

IAFI Roadmap for ITU and APT Contributions for 2021 and beyond

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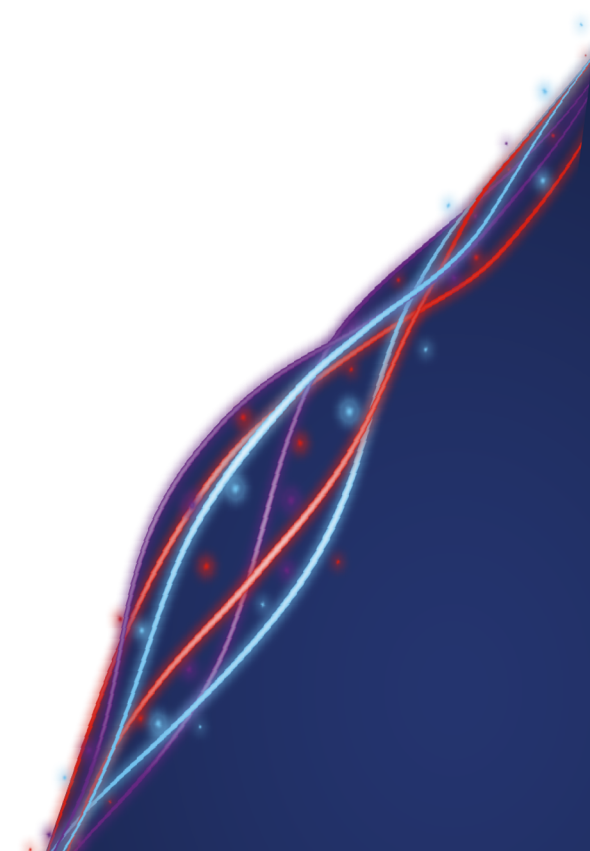
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ITU-APT

Foundation of India

ITU's Association in India



About ITU-APT

- ITU-APT Foundation of India (IAFI) is a non-profit, non-political registered society based in India
- We are a nonpartisan Foundation and we do not identify with any Industry sector or group. We support all telecom sectors – mobile broadcasting, satellite,
- We are working for the last 18 years with the prime objective of encouraging involvement of professionals, corporate, public/private sector industries, R&D organizations, academic institutions, and such other agencies in the activities of ITU and APT
- We are recognized by ITU as an international/regional Telecommunications organization. We are a sector Member of the ITU Radio Sector (ITU-R), ITU Development sector (ITU-D) and ITU Telecommunication Standardization Sector (ITU-T)
- Our members include many stalwarts of the telecom sector including former telecom secretaries, members, advisors and DDGs of the DOT and Telecom Commission, former Wireless Advisors and other WPC officers. We also have many corporate members from India and other countries including R&D organizations, telecom operators, manufacturers and technology provider

Structure of ITU-R Study Groups and APT Work Programs

IAFI Radio Group
Focus areas of studies



Study Group 1 (SG 1);	Spectrum management
Study Group 3 (SG 3);	Radio wave propagation
Study Group 4 (SG 4)	Satellite services
Study Group 5 (SG 5)	Terrestrial services
Study Group 6 (SG 6);	Broadcasting service
Study Group 7 (SG 7);	Science services


APT Work Programs

APG
ASTAP
AWG
GA
MC
CGMM
HRD
ICT
PRF
PRFP
SATRC
AFIS





IAFI studies relating to ITU-R WP5D

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1. Frequency arrangements for new bands identified at WRC-19
 2. 600 MHz UHF band arrangements
 3. Cellular V2X
 4. Studies towards various agenda items of WRC-23.
 5. IMT2020 outcome Report.
 6. Vision and Technology Trends beyond IMT-2020 towards IMT-2030
 7. L Band spectrum planning - Report/Recommendation
 8. Use of 5G for Public safety/Industries/enterprises/utilities/
 9. IMT for fixed wireless broadband.
 10. Updating various status Reports on 4G/5G
 11. WP5D and WP4C studies on India S Band issue
 12. HAPS IMT Base stations (HIBS) spectrum studies
 13. AAS/RR21.5
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IAFI has so far submitted 8 contributions to WP5D

