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|  | **Revision 1 to****Document RAG/58-E** |
| **24 April 2023** |
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| Director, Radiocommunication Bureau |
| report TO the tHIRTIETH meeting of the radiocommunication advisory group |

# 1 Introduction

This document provides status reports and information on some of the issues that appear on the draft agenda for the 30th meeting of RAG (see [CA/264](https://www.itu.int/md/R00-CA-CIR-0264/en)). This document is intended to assist the meeting in considering the relevant agenda items.

Separate reports will be submitted for some of the agenda items.

# 2 ITU-R Governance

# 2.1 2022 ITU Plenipotentiary (PP-22) Results

PP-22 elected the senior management team of the organization, the Member States of the [Council](http://www.itu.int/en/council/Pages/overview.aspx), and the twelve members of the [Radio Regulations Board](http://www.itu.int/ITU-R/index.asp?category=conferences&link=rrb&lang=en).

It also set the Union’s policies in various areas, including the Union’s strategic and financial plans, through new and revision of existing resolutions and decisions.

The Plenipotentiary has approved a set of new and revised some existing Resolutions related to the Radiocommunication Sector:

* Resolution 25, on strengthening the ITU regional presence,
* Resolution 71, on the strategic plan for the Union for 2024-2027,
* Resolution 119, on methods to improve the efficiency and effectiveness of the Radio Regulations Board,
* Resolution 136, on use of telecommunications/ICTs for humanitarian assistance and for monitoring and management in emergency and disaster situations, including health-related emergencies, for early warning, prevention, mitigation and relief,
* Resolution 137, on deployment of future networks in developing countries,
* Resolution 139, on use of telecommunications/ICTs to bridge the digital divide and build an inclusive information society,
* Resolution 154, on use of the six official languages of the Union on an equal footing,
* Resolution 170, on admission of sector members from developing countries to participate in the work of the ITU Radiocommunication Sector and the ITU Telecommunication Standardization Sector,
* Resolution 176, on human exposure to electromagnetic fields,
* Resolution 182, on the role of telecommunications/ICTs in regard to climate change and the protection of the environment,
* Resolution 186, on strengthening the role of ITU with regard to transparency and confidence-building measure in outer space activities,
* Resolution 191, on the strategy for the coordination of efforts among the three sectors of the union,
* Resolution 197, on facilitating the Internet of Things and smart sustainable cities and communities,
* Resolution 203, on connectivity to broadband networks,
* Resolution 208, on the appointment and maximum term of office for chairman and vice-chairmen of Sector advisory groups, study groups and other groups,
* New Resolution 216 on the use of frequency assignments by military radio installations for national defence services,
* New Resolution 218, on ITU’s role in the implementation of the “Space2030” Agenda: space as a driver of sustainable development, and its follow-up and review process,
* New Resolution 219, on the sustainability of radio-frequency spectrum and associated satellite orbit resources used by space services.

# 2.2 Council issues

 This section covers issues addressed by the 2022 session of Council (see: <https://www.itu.int/en/council/2021/Pages/default.aspx>).

## 2.2.1 Free on-line access to ITU-R Publications

ITU continues to publish flagship and various other publications in both print and digital/electronic versions. By Decision 12 (Guadalajara, 2010), PP-10 adopted a free online access policy to include, inter alia, ITU R Recommendations and Reports. This policy was expanded by Council 2012 Decision 571, revised by Council 2013 and 2014 and confirmed by PP-14 revised Decision 12, which provides free online access for the general public, permanently. Many publications were added to the free online access to disseminate information and reach out to a wider general public. These include major publications such as the Radio Regulations, Rules of Procedure, Recommendations, Basic Texts of the Union, WCIT Final Acts, Council Resolutions and Decisions, and ITU Handbooks, resulting in only Maritime Service Publications and a few other titles still for sale.

Furthermore, in response to requests from Member States, in particular developing countries, in January 2017 the free access policy has been extended by the BR Director to include all ITU-R Handbooks.

