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| **Radiocommunication Assembly (RA-15) Geneva, 26-30 October 2015** |  |
| **INTERNATIONAL TELECOMMUNICATION UNION** |  |
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| **9 September2015** |
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| Radiocommunication Study Group 4 | |
| SATELLITE SERVICES | |
| LIST OF RECOMMENDATIONS | |
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**ITU-R BO-series of Recommendations**

**ITU-R M-series of Recommendations**

**ITU-R S-series of Recommendations**

**ITU-R SF-series of Recommendations**

**ITU-R SNG-series of Recommendations**

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| **NOC** =  Maintained | **MOD** =  Revised | **SUP** =  Deleted | **ADD** =  New text | **UNA** =  Undergoing approval |

Broadcasting-satellite service

| Rec.  ITU-R | Recommendation title | Action  by RA-15 | Comments |
| --- | --- | --- | --- |
| **BO.600-1** | Standardized set of test conditions and measurement procedures for the subjective and objective determination of protection ratios for television in the terrestrial broadcasting and the broadcasting-satellite services | NOC |  |
| **BO.650-2** | Standards for conventional television systems for satellite broadcasting in the channels defined by Appendix 30 of the Radio Regulations | NOC |  |
| **BO.651-0** | Digital PCM coding for the emission of high-quality sound signals in satellite broadcasting (15 kHz nominal bandwidth) | NOC |  |
| **BO.652-1** | Reference patterns for earth-station and satellite antennas for the broadcasting satellite service in the 12 GHz band and for the associated feeder links in the 14 GHz and 17 GHz bands | NOC |  |
| **BO.712-1** | High-quality sound/data standards for the broadcasting-satellite service in the 12 GHz band | NOC |  |
| **BO.789-2** | Service for digital sound broadcasting to vehicular portable and fixed receivers for broadcasting-satellite service (sound) in the frequency range 1 400-2 700 MHz | NOC |  |
| **BO.790-0** | Characteristics of receiving equipment and calculation of receiver figure-of-merit (*G*/*T*) for the broadcasting-satellite service | NOC |  |
| **BO.791-0** | Choice of polarization for the broadcasting-satellite service | NOC |  |
| **BO.792-0** | Interference protection ratios for the broadcasting-satellite service (television) in the 12 GHz band | NOC |  |
| **BO.793-0** | Partitioning of noise between feeder links for the broadcasting-satellite service (BSS) and BSS downlinks | NOC |  |
| **BO.794-0** | Techniques for minimizing the impact on the overall BSS system performance due to rain along the feeder-link path | NOC |  |
| **BO.795-0** | Techniques for alleviating mutual interference between feeder links to the BSS | NOC |  |
| **BO.1130-4** | Systems for digital satellite broadcasting to vehicular, portable and fixed receivers in the bands allocated to BSS (sound) in the frequency range 1 400-2 700 MHz | NOC |  |
| **BO.1212-0** | Calculation of total interference between geostationary-satellite networks in the broadcasting-satellite service | NOC |  |
| **BO.1213-1** | Reference receiving earth station antenna pattern for the broadcasting-satellite service in the 11.7-12.75 GHz band | NOC |  |
| **BO.1293-2** | Protection masks and associated calculation methods for interference into broadcast-satellite systems involving digital emissions | NOC |  |
| **BO.1295-0** | Reference transmit earth station antenna off-axis e.i.r.p. patterns for planning purposes to be used in the revision of the Appendix 30A (Orb-88) Plans of the Radio Regulations at 14 GHz and 17 GHz in Regions 1 and 3 | NOC |  |
| **BO.1296-0** | Reference receive space station antenna patterns for planning purposes to be used for elliptical beams in the revision of the Appendix 30A (Orb-88) Plans of the Radio Regulations at 14 GHz and 17 GHz in Regions 1 and 3 | NOC |  |
| **BO.1297-0** | Protection ratios to be used for planning purposes in the revision of the Appendices 30 (Orb-85) and 30A (Orb-88) Plans of the Radio Regulations in Regions 1 and 3 | NOC |  |
| **BO.1373-2** | Use of broadcasting-satellite service assignments and of the associated feeder link assignments for fixed-satellite service transmissions in bands subject to Appendices 30 and 30A of the Radio Regulations | NOC |  |
| **BO.1383-0** | Introduction of the broadcasting-satellite service (sound) in the same frequency bands as used by mobile aeronautical telemetry systems in the frequency range 1-3 GHz | NOC |  |
| **BO.1408-1** | Transmission system for advanced multimedia services provided by integrated services digital broadcasting in a broadcasting-satellite channel | NOC |  |
| **BO.1443-3** | Reference BSS earth station antenna patterns for use in interference assessment involving non-GSO satellites in frequency bands covered by RR Appendix 30 | NOC |  |
| **BO.1444-0** | Protection of the BSS in the 12 GHz band and associated feeder links in the 17 GHz band from interference caused by non-GSO FSS systems | NOC |  |
| **BO.1445-0** | Improved patterns for fast roll-off satellite transmit antennas of the Regions 1 and 3 BSS plans of RR Appendix S30 | NOC |  |
| **BO.1504-0** | Effective utilization of spectrum assigned to the broadcasting-satellite service (sound) | NOC |  |
| **BO.1506-0** | A methodology to evaluate the impact of solar interference on GSO BSS link performance | NOC |  |
| **BO.1516-1** | Digital multiprogramme television systems for use by satellites operating in the 11/12 GHz frequency range | NOC |  |
| **BO.1517-0** | Equivalent power flux-density limits, epfd↓, to protect the broadcasting-satellite service in the 12 GHz band from interference caused by non-geostationary fixed-satellite service systems | NOC |  |
| **BO.1597-0** | Methodology for the calculation of the worst-case interference levels between non-geostationary BSS (sound) systems using highly-elliptical orbit and geostationary orbit satellite networks operating in the band 2 630-2 655 MHz | NOC |  |
| **BO.1658-0** | Continuous curves of epfd↓ versus the geostationary broadcasting-satellite service earth station antenna diameter to indicate the protection afforded by systems complying with the limits of antennas with diameters other than those in Article 22 of the Radio Regulations | NOC |  |
| **BO.1659-1** | Mitigation techniques for rain attenuation for broadcasting-satellite service systems in frequency bands between 17.3 GHz and 42.5 GHz | NOC |  |
| **BO.1696-0** | Methodologies for determining the availability performance for digital multi-programme BSS systems, and their associated feeder links operating in the planned bands | NOC |  |
| **BO.1697-0** | Power flux-density values in the band 11.7-12.7 GHz and associated calculation methodology which may be used for bilateral coordination when the power flux-density values in Section 3 of Annex 1 to Appendix 30 or Annex 4 to Appendix 30 of the Radio Regulations are exceeded | NOC |  |
| **BO.1724-1** | Interactive satellite broadcasting systems (television, sound and data) | NOC |  |
| **BO.1773-0** | Criterion to assess the impact of interference to the broadcasting-satellite service from emissions of devices without a corresponding frequency allocation in the Radio Regulations, that produce fundamental emissions in the frequency bands allocated to the broadcasting satellite service | NOC |  |
| **BO.1774-1** | Use of satellite and terrestrial broadcast infrastructures for public warning, disaster mitigation and relief  Note – Identical to Recommendation ITU-R BT.1774-1 | NOC |  |
| **BO.1776-1** | Maximum power flux-density for the broadcasting-satellite service in the band 21.4-22.0 GHz in Regions 1 and 3 | NOC |  |
| **BO.1784-0** | Digital satellite broadcasting system with flexible configuration (television, sound and data) | NOC |  |
| **BO.1785-0** | Intra-service sharing criteria for GSO BSS systems in the band 21.4‑22.0 GHz in Regions 1 and 3 | NOC |  |
| **BO.1834-0** | Coordination between geostationary-satellite orbit fixed-satellite service networks and broadcasting-satellite service networks in the band 17.3-17.8 GHz and among the broadcasting-satellite service and associated feeder-link networks serving Region 2 in the bands 17.3‑17.8 GHz and 24.75-25.25 GHz | NOC |  |
| **BO.1835-0** | Sharing between broadcasting-satellite service (BSS) networks using the Region 2 17.3-17.8 GHz BSS allocation and feeder links of BSS networks using the worldwide 17.3-17.8 GHz fixed-satellite service (FSS) (Earth-to-space) allocation | NOC |  |
| **BO.1898-1** | Power flux-density value required for the protection of receiving earth stations in the broadcasting-satellite service in Regions 1 and 3 from emissions by a station in the fixed and/or mobile services in the band 21.4-22 GHz | NOC |  |
| **BO.1900-0** | Reference receive earth station antenna pattern for the broadcasting-satellite service in the band 21.4-22 GHz in Regions 1 and 3 | NOC |  |
| **BO.2063-0** | Alternative BSS earth station antenna radiation pattern for 12 GHz BSS bands with effective apertures in the range 55-75 cm | NOC |  |

