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|  | ASIA-PACIFIC TELECOMMUNITY |
| **The APT Wireless Group** |  |
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 **APT Wireless Group Workplan**

*Updated at AWG-20, 6-9 September 2016*

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# 1. AWG STRUCTURE:

AWG is consists of Plenary and three Working Groups (WGs). Sub-Working Groups (Sub-WG) and Task Groups (TGs) are formed under the WGs. Following AWG structure was approved at AWG-19 held from 2 to 5 February 2016 in Chiang Mai, Thailand and updated at AWG-20 held from 6 to 9 September 2016 in Bangkok, Thailand.

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| **Working Group on Spectrum Aspects** **(wg SPEC)** | **Working Group on Technology Aspects** **(WG TECH)** | **Working Group on Services and Applications** **(WG S&A)** |
| Sub Working Group on Spectrum Arrangement and Harmonization(Sub-WG SA&H**)** | Sub Working Group on IMT(Sub-WG IMT) | Task Group on Modern Satellite Applications (TG MSA) |
| Task Group on CRS and SDR(TG CRS&SDR) | Task Group on Aeronautical and Maritime (TG A&M) |
| Sub Working Group on Sharing(Sub-WG Sharing) | Task Group on Fixed Wireless Systems (TG FWS) | Task Group on PPDR (TG PPDR) |
| Task Group on Short Range Devices (TG SRD) | Task Group on Railway Radiocommunications (TG RR) |
| Sub Working Group on Spectrum Monitoring(Sub-WG SM) | Task Group on Intelligent Transportation Systems (TG ITS)  |  |
| Task Group on Wireless Power Transmission (TG WPT) |

# 2. TERMS OF REFERENCE OF THE AWG WORKING GROUPS

**Inside APT:**

* APG
* ASTAP
* PRF, SATRC

**Outside APT:**

* ITU-R SGs
* CEPT, 3GPP etc.

**Inside APT:**

* APG
* ASTAP
* PRF, SATRC

**Outside APT:**

* ITU-R SGs
* CEPT, 3GPP etc.

**Inside APT:**

* APG
* ASTAP
* PRF, SATRC

**Outside APT:**

* ITU-R SGs
* CEPT, 3GPP etc.

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| **WG Spec** | * To develop plans for harmonized spectrum usage for radiocommunication systems in the region;
* To develop optimum sharing methodologies, conduct coexistence and compatibility studies between radiocommunication services and systems to ensure compatibility;
* To study the impact of interference to radiocommunication services from other sources;
* To coordinate efforts to eliminate harmful interference between concerned countries, as appropriate.
 |
| **WG Tech** | * To carry out studies and develop deliverables which facilitate development of new wireless technologies;
* To share information on emerging wireless technologies, including use cases of the technologies;
* To encourage industry research and development;
* To perform studies of technical and operational matters related to WRC issues, in order to assist APT Members’ to have a better understanding of the issues;
* To conduct technical consultation based upon the requests of APT Members to meet the needs of the developing countries, and reflect in the work and deliverables of the WG TECH;
* To identify the spectrum requirements for new radio technologies.
 |
| **WG S&A** | * To carry out studies and develop deliverables which facilitate the introduction of new wireless applications and radiocommunication services;
* To perform the study on implementation and deployment of radiocommunication services and applications;
* To perform studies related to WRC issues in the scope of WG S&A, in order to assist APT Members’ to have a better understanding of the issues;
* To study market and user requirements of wireless services and applications;
* To share information on emerging wireless applications;
* To develop and update recommendations and reports, other documentation, on wireless services and applications; and
* To ensure that the requirements and needs of the developing countries are reflected in the work and deliverables of the WG S&A.
* To identify the spectrum requirements for wireless applications and services
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**3. TERMS OF REFERENCE OF THE SUB WORKING GROUPS AND TASK GROUPS**

**Sub Working Groups of WG Spectrum Aspects**

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| **Sub-WG SA&H** | * To review the availability of spectrum resulting required for the introduction of new system technologies or revised allocations and the potential new or alternative uses of the spectrum thus made available for new applications;
* To develop recommended harmonized approaches for the introduction of new wireless technologies, services and application in such spectrum, including preferred frequency band and associated technical characteristics;
* To develop APT Recommendations/Reports on spectrum arrangement and/or harmonization;
* To review any draft texts on spectrum arrangement and/or harmonization, which may be included in APT Recommendations and/or Reports already developed in AWG.
 |
| **Sub-WG Sharing** | * To conduct sharing and compatibility studies between different systems and applications in the same and adjacent bands;
* To study characteristics and methodologies for modelling and simulation to support the above-mentioned sharing and compatibility studies;
* To study techniques and technical conditions for sharing and compatibility among these systems and applications;
* To develop related APT Reports and/or Recommendations and other documentation resulting from these studies;
* To review any draft texts on sharing and compatibility matters which may be included in APT Recommendations and/or Reports already developed in AWG.
 |
| **Sub-WG SM** | * To share information on spectrum monitoring and analysis methods with spectrum monitoring systems and to set up programs such as frequency occupancy measurement;
* To share members’ case studies on harmful interference and its elimination;
* To promote the introduction and implementation of new technologies and applications which could be used in spectrum monitoring activities in the Asia-Pacific region;
* To exchange views and develop the methods for cooperation  on preventing interference between neighboring countries;
* To share information and good practices on the planning, operational, management and maintenance method of monitoring stations and other facilities and to develop related AWG documents;
* To facilitate the deployment of the APT Frequency Information System (AFIS).
 |

**Sub Working Groups and Task Groups of WG Technology Aspects**

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| **Sub-WG IMT** | * To review activities on the future development of IMT discussed in the ITU-R Working Party 5D (WP 5D) and relevant organizations; and
* To study technology related aspects of the on-going and future development and implementation of IMT in the Asia-Pacific region.
 |
| **TG CRS&SDR** | * To conduct surveys on regulation and possible spectrum use of SDR and CRS in Asia-Pacific countries;
* To conduct surveys on current status of the introduction and development of SDR and CRS in Asia-Pacific countries;
* To conduct survey on possible deployment examples of SDR and CRS across different countries or operators in Asia-Pacific countries;
* To study and discuss the possible applications, deployment scenarios and/or standardization processes of SDR and CRS in Asia-Pacific countries;
* To study the key techniques, system characteristics and requirements of SDR and CRS;
* To develop recommendation and/or report on SDR and CRS, as required.
 |
| **TG FWS** | * To gather following national information regarding fixed wireless systems:
* Frequency planning and usage;
* Licensing conditions;
* Usages and applications;
* Standardization activities;
* To study on following questions regarding fixed wireless systems:
* Current status of frequency planning and usage, frequency assignment, band width, main usages and applications;
* Trends on technology development and R&D prospects on future usages and new applications;
* Based on the above studies, to develop reports and/or recommendations as appropriate.
 |
| **TG SRD** | * To enhance and timely update the published APT Recommendation/Reports on SRD,UWB and RFID;
* To develop technical and operational characteristics of short range radiocommunication systems operating in the frequency range up to terahertz for the preparation sharing and compatibility studies;
* To study measures to resolve frequency interference and noise problems with RF facilities, e.g. measuring noise level in the bands which are used for unlicensed devices;
* To provide study results on the short range radiocommunication devices applications operating in the frequency range up to terahertz to the ITU-R relevant working parties and APG, as appropriate;
* To share information on advanced technologies related to SRDs with APT Members.
 |
| **TG ITS** | * To share information on current status of regulation and frequency use of ITS radio system;
* To determine the spectrum needs (if any) of ITS radio communications;
* To invite and collect information relevant to possible regional harmonization of ITS radio-communications spectrum, taking into account the trends and studies towards spectrum harmonization, applications and standards developments;
* To share information on current status of introduction and development of ITS radio system;
* To study and discuss useful ITS applications and standardization in the Asia-Pacific region;
* To develop Recommendations and Reports on ITS Radiocommunications as required.
 |
| **TG WPT** | - To gather following information* + Applications (by using inductive and resonant technologies)
	+ Potential market
	+ Relevant technical and operational characteristics for WPT
	+ Standardization efforts in the world
* To study following questions
	+ What category of spectrum usage could administrations consider? (e.g., ISM or others)
	+ What radio frequency bands are suitable for WPT?
	+ What steps are required to make sure radio services protected from the usage of WPT?
	+ What are impacts on human body from RF exposure of WPT?
* Based on the above studies, to develop the recommendation and/or report, as appropriate.
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**Task Groups of WG Service and Applications**