- **Report on critical applications of IMT for industrial and enterprise users. (WP5D/ 639)**
 - **Proposed new Recommendation on vision for International Mobile Telecommunications (IMT) for 2030 and beyond (WP5D/ 638)**
 - **The use of terrestrial component of IMT for cellular-vehicle-to-everything application (Question ITU-R 262/5) (WP5D/ 637)**
 - **New Report for MM wave bands in Recommendation M.1036- (WP5D/ 636)**
 - **Next Steps on RR No.21.5 (WP5D/ 474)**
 - **Draft revision of Report M.2291 on PPDR (WP5D/ 473)**
 - **Proposed modifications to Recommendation M.1036 (WP5D/ 472)**
 - **Adjacent band compatibility studies of IMT systems in the band 1492-1 518 MHz (WP5D/ 471)**
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**IAFI is now
working towards 7
new contributions
to WP5D-39**


- **New ITU-R Recommendation on 6G vision**
 - **Future Technology Trends towards International Mobile Telecommunications (IMT) for 2030 and beyond**
 - **IMT for cellular-vehicle-to-everything application**
 - **Studies on RR 21.5**
 - **Proposed modifications to Recommendation ITU-R M.1036**
 - **Adjacent band compatibility studies of IMT systems in the mobile service in the band 1492-1 518 MHz**
 - **New Report on IMT for industrial and enterprise users.**
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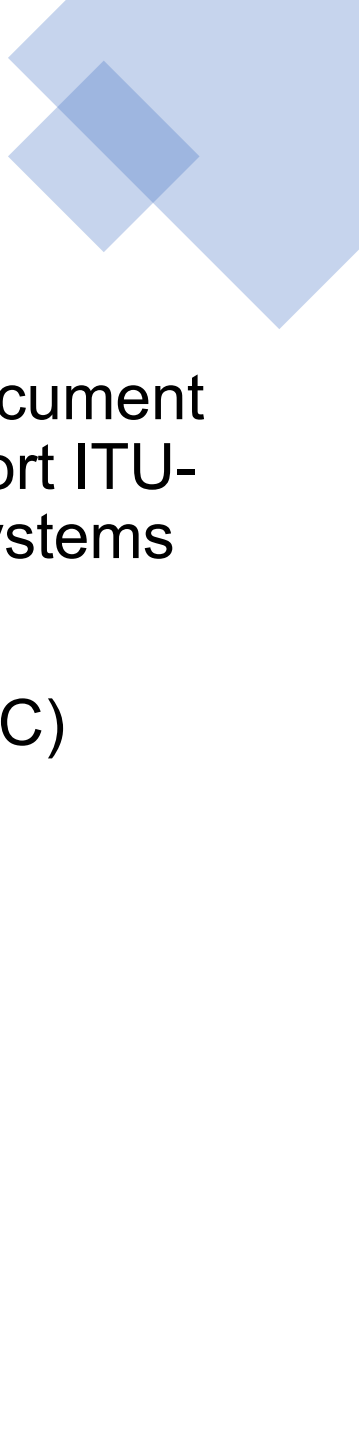
IAFI work relating to WP5A/5B/5C


IAFI is developing contributions on:

- Wi-Fi -6E
 - Fixed Wireless Broadband/Fixed Wireless Access
 - RR 21.5
 - PPDR
 - UAVs
 - High-altitude platform stations (HAPS) /
 - Railway radiocommunication systems between train and trackside (RSTT)
 - Intelligent Transport Systems (ITS)
 - Global Maritime Distress and Safety System (GMDSS) – Expanded coverage and enhanced capabilities for GMDSS by adding Iridium to the official providers of GMDSS. Implementation guidelines are to developed by 5C
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IAFI has so far submitted 3 contributions to WP5A

- Proposed changes to the working document towards a preliminary draft new Report ITU-R M.[UCS] - Utility communication systems (Doc. ITU-R WP5A/274)
 - Studies under agenda item 9.1 topic C) (Doc. ITU-R WP5A/273)
 - RSTT study Question (Doc. ITU-R WP5A/272)
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IAFI work relating to WP 4A/4B/4C

1. Earth stations on vehicles, ships and aircraft (E-SIM) guidelines approved in Ku and Ka bands for GSO with power limits to protect 5G-Next WRC to consider similar guidelines for NGS0.
 2. Non-Geostationary Satellites – Regulatory procedures established for non-geostationary satellite constellations in the fixed-satellite service, opening the skies to next-generation communication capabilities. Mega-constellations of satellites consisting of hundreds to thousands of spacecraft in low-Earth orbits.
 3. Broadcasting-satellite service (BSS) – Protection of frequency assignments, providing a priority mechanism for developing countries to regain access to spectrum orbit resources.
 4. 2.5 GHz MSS interference
 5. Others
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IAFI work relating to APT (APG+AWG)