Mobile-satellite service and radiodetermination-satellite service

| Rec.  ITU-R | Recommendation title | Action  by RA‑15 | Comments |
| --- | --- | --- | --- |
| **M.632-3** | Transmission characteristics of a satellite emergency position-indicating radio beacon (satellite EPIRB) system operating through geostationary satellites in the 1.6 GHz band | NOC |  |
| **M.633-4** | Transmission characteristics of a satellite emergency position-indicating radio beacon (satellite EPIRB) system operating through a satellite system in the 406 MHz band | NOC |  |
| **M.694-1** | Reference radiation pattern for ship earth station antennas | NOC |  |
| **M.818-2** | Satellite operation within International Mobile Telecommunications‑2000 (IMT-2000) | NOC |  |
| **M.827-0** | Hypothetical reference digital path for systems in the mobile-satellite service using feeder links | NOC |  |
| **M.828-2** | Definition of availability for radiocommunication circuits in the mobile-satellite service | NOC |  |
| **M.830-1** | Operational procedures for mobile-satellite networks or systems in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz which are used for distress and safety purposes as specified for the GMDSS | NOC |  |
| **M.1037-0** | Bit error performance objectives for aeronautical mobile-satellite (R) service (AMS(R)S) radio link | NOC |  |
| **M.1038-0** | Efficient use of the geostationary-satellite orbit and spectrum in the 1‑3 GHz frequency range by mobile-satellite systems | NOC |  |
| **M.1039-3** | Co-frequency sharing between stations in the mobile service below 1 GHz and mobile earth stations of non-geostationary mobile-satellite systems (Earth-space) using frequency division multiple access (FDMA) | NOC |  |
| **M.1086-1** | Determination of the need for coordination between geostationary mobile satellite networks sharing the same frequency bands | NOC |  |
| **M.1089-1** | Technical considerations for the coordination of mobile-satellite systems relating to the aeronautical mobile satellite (R) service (AMS(R)S) in the bands 1 545 to 1 555 MHz and 1 646.5 to 1 656.5 MHz | NOC |  |
| **M.1090-0** | Frequency plans for satellite transmission of single channel per carrier (SCPC) carriers using non-linear transponders in the mobile-satellite service | NOC |  |
| **M.1091-0** | Reference off-axis radiation patterns for mobile earth station antennas operating in the land mobile-satellite service in the frequency range 1 to 3 GHz | NOC |  |
| **M.1141-2** | Sharing in the 1-3 GHz frequency range between non-geostationary space stations operating in the mobile-satellite service and stations in the fixed service | NOC |  |
| **M.1142-2** | Sharing in the 1-3 GHz frequency range between geostationary space stations operating in the mobile-satellite service and stations in the fixed service | NOC |  |
| **M.1143-3** | System specific methodology for coordination of non-geostationary space stations (space-to-Earth) operating in the mobile-satellite service with the fixed service | NOC |  |
| **M.1167-0** | Framework for the satellite component of International Mobile Telecommunications-2000 (IMT-2000) | NOC |  |
| **M.1180-0** | Availability of communication circuits in the aeronautical mobile satellite (R) services (AMS(R)S) | NOC |  |
| **M.1181-0** | Minimum performance objectives for narrow-band digital channels using geostationary satellites to serve transportable and vehicular mobile earth stations in the 1-3 GHz range, not forming part of the ISDN | NOC |  |
| **M.1182-1** | Integration of terrestrial and satellite mobile communication systems | NOC |  |
| **M.1183-0** | Permissible levels of interference in a digital channel of a geostationary network in mobile-satellite service in 1-3 GHz caused by other networks of this service and fixed-satellite service | NOC |  |
| **M.1184-2** | Technical characteristics of mobile satellite systems in the frequency bands below 3 GHz for use in developing criteria for sharing between the mobile-satellite service (MSS) and other services | NOC |  |
| **M.1186-1** | Technical considerations for the coordination between mobile-satellite service networks utilizing code division multiple access and other spread spectrum techniques in the 1-3 GHz band | NOC |  |
| **M.1187-1** | A method for the calculation of the potentially affected region for a mobile-satellite service network in the 1-3 GHz range using circular orbits | NOC |  |
| **M.1188-1** | Impact of propagation on the design of non-GSO mobile-satellite systems not employing satellite diversity which provide service to handheld equipment | NOC |  |
| **M.1228-0** | Methodology for determining performance objectives for narrow-band channels in mobile satellite systems using geostationary satellites not forming part of the ISDN | NOC |  |
| **M.1229-0** | Performance objectives for the digital aeronautical mobile-satellite service (AMSS) channels operating in the bands 1 525 to 1 559 MHz and 1 626.5 to 1 660.5 MHz not forming part of the ISDN | NOC |  |
| **M.1230-0** | Performance objectives for space-to-Earth links operating in the mobile-satellite service with non-geostationary satellites in the 137‑138 MHz band | NOC |  |
| **M.1231-0** | Interference criteria for space-to-Earth links operating in the mobile-satellite service with non-geostationary satellites in the 137-138 MHz band | NOC |  |
| **M.1232-0** | Sharing criteria for space-to-Earth links operating in the mobile-satellite service with non-geostationary satellites in the 137-138 MHz band | NOC |  |
| **M.1233-1** | Technical considerations for sharing satellite network resources between the mobile-satellite service (MSS) (other than the aeronautical mobile-satellite (R) service (AMS(R)S)) and AMS(R)S | NOC |  |