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| **TG MSA** | * To assist the requirements of the APT membership in putting into practice modern satellite applications in a national context.
* In this context, to develop reports on satellite applications in the Asia Pacific Region, such as satellite communication systems, satellite devices, key components, interfaces, interconnection and intercommunication, licensing, Ka-band applications and deployment, satellite broadband applications, new applications of mobile satellite, disaster relief applications etc., to serve the mutual interests inside the APT and outside, for instance in the ITU-R Study Group 4, without overlapping with the activities of APG.
* To study and develop possible techniques that may be used to improve the compatibility between satellite and other services.
 |
| **TG A&M** | * To consider the following issues of the use of mobile phone as well as the use of other modern wireless technologies on-board the aircraft and vessels:

 For the use of mobile phones on-board the aircraft and vessels:* + - Licensing issues and possible ways to harmonize the approach to licensing by APT members such as mutual recognition while taking due account of national differences;
		- Spectrum matters noting that currently a number of different frequency bands and different mobile technologies are in use in the Asia-Pacific region; and
		- Researching technical requirements especially in regard to the capability of the equipment on-board the aircraft and vessels as well as the technical and operational conditions of each country being over-flown.

  For other wireless technologies:* + - Service and application issues including technical characteristics, preferred frequency bands and the use of these frequency bands.
		- Associated regulatory and licensing issues, when considered appropriate. and
		- To study and review future wireless communication technologies on aeronautical and maritime
 |
| **TG RR** | * To study the operational scenarios and deployment of railway radiocommunication systems;
* To share information about railway radiocommunication systems on current status of spectrum usage and national regulatory experiences in Asia-Pacific region, relevant technical standards, technical evolving trends, and studies upon railway radiocommunication systems in relevant international and regional organizations;
* To study the system description, architecture, functionality and service requirements etc. of railway radiocommunication systems;
* To develop related APT Recommendations/Reports and other documentation resulting from above activities;
* To provide information on various potential services and applications, and success factors to deliver services and applications for railway radiocommunication systems.
 |
| **TG PPDR** | * Study the working scenarios and implementation strategies of PPDR Radiocommunications;
* Develop Reports and recommendations on PPDR technologies, user requirements, spectrum requirements and implementation strategies;
* Share information about PPDR radiocommunication on current status of spectrum usage and deployment scenarios in Asia-Pacific region, relevant technical standards, technical evolving trends with relevant international and regional organizations;
* Develop related APT Recommendations/Reports and other documentation resulting from above activities.
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# 4. LIST OF THE OFFICE BEARERS

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| **AWG****Chairman** | **Dr. Kohei Satoh**Association of Radio Industries and Businesses (ARIB)JapanE-mail: satoh@arib.or.jp | **AWG Vice-Chairman** | **Ms. Zhu KeerMinistry of Industry and Information Technology,China (People's Republic of)E-mail:** zhukeer@miit.gov.cn |
| **AWG Vice- Chairman** | **Mr. Le Van Tuan**Authority of Radio Frequency Management, Socialist Republic of Vietnam E-mail: tuanlv@rfd.gov.vn  | **Chairman WG Spec** | **Mr. John Lewis**Added Value Applications, New ZealandEmail: john.lewis@ties.itu.int  |
| **Chairman WG Tech** | **Dr. Dae Jun Kim**TTA, Republic of KoreaE-mail : kdj@tta.or.kr  |  **Chairman WG S&A** | **Dr. Bambang Setia Nugroho**Telkom University IndonesiaEmail: bambang.setia@ypt.or.id  |

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|  **Sub-WGs of WG SPEC** |
| **Sub-WG SA&H** | **Mr. Zhu Yutao**China Academy of Information and Communications Technology, China **(People's Republic of)****Email:** zhuyutao@caict.ac.cn  | **Sub-WG Sharing**  | **Ms. Julie Welch** Qualcomm International Inc., Hong KongE-mail : jgwelch@qualcomm.com **Dr. Jung Soo Woo**Samsung Electronics, Republic of KoreaEmail: jungsoo.woo@samsung.com  |
| **Sub-WG SM** | **Mr. Huang Jia**State Radio Monitoring Center, China **(People's Republic of)****Email:** Ferrero.huang@srrc.org.cn  |  |  |
| **Sub-WG and TGs of WG TECH** |
| **Sub-WG IMT** | **Dr. Hiroyuki Atarashi**NTT DoCoMo Inc., JapanEmail: hiroyuki.atarashi.yt@nttdocomo.com  | **TG CRS&SDR** | **Dr. Lang Baozhen****Ministry of Industry and Information Technology**China(People's Republic of)E-mail : langbaozhen@ritt.cn  |
| **TG FWS** | **Dr. Tetsuya Kawanishi**NICT, JapanEmail: kawanishi@nict.go.jp  | **TG SRD** | **Dr. Satoshi Tsukamoto**Advanced Telecommunication Research Institute, JapanEmail : tsukamoto@atr.jp  |
| **TG ITS** | **Mr. Satoshi OyamaAssociation of Radio Industries and Businesses (ARIB)JapanEmail :** s-oyama@arib.or.jp | **TG WPT** | **Dr. Chan Hyung Chung**Director, Association (RAPA)Republic of KoreaEmail: backbum@rapa.or.kr |
| **TGs of WG S&A** |
| **TG MSA** | **Ms. Geetha Remy VincentMeasat Satellite Systems Sdn Bhd, MalaysiaEmail :** **geetha@measat.com** | **TG RR** | **Mr. Liu Bin**State Radio Monitoring Center, China (People’s Republic of)Email: liubin@srrc.org.cn |
| **TG A&M** | **Dr. Jiaxin Ding**State Radio Monitoring Center,China (People's Republic of)E-mail: dingjiaxin@srrc.org.cn |  |   |
| **TG PPDR** | **Mr. Bharat Bhatia**Motorola India Pvt. Ltd.E-mail : bharat.bhatia@motorola.com |  |  |

**APT Secretariat Contacts**

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| **Mr. Forhadul Parvez**Project Coordinator, RadiocommunicationAsia-Pacific Telecommunity (APT)12/49, Soi 5, Chaengwattana RoadBangkok 10210, ThailandTel: 66-2-5730044 (Ext: 117) Email: parvez@apt.int; aptawg@apt.int  |   |