The impact of these Decisions is well reflected by the large number of downloads of these publications, as indicated in Section 8.1.4.

## 2.2.2 Cost recovery for satellite network filings

At its 2022 session held from 21 to 31 March 2022, Council took note of the annual report on the implementation of Decision 482 (see [Document C22/16](https://www.itu.int/md/S22-CL-C-0016/en)).

It was also indicated to Council that the Bureau will undertake a study and submit to the 2023 session of Council an assessment on whether further revisions to Decision 482 should be considered.

At its April 2022 meeting, the RAG advised the Director, in doing this assessment, to take into account the actual costs of all staff involved in various departments and divisions of the Radiocommunication Bureau, as well as other costs (direct and indirect) of other parts of the ITU.

This assessment is currently under development within the ITU secretariat and will be submitted in due time to the 2023 session of the Council, scheduled to take place from 11 to 21 July 2023.

## 2.2.3 Budget for 2022 - 2023 and draft budget for 2024 - 2025 periods

The biennial budget for 2022-2023, as adopted in Council Resolution 1405 is shown below.



The amount of the contributory unit to be paid by Member States of CHF 318,000 was retained by PP-22 resulting in zero nominal growth since 2016. Expenses and revenue are balanced normally without any withdrawal from the Reserve Account. In anticipation of a deficit in the 2022 budget implementation, the 2023 Extraordinary Session of the Council adopted Resolution 1412 authorizing *“that an amount of up to CHF 700K may be withdrawn from the Reserve Account to be used by the Secretary-General if at the end of the year there remains a deficit in the 2022 budget implementation.”*

As in previous budgets, a five per cent vacancy rate has been applied in 2023 which imposes a need for recruitment delays, part-time service and leave without pay.The implementation of the five percent vacancy rate continues to pose a significant challenge in the management of BR activities because newly vacant positions of recently retired staff have been frozen and the recruitment process for other vacant posts has been delayed or deferred. The budget for 2022-2023 was based on the programme of activities of the Union, which includes the holding of the 2023 World Radiocommunication Conference (WRC-23).

The draft biennial budget for 2024-2025 will be presented to the 2023 Council for its adoption. As of this report, the ITU’s draft budget for 2024-2025 that will be presented Council will not fully address the BR’s financial needs.

## 2.2.4 Use of the six official languages of the Union on an equal footing

The 2022 ITU Plenipotentiary (PP-22) Conference adopted Resolution 154 (Rev. Bucharest, 2022) which addresses the use of the six official languages of the Union. This resolution calls on the ITU to continue to take all necessary measures to ensure the use of the six official languages of the Union on an equal footing and to provide interpretation and the translation of ITU documentation while noting that some work in ITU (for example working parties, regional conferences) might not require the use of all official languages.

Resolution 154 (Rev. Bucharest, 2022) instructs the ITU Secretary-General, in close collaboration with the Directors of the Bureaux, to annually report to Council and to the Council Working Group on Languages (CWG-Lang) on a variety of measures to support multilingualism in the ITU. Additionally, it instructs them to:

* to publish all contributions submitted to the ITU secretariat for any ITU event in their original language on the respective event website as soon as possible, but in any event not later than three working days after they were received, and even before their translation into the other official languages of the Union;
* to intensify work on harmonization of the websites of the ITU Sectors and the General Secretariat in all the official languages of the Union to ensure clarity and ease of navigation and to achieve the image of One ITU;
* to support the incorporation of multilingualism in communications and knowledge exchange, paying particular attention to multilingual content on official websites and social media accounts around the world;
* to provide timely updates of the pages of the ITU website in all six languages of the Union;
* to provide all necessary information and support to ITU CCT;
* to collect all new terms and definitions proposed by ITU study groups in consultation with ITU CCT, enter them in ITU's online database for such terms and definitions, and improve the search facilities of the database based upon time ranges;
* to monitor the quality of interpretation and translation and the associated expenditures;
* to continue to translate ITU policy documents and other documents providing guidance on intellectual property rights in ITU;
* to continue to explore all possible options for the provision of interpretation and translation of existing ITU documentation to promote the use of the six official languages of the Union on an equal footing during official meetings of ITU;
* to continue to collaborate with interested Member States and, to the extent practicable, to refine the translation of terminology and definitions in all six official languages,