- Studies relating to Frequency arrangements
 - Preparatory actions for WRC-23
 - Studies relating to specific applications of IMT – PPDR, industries, enterprises, health,
 - Studies relating to 6G
 - L Band implementation issues
 - Studies related to LEO & GEO
 - India S Band issue
 - Use of Ku and Ka bands
 - Satellite IOT
 - ESIMS – both GSO and NGSO
 - ITS and C-V2X
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IAFI has so far
submitted 4
contributions to
AWG this year



Also 6 docs for
APG submitted to
WPC for WRC-23

- Response to APT Report on information of mobile operators' frequencies, technologies and license durations in Asia Pacific countries [AWG-27/INP-63](#)
 - Further work on a draft new Report on sharing and compatibility studies between IMT in the band 1492 – 1518 MHz and MSS systems in the band above 1518 MHz in the Asia Pacific region [AWG-27/INP-62](#)
 - Working document towards a preliminary draft new APT Report on current status and future plan of implementation and development of IMT-2020 (5G) in Asia-Pacific region [AWG-27/INP-61](#)
 - Further updates to working document towards a preliminary draft new APT Report on emerging critical applications of IMT for industrial, societal and enterprise users [AWG-27/INP-60](#)
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IAFI is now working 13 Topics for AWG-28 (work items likely to be completed at AWG-28

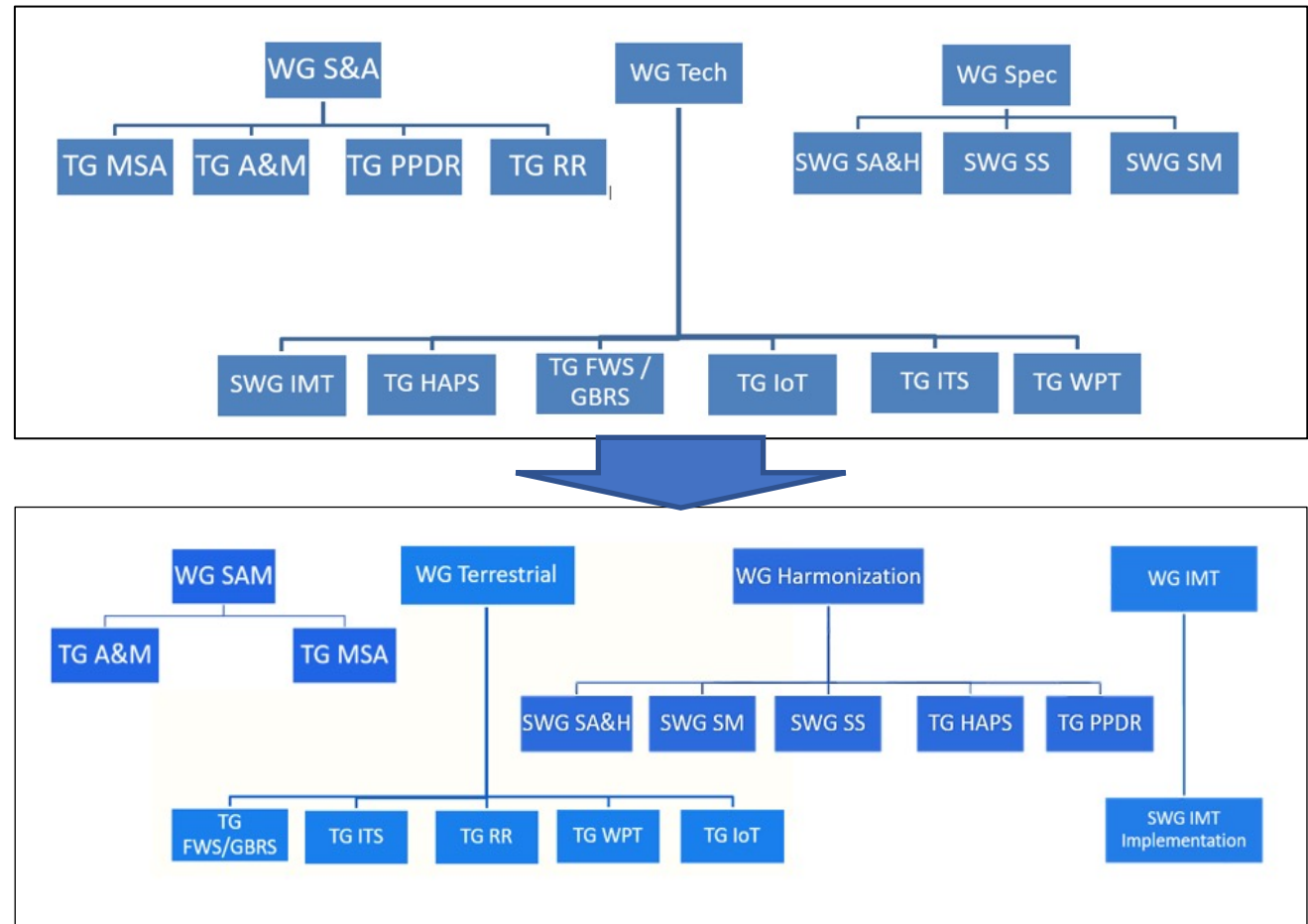
1. Studies on frequency arrangement(s) in the band 1 427 – 1 518 MHz
 2. Revision of APT/AWG/REP-79 APT Report on frequency arrangements for IMT in the band 470 –698 MHz
 3. Sharing and Compatibility Studies for Selected Frequency Bands Below 6 GHz
 4. Report on mitigation measures to improve coexistence of 4G-LTE and 5G-NR around 3300 MHz and 3600 MHz and other systems operating in adjacent and in-band spectrum.
 5. Study on Technical and Operational Measures for Coexistence between Terrestrial and Satellite IMT Systems Deployed in 1 980-2 010 MHz/2 170-2 200 MHz in the Asia-Pacific Region
 6. Current status and future plan of implementation and deployment of IMT-2020 (5G) in Asia-Pacific region
 7. Studies on implementation aspects of IMT-2020 in the frequency bands below 6 GHz in Asia-Pacific region
 8. Studies on 5G implementation in frequency bands above 24.25 GHz
 9. Models for FWS link performance degradation due to wind
 10. Vehicle Mounted Earth Stations (VMES) in Ku-Band GSO FSS Networks.
 11. Radio Frequency Beam WPT
 12. Working Document for a Draft APT Survey Report on Alerting Means over IMT networks to the Public in APT Member Countries
 13. Operational scenarios and relevant national regulatory experiences upon systems of train positioning application of RSTT in some APT countries
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**IAFI is also
working 6 other
Topics which will
be completed in
AWG-29 or AWG-
30**