# 4. MICRO WORKPLAN

**Sub Working Groups of Working Group Spectrum Aspects**

**Sub-WG Spectrum Arrangement and Harmonization:**

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| **Title** | **Draft APT Recommendation on harmonized frequency arrangements for PPDR in frequency ranges included in Resolution 646(Rev. WRC-15)** |
| **Document Type** | APT Recommendation |
| **Group/Chair** | WG SPEC/Sub-WG SA&H/ Mr. Bhatia  |
| **Editor(s)** | TBD |
| **Scope** | APT Report APT/AWG/REP-08 contains example frequency arrangements for some of the frequency bands included in Resolution 646 (Rev. WRC-2015), This proposed recommendation is intended to contain the regional harmonized PPDR frequency arrangements and frequency arrangements of individual administrations.  |
| **Purpose** | To develop harmonized frequency arrangements for ranges included in Resolution 646 (rev. WRC-15) for guidance of APT Members and providing these arrangements to ITU-R for inclusion in the Recommendation ITU-R M.2015 as mandated by WRC-15 |
| **Related Document** | Resolution 646(Rev. WRC-15), APT-AWG Report-08 |
| **Related Forums and Organization** | ITU-R WP 5A |
| **Timelines** | **2016**AWG-20 (3Q)* Consider input documents
* Develop working document

**2017**AWG-21 * Consider relevant input documents
* Finalize and approved the proposed Recommendation
* Send the Recommendation to WP5A
 |

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| **Title** | **Development of APT Recommendation on Frequency Ranges for Non-Beam WPT for Mobile Devices**  |
| **Document Type** | APT Recommendation  |
| **Group/Chair** | WG-SPEC/Sub-WG SA&H/Mr. ZHU Yutao |
| **Editor(s)** | ISHIDA, Kazuhito (Japan) |
| **Scope** | Draft and complete the APT Recommendation on frequency ranges for non-beam WPT technologies for mobile devices. 6765 kHz – 6795 kHz (see RR No. 5.138) is the target frequency range as described in the APT Report on WPT and the latest WPT studies in ITU-R.  |
| **Purpose** | Study and identify frequency ranges for non-beam WPT technologies for mobile devices: 1. Not to cause harmful interference to radiocommunication services;
2. To facilitate smooth deployment of WPT systems without spectrum concerns;
3. To maximize users’ benefit of WPT given by global or regional spectrum harmonization;
4. To address APT administrations to take appropriate regulatory measures on spectrum that should be taken into consideration when WPT is deployed.
 |
| **Related Document** | 1. APT Survey Report on WPT
2. APT Report on WPT (APT/AWG/REP-62(Rev.1))
3. ITU-R Question ITU-R 210-3/1
4. Report ITU-R SM.2303-1“Wireless power transmission using technologies other than radio frequency beam”
5. ITU-R SG1 1A/TEMP/107 PRELIMINARY DRAFT NEW RECOMMENDATION ITU-R SM.[WPT] “Frequency ranges for global or regional operation and Human Hazards of non-beam Wireless Power Transmission (WPT) systems”
 |
| **Related Forums and Organization** | ITU-R SG1, WP 1A, and WP 1B |
| **Timelines** | **2016** * AWG-19:
	+ Development of the Work Plan at WG-TECH
	+ Handover to WG-SPEC for spectrum requirements and related matters
* AWG-20
	+ Initiation of new work
	+ Introduction of the work plan to WG-SPEC / Sub-WG SA&H

2017* AWG-21
	+ Review spectrum requirements of WPT for mobile devices
	+ Review the latest ITU-R Preliminary Draft New Recommendation (PDNR) on WPT
	+ Development of the APT PDNR for mobile devices
* AWG-22
	+ Review spectrum requirements of WPT for mobile devices
	+ Review the ITU-R approved Recommendation
	+ Development of the APT PDNR for mobile devices
	+ Approval of PDNR for an AWG output for Recommendation
 |

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| **Title** | **Harmonized frequency arrangement in the band 470-698 MHz** |
| **Document Type** | Recommendation/Report |
| **Group/Chair** | WG-SPEC/Sub-WG 1/Mr. ZHU Yutao |
| **Editor(s)** |  |
| **Scope** | To develop possible harmonized frequency arrangement in the band 470-698 MHz in APT region |
| **Purpose** | To develop APT Recommendation/Report for harmonized frequency arrangement in the band 470-698 MHz for IMT systems To develop contribution to ITU-R WP5D with respect to frequency arrangement in the band 470-698 MHz for IMT systems |
| **Related Document** | Recommendation ITU-R M.1036-5 |
| **Related Organization** | ITU-R3GPP |
| **Timelines** | **2016*** AWG-20:
	+ Develop work plan

**2017*** AWG-21:
	+ Develop a working document towards a draft new APT/AWG Recommendation/Report on harmonized frequency arrangement in the band 470-698 MHz based on the contributions and meeting discussions.
	+ Inform the study progress to ITU-R WP5D, as appropriate
* AWG-22:
	+ Finalize APT/AWG Recommendation/Report on harmonized frequency arrangement for IMT in the band 470-698 MHz
	+ Inform the study progress to related organization as appropriate.
	+ Inform the study progress to ITU-R WP5D, as appropriate
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| **Title** | **Studies on frequency arrangement(s) in the band 1 427 – 1 518 MHz** |
| **Document Type** | APT Report |
| **Group/Chair** | WG-SPEC/Sub-WG 1/Mr. ZHU Yutao |
| **Editor(s)** |  |
| **Scope** | To provide technical and regulatory considerations on development of the frequency arrangement(s) in the band 1 427 – 1 518 MHz and possible harmonized frequency arrangement(s) for IMT systems in the band |
| **Purpose** | To provide administrations in the Asia-Pacific region wishing to implement IMT systems with relevant information on development of the frequency arrangement(s) in the band 1 427 – 1 518 MHz.To reflect the views of these administrations in the region into the on-going work in ITU-R WP 5D, as necessary. |
| **Related Document** | Recommendation ITU-R M.1036-5Resolution 761 (WRC-15) |
| **Related Organization** | ITU-R3GPP |
| **Timelines** | **2016*** AWG-20:
	+ Develop a workplan for the studies
	+ Discuss and develop a working document towards a draft new APT/AWG Report on frequency arrangement(s) in the band 1 427 – 1 518 MHz based on the contributions and meeting discussions.

**2017*** AWG-21:
	+ Continue to develop the working document based on the contributions and meeting discussions.
	+ Review the study results in other AWG sub-Working groups
	+ Inform progress of these frequency arrangement studies to APG, as necessary
	+ Inform progress of the studies to ITU-R WP5D, as necessary.
* AWG-22:
	+ Finalize a draft APT/AWG Report on studies on frequency arrangement(s) for IMT in the band 1 427 – 1 518 MHz for approval in the AWG Plenary
	+ Inform results of the studies to the related organization, as appropriate.
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| **Title** | **Harmonized frequency arrangement in the band 3 300 – 3 400 MHz** |
| **Document Type** | Recommendation/Report |
| **Group/Chair** | WG-SPEC/Sub-WG 1/Mr. ZHU Yutao |
| **Editor(s)** |  |
| **Scope** | To develop possible harmonized frequency arrangement in the band 3 300-3 400MHz in APT region |
| **Purpose** | To develop APT Recommendation/Report for harmonized frequency arrangement in the band 3 300-3 400MHz for IMT systems To develop contribution to ITU-R WP5D with respect to frequency arrangement in the band 3 300-3 400MHz for IMT systems |
| **Related Document** | Recommendation ITU-R M.1036-5 |
| **Related Organization** | ITU-R3GPP |
| **Timelines** | **2016*** AWG-19:
	+ Develop work plan
	+ Discuss the structure of the working document
* AWG-20:
	+ Develop a working document towards a draft new APT/AWG Recommendation/Report on harmonized frequency arrangement in the band 3 300 – 3 400 MHz based on the contributions and meeting discussions.
	+ Inform the study progress to ITU-R WP5D, as appropriate