| **M.1234-1** | Permissible level of interference in a digital channel of a geostationary satellite network in the aeronautical mobile-satellite (R) service (AMS(R)S) in the bands 1 545 to 1 555 MHz and 1 646.5 to 1 656.5 MHz and its associated feeder links caused by other networks of this service and the fixed-satellite service | NOC |  |
| **M.1315-0** | Methodology for evaluating interference from narrow-band mobile-satellite networks to spread-spectrum direct-sequence mobile-satellite networks operating with space stations in low-Earth orbit at frequencies below 1 GHz | NOC |  |
| **M.1316-1** | Principles and a methodology for frequency sharing in the 1 610.6‑1 613.8 MHz and 1 660-1 660.5 MHz bands between the mobile-satellite service (Earth-to-space) and the radio astronomy service | NOC |  |
| **M.1318-1** | Evaluation model for continuous interference from radio sources other than in the radionavigation-satellite service to the radionavigation-satellite service systems and networks operating in the 1 164‑1 215 MHz, 1 215-1 300 MHz, 1 559-1 610 MHz and 5 010‑5 030 MHz bands | NOC |  |
| **M.1319-3** | The basis of a methodology to assess the impact of interference from a time division multiple access/frequency division multiple access (TDMA/FDMA) mobile-satellite service (MSS) space-to-Earth transmissions on the performance of line-of-sight fixed service receivers in the frequency range 1-3 GHz | NOC |  |
| **M.1343-1** | Essential technical requirements of mobile earth stations for global non-geostationary mobile satellite service systems in the bands 1‑3 GHz | NOC |  |
| **M.1389-0** | Methods for achieving coordinated use of spectrum by multiple non-geostationary mobile-satellite service systems below 1 GHz and sharing with other services in existing mobile-satellite service allocations | NOC |  |
| **M.1391-1** | Methodology for the calculation of IMT-2000 satellite spectrum requirements | NOC |  |
| **M.1454-0** | E.i.r.p. density limit and operational restrictions for RLANs or other wireless access transmitters in order to ensure the protection of feeder links of non-geostationary systems in the mobile-satellite service in the frequency band 5 150-5 250 MHz | NOC |  |
| **M.1459-0** | Protection criteria for telemetry systems in the aeronautical mobile service and mitigation techniques to facilitate sharing with geostationary broadcasting-satellite and mobile-satellite services in the frequency bands 1 452-1 525 MHz and 2 310-2 360 MHz | NOC |  |
| **M.1469-2** | Methodology for evaluating potential for interference from time division multiple access/frequency division multiple access (TDMA/FDMA) mobile-satellite service (MSS) Earth-to-space transmissions into line-of-sight (LoS) fixed service receivers in the frequency range 1-3 GHz | NOC |  |
| **M.1470-0** | Methodology of sharing between MSS systems (Earth-to-space) and existing RNSS systems (space-to-Earth) in frequency bands 149.9‑150.05 MHz and 399.9-400.05 MHz | NOC |  |
| **M.1471-1** | Guide to the application of the methodologies to facilitate coordination and use of frequency bands shared between the mobile-satellite service and the fixed service in the frequency range 1-3 GHz | NOC |  |
| **M.1472-1** | Methodology to evaluate the impact of interference from time division multiple access/frequency division multiple access (TDMA/FDMA) mobile-satellite service (MSS) space-to-Earth transmissions on baseband performance in frequency division multiplexing-frequency modulation (FDM-FM) analogue line-of-sight (LoS) fixed service receivers in the frequency range 1-3 GHz | NOC |  |
| **M.1473-1** | Methodology to evaluate the impact of interference from time division multiple access/frequency division multiple access (TDMA/FDMA) mobile-satellite service (MSS) space-to-Earth transmissions on video baseband performance in TV-FM analogue line-of-sight fixed service receivers in the frequency range 1-3 GHz | NOC |  |
| **M.1474-1** | Methodology to evaluate the impact of interference from time division multiple access/frequency division multiple access (TDMA/FDMA) mobile-satellite service (MSS) systems on baseband performance in digital line-of-sight fixed service receivers based on statistics of radio-frequency interference in the frequency range 1-3 GHz | NOC |  |
| **M.1475-0** | Methodology for derivation of performance objectives of non-geostationary mobile-satellite service systems operating in the 1‑3 GHz band not using satellite diversity | NOC |  |
| **M.1476-0** | Performance objectives for narrow-band digital channels using geostationary satellites to serve transportable and mobile earth stations in the 1-3 GHz range forming part of the integrated services digital network | NOC |  |
| **M.1478-3** | Protection criteria for Cospas-Sarsat search and rescue instruments in the band 406-406.1 MHz | NOC |  |
| **M.1480-0** | Essential technical requirements of mobile earth stations of geostationary mobile-satellite systems that are implementing the Global mobile personal communications by satellite (GMPCS) – Memorandum of understanding arrangements in parts of the frequency band 1-3 GHz | NOC |  |
| **M.1582-0** | Method for determining coordination distances, in the 5 GHz band, between the international standard microwave landing system stations operating in the aeronautical radionavigation service and stations of the radionavigation-satellite service (Earth-to-space) | NOC |  |
| **M.1583-1** | Interference calculations between non-geostationary mobile-satellite service or radionavigation-satellite service systems and radio astronomy telescope sites | NOC |  |
| **M.1584-0** | Methodology for computation of separation distances between earth stations of the radionavigation-satellite service (Earth-to-space) and radars of the radiolocation service and the aeronautical radionavigation service in the frequency band 1 300-1 350 MHz | NOC |  |