Implementation of this resolution will be led by the Intersectoral Group on Multilingualism (IGM) which was initially set up by the 2022 Council to draft the Policy Framework on Multilingualism. This group is now responsible for developing the Administrative and Operational Guidelines for the implementation of the policy on multilingualism, as requested by Council and to ensure that the revisions at Res 154 are implemented. The main activities within the group are:

* Development of Administrative and Operational Guidelines for the implementation of the Policy framework on multilingualism
* Enhanced and harmonized the role of the Coordination Committee for Terminology
* Increasing website content available in all six languages – establishing harmonized policy on the levels of pages/types of pages/types of translation (human vs machine) across all sectors
* Reporting to Council on the implementation of Res. 154 on the above instructions

Resolution 154 (Rev. Bucharest, 2022) also instructs the Sector Advisory Groups to review annually the use of all official languages of the Union on an equal footing in ITU publications and on ITU websites.

# 3 Implementation of WRC-19 decisions

### 3.1 Software development to implement WRC-19 decisions

The BR is finalizing software design and development to implement WRC-19 decisions.

The following presents a summary of the main tasks finalized since the last report or remaining to be finalized.

### 3.1.1 Implementation of WRC-19 decisions relating to terrestrial services:

Development of the software modules for processing HAPS notifications (validation, examination, and publication tools) continued during the reporting period. This task also comprises the development of calculation modules for checking technical conditions specified in Resolutions **122 (Rev.WRC-19)**, **145** **(Rev.WRC-19)**, **165 (WRC-19)**, **166 (WRC-19)**, **167 (WRC-19)**, and **168 (WRC-19)**, as well as the corresponding changes in the database and filing structure.

Development of the examination software for the identification of affected administrations using digital elevation models (DEM) for several frequency bands and services continued during the reporting period.

### 3.1.2 Implementation of WRC-19 decisions relating to space services:

In 2022, the BR finalized the implementation of database and software changes to satisfy WRC-19 decisions relating to space services, as explained in CR/493. The changes were presented in detail at the WRS-22 and were released on IFIC 2985 (29 November 2022) as version 9.1 of BR Space Software. A partial list of changes to space service software related to WRC-19 implementation in 2022 includes:

* Delivery of a tool to assist administrations in communicating to the Bureau the coordination status with respect to affected administrations at first notification and resubmission of notification (in SpaceCap, BR-SIS, e-Submission, SpacePub, and in BR internal processing) (as described in section 7.3.3);

### 3.2 Other actions to implement WRC-19 decisions

In compliance with No. **11.50**, the Bureau contacted notifying administrations to initiate the review of findings of frequency assignments subject to No. **5.260A**. In this provision, WRC-19 decided to exempt certain frequency assignments from power limits until 22 November 2022.

The Bureau also contacted notifying administrations of frequency assignments subject to Resolution **771 (WRC-19)** because such assignments had to be brought into use before 23 November 2022 (or the end of the regulatory period set forth in No. **11.44**, whichever date comes earlier) or be suppressed.

# 4 Study Groups activities

This topic is presented in Addendum 1 to this document.