**2017*** AWG-21:
	+ Continue to develop the working document towards a draft new APT/AWG Recommendation/Report on harmonized frequency arrangement in the band 3 300-3 400 MHz based on the contributions and meeting discussions.
	+ Review the study results in other AWG sub-Working groups
	+ Inform the study progress to ITU-R WP5D, as appropriate
* AWG-22:
	+ - Finalize APT/AWG Recommendation/Report on harmonized frequency arrangement for IMT in the band 3 300-3 400 MHz
		- Inform the study progress to related organization as appropriate.
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| **Title** | **Frequency arrangements in the band 4 800 – 4 990 MHz** |
| **Document Type** | Recommendation/Report |
| **Group/Chair** | WG-SPEC/Sub-WG 1/Mr. ZHU Yutao |
| **Editor(s)** |  |
| **Scope** | To develop possible frequency arrangements in the band 4 800-4 990MHz for administrations wishing to implement IMT in APT region |
| **Purpose** | To develop APT Recommendation/Report for frequency arrangements in the band 4 800-4 990MHz for IMT systems To develop contribution to ITU-R WP5D with respect to frequency arrangements in the band 4 800-4 990MHz for IMT systems |
| **Related Document** | Recommendation ITU-R M.1036-5 |
| **Related Organization** | ITU-R3GPP |
| **Timelines** | **2016*** AWG-19:
	+ Develop work plan
	+ Discuss the structure of the working document
* AWG-20:
	+ Develop a working document towards a draft new APT/AWG Recommendation/Report on frequency arrangements in the band 4 800 – 4 990 MHz based on the contributions and meeting discussions.
	+ Inform the study progress to ITU-R WP5D, as appropriate

**2017*** AWG-21:
	+ Continue to develop the working document towards a draft new APT/AWG Recommendation/Report on frequency arrangements in the band 4 800 – 4 990 MHz based on the contributions and meeting discussions.
	+ Review the study results in other AWG sub-Working groups
	+ Inform the study progress to ITU-R WP5D, as appropriate
* AWG-22:
	+ Finalize APT/AWG Recommendation/Report on frequency arrangements for IMT in the band 4 800 – 4 990 MHz
	+ Inform the study progress to related organization as appropriate.
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**Sub-WG Sharing Studies:**

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| **Title** | **APT Report on sharing and compatibility studies for selected frequency bands below 6GHz** |
| **Document Type** | APT Report and liaison statement to APG |
| **Group/Chair** | WG-SPEC/Sub-WG Sharing Studies/Ms. Julie Welch |
| **Editor(s)** | TBD |
| **Scope** | To conduct sharing and compatibility studies on the following frequency bands:WRC-19 related studies:* 1 452 – 1492 MHz (WRC-19 Agenda Item 9.1 CPM Report Issue 9.1.2)
* 1 980 – 2 010 / 2 170 – 2 200 MHz (WRC-19 Agenda Item 9.1 CPM Report Issue 9.1.1)

Studies to facilitate IMT implementation and not related to WRC-19 for the interested APT members: * 470-698 MHz
* 1427-1452 MHz
* IMT in 1492-1518 MHz and MSS in 1518-1525 MHz
* 3 300 – 3 400 MHz
* 4 400 – 4 500 MHz
* 4 800 – 4 990 MHz

Note: frequency ranges above are an initial list. This list could be updated in future AWG meetings.  |
| **Purpose** | * To conduct sharing and compatibility studies between IMT and other services within the APT region on the listed and neighboring frequency bands.
* To develop material from an APT perspective and send relevant results of these studies of those bands that are relevant for WRC-19 to APG.
* To develop APT Report in accordance with relevant study results.
 |
| **Related Document** |  |
| **Related Organization** | ITU-R |
| **Timelines** | **2016****AWG-19 (2016 Feb.)*** Identify the frequency bands requiring the sharing study in AWG.
* Develop work plan and timeline for the joint task group.
* Adopt the work plan and frequency bands requiring sharing studies.
* Provide additional questionnaires to TG IMT on the survey.
* Inform the initiation of this study to APG 19-1.

**AWG-20 (2016-3Q)*** Update the work plan
* Consider input contributions.
* Develop a working document towards a draft new Report in relation to listed frequency bands.

**2017****AWG-21(2017 -1Q)*** Consider and review the input contributions.
* Update Report APT/AWG/Report 46 "APT Frequency Usage of the Bands 1 980-2 010 MHZ and 2 170 - 2 200 MHz in Asia Pacific Region" as required
* Further develop a working document towards a draft new Report in relation to a frequency band.

**AWG-22 (2017-3Q)*** Discuss the input contributions.
* Update the working document towards a draft new Report.
* Submit study results to APG and relevant ITU-R groups as appropriate.

**2018****AWG-23 (2018-1Q)*** Discuss the input contributions.
* Complete the working document towards a draft new Report.
* Submit study results to APG and relevant ITU-R groups as appropriate.

**AWG-24 (2018-3Q)*** Finalize the draft new Report and approve it.
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| **Title** | **New APT Report on sharing and compatibility studies for IMT above 24 GHz** |
| **Document Type** | Report and liaison statement to APG / relevant ITU-R groups as appropriate |
| **Group/Chair** | WG-SPEC/Sub-WG Sharing Studies/Mr. Jungsoo Woo  |
| **Editor(s)** | TBD |
| **Scope** | 1. To survey existing services or applications operating on a primary basis in the frequency ranges listed in Resolution 238 [COM6/20] (WRC-15)
2. To provide RF characteristics and relevant propagation models as required to support sharing and compatibility studies for IMT above 24 GHz and existing services
3. To conduct sharing and compatibility studies between IMT and other services within APT region taking into account mitigation techniques for co-existence between IMT and other systems
4. To deliver study results to relevant ITU-R groups and APG
5. To develop APT Report in accordance with relevant study results
 |
| **Purpose** | Provide APT member countries with regionally adapted studies for implementing IMT above 24GHz  |
| **Related Document** | ITU-R Administrative circular CA/226 (related to WRC-19 agenda item 1.13)  |
| **Related organizations**  | ITU-R, 3GPP, CEPT ECC and other relevant regional study groups |
| **Timelines** | **AWG-19 (2016-2)*** Adopt the work plan
* Invite contributions to describe implementations of existing services/applications in the frequency ranges listed in Resolution 238 [COM6/20] (WRC-15)

**AWG-20 (2016-3Q)*** Consider input contributions describing implementations of existing services/applications in the frequency range listed in Resolution 238 [COM6/20] (WRC-15)
* Discuss RF characteristics and relevant propagation models as required to support sharing studies for IMT above 24 GHz and existing services based on input contributions
* Invite the sharing study in the frequency ranges listed in Resolution 238 [COM6/20] (WRC-15)
* Develop a working document towards a draft new Report

**AWG-21 (2017-1Q)*** Provide technical characteristics for sharing studies based on input contributions
* Provide propagation models for sharing studies based on input contributions
* Discuss sharing studies based on input contributions
* Submit study results to APG and relevant ITU-R groups as appropriate
* Update the working document towards a draft new Report

**AWG-22 (2017-3Q)*** Discuss the received contributions
* Submit study results to APG and relevant ITU-R groups as appropriate
* Update the working document towards a draft new Report