1. Developments in industrial IoT applications using satellite technologies
 2. APT Report on Emerging Critical Applications of IMT for Industrial, Societal and Enterprise Users
 3. Current status and future plan on regulations and usage of HAPS in the fixed service in APT countries
 4. The use of cellular networks for unmanned aircraft system operations
 5. KA-BAND and satellite systems for use in the Asia pacific region and considerations for development of national frequency plans
 6. Cellular based V2X for ITS applications in APT countries
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AWG STRUCTURE IS BEING CHANGED





Key WRC-23 AGENDA items on which IAFI is working during 20- 23 Study Period

- New Spectrum for IMT : Identify new bands and conditions for existing bands: 3 300-3 400 MHz, 3 600 3 800 MHz, 4 800-4 990 MHz, 6 425-7 025 MHz, 7 025-7 125 MHz and 10.0-10.5 GHz bands for 4G/5G
 - Earth stations in motion (ESIM) – Conditions to be further defined for communications of ESIMs with non- geostationary space stations in the fixed-satellite service to provide reliable and high-bandwidth Internet services to aircraft, ships and land vehicles.
 - High-altitude IMT base stations (HIBS) – The use of high-altitude platform stations as IMT base stations (HIBS) in the mobile service in certain frequency bands below 2.7 GHz already identified for IMT,
 - Aeronautical mobile applications – Modernizing aeronautical HF radio, new non-safety aeronautical mobile applications for air-to-air, ground-to-air and air-to-ground communications of aircraft systems, and possible new allocations to the aeronautical mobile satellite service to support aeronautical VHF communications in the Earth-to-space and space-to-Earth directions.
 - Global Maritime Distress and Safety System (GMDSS) – Improved communications and additional spectrum and satellite resources to enhance maritime capabilities in GMDSS, such as e-navigation.
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