# 5 RA-23, WRC-23 and CPM27-1 preparations

The responsible ITUR Working Parties and Task Group 6/1 completed the development of the draft CPM texts assigned to them at the first session of CPM-23 (CPM23-1), and these were included in the draft CPM Report for consideration at the second session of CPM-23 (CPM23-2). CPM23-2, held on 27 March to 6 April 2023, completed the preparation of the final Report of the CPM to WRC-23. As soon as possible after CPM23-2, the compiled version of this Report can be found on the CPM webpage at: [www.itu.int/go/ITU-R/CPM](http://www.itu.int/go/ITU-R/CPM), taking into account the relevant deadline in Resolution ITU-R 2-8. In some cases, technical studies continue in the relevant ITUR Working Parties to finalize before RA-23 supporting ITUR Recommendations/Reports in preparation for WRC23.

Taking into account PP Resolution 80 (Rev. Marrakesh, 2002) and Resolution **72 (Rev.WRC-19)**, extensive preparations for WRC‑23 also continued at the regional level, with the BR’s active participation in the meetings of the regional groups and Regional Telecommunication Organizations (RTOs), including APT, ASMG, ATU, CEPT, CITEL and RCC, wherever possible.

Information on the regional groups’ preparation for WRC-23 can be found at: [www.itu.int/go/wrc-23-regional](http://www.itu.int/go/wrc-23-regional).

After the first ITU Inter-regional Workshop on WRC‑23 preparation held online in December 2021, the second Workshop took place in the ITU Headquarters in Geneva as a face-to-face event with the possibility of remote participation from 29 November to 1 December 2022. The third and final Workshop is planned to be held in Geneva from 27 to 29 September 2023, between the SG 5 and the SG 7 blocks of meetings. Additional information on these workshops can be found at: https://www.itu.int/en/ITU-R/conferences/wrc/2023/irwsp/Pages/default.aspx.

The ITU‑R webpage for WRC‑23 at <https://www.itu.int/wrc-23/> has been updated and provides direct access to the above-mentioned information including also a link to the WRC-23 Booklet ([www.itu.int/wrc-23/booklet-wrc-23](http://www.itu.int/wrc-23/booklet-wrc-23)), WRC-23 Newsroom (<https://www.itu.int/wrc-23/newsroom/wrc-news/>) and other useful material.

In accordance with PP‑22 No. 10 of Annex 2 to Decision 5 (Rev. Bucharest, 2022) to reduce the cost of documentation of ITU conferences, RA-23 and WRC-23 will be completely paperless events. These measures are outlined, for RA-23 and WRC‑23 respectively, in BR Administrative Circulars [CACE/1050](https://www.itu.int/md/R00-CACE-CIR-1050/en) of 10 February 2023 and in [CA/265](https://www.itu.int/md/R00-CA-CIR-0265/en) dated March 2023.

The joint work with the host country for RA-23/WRC-23 has continued, in order to ensure that all the facilities for the smooth running of these events will be in place as well as the corresponding logistical arrangements.

The first session of the CPM for WRC-27 (i.e. CPM27-1) is scheduled for 18-19 December 2023 at the same venue as for RA-23/WRC-23.

# 6 Operational planning

The ITU-R Operational Plan has been structured in accordance with the results-based management concept of the Union to ensure complete linkage with the budget and other financial tools of the Union.

The draft ITUR Operational Plan for the period 2023-2026, which is not available at the time of this writing, will be presented in a separate document for review and comments by RAG.

# 7 BR information system

## 7.1 Terrestrial software and tools

### 7.1.1 Processing of coordination requests under RR No. 9.21

The development of the software modules and associated tools for the processing of coordination requests under RR No. **9.21** continued during the reporting period. The algorithms and software modules used for technical examinations under No. **9.21** had been reviewed in accordance with the corresponding RoPs: existing algorithms were revised, and new algorithms were introduced, in particular regarding RoP B6. The testing of these algorithms has been completed. The completion of the software for checking the corresponding assignments (subject to **9.21**) notified under RR Article **11** to the Master Register and its integration into TerRaSys is scheduled for the fourth quarter of 2022 in the context of the overall system migration.