**AWG-23 (2018-1Q)*** Discuss the received contributions
* Submit study results to APG and relevant ITU-R groups as appropriate
* Complete the working document towards a draft new Report

**AWG-24 (2018-3Q)*** Finalize the draft new Report and approve it
 |

|  |  |
| --- | --- |
| **Title** | **APT Recommendation on “LSA”** |
| **Document Type** | APT Recommendation |
| **Group/Chair** | WG-SPECTRUM/Sub-WG Sharing Studies/Ms. Julie Welch |
| **Editor(s)** |  |
| **Scope** | To develop a recommendation on LSA.  |
| **Purpose** | To develop an APT Recommendation on LSA to facilitate the use of LSA as a national solution in the APT countries when incumbents cannot vacate the IMT band. The LSA Recommendation should be based on the previous report (draft found in AWG-19/TMP-01). |
| **Related Document** | AWG-19/TMP-01” Authorized/Licensed Shared Access (ASA/LSA) as a National Solution to Access Spectrum for IMT Globally Harmonized Bands” |
| **Related Org.** | APT, CEPT, ITU WP5D |
| **Timelines** | **2016**AWG-20* Initiate the discussion in AWG
* Develop and agree work plan and timeline
* Discuss and agree the draft Recommendation
* Invite contributions/comments to next meeting from members about the recommendation

**2017**AWG-21* Collect and review input contributions
* Further develop and update the working document towards a draft new Recommendation on LSA based on input contributions and related documents, and finalize the draft APT Recommendation for approval
 |

**Sub-WG Spectrum Monitoring:**

|  |  |
| --- | --- |
| **Title** | **APT Report on Grid Monitoring Network using TDOA Technology** |
| **Document Type** | Report |
| **Group/Chair** | Spectrum sub-Working Group-Spectrum Monitoring /Mr. HUANG Jia |
| **Editor(s)** | Mr. HUANG Jia |
| **Scope** | To prepare an APT Report containing system key features, essential factors and experience in construction of monitoring network using TDOA technology to meet requirement to improve traditional spectrum monitoring network |
| **Purpose** | To provide guidance to APT member states in establishing new monitoring facilities to fulfil the goal of national spectrum monitoring |
| **Related Document** |  |
| **Related Forums** |  |
| **Timelines** | AWG-14/15(2013) * sharing of detailed information, preparation of a first draft working document

AWG-16/17/18/19/20(2014, 2015, 2016) * Consider the input contribution and draft working document

AWG-21(2017) * To finalize the Report
 |

|  |  |
| --- | --- |
| **Title** | **Spectrum Monitoring Methodology at the Border Areas** |
| **Document Type** | APT Report |
| **Group / Chair** | Spectrum sub-Working Group-Spectrum Monitoring /Mr. HUANG Jia |
| **Editor(s)** |  |
| **Scope** | To summarize the existing technical approaches which could be used by administration in APT countries for spectrum monitoring at the border areas to aid frequency coordination |
| **Purpose** | To provide guidance to administrations in APT region for spectrum monitoring of the terrestrial radio services at the border areas |
| **Related Document** | [APT/AWF/REC-02](http://www.apt.int/sites/default/files/APT-AWF-REC-02_Final_Terr_Coord_Recommendation.doc) |
| **Related Organization** | ITU-R |
| **Timelines** | AWG-16(2014) * Develop draft work plan and timeline
* Agree the structure and draft working document

AWG-17/18/19/20(2014, 2015, 2016) * Consider the input contribution and draft working document

AWG-21(2017)* To finalize the Report
 |

**Sub-WG and TGs of Working Groups Technology Aspects**

**Sub-WG IMT:**

|  |  |
| --- | --- |
| **Title** | **Survey of usage and future plan of frequency bands in relation to studies on WRC-19 agenda item 1.13 in Asia-Pacific region** |
| **Document Type** | APT Report and Liaison Statement to APG |
| **Group/Chair** | WG TECH/Sub-WG IMT/ Dr. Hiroyuki Atarashi (J) |
| **Editor(s)** | Ms. Boya Lyu (CHN) |
| **Scope** | To facilitate the study in relation to WRC-19 Agenda item 1.13 in APG, AWG-19 developed a questionnaire to collect information on usage and future plan as well as other relevant information for the frequencies to be studied for IMT under Resolution **238 (WRC-15)** in Asia-Pacific Region.  |
| **Purpose** | * To collect information on usage and future plan as well as other relevant information for the frequencies to be studied for IMT under Resolution **238 (WRC-15)** in Asia-Pacific Region,
* To develop an APT/AWG Report by compiling the responses from APT members, and sent it to APG 19-2.
 |
| **Related Document** | Resolution **238 (WRC-15)** |
| **Related Organization** | ITU-R |
| **Timelines** | **2016*** AWG-19 (2016 Feb.)
	+ - Develop work plan and timeline.
		- Prepare and issue a questionnaire to seek information from APT members.
		- Inform the initiation of this study to APG 19-1.
		- Invite APT members to provide their initial responses to the questionnaire until AWG-20.
* AWG-20 (2016 September)
	+ - Review the initial responses from APT members and corresponding input contributions.
		- Review needs for further information.
		- Draft a working document towards an APT/AWG Report to summarize the responses to the questionnaire based on the contributions from APT members and the meeting discussion.

**2017*** AWG-21(2017 1Q)
	+ - Review the further responses from APT members and corresponding input contributions.
		- Update the working document and finalize it as an APT/AWG Report.
		- Provide the final report to APG 19-2.
 |

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| --- | --- |
| **Title** | **Implementation of Public Safety LTE (PS-LTE) networks** |
| **Document Type** | APT/AWG Report |
| **Group/Chair** | WG-Service and Applications / TG-PPDR, Mr. Bharat Bhatia andWG-Technology Aspects / Sub-WG IMT, Dr. Hiroyuki Atarashi |
| **Editor(s)** | TBD |
| **Scope** | This study summarizes present status of international standardization of PS-LTE technologies by 3GPP and relevant implementation activities in some countries in the world including the Asia-Pacific Region. It also summarizes technical subjects that are important for implementation of PS-LTE networks.  |
| **Purpose** | * To share the relevant information from some countries with the APT Members wishing to consider implementation of PS-LTE technologies in their countries.
 |
| **Related Document** | TBD |
| **Related Forums and Organization** | 3GPP, ITU-R WP 5D, WP 5A |
| **Timelines** | **2016**AWG-19 (February)* Consider relevant input documents
* Develop a detailed work plan

AWG-20 (September)* Consider relevant input documents
* Review and update the detailed work plan

**2017**AWG-21 (1Q)* Consider relevant input documents
* Consider to develop a working document, if necessary
* Review and update the detailed work plan, if necessary
 |