| **M.1636-0** | Basic reference models and performance parameters of IP (Internet Protocol) packet networks transmission in the mobile-satellite service | NOC |  |
| **M.1639-1** | Protection criterion for the aeronautical radionavigation service with respect to aggregate emissions from space stations in the radionavigation-satellite service in the band 1 164-1 215 MHz | NOC |  |
| **M.1642-2** | Methodology for assessing the maximum aggregate equivalent power flux-density at an aeronautical radionavigation service station from all radionavigation-satellite service systems operating in the 1 164-1 215 MHz band | NOC |  |
| **M.1643-0** | Technical and operational requirements for aircraft earth stations of the aeronautical mobile-satellite service including those using fixed-satellite service networks operating in the band 14-14.5 GHz (Earth‑to‑space) | NOC |  |
| **M.1645-0** | Framework and overall objectives of the future development of IMT‑2000 and systems beyond IMT-2000 | NOC |  |
| **M.1654-0** | A methodology to assess interference from BSS (sound) into terrestrial IMT-2000 systems intending to use the band 2 630-2 655 MHz | NOC |  |
| **M.1731-2** | Protection criteria for Cospas-Sarsat local user terminals in the band 1 544-1 545 MHz | NOC |  |
| **M.1741-0** | Methodology for deriving performance objectives and its optimization for IP packet applications in the mobile-satellite service | NOC |  |
| **M.1747-0** | Protection of the Earth exploration-satellite service (EESS) (passive) in the band 1 400-1 427 MHz from unwanted emissions of MSS feeder links that may operate in the bands 1 390-1 392 MHz (Earth-to-space) and 1 430-1 432 MHz (space-to-Earth) | NOC |  |
| **M.1748-0** | Protection of the radio astronomy service in the band 1 400-1 427 MHz from unwanted emissions of MSS feeder links that may operate in the bands 1 390-1 392 MHz (Earth-to-space) and 1 430-1 432 MHz (space-to-Earth) | NOC |  |
| **M.1787-2** | Description of systems and networks in the radionavigation-satellite service (space-to-Earth and space-to-space) and technical characteristics of transmitting space stations operating in the bands 1 164-1 215 MHz, 1 215-1 300 MHz and 1 559-1 610 MHz | NOC |  |
| **M.1799-0** | Sharing between the mobile service and the mobile-satellite service in the band 1 668.4-1 675 MHz | NOC |  |
| **M.1800-0** | Protection of the fixed, mobile and radiolocation services from MSS feeder links that may operate in the bands 1 390-1 392 MHz (Earth-to-space) and 1 430-1 432 MHz (space-to-Earth) | NOC |  |
| **M.1831-1** | A coordination methodology for RNSS inter-system interference estimation | NOC |  |
| **M.1850-2** | Detailed specifications of the radio interfaces for the satellite component of International Mobile Telecommunications-2000 (IMT‑2000) | NOC |  |
| **M.1854-1** | Use of mobile-satellite service in disaster response and relief | NOC |  |
| **M.1901-1** | Guidance on ITU-R Recommendations related to systems and networks in the radionavigation-satellite service operating in the frequency bands 1 164-1 215 MHz, 1 215-1 300 MHz, 1 559‑1 610 MHz, 5 000-5 010 MHz and 5 010-5 030 MHz | NOC |  |
| **M.1902-0** | Characteristics and protection criteria for receiving earth stations in the radionavigation-satellite service (space-to-Earth) operating in the band 1 215-1 300 MHz | NOC |  |
| **M.1903-0** | Characteristics and protection criteria for receiving earth stations in the radionavigation-satellite service (space-to-Earth) and receivers in the aeronautical radionavigation service operating in the band 1 559‑1 610 MHz | NOC |  |
| **M.1904-0** | Characteristics, performance requirements and protection criteria for receiving stations of the radionavigation-satellite service (space‑to‑space) operating in the frequency bands 1 164-1 215 MHz, 1 215-1 300 MHz and 1 559-1 610 MHz | NOC |  |
| **M.1905-0** | Characteristics and protection criteria for receiving earth stations in the radionavigation-satellite service (space-to-Earth) operating in the band 1 164-1 215 MHz | NOC |  |
| **M.1906-1** | Characteristics and protection criteria of receiving space stations and characteristics of transmitting earth stations in the radionavigation-satellite service (Earth-to-space) operating in the band 5 000‑5 010 MHz | NOC |  |
| **M.2014-1** | Global circulation of IMT satellite terminals | NOC |  |
| **M.2030-0** | Evaluation method for pulsed interference from relevant radio sources other than in the radionavigation-satellite service to the radionavigation-satellite service systems and networks operating in the 1 164-1 215 MHz, 1 215-1 300 MHz and 1 559-1 610 MHz frequency bands | NOC |  |
| **M.2031-1** | Characteristics and protection criteria of receiving earth stations and characteristics of transmitting space stations of the radionavigation-satellite service (space-to-Earth) operating in the band 5 010‑5 030 MHz | NOC |  |
| **M.2046-0** | Characteristics and protection criteria for non-geostationary mobile-satellite service systems operating in the band 399.9-400.05 MHz | NOC |  |
| **M.2047-0** | Detailed specifications of the satellite radio interfaces of International Mobile Telecommunications-Advanced (IMT‑Advanced) | NOC |  |
|  | Draft new Recommendation ITU-R M.[AMS(R)S.METHODOLOGY]-0 – Methodology to calculate spectrum requirements within the frequency bands 1 545-1 555 MHz (space-to-Earth) and 1 646.5-1 656.5 MHz (Earth-to-space) for aeronautical mobile-satellite (R) service communications related to the priority categories 1 to 6 of Article 44 of the Radio Regulations | ADD | See Doc. 4/1005 |
|  | Draft new Recommendation ITU-R M.[MSS-RDSS-SHARE] – Coordination of the mobile-satellite service and the radiodetermination-satellite service with the fixed service based on the power flux-density coordination trigger levels in the 2 483.5‑2 500 MHz band | UNA | CACE/753 proposes ADD |