### 7.1.2 HFBC software re-engineering

In accordance with provisions of Article 12 of the Radio Regulations (RR), the Radiocommunication Bureau (BR) prepares and publishes the seasonal HFBC schedules together with compatibility analysis results. The schedules are made available on the BR website.

The current HF software consists of a number of standalone desktop applications developed in Visual Basic. These applications can no longer be maintained in the Operating Systems used by computer systems in the BR and they need to be re-developed using newer technologies.

For consistency with other terrestrial software and applications, the HFBC software is currently being re-engineered into a single online application using the .Net framework in C#.

The new HFBC application is scheduled to be operational before the end of 2023.

### 7.1.3 Migration from Ingres to SQL Server

The work on the migration of the TerRaSys system continued during 2022, concerning both the migration of the database and the rewriting and enhancements of the system modules using new coding techniques. This includes (but is not limited to):

* Bringing the design of the terrestrial database to its final stage, including the final design of the needed new database structures to accommodate the processing of HAPS, following WRC-19 decisions.
* Stabilizing the database structures, schemas, and procedures (including archiving) to adapt them and take advantage of the modern technology offered by the new DBMS.
* Reviewing and redesigning many parts of the database, mainly for the broadcasting services cluster, to enhance the efficiency of the structure and bring it to its third normal form.
* Using new data types for the representation of geographical coordinates and introducing the new geographic data types provided by the new DBMS, which offer efficient techniques for performing fast complex geographic queries.
* Continued redesign of various TerRaSys software components and applications used to access the database, with the view of taking advantage of the modern technology offered by the new DBMS and using web applications and modern software development techniques.
* Introducing a new format for the electronic notifications of terrestrial frequency assignments, conforming to XML standards and used in addition to the existing SGML format. Automatic conversion tools were developed to maintain the flexibility and compatibility between the two formats.

The new database system and software modules for the processing and validation of the electronic terrestrial notifications were finalized, including HAPS, and are currently under their final Beta testing. The migration of the existing software modules used for the technical examinations was finalized. Examination results display modules were also finalized and delivered for final Beta testing during the first quarter of 2023. Work on the publication and preparation of the new BR IFIC packages is being finalized and tested before delivery for Beta testing, expected during the second quarter of 2023.

Various Web Applications have been designed and implemented, and are under continuous development and testing, to allow online access to the database queries and other software tools, including the online validation of the terrestrial notifications of frequency assignments.

Copies of the existing terrestrial database in its new structure on the new DBMS platform are now available and are being used by various BR applications through the web to display, validate and process terrestrial frequency notifications. Dedicated copies were also designed and are now available, containing the data image of the last published BR IFIC, with the view of providing an online terrestrial BR IFIC web application.

It is expected that the full migration and restructuring of the existing system will be completed between the third and fourth quarters of 2023, prior to WRC-23. A circular letter describing the resulting new and modified Terrestrial database structure and tools on the BR IFIC, as well as a description of the new XML notification format, is under preparation and will be sent to the Member States Administrations and other users.

As seen by the Member States and external users, a transition period is planned before the final cut-off of the existing system and will be specified in the above-mentioned circular letter, to allow the on-time adaptation and adjustment of third-party developed software. During this period, the BR IFIC database will be distributed both in its existing current format and its new format, thus ensuring continuity of service. Forward-only conversion tools have been developed and will be distributed to allow the conversion of the current BR IFIC database format to the new system database format.

## 7.2 Progress in fulfilling the BR Space Information Systems roadmap (RAG-19, 2012)

RAG-19 (2012) advised the Director to implement recommended actions within the proposed timeframe, as described in the agreed roadmap, comprising: Phase 1 (Implementation of WRC-12 decisions); Phase 2 (Rewrite some existing software); and Phase 3 (Set up a project team to implement a common framework, security system, and centralized space database). RAG encouraged Member States and Sector Members to submit their comments on Phase 3.

In 2022, the BR continued to maintain existing legacy software, while at the same time working on implementing new versions of key software applications. This parallel effort is both a necessity due to operational exigencies as well as the reason why certain modernization projects are still underway.