**TG CRS&SDR:**

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| --- | --- |
| **Title** | **Study on Geo-Location Database as an enable technology of CRS** |
|  | * Report
 |
| **Group/Chair** | * WG-Tech/TG on CRS&SDR/Mr. Baozhen LANG
 |
| **Editor(s)** | * Mr. Dong ZHOU
 |
| **Scope** | The report addresses study related to Geo-location Database. It includes:* Architecture and Functional ability of Geo-location Database
* External interfaces of Geo-location Database with other entities
* Key technologies of Geo-location Database
* Possible deployment of Geo-location Database
 |
| **Purpose** | To conduct the study of GLDB and related key technologies, to provide reference and basis for the spectrum regulation, spectrum planning and technical standardization of APT countries. |
| **Related Documents** | * ITU-R M.2242
* CEPT ECC Report 159, Report 185, Report 186
* ETSI TS 103 143, EN 303 144
 |
| **Related Organization** | * ITU-R, CEPT ECC, ETSI RRS
 |
| **Timelines** | * 2015
* AWG-18
	+ - Set up new work item, develop workplan
* 2016
* AWG-19
	+ - Discuss and agree the structure of the draft Report
		- Discussion of Geo-Location Database studies as an enabler of CRS from external standardization organizations in other two regions
		- Collect and review the input contributions
		- Review and update the workplan if necessary
* AWG-20
	+ - Collect and review the input contributions
		- Further develop and update the working document of draft report on Geo-location Database Study based on the input contributions and related documents
		- Review and update the workplan if necessary
* 2017
* AWG-21
	+ - Collect and review the input contributions
		- Editorial treatment
		- Finish the study and wrap up the document
 |

**TG FWS:**

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| --- | --- |
| **Title** | **APT Report on FWS link performance under severe weather conditions** |
| **Document Type** | APT Report  |
| **Group/Chair** | WG TECH/TG FWS/ Dr. Tetsuya KAWANISHI |
| **Editor(s)** | MR. Eisaku SASAKI, MR. Bui Ha LONG and MR. Hazim Ahmadi |
| **Scope** | 1. To study on link performance of fixed wireless systems, especially on millimetre-wave bands, under severe weather conditions
2. Based on the above studies, to develop reports and/or recommendations as appropriate.
 |
| **Purpose** | To promote the incorporation of fixed wireless systems in a wide range of application fields in Asia-Pacific region. |
| **Related Documents** | APT/AWG/REP-54 APT Survey Report on Fixed Wireless Systems |
| **Related** **Organization** | ITU-R Working Party 3M & 3J |
| **Timelines** | **2015:** AWG-19: Initiate to develop a new APT report on FWS link performance under severe weather conditions**2016:**AWG-20: Drafting of a new APT report on FWS link performance under severe weather conditionsAWG-21: Completion of draft for the new APT report on FWS link performance under severe weather conditions  |

|  |  |
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| **Title** | **APT report on In band Full Duplex system for fixed wireless service** |
| **Document Type** | APT Report |
| **Group/Chair** | WG TECH/TG FWS/ Dr. Tetsuya KAWANISHI |
| **Editor(s)** | Mr. Xi Huang, (to be added) |
| **Scope** | 1. To share information on current status of introduction, development, and spectrum usage of IFD technology
2. To study and discuss IFD application scenarios in the Asia-Pacific region
3. To study and identify the enabled technologies and interference cancellation technologies on IFD application
4. Based on the above studies, to develop the recommendation and/or report, as appropriate
 |
| **Purpose** | To promote the understanding of IFD technology in industry, and make technique preparation and standard preparation for coming commercialization in Asia-Pacific region. |
| **Related Documents** | APT/AWG/REP-54 APT Survey Report on Fixed Wireless Systems |
| **Related** **Organization** | TBD |
| **Timelines** | **2016:** AWG-19: Initiate to develop a new APT report on Intra frequency (or in band) Full Duplex system for fixed wireless serviceAWG-20: Drafting a new APT report on Intra frequency (or in band) Full Duplex system for fixed wireless service based on contributions**2017:**AWG-21: Continuing drafting a new APT report on Intra frequency (or in band) Full Duplex system for fixed wireless service based on contributionsAWG-22: Completion of APT report on Intra frequency (or in band) Full Duplex system for fixed wireless service |

**TG SRD:**

No work item currently under this TG.

**TG ITS:**

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| --- | --- |
| **Title** | **The usage of ITS in APT countries (Revision 2)** |
| **Document Type** | Report |
| **Group/Chair** | ITS TG/ Mr. Satoshi (Sam) Oyama, Japan |
| **Editor(s)** | Mr. SooHak Kim, TTA, Rep. of Korea |
| **Scope** | Provide up-date information on the currently used ITS technologies, frequency bands, status of commercialization service and others in APT member countries. |
| **Purpose** | Provide APT member countries with practical information on the currently used ITS technologies, frequency bands, status of commercialization service and others with the purpose of reaching harmonization to the greatest extent |
| **Related Document** | Usage of ITS in APT countries (Document# APT/AWG/REP-18 (Rev. 1)) |
| **Related Forums** | ITU-R SG5 WP 5A |
| **Timelines** | The 16th meeting (Pataya, Thailand) in March 2014🡪 collect the responses and reflect to the draft report🡪 consideration of input contribution on the global version of ITS usage report for ITU-R SG5 WP 5A/WP 5BThe 17th meeting (Macao) in September 2014🡪 create a revision of workplanThe 18th meeting (Kyoto) in March 2015🡪 consideration of input contribution for ITU-R SG5 WP 5AThe 19th meeting (Chiang-Mai) in February 2016🡪 create a revision of workplan🡪 consideration of input contribution for ITU-R SG5 WP 5AThe 20th meeting (Bangkok) in September2016🡪 create a letter to APT member countries to invite up-date contents in the report🡪 consideration of input contribution for ITU-R SG5 WP 5AThe 21st meeting (T.B.D.) in [Spring] 2017🡪 collect the responses🡪 consideration of input contribution for ITU-R SG5 WP 5AThe 22nd  meeting (T.B.D.) in [Fall] 2017🡪 finalize the Report (Revision 2)🡪 consideration of input contribution for ITU-R SG5 WP 5A |

**TG WPT:**

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| --- | --- |
| **Title** | **APT new Report on “Services and Applications of Wireless Power Transmission (WPT) technology”** |
| **Document Type** | Report |
| **Group/Chair** | WG-TECHNOLOGY/TG WPT/ Chan Hyung Chung (Korea) |
| **Editor(s)** |  Yoshikatsu Nakagawa (Japan), Sung Hei Kim (Korea) |
| **Scope** | 1. Analysis of devices applying WPT technology and services
2. Analysis of expected infrastructures providing WPT services
3. Analysis of study items and scenarios for deploying WPT services
 |
| **Purpose** | 1. To study WPT technology deployment status for each applications
2. To study service infrastructure deployment for each application

3. To raise APT countries’ attention to WPT and activities of TG-WPT4. To contribute to ITU-R SG1 discussion on WPT |
| **Related Document** | 1. ITU-R Question ITU-R 210-3/1,
 |
| **Related Forums and Organization** | ITU-R SG1 WP 1A, AirFuel Alliance and WPC, etc. as appropriate |
| **Timelines** | **2014*** Sep. (AWG-17)
* Approve the Work Plan of TG-WPT

**2015*** Mar. (AWG-18)
* Discuss on developing APT new Report on service scenarios and use cases of wireless power transmission technology
*

**2016*** Feb. (AWG-19)
* Discuss and confirm the title and the table of contents
* Approve the updated Work Plan
* Update the working document towards APT new Report
* Liaison to external organizations
* Mar. - Aug.
* Collect information on WPT services and applications
* Sep. (AWG-20)
* Update the draft APT new Report