Fixed-satellite service

| Rec.  ITU-R | Recommendation title | Action  by RA‑15 | Comments |
| --- | --- | --- | --- |
| **S.354-2** | Video bandwidth and permissible noise level in the hypothetical reference circuit for the fixed-satellite service | NOC |  |
| **S.446-4** | Carrier energy dispersal for systems employing angle modulation by analogue signals or digital modulation in the fixed-satellite service | NOC |  |
| **S.465-6** | Reference radiation pattern for earth station antennas in the fixed-satellite service for use in coordination and interference assessment in the frequency range from 2 to 31 GHz | NOC |  |
| **S.466-6** | Maximum permissible level of interference in a telephone channel of a geostationary-satellite network in the fixed-satellite service employing frequency modulation with frequency-division multiplex, caused by other networks of this service | NOC |  |
| **S.483-3** | Maximum permissible level of interference in a television channel of a geostationary-satellite network in the fixed-satellite service employing frequency modulation, caused by other networks of this service | NOC |  |
| **S.484-3** | Station-keeping in longitude of geostationary satellites in the fixed-satellite service | NOC |  |
| **S.521-4** | Hypothetical reference digital paths for systems using digital transmission in the fixed-satellite service | NOC |  |
| **S.522-5** | Allowable bit error ratios at the output of the hypothetical reference digital path for systems in the fixed-satellite service using pulse-code modulation for telephony | NOC |  |
| **S.523-4** | Maximum permissible levels of interference in a geostationary-satellite network in the fixed-satellite service using 8-bit PCM encoded telephony, caused by other networks of this service | NOC |  |
| **S.524-9** | Maximum permissible levels of off-axis e.i.r.p. density from earth stations in geostationary-satellite orbit networks operating in the fixed-satellite service transmitting in the 6 GHz, 13 GHz, 14 GHz and 30 GHz frequency bands | NOC |  |
| **S.579-6** | Availability objectives for hypothetical reference circuits and hypothetical reference digital paths when used for telephony using pulse code modulation, or as part of an integrated services digital network hypothetical reference connection, in the fixed-satellite service operating below 15 GHz | NOC |  |
| **S.580-6** | Radiation diagrams for use as design objectives for antennas of earth stations operating with geostationary satellites | NOC |  |
| **S.614-4** | Allowable error performance for a satellite hypothetical reference digital path in the fixed-satellite service operating below 15 GHz when forming part of an international connection in an integrated services digital network | NOC |  |
| **S.670-1** | Flexibility in the positioning of satellites as a design objective | NOC |  |
| **S.671-3** | Necessary protection ratios for narrow-band single channel-per-carrier transmissions interfered with by analogue television carriers | NOC |  |
| **S.672-4** | Satellite antenna radiation pattern for use as a design objective in the fixed-satellite service employing geostationary satellites | NOC |  |
| **S.673-2** | Terms and definitions relating to space radiocommunications | NOC |  |
| **S.725-0** | Technical characteristics for very small aperture terminals (VSATs) | NOC |  |
| **S.726-1** | Maximum permissible level of spurious emissions from very small aperture terminals (VSATs) | NOC |  |
| **S.728-1** | Maximum permissible level of off-axis e.i.r.p. density from very small aperture terminals (VSATs) | NOC |  |
| **S.729-0** | Control and monitoring function of very small aperture terminals (VSATs) | NOC |  |
| **S.730-0** | Compensation of the effects of switching discontinuities for voice band data and of doppler frequency-shifts in the fixed‑satellite service | NOC |  |
| **S.731-1** | Reference earth-station cross-polarized radiation pattern for use in frequency coordination and interference assessment in the frequency range from 2 to about 30 GHz | NOC |  |
| **S.732-1** | Method for statistical processing of earth-station antenna side-lobe peaks to determine excess over antenna reference patterns and conditions for acceptability of any excess | NOC |  |
| **S.733-2** | Determination of the G/T ratio for earth stations operating in the fixed-satellite service | NOC |  |
| **S.734-0** | The application of interference cancellers in the fixed-satellite service | NOC |  |
| **S.735-1** | Maximum permissible levels of interference in a geostationary-satellite network for an HRDP when forming part of the ISDN in the fixed-satellite service caused by other networks of this service below 15 GHz | NOC |  |
| **S.736-3** | Estimation of polarization discrimination in calculations of interference between geostationary-satellite networks in the fixed-satellite service | NOC |  |
| **S.737-0** | Relationship of technical coordination methods within the fixed-satellite service | NOC |  |
| **S.738-0** | Procedure for determining if coordination is required between geostationary-satellite networks sharing the same frequency bands | NOC |  |
| **S.739-0** | Additional methods for determining if detailed coordination is necessary between geostationary-satellite networks in the fixed-satellite service sharing the same frequency bands | NOC |  |
| **S.740-0** | Technical coordination methods for fixed-satellite networks | NOC |  |
| **S.741-2** | Carrier-to-interference calculations between networks in the fixed- satellite service | NOC |  |
| **S.742-1** | Spectrum utilization methodologies | NOC |  |
| **S.743-1** | The coordination between satellite networks using slightly inclined geostationary-satellite orbits (GSOs) and between such networks and satellite networks using non-inclined GSO satellites | NOC |  |
| **S.744-0** | Orbit/spectrum improvement measures for satellite networks having more than one service in one or more frequency bands | NOC |  |
| **S.1001-2** | Use of systems in the fixed-satellite service in the event of natural disasters and similar emergencies for warning and relief operations | NOC |  |
| **S.1002-0** | Orbit management techniques for the fixed-satellite service | NOC |  |
| **S.1003-2** | Environmental protection of the geostationary-satellite orbit | NOC |  |
| **S.1061-1** | Utilization of fade countermeasure strategies and techniques in the fixed-satellite service | NOC |  |
| **S.1062-4** | Allowable error performance for a satellite hypothetical reference digital path operating below 15 GHz | NOC |  |
| **S.1063-0** | Criteria for sharing between BSS feeder links and other Earth-to-space or space-to-Earth links of the FSS | NOC |  |
| **S.1064-1** | Pointing accuracy as a design objective for earthward antennas on board geostationary satellites in the fixed-satellite service | NOC |  |
| **S.1068-0** | Fixed-satellite and radiolocation/radionavigation services sharing in the band 13.75-14 GHz | NOC |  |
| **S.1069-0** | Compatibility between the fixed-satellite service and the space science services in the band 13.75-14 GHz | NOC |  |
| **S.1149-2** | Network architecture and equipment functional aspects of digital satellite systems in the fixed-satellite service forming part of synchronous digital hierarchy transport networks | NOC |  |
| **S.1150-0** | Technical criteria to be used in examinations relating to the probability of harmful interference between frequency assignments in the fixed-satellite service as required in No. 11.32A.1 of the Radio Regulations | NOC |  |
| **S.1151-0** | Sharing between the inter-satellite service involving geostationary satellites in the fixed-satellite service and the radionavigation service at 33 GHz | NOC |  |
| **S.1250-0** | Network management architecture for digital satellite systems forming part of SDH transport networks in the fixed‑satellite service | NOC |  |
| **S.1251-0** | Network management – Performance management object class definitions for satellite systems network elements forming part of SDH transport networks in the fixed-satellite service | NOC |  |
| **S.1252-0** | Network management – Payload configuration object class definitions for satellite system network elements forming part of SDH transport networks in the fixed-satellite service | NOC |  |
| **S.1253-0** | Technical options to facilitate coordination of fixed-satellite service networks in certain orbital arc segments and frequency bands | NOC |  |
| **S.1254-0** | Best practices to facilitate the coordination process of fixed-satellite service satellite networks | NOC |  |