### 7.2.1 Progress toward achieving the objectives of Phase 2 of the roadmap

#### 7.2.1.1 Rewrite legacy software for technical examination

* Rewrite of PFD for protection of space services: Ongoing, to be finalized in 2023.
* Migration of GIMS Fortran components: Not yet started.
* Mspace – Migration of Visual Basic 6 components to .NET: Ongoing.

#### 7.2.1.2 Design and develop the BR Space Information System (BR SIS)

* Rewrite SpaceCap written in Visual Basic 6: Ongoing. In 2022, the first modules of SpaceCap implemented in BRSIS were made available, as part of the coordination agreements capture feature. The full rewrite of SpaceCap (to be renamed as BRSIS-Capture) started in December 2022, aiming for availability at the same time that WRC-23 decisions will be implemented.
* Migrate SRS MDB to a more modern technology: Although the choice of technology to replace MDB files is clear, the migration will significantly impact BR internal space services processing. Therefore, the migration to SQLite databases cannot be delivered in production before the implementation of WRC-23 decisions. Even when the BR Space Software applications move to SQLite, backward compatibility with the MDB format, as well as conversion tools, will be retained for the foreseeable future.
* Migrate SNS database on Ingres to SQL Server: The migration of Ingres-environment-specific internal processing applications continued in 2022. A beta testing environment has been made available to internal users in March 2023, and the migration is expected to be completed by end of June.
* Review SNTrack: Ongoing. SNTrack will be gradually replaced by a Space Management Information System to complete the back-office functionality of the e-Submissions system.
* Review SNS Online (and merge with SNL Online): Ongoing. Development of the web application "ITU Space Explorer" to replace the data mining system previously contained in the SNS Online and SNL Online is part of the deliverables to satisfy instruction 4 of Resolution 186 (Rev. PP-22 Bucharest). Phase 1 of the project progressed in 2022 and was made available to external testers on 30 June 2022, as detailed in CR/489. The full release in production is expected in early 2024.

### 7.2.2 Progress toward achieving the objectives of Phase 3 of the roadmap

The work done during the previous phases, as well as the design and technology choices made thereafter, provide a foundation for successful completion of Phase 3, which will be as follows:

* A schema redesign, preserving equivalence of data, but with the objective of eliminating certain redundancies, will be delivered at the same time as the implementation of WRC-23 decisions, so as not to force a database schema change too frequently.
* Activities on centralizing and streamlining risk, recovery, and security management: Ongoing.

## 7.3 Software developments related to space services

### 7.3.1 Implementation of Resolution 907 (Rev.WRC-15): Use of modern electronic means of communication for satellite network-related administrative correspondence

In 2022, work continued on improving and maintaining the “e-Communications” online system in response to Resolution **907 (Rev.WRC-15)**. The number of registered Administrations has grown to 147, out of which 126 Administrations have sent correspondence via the system as of 8th March 2023.

Two major updates were provided to the e-Communications system in 2022.

In those updates, a new user role for “an administration acting on behalf of an intergovernmental satellite organization” (ADM/IGSO) was released on 1st September 2022. The new user role “ADM/IGSO” enables administration users to act on behalf of an IGSO to send and receive correspondence with the Bureau and other administrations including ADM/IGSOs. As of 8th March 2023, the number of registered ADM/IGSO is 11.

Furthermore, various improvements in performance and usability, such as relaxing the limits on the number of characters, were provided in the system in 2022.

The new function to integrate with the e-Submission system is under development and aimed at being introduced in the second quarter of 2023.

### 7.3.2 Implementation of Resolution 908 (Rev.WRC-15): Electronic submission of satellite network filings

The “e-Submission” system has been providing round-the-clock operation to administrations and operating agencies for the submission of satellite network filings throughout 2022. The number of registered Administrations has grown to 153 as of 8th March 2023.