**2017*** May (AWG-21)
* Finalize APT new Report
 |

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| --- | --- |
| **Title** | **APT Report on Frequency Ranges used for Non-Beam WPT for Electric Vehicles** |
| **Document Type** | APT Report  |
| **Group/Chair** | WG on Technology /TG WPT/ CHUNG, Chan Hyung (Korea) |
| **Editor(s)** | ISHIDA, Kazuhito (Japan) |
| **Scope** | To draft and complete the APT Report on frequency ranges used for non-beam WPT technologies for electric vehicles. To study possible frequency ranges described in the APT Report on WPT and the latest WPT studies in ITU-R. To carry out studies providing information and necessary supports to APT Members on their preparation for WRC-19 A.I. 9.1.6 |
| **Purpose** | Study frequency ranges used for non-beam WPT technologies for electric vehicles: 1. Not to cause harmful interference to radiocommunication services;
2. To facilitate smooth deployment of WPT systems without spectrum concerns;
3. To collect information on spectrum requirements and related matters of WPT;
 |
| **Related Document** | 1. APT Survey Report on WPT
2. APT Report on WPTb
3. ITU-R Question ITU-R 210-3/1
4. Report ITU-R SM.2303-1“Wireless power transmission using technologies other than radio frequency beam”
5. ITU-R SG1 1A/TEMP/107 PRELIMINARY DRAFT NEW RECOMMENDATION ITU-R SM.[WPT] “Frequency ranges for global or regional operation and Human Hazards of non-beam Wireless Power Transmission (WPT) systems”
 |
| **Related Forums and Organization** | APG, ITU-R SG1, WP 1A, and WP 1B |
| **Timelines** | 2016 February (AWG-19) * Approval of the Work Plan
* Initiation of new work
* Drafting the Working Document (WD)

September (AWG-20) * Review spectrum requirements of WPT for electric vehicles
* Review assessment methodologies
* Studies on spectrum sharing and impact of WPT to radiocommunication services
* Update WD to Preliminary Draft New Report (PDNR)

2017February (AWG-21) * Studies on spectrum sharing and impact of WPT to radiocommunication services
* Review and update PDNR

September (AWG-22) * Studies on spectrum sharing and impact of WPT to radiocommunication services
* Approval of PDNR for an AWG output for Report
 |
| **Note** | * This work plan is referred to the proposed APT Report on WPT. When this report is fully discussed and approved in AWG, a recommendation on suitable WPT frequency ranges may be needed.
 |

**TGs of Working Group Service & Applications**

**TG MSA:**

|  |  |
| --- | --- |
| **Title** | **Studies within the Architecture and Performance of Integrated MSS Systems and Hybrid Satellite/Terrestrial Systems below the 3 GHz Band** |
| **Document Type** | Report |
| **Group/Chair** | TG-3/WG-S&A/Ms. Geetha Remy Vincent  |
| **Editor(s)** | Ms. Geetha Remy Vincent |
| **Scope** | To update the report on satellite applications in the Asia-Pacific Region and to assist the APT membership in consideration of the implementation of modern satellite applications in a national context |
| **Purpose** | To update the Report on Studies within the Architecture and Performance of Integrated MSS Systems and Hybrid Satellite/Terrestrial Systems below the 3 GHz Band ([APT/AWG/REP-57](http://www.apt.int/sites/default/files/Upload-files/AWG/APT-AWG-REP-57-APT_Report_on_Integrated_MSS__Hybrid_Satellite_Terrestrial_System_20140926_0-2_0.docx)). |
| **Related Document** | - |
| **Related Forums** | - |
| **Timelines** | **2015**AWG-18 🡪 To add a Work Plan for the update of the Report.**2016**AWG-19 🡪 To update the APT Report based on input contributions.AWG-20 🡪 To update the APT Report based on input contributions.**2017**AWG-21 🡪 To finalize the Revised APT Report. |

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| --- | --- |
| **Title** | **Usage and Future Plans of the bands 17.7-20.2 GHz and 27.5-30 GHz in Asia-Pacific Region** |
| **Document Type** | Report |
| **Group/Chair** | TG-3/WG-S&A/Ms. Geetha Remy Vincent  |
| **Editor(s)** | Ms. Geetha Remy Vincent |
| **Scope** | To gather information on the usage and future plans in the Ka-band and its related domestic regulations in the Asia-Pacific Region. |
| **Purpose** | 1. To provide information on the usage of the bands 17.7-20.2 GHz and 27.5-30.0 GHz to APT Member countries, operators and vendors.
2. To provide information, as applicable, to the APG studies on the Agenda Item 1.5 of WRC-19.
 |
| **Related Document** | - |
| **Related Forums** | APT, WP4A |
| **Timelines** | **2016**

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| --- | --- | --- |
| AWG-19 | 🡪 | Initiate the task in AWG/TG-MSA. |
|  | 🡪 | Develop work plan and timeline. |
|  | 🡪 | Prepare and circulate questionnaire to APT members. |
|  | 🡪 | Prepare working document towards Draft New APT Report based on input contributions. |
| AWG-20 | 🡪 | Update the working document towards Draft New APT Report based on responses from APT Members. |

**2017**

|  |  |  |
| --- | --- | --- |
| AWG-21 | 🡪 | Finalize the Draft New APT Report. |
|  | 🡪🡪 | Consider the future work plan and working method in accordance with the proposal from APT members.Convey a copy of the Report to APG19-2, once approved.  |

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**TG A&M:**

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| --- | --- |
| **Title** | **Study of possible services and applications for public use of unmanned aircraft** |
| **Document Type** | Report  |
| **Group/Chair** | TG-Aeronautical and Maritime |
| **Editor(s)** | Chairman TG-Aeronautical and Maritime  |
| **Scope** | Provide information on various potential services and applications, and success factors to deliver services and applications for public use of unmanned aircraft, disaster relief case studies and future challenges  |
| **Purpose** | To identify the future needs of special communications for social, industrial and economic development which could be satisfied by services and applications on unmanned aircraft systems. |
| **Related Document** | NONE |
| **Related Forums** | ITU WP 5B |
| **Timelines** | **2015:**AWG-18 🡪Initial revision of Terms of Reference**2016:**AWG-19 🡪Review input contributions and initiate studies on the topic of service and application for public use of unmanned aircraft, and review ToRAWG-20🡪 Initiate report based on the results of studies. **2017:**AWG-21🡪 Continue development of reportAWG-22🡪 Finalize report |

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| --- | --- |
| **Title** | **[UHF-MAR] Study of usage, regulation of the bands 457.5125-457.5875 MHz and 467.5125-467.5875 MHz for UHF on-board vessel communication in Asia Pacific region.** |
| **Document Type** | Report  |
| **Group/Chair** | TG-Aeronautical and Maritime / Dr. JIAXIN DING |
| **Editor(s)** | Chairman TG-Aeronautical and Maritime / Bui Ha Long (VTN) |
| **Scope** | 1. To gather national information regarding usage, regulation of the bands 457.5125-457.5875 MHz and 467.5125-467.5875 MHz for UHF on-board vessel communication.2. Based on the above studies, to develop reports as appropriate. |
| **Purpose** | To support the wide usage of UHF on-board vessel communication in the bands 457.5125-457.5875 MHz and 467.5125-467.5875 MHz in Asia-Pacific region. |
| **Related Document** | NONE |
| **Timelines** | 2016:AWG-19: Development and circulation of survey questionnaireAWG-20: Compilation of questionnaire responses, development of APT survey report on the usage of UHF on-board vessel communication in the bands 457.5125-457.5875 MHz and 467.5125- 467.5875 MHz in Asia-Pacific region 2017:AWG-21: Continue development of reportAWG-22 Completion of draft new APT survey report  |

|  |  |
| --- | --- |
| **Title** | **[V/UHF-ARN] Study of usage, regulation of the bands 108 – 117.975 MHz, 328.6 – 335.4 MHz and 960 – 1164 MHz for aeronautical radionavigation systems in Asia Pacific region.** |
| **Document Type** | Report  |
| **Group/Chair** | TG-Aeronautical and Maritime / Dr. JIAXIN DING |
| **Editor(s)** | Chairman TG-Aeronautical and Maritime / Bui Ha Long (VTN)  |
| **Scope** | 1. To gather national information regarding usage, regulation of the bands 108 – 117.975 MHz, 328.6 – 335.4 MHz and 960 – 1164 MHz for aeronautical radionavigation systems.2. Based on the above studies, to develop reports as appropriate. |
| **Purpose** | To recognize the commonly used radio frequency channel arrangements and assignments for these bands in order to facilitate the efficient usage, border coordination on these frequencies among APT countries. |
| **Related Document** | NONE |
| **Timelines** | 2016:AWG-19: Development and circulation of survey questionnaireAWG-20: Compilation of questionnaire responses and develop a new APT survey report2017:AWG-21: Completion of draft new APT survey report  |