| **S.1255-0** | Use of adaptive uplink power control to mitigate codirectional interference between geostationary satellite orbit/fixed-satellite service (GSO/FSS) networks and feeder links of non-geostationary satellite orbit/mobile-satellite service (non-GSO/MSS) networks and between GSO/FSS networks and non-GSO/FSS networks | NOC |  |
| **S.1256-0** | Methodology for determining the maximum aggregate power flux-density at the geostationary-satellite orbit in the band 6 700-7 075 MHz from feeder links of non-geostationary satellite systems in the mobile-satellite service in the space-to-Earth direction | NOC |  |
| **S.1257-3** | Analytical method to calculate short-term visibility and interference statistics for non-geostationary satellite orbit satellites as seen from a point on the Earth’s surface | NOC |  |
| **S.1323-2** | Maximum permissible levels of interference in a satellite network (GSO/FSS; non-GSO/FSS; non-GSO/MSS feeder links) in the fixed-satellite service caused by other codirectional FSS networks below 30 GHz | NOC |  |
| **S.1324-0** | Analytical method for estimating interference between non‑geostationary mobile-satellite feeder links and geostationary fixed-satellite networks operating co-frequency and codirectionally | NOC |  |
| **S.1325-3** | Simulation methodologies for determining statistics of short‑term interference between co-frequency, codirectional non-geostationary-satellite orbit fixed-satellite service systems in circular orbits and other non-geostationary fixed-satellite service systems in circular orbits or geostationary-satellite orbit fixed-satellite service networks | NOC |  |
| **S.1326-0** | Feasibility of sharing between the inter-satellite service and the fixed-satellite service in the frequency band 50.4-51.4 GHz | NOC |  |
| **S.1327-0** | Requirements and suitable bands for operation of the inter-satellite service within the range 50.2-71 GHz | NOC |  |
| **S.1328-4** | Satellite system characteristics to be considered in frequency sharing analyses within the fixed-satellite service | NOC |  |
| **S.1329-0** | Frequency sharing of the bands 19.7-20.2 GHz and 29.5-30.0 GHz between systems in the mobile-satellite service and systems in the fixed-satellite service | NOC |  |
| **S.1339-1** | Sharing between spaceborne passive sensors of the Earth exploration-satellite service and inter-satellite links of geostationary-satellite networks in the range 54.25-59.3 GHz | NOC |  |
| **S.1340-0** | Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the Earth-to-space direction in the band 15.4-15.7 GHz | NOC |  |
| **S.1341-0** | Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the space-to-Earth direction in the band 15.4-15.7 GHz and the protection of the radio astronomy service in the band 15.35‑15.4 GHz | NOC |  |
| **S.1342-0** | Method for determining coordination distances, in the 5 GHz band, between the international standard microwave landing system stations operating in the aeronautical radionavigation service and non-geostationary mobile-satellite service stations providing feeder uplink services | NOC |  |
| **S.1418-0** | Method for calculating single entry carrier-to-interference ratios for links in inter-satellite service using geostationary orbit | NOC |  |
| **S.1419-0** | Interference mitigation techniques to facilitate coordination between non-geostationary-satellite orbit mobile-satellite service feeder links and geostationary-satellite orbit fixed-satellite service networks in the bands 19.3-19.7 GHz and 29.1-29.5 GHz | NOC |  |
| **S.1420-0** | Performance for broadband integrated services digital network asynchronous transfer mode via satellite | NOC |  |
| **S.1424-0** | Availability objectives for a hypothetical reference digital path when used for the transmission of B-ISDN asynchronous transfer mode in the fixed-satellite service by geostationary orbit satellite systems using frequencies below 15 GHz | NOC |  |
| **S.1425-0** | Transmission considerations for digital carriers using higher levels of modulation on satellite circuits | NOC |  |
| **S.1426-0** | Aggregate power flux-density limits, at the FSS satellite orbit for radio local area network (RLAN) transmitters operating in the 5 150‑5 250 MHz band sharing frequencies with the FSS (RR No. 5.447A) | NOC |  |
| **S.1427-1** | Methodology and criterion to assess interference from terrestrial wireless access system/radio local area network transmitters to non-geostationary-satellite orbit mobile-satellite service feeder links in the band 5 150-5 250 MHz | NOC |  |
| **S.1428-1** | Reference FSS earth-station radiation patterns for use in interference assessment involving non-GSO satellites in frequency bands between 10.7 GHz and 30 GHz | NOC |  |
| **S.1429-0** | Error performance objectives due to internetwork interference between GSO and non-GSO FSS systems for hypothetical reference digital paths operating at or above the primary rate carried by systems using frequencies below 15 GHz | NOC |  |
| **S.1430-0** | Determination of the coordination area for earth stations operating with non-geostationary space stations with respect to earth stations operating in the reverse direction in frequency bands allocated bidirectionally to the fixed-satellite service | NOC |  |
| **S.1431-0** | Methods to enhance sharing between non-GSO FSS systems (except MSS feeder links) in the frequency bands between 10-30 GHz | NOC |  |
| **S.1432-1** | Apportionment of the allowable error performance degradations to fixed-satellite service (FSS) hypothetical reference digital paths arising from time invariant interference for systems operating below 30 GHz | NOC |  |
| **S.1433-0** | Uplink and inter-satellite equivalent power flux-density radiated by non-GSO FSS systems | NOC |  |
| **S.1503-2** | Functional description to be used in developing software tools for determining conformity of non-geostationary-satellite orbit fixed-satellite system networks with limits contained in Article 22 of the Radio Regulations | NOC |  |
| **S.1512-0** | Measurement procedure for determining non-geostationary satellite orbit satellite equivalent isotropically radiated power and antenna discrimination | NOC |  |
| **S.1521-1** | Allowable error performance for a hypothetical reference digital path based on synchronous digital hierarchy | NOC |  |
| **S.1522-1** | Impact of loss of synchronization recovery time on availability in hypothetical reference digital paths | NOC |  |
| **S.1523-0** | Methodology for performing parametric evaluation studies of interference sensitivity for geostationary-satellite orbit fixed-satellite service systems sharing spectrum in bands above 10 GHz | NOC |  |
| **S.1524-0** | Coordination identification between geostationary-satellite orbit fixed-satellite service networks | NOC |  |
| **S.1525-1** | Impact of interference from the Sun into a geostationary-satellite orbit fixed-satellite service link | NOC |  |
| **S.1526-1** | Methodology to assess the interference environment in relation to Nos. 9.12, 9.12A and 9.13 of the Radio Regulations when non‑geostationary-satellite orbit fixed-satellite service systems are involved | NOC |  |
| **S.1527-0** | Procedure for the identification of non-geostationary-satellite orbit satellites causing interference into an operating geostationary-satellite orbit earth station | NOC |  |
| **S.1528-0** | Satellite antenna radiation patterns for non-geostationary orbit satellite antennas operating in the fixed-satellite service below 30 GHz | NOC |  |
| **S.1529-0** | Analytical method for determining the statistics of interference between non-geostationary-satellite orbit fixed-satellite service systems and other non-geostationary-satellite orbit fixed-satellite service systems or geostationary-satellite orbit fixed-satellite service networks | NOC |  |
| **S.1553-0** | A possible method to account for environmental and other effects on satellite antenna patterns | NOC |  |
| **S.1554-0** | Methodology for determining the overall accuracy of epfd↓ measurements | NOC |  |
| **S.1555-0** | Aggregate interference levels between closely spaced dual circularly and dual linearly polarized geostationary-satellite networks in the fixed-satellite service operating in the 6/4 GHz frequency bands | NOC |  |
| **S.1556-0** | Methodology to determine the epfd↓ level corresponding to the loss of synchronization in geostationary fixed satellite service networks caused by interference from non-geostationary-satellite systems | NOC |  |
| **S.1557-0** | Operational requirements and characteristics of fixed-satellite service systems operating in the 50/40 GHz bands for use in sharing studies between the fixed-satellite service and the fixed service | NOC |  |