Four major updates were provided to the e-Submission system in 2022.

On 5th April 2022, a new interface was introduced to facilitate the reporting of coordination status at resubmission of a space station notice. An SNS file for resubmission of a notification of a space station containing coordination agreement information can now be submitted. This update also supports administrations in providing the information to indicate the efforts made to coordinate the satellite network, in accordance with No. **11.41.2**.

In addition, to manage the transition of the SNS database structure from version 9.0 to version 9.1, the e-Submission system accepted SNS files in both versions from 29th November 2022 to 15th January 2023. The system only accepts SNS files in SNS 9.1 format since 16th January 2023.

Furthermore, various improvements of the performance and usability were implemented for the system such as a warning message for SpaceCom comments submitted beyond the 4-month commenting period, a warning message to request the notifying administration to submit necessary information when the code of an operating agency was new (“999”) in the submitted notice.

Further developments are ongoing to provide additional functions to administrations and operating agencies such as a new status of “Published in BR IFIC” for each notice, the integration with the e‑Communications system and the online PFD tool, which are aimed to be introduced in the second quarter of 2023.

To assist in the development and testing of this tool, the Administration of Japan has made a financial contribution and also made available a space regulatory and technical expert in the ITU headquarters. The Radiocommunication Bureau renews its thanks to the Administration of Japan for its continuous support and specific assistance in the development of this project.

### 7.3.3 Development of a tool to assist administrations in communicating to the Bureau the coordination status with respect to affected administrations at notification

The development of the subject tool, which was reported to the RAG in 2022, has been completed and the tool was made available in the BR IFIC (Space Services) 2968 on 8 April 2022. The announcement of the availability of the tool was made in the Circular Letter [[CR/483](https://www.itu.int/md/R00-CR-CIR-0483/en)](https://www.itu.int/md/R00-CR-CIR-0483/en) dated 25 March 2022. At the same time, the e-submission portal was updated to support the notification and resubmission of notices created with the tool.

The tool, implemented through the SpaceCap software, includes user-friendly interfaces that display the coordination requirements of the satellite network and allow the user to easily circulate within the notice to capture the coordination status with respect to an affected administration at the group level of a notice.

In addition, new SpaceCap software features such as “wizards” were introduced to facilitate the notice creation for space station notification in the following cases:

* First notification under No. **11.2** for frequency assignments subject to coordination under Section II of Article **9**;
* Resubmission of notification after a notice has been returned under No. **11.37** or No. **11.38**;
* First notification under No. **11.2** for frequency assignments not subject to coordination under Section II of Article **9**.

In order to help users navigate the new tool and features, a help page with guidelines and videos has been created and is accessible at:

<https://www.itu.int/en/ITU-R/space/support/Pages/GuideforNotificationwithSpacecap.aspx>

A workshop on the use of the new tool and features was also conducted at the ITU World Radiocommunication Seminar 2022 (WRS-22) held in Geneva from 24 to 28 October 2022.

### 7.3.4 Migration of the BRIFIC (Space services) from a DVD format to an online mechanism

Following the obsolescence of one of the software technologies currently used in the implementation of the BRIFIC (Space Services) DVD, the Bureau has been working on a project to migrate the BRIFIC (Space Services) from a DVD format to an online delivery mechanism. The BRIFIC (Space Services) online will facilitate the viewing and downloading of the special sections and Parts in PDF formats, querying the data for all publications within that BRIFIC, with a user-friendly online interface, and a secure server. On 7 March 2023, the BRIFIC (Space services) online application has been released in beta version for the BRIFIC subscribers. Comments and feedback will be gathered until the beginning of May 2023. The BRIFIC online is expected to be put into production beginning of June 2023. The new application will also be deployed for the BRIFIC DVD and ISO copy.