**TG PPDR:**

|  |  |
| --- | --- |
| **Title** | **Implementation of Public Safety LTE (PS-LTE) networks** |
| **Document Type** | APT/AWG Report |
| **Group/Chair** | WG-Service and Applications / TG-PPDR, Mr. Bharat Bhatia andWG-Technology Aspects / Sub-WG IMT, Dr. Hiroyuki Atarashi |
| **Editor(s)** | TBD |
| **Scope** | This study summarizes present status of international standardization of PS-LTE technologies by 3GPP and relevant implementation activities in some countries in the world including the Asia-Pacific Region. It also summarizes technical subjects that are important for implementation of PS-LTE networks.  |
| **Purpose** | * To share the relevant information from some countries with the APT Members wishing to consider implementation of PS-LTE technologies in their countries.
 |
| **Related Document** | TBD |
| **Related Forums and Organization** | 3GPP, ITU-R WP 5D, WP 5A |
| **Timelines** | **2016**AWG-19 (February)* Consider relevant input documents
* Develop a detailed work plan

AWG-20 (September)* Consider relevant input documents
* Review and update the detailed work plan

**2017**AWG-21 (1Q)* Consider relevant input documents
* Consider to develop a working document, if necessary
* Review and update the detailed work plan, if necessary
 |

**TG Railway Radiocommunication:**

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| --- | --- |
| **Title** | **Railway Radiocommunication System Between Train and Trackside (RSTT) with respect to WRC-19 Agenda item 1.11** |
| **Document Type** | APT Report |
| **Group/Chair** | TG Railway/ Mr. Bin LIU, CHINA |
| **Editor(s)** | Mr. HUANG XI (China) and Mr. KUNHIRO KAWASAKI(Japan) |
| **Scope** | To study the system description of RSTT, including the definition, working scenarios, main functionalities, system architecture, national implementation experiences of RSTT. |
| **Purpose** | To provide APT member countries the system description of RSTT and share information on national implementation experiences of RSTT in Asia-Pacific Region. |
| **Related Document** |  |
| **Related Forums** | **ITU-R WP 5A** |
| **Timelines** | **The 19th meeting (Chiang-Mai) in Feb.2016**🡪to start the study by conducting the working plan and the structure **The 20th meeting(TBD) in 2016**🡪to collect information on RSTT and to discuss the structure and contents of the Report according to contributions from APT Member countries**The 21st meeting(TBD) in 2017**🡪to improve the Report (if possible, to finalize the Report)**The 22nd meeting(TBD) in 2017**🡪to finalize the Report(if necessary) |

**5. SUMMARY WORKPLAN STATUS**

| **No.** | **Work Item** | **Responsible Group** | **Expected Deliverable** | **Completion Target** |
| --- | --- | --- | --- | --- |
| 1 | Development of a draft APT Recommendation on harmonized frequency arrangements for PPDR in frequency ranges included in Res.646 (Rev.WRC-15)  | Sub-WG SA&H | Recommendation | AWG-21 |
| 2 | Development of APT Recommendation on Frequency Ranges for Non-Beam WPT for Mobile Devices  | Sub-WG SA&H | Recommendation | AWG-22 |
| 3 | Harmonized frequency arrangement in the band 470 – 698 MHz | Sub-WG SA&H | Report/Recommendation | AWG-22 |
| 4 | Studies on frequency arrangements in the band 1427-1518 MHz | Sub-WG SA&H | Report/Recommendation | AWG-22 |
| 5 | Harmonized frequency arrangement in the band 3 300 – 3 400 MHz | Sub-WG SA&H | Report/Recommendation | AWG-22 |
| 6 | Frequency arrangement in the band 4 800 – 4 990 MHz | Sub-WG SA&H | Report/Recommendation | AWG-22 |
| 7 | APT Report on sharing and compatibility studies for selected frequency bands below 6GHz | Sub-WG Sharing | Report, Liaison Statements | AWG-24 |
| 8 | APT Report on sharing and compatibility studies for IMT above 24GHz | Sub-WG Sharing | Report, Liaison Statements | AWG-24 |
| 9 | APT Recommendation on Licensed Shared Access (LSA) | Sub-WG Sharing | Recommendation | AWG-21 |
| 10 | APT Report on Grid Monitoring Network using TDOA Technology  | Sub-WG SM | Report | AWG-21 |
| 11 | APT Report on Spectrum Monitoring Methodology at the Border Areas | Sub-WG SM | Report | AWG-21 |
| 12 | Survey of usage and future plan of frequency bands in relation to studies on WRC-19 agenda item 1.13 in Asia-Pacific region | Sub-WG IMT | Report, Liaison Statements | AWG-21 |
| 13 | Implementation of Public Safety LTE (PS-LTE) Networks | Sub-WG IMT | Report  | AWG-21 |
| 14 | Study on Geo-Location Database as an enable technology of CRS | TG CRS&SDR | Report | AWG-21 |
| 15 | APT Report on FWS link performance under severe weather conditions | TG FWS | Report | AWG-21 |
| 16 | APT Report on In-band Full Duplex system for fixed wireless service | TG FWS | Report | AWG-22 |
| 17 | The usage of ITS in APT countries (Revision 2) | TG ITS | Report | AWG-22 |
| 18 | APT new Report on Services and Applications of Wireless Power Transmission(WPT) technology | TG WPT | Report | AWG-21 |
| 19 | APT Report on Frequency Ranges used for Non-Beam WPT for Electric Vehicles | TG WPT | Report | AWG-22 |
| 20 | Studies within the Architecture and Performance of Integrated MSS Systems and Hybrid Satellite/Terrestrial Systems below the 3 GHz Band | TG MSA | Report | AWG-21 |
| 21 | Usage and Future Plans of the bands 17.7-20.2 GHz and 27.5-30 GHz in Asia-Pacific Region | TG MSA | Report | AWG-21 |
| 22 | Study of possible services and applications for public use of unmanned aircraft | TG AM | Report | AWG-22 |
| 23 | Study of usage, regulation of the bands 457.5125-457.5875 MHz and 467.5125-467.5875 MHz for UHF on-board vessel communication in Asia Pacific region | TG AM | Report | AWG-22 |
| 24 | Study of usage, regulation of the bands 108 – 117.975 MHz, 328.6 – 335.4 MHz and 960 – 1164 MHz for aeronautical radionavigation systems in Asia Pacific region | TG AM | Report | AWG-21 |
| 25 | APT Report on Implementation of Public Safety LTE (PS-LTE) Networks | TG PPDR | Report | AWG-21 |
| 26 | Railway Radiocommunication System between Train and Trackside (RSTT) with respect to WRC-19 Agenda Item 1.11 | TG RR | Report | AWG-22 |