| **S.1558-0** | Methodologies for measuring epfd↓ caused by a non-geostationary-satellite orbit space station to verify compliance with operational epfd↓ limits | NOC |  |
| **S.1559-0** | Methodology for computing the geographical distribution of maximum downlink equivalent power flux-density levels generated by non‑geostationary fixed-satellite service systems using circular orbits | NOC |  |
| **S.1560-0** | Methodology for the calculation of the worst-case interference levels from a particular type of non-geostationary fixed-satellite service system using highly-elliptical orbits into geostationary fixed-satellite service satellite networks operating in the 4/6 GHz frequency bands | NOC |  |
| **S.1586-1** | Calculation of unwanted emission levels produced by a non-geostationary fixed-satellite service system at radio astronomy sites | NOC |  |
| **S.1587-3** | Technical characteristics of earth stations on board vessels communicating with FSS satellites in the frequency bands 5 925‑6 425 MHz and 14-14.5 GHz which are allocated to the fixed-satellite service | NOC |  |
| **S.1588-0** | Methodologies for calculating aggregate downlink equivalent power flux-density produced by multiple non-geostationary fixed-satellite service systems into a geostationary fixed-satellite service network | NOC |  |
| **S.1589-0** | Continuous curves of epfd↓ versus geostationary fixed-satellite service earth station antenna diameter and epfd↑ versus geostationary fixed-satellite service space station antenna beamwidth to indicate the protection afforded by systems complying with the limits to antennas with diameters other than those in Article 22 of the Radio Regulations | NOC |  |
| **S.1590-0** | Technical and operational characteristics of satellites operating in the range 20-375 THz | NOC |  |
| **S.1591-0** | Sharing of inter-satellite link bands around 23, 32.5 and 64.5 GHz between non-geostationary/geostationary inter-satellite links and geostationary/geostationary inter-satellite links | NOC |  |
| **S.1592-0** | Methodology to assess compliance of non-geostationary fixed-satellite service satellite systems in circular orbits with the additional operational limits on downlink equivalent power flux-density in Article 22 of the Radio Regulations | NOC |  |
| **S.1593-0** | Methodology for frequency sharing between certain types of homogeneous highly-elliptical orbit non-geostationary fixed-satellite service systems in the 4/6 GHz and 11/14 GHz frequency bands | NOC |  |
| **S.1594-0** | Maximum emission levels and associated requirements of high density fixed-satellite service earth stations transmitting towards geostationary fixed-satellite service space stations in the 30 GHz range | NOC |  |
| **S.1595-0** | Interference mitigation techniques to facilitate coordination between non-geostationary fixed-satellite service systems in highly elliptical orbit and non‑geostationary fixed-satellite service systems in low and medium earth orbit | NOC |  |
| **S.1647-0** | Methodology to determine the worst-case interference among certain types of non-GSO FSS systems in situations where no in-line interference exists | NOC |  |
| **S.1655-0** | Interference mitigation techniques and frequency sharing in the bands 37.5-42.5 GHz and 47.2-50.2 GHz between geostationary-satellite fixed-satellite service networks and non-geostationary-satellite fixed-satellite service systems | NOC |  |
| **S.1656-0** | Outline of a software specification for automating the examination of satellite network filings for compliance with Article 5 of the Radio Regulations | NOC |  |
| **S.1672-0** | Guidelines to be used in the event of non-compliance with single-entry operational and/or additional operational limits in Section II of Article 22 of the Radio Regulations | NOC |  |
| **S.1673-1** | Methodologies for the calculation of the worst-case interference levels from non-geostationary HEO-type fixed-satellite service system into geostationary fixed-satellite service satellite networks operating in the 10 to 30 GHz frequency bands | NOC |  |
| **S.1709-1** | Technical characteristics of air interfaces of global broadband satellite systems | NOC |  |
| **S.1711-1** | Performance enhancements of transmission control protocol over satellite networks | NOC |  |
| **S.1712-0** | Methodologies for determining whether an FSS earth station at a given location could transmit in the band 13.75-14 GHz without exceeding the pfd limits in No. 5.502 of the Radio Regulations, and guidelines to mitigate excesses | **NOC** |  |
| **S.1713-1** | Methodology to calculate the minimum separation angle at the Earth’s surface between a non-geostationary HEO-type FSS satellite in its “active” arc and a geostationary satellite | NOC |  |
| **S.1714-0** | Static methodology for calculating epfd↓ to facilitate coordination of very large antennas under Nos. 9.7A and 9.7B of the Radio Regulations | NOC |  |
| **S.1715-0** | Guidelines developed in response to the studies requested in Resolution 140 (WRC-03) | NOC |  |
| **S.1716-0** | Performance and availability objectives for fixed-satellite service telemetry, tracking and command systems | NOC |  |
| **S.1717-1** | Electronic data file format for earth station antenna patterns | NOC |  |
| **S.1718-0** | Power flux-density values in the band 11.7-12.7 GHz and associated calculation methodology which may be used when the power flux-density values in § 6 of Annex 1 to Appendix 30 of the Radio Regulations are exceeded | NOC |  |
| **S.1758-0** | Characterization of HEO-type systems in the fixed-satellite service | NOC |  |
| **S.1759-0** | Analysis of interference from HEO system space operation transmissions in FSS bands into GSO networks and corresponding guidelines to be used for designing and operating TT&C for HEO-type FSS system | NOC |  |
| **S.1779-0** | Characteristics of fixed-satellite service systems using wideband spreading signals | NOC |  |
| **S.1780-0** | Coordination between geostationary-satellite orbit fixed-satellite service networks and broadcasting-satellite service networks in the band 17.3-17.8 GHz | NOC |  |
| **S.1781-0** | Possible methodology for frequency sharing between bidirectional geostationary fixed-satellite service networks comprising ubiquitously deployed earth stations | NOC |  |
| **S.1782-0** | Possibilities for global broadband Internet access by FSS systems | NOC |  |
| **S.1783-0** | Technical and operational features characterizing high-density applications in the fixed-satellite service | NOC |  |
| **S.1806-0** | Availability objectives for hypothetical reference digital paths in the fixed-satellite service operating below 15 GHz | NOC |  |
| **S.1844-0** | Cross-polarization reference gain pattern for linearly polarized very small aperture terminals (VSATs) for frequencies in the range 2 to 31 GHz | NOC |  |
| **S.1855-0** | Alternative reference radiation pattern for earth-station antennas used with satellites in the geostationary-satellite orbit for use in coordination and/or interference assessment in the frequency range from 2 to 31 GHz | NOC |  |
| **S.1856-0** | Methodologies for determining whether an IMT station at a given location operating in the band 3 400-3 600 MHz would transmit without exceeding the power flux-density limits in Nos. 5.430A, 5.432A, 5.432B and 5.433A of the Radio Regulations | NOC |  |
| **S.1857-0** | Methodologies to estimate the off-axis e.i.r.p. density levels and to assess the interference towards adjacent satellites resulting from pointing errors of vehicle-mounted earth stations in the 14 GHz frequency band | NOC |  |
| **S.1878-0** | Multi-carrier based transmission techniques for satellite systems | NOC |  |
| **S.1897-0** | Cross-layer QoS provisioning in IP-based hybrid satellite-terrestrial networks | NOC |  |
| **S.1899-0** | Protection criteria and interference assessment methods for non-GSO inter-satellite links in the 23.183-23.377 GHz band with respect to the space research service | NOC |  |
| **S.2029-0** | Statistical methodology to assess time-varying interference produced by a geostationary fixed-satellite service network of earth stations operating with MF-TDMA schemes to geostationary fixed-satellite service networks | NOC |  |
| **S.2049-0** | **Access procedures for fixed-satellite service occasional use, transmissions to geostationary-satellite orbit space stations, in the 4/6 GHz and 11-12/13/14 GHz FSS bands** | NOC |  |
| **S.2062-0** | **Carrier identification system for digital-modulation transmissions of fixed-satellite service occasional use carrier earth station transmissions** using geostationary-satellite networks in the 4/6 GHz and 11‑12/13/14 GHz FSS bands | NOC |  |

