo Mario Triviño (htrivino@mintic.gov.co) from the administration of Colombia, since he is performing the corresponding compilation.
3. To request the Secretariat of CITELE to update the current information in the CITELE website based on the corresponding report.

PCC.II/DEC. 167 (XXIII-14)¹⁷

**PUBLICATION OF STUDIES ON COMPATIBILITY OF DIGITAL TERRESTRIAL
TELEVISION BROADCASTING (DTT) WITH TERRESTRIAL MOBILE SYSTEMS IN THE
698-806 MHZ BAND**

The XXIII Meeting of Permanent Consultative Committee II: Radiocommunications (PCC.II),

DECIDES:

1. To publish the results of the studies conducted by the administration of Colombia presented in document **CCP.II-RADIO/doc. 3545/14** - “Techniques for the coexistence of DTT DVB-T2 services with IMT services and conventional voice services” and those presented by ABERT in document **CCP.II-RADIO/doc. 3512/14** - “Report on Laboratory Tests on the interference of the LTE Mobile Broadband in the 700 MHz Band into the Digital TV in 470 - 698 MHz Band” on the CITELE Virtual Community’s Discussion Group on the Digital Dividend Spectrum, created by **PCC.II/DEC. 118 (XVII-11)**.
2. To call upon CITELE administrations and PCC.II Associate Members to make use of this resource for posting their contributions on the subject matter.
3. To invite the Virtual Community’s coordinators on this subject, Mr. Claudio Castro (Argentina) and Mr. Jose Costa, (Canada), to present a report to the XXIV Meeting of PCC.II on the contributions posted on the above mentioned Community.
4. To instruct the Secretariat of CITELE to carry out the necessary actions to comply with the mandates of this Decision.

¹⁷ CCP.II-RADIO/doc. 3581/14 rev.1

PCC.II/DEC. 168 (XXIII-14)¹⁸

CONTINUE THE ANALYSIS ON THE STRUCTURE AND TERMS OF REFERENCE OF THE PERMANENT CONSULTATIVE COMMITTEE II: RADIOCOMMUNICATIONS

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunications(PCC.II),

DECIDES:

1. That the Ad Hoc Group continues to analyze the structure and terms of reference of PCC.II continues with the analysis of the proposals to modify the structure and terms of reference of PCC. II.
2. To establish a specific group in the Collaborative Space of CITELE to exchange opinions and views from the interested administrations in order to make a draft for the structure and terms of reference.
3. To instruct the Chairman of the Ad Hoc Group to present a new draft structure and terms of reference of the Committee to the XXIV Meeting of PCC. II. This draft shall be made available to the Member States at least one month before that meeting.
4. To instruct the Executive Secretary of CITELE to give the support needed to the Ad Hoc Group, including interpretation and captioning in case virtual meetings are conducted.

PCC.II/DEC. 169 (XXIII-14)¹⁹

MEETING OF THE REGIONAL GROUP OF THE TELECOMMUNICATION STANDARDIZATION SECTOR (ITU-T) STUDY GROUP 5 ON ENVIRONMENT AND CLIMATE CHANGE

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunications (PCC.II),

DECIDES:

To request the CITELE Secretariat to do the coordination so as to have a meeting of the regional group of the Telecommunication Standardization Sector (ITU-T) Study Group 5 on environment and climate change at the XXIV Meeting of PCC.II that will be face to face but will also have virtual access.

¹⁸ CCP.II-RADIO/doc. 3591/14 rev.1

¹⁹ CCP.II-RADIO/doc. 3595/14

PCC.II/RES. 170 (XXIII-14) ²⁰

MEETINGS OF PCC.II IN 2015

The XXIII Meeting of the Permanent Consultative Committee II: Radiocommunications (PCC.II),

DECIDES:

To inform that the XXV meeting of PCC.II will take place on February 23 to 27, 2015 and the XXVI meeting of PCC.II will take place on September 7 to 11, 2015.

VI. LIST OF BASIC DOCUMENTS

Summary Minutes of the Inaugural Session:	CCP.II-RADIO/doc. 3572/14 rev.2
Summary Minutes of the First Plenary Session:	CCP.II-RADIO/doc. 3572/14 rev.2
Summary Minutes of the Second Plenary Session:	CCP.II-RADIO/doc. 3592/14
Summary Minutes of the Third Plenary Session and Closing Session:	CCP.II-RADIO/doc. 3594/14
Working Group on Preparation for Regional and World Radiocommunication Conferences.	CCP.II-RADIO/doc. 3588/14
Working Group on Terrestrial Fixed and Mobile Radiocommunication Services.	CCP.II-RADIO/doc. 3587/14 rev.1
Working Group on Satellite Systems to Provide Fixed and Mobile Services.	CCP.II-RADIO/doc. 3589/14
Working Group on Broadcasting.	CCP.II-RADIO/doc. 3586/14 rev.1
List of Documents:	CCP.II-RADIO/doc. 3456/14 rev.4
List of Participants:	CCP.II-RADIO/doc. 3457/14 rev.2
Final Report for the Meeting:	CCP.II-RADIO/doc. 3597/14 rev.1

²⁰ CCP.II-RADIO/doc. 3596/14