Frequency sharing between the fixed-satellite and the fixed services

| Rec. ITU-R | Recommendation title | Action  by RA‑15 | Comments |
| --- | --- | --- | --- |
| **SF.674-3** | Determination of the impact on the fixed service operating in the 11.7‑12.2 GHz band when geostationary fixed-satellite service networks in Region 2 exceed power flux-density thresholds for coordination | NOC |  |
| **SF.675-4** | Calculation of the maximum power density (averaged over 4 kHz or 1 MHz) of angle-modulated and digital carriers | NOC |  |
| **SF.765-1** | Intersection of radio-relay antenna beams with orbits used by space stations in the fixed-satellite service | NOC |  |
| **SF.766-0** | Methods for determining the effects of interference on the performance and the availability of terrestrial radio-relay systems and systems in the fixed-satellite service | NOC |  |
| **SF.1006-0** | Determination of the interference potential between earth stations of the fixed-satellite service and stations in the fixed service | NOC |  |
| **SF.1395-0** | Minimum propagation attenuation due to atmospheric gases for use in frequency sharing studies between the fixed-satellite service and the fixed service | NOC |  |
| **SF.1482-0** | Maximum allowable values of power flux-density (pfd) produced at the Earth’s surface by non-GSO satellites in the fixed-satellite service (FSS) operating in the 10.7-12.75 GHz band | NOC |  |
| **SF.1483-0** | Maximum allowable values of power flux-density (pfd) produced at the Earth’s surface by non-GSO satellites in the fixed-satellite service (FSS) operating in the 17.7-19.3 GHz band | NOC |  |
| **SF.1485-0** | Determination of the coordination area for earth stations operating with non-geostationary space stations in the fixed-satellite service in frequency bands shared with the fixed service | NOC |  |
| **SF.1486-0** | Sharing methodology between fixed wireless access systems in the fixed service and very small aperture terminals in the fixed-satellite service in the 3 400-3 700 MHz band | NOC |  |
| **SF.1572-0** | Methodology to evaluate the impact of space-to-Earth interference from the fixed-satellite service to the fixed service in frequency bands where precipitation is the predominant fade mechanism | NOC |  |
| **SF.1585-0** | Example approach for determination of the composite area within which interference to fixed service stations from earth stations on board vessels when operating in motion near a coastline would need to be evaluated | NOC |  |
| **SF.1601-2** | Methodologies for interference evaluation from the downlink of the fixed service using high altitude platform stations to the uplink of the fixed-satellite service using the geostationary satellites within the band 27.5-28.35 GHz | NOC |  |
| **SF.1602-0** | Methodology for determining power flux-density statistics for use in sharing studies between fixed wireless systems and multiple fixed-satellite service satellites | NOC |  |
| **SF.1648-0** | Use of frequencies by earth stations on board vessels transmitting in certain bands allocated to the fixed-satellite service | NOC |  |
| **SF.1649-1** | Guidance for determination of interference from earth stations on board vessels to stations in the fixed service when the earth station on board vessels is within the minimum distance | NOC |  |
| **SF.1650-1** | The minimum distance from the baseline beyond which in-motion earth stations located on board vessels would not cause unacceptable interference to the terrestrial service in the bands 5 925-6 425 MHz and 14-14.5 GHz | NOC |  |
| **SF.1707-0** | Methods to facilitate the implementation of large numbers of earth stations in the FSS in areas where terrestrial services are also deployed | NOC |  |
| **SF.1719-0** | Sharing between point-to-point and point-to-multipoint fixed service and transmitting earth stations of GSO and non-GSO FSS systems in the 27.5-29.5 GHz band | NOC |  |
| **SF.1843-0** | Methodology for determining the power level for high altitude platform stations ground terminals to facilitate sharing with space station receivers in the bands 47.2-47.5 GHz and 47.9-48.2 GHz | NOC |  |

Satellite news gathering

| Rec. ITU-R | Recommendation title | Action  by RA‑15 | Comments |
| --- | --- | --- | --- |
| **SNG.722-1** | Uniform technical standards (analogue) for satellite news gathering (SNG) | NOC |  |
| **SNG.770-2** | Uniform operational procedures for digital satellite news gathering (DSNG) | NOC |  |
| **SNG.771-1** | Auxiliary coordination satellite circuits for SNG terminals | NOC |  |
| **SNG.1007-1** | Uniform technical standards (digital) for satellite news gathering (SNG) | NOC |  |
| **SNG.1070-0** | An automatic transmitter identification system (ATIS) for analogue-modulation transmissions for satellite news gathering and outside broadcasts | NOC |  |
| **SNG.1152-0** | Use of digital transmission techniques for Satellite News Gathering (SNG) (sound) | NOC |  |
| **SNG.1421-0** | Common operating parameters to ensure interoperability for transmission of digital television news gathering | NOC |  |
| **SNG.1561-0** | Digital transmission of high-definition television for satellite news gathering and outside broadcasting | NOC |  |
| **SNG.1710-0** | Satellite news gathering carriers universal access procedures | NOC |  |

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