## 7.4 Software developments related to terrestrial services and other BR software and tools

### 7.4.1 Radio Regulations tools

The Bureau continues to update and maintain software tools to facilitate the use and analysis of the Radio Regulations (RR):

1. The current version of the Radio Regulation Navigation Tool, which was released during Q2-2022, incorporates the most recent corpus of texts (RR 2020, ITU-R Recommendations, Rules of Procedure 2021 rev.2). This version is available for download and purchase at the ITU sales website. Until the 1st of January 2024, yearly free updates will be released to incorporate the latest versions of the RoP when available.
2. The software tool to conduct a detailed search and analysis of the Table of Frequency Allocations in Article 5 of the Radio Regulations, enables filtering and reformatting by frequency range, service, category of service, footnote, country, etc. The tool has been updated based on the outcomes of the WRC-19 and the RR 2020 Edition to introduce the changes in the frequency allocations, country footnotes, and related references to associated Resolutions and Recommendations. The updated package now also includes links to the relevant ITU-R Recommendations referenced in RR5, as well as the latest version of the relevant Rules of Procedure. The package is now also equipped with a utility to extract the National Table of Frequency Allocations for a specific country as it results from combining the various provisions of RR5. Throughout 2022, the tool was enhanced to link with various provisions in the various articles of the RR. It was demonstrated during various Radiocommunication Regional Seminars. It is available for purchase at the ITU sales website. All software and data updates will be provided regularly and freely to the subscribers, until the WRC-23.

### 7.4.2 Further enhancement of web tools

The online tools eBroadcasting (former eBCD2.0) and eMIFR were integrated into the eTerrestrial portal, implemented with the latest web technologies, and put into production in December 2020. Online Validation (rebranded to eValidation) was integrated in the last quarter of 2021, as well as new features like a Dashboard to allow the BR and users to monitor their activities. The propagation tools are now available via the ePropagation tool with improved mapping capabilities.

The eBroadcasting tools developed to support the GE84 optimization process were instrumental to the success of this activity. Maps are implemented using the open source OpenLayers library, chosen by the BR Task Force (see 7.4.4).

The web interface for the submission of terrestrial frequency assignments/allotments to the BR has been rewritten with the latest web technology. The possibility of validating the notices using eValidation has been integrated into WISFAT. The integrated tool is currently being tested.

The online platform for fixed and mobile services (eFXM) was developed with the latest web technologies and integrated into the eTerrestrial portal in October 2022. eFXM currently includes eQueryFXM which is the query service for fixed and mobile frequency assignments/allotments recorded in the MIFR and Plans. eQueryFXM also provides the statistics and technical characteristics of the assignments recorded in the MIFR in the frequency bands considered under the WRC-23 agenda items. The development continues with ePubFXM to allow administrations to consult the published FXM Special Sections and the related coordination information.

### 7.4.3 Compatibility analysis software for FM sound broadcasting

The BR deployed in 2021 an eBroadcasting online tool for the GE84 Plan (FM broadcasting) optimization in Africa in the band 87.5-108 MHz: the GE84 Optimization tool. This tool performs compatibility calculations based on the GE84 Agreement and evaluates the incompatibilities for all the frequencies in the GE84 band. This tool, which served as the basis for optimizing the FM band in Africa, has been made available to all administrations - parties to the GE84 Agreement.

The tool uses the GE84 propagation curves and also the Recommendation ITU-R P.1812 propagation prediction method in conjunction with a digital terrain map (SRTM3) with 90m resolution. In 2023, additional Digital Terrain Models (DEMs) have been added namely, SRTM1 and ASTER, with 30m resolution. Contrary to SRTM DEMs, providing terrain elevation information from 56°S to 60°N, ASTER provides terrain elevation information from 83°S to 83°N, allowing field strength calculations between sites located above 60°N latitude. Considering that SRTM1 is more accurate than ASTER, an additional option is provided to the users (AUTO) for which the software automatically selects the appropriate DEM, between SRTM1 and ASTER, both using a 30m resolution, to evaluate the prediction of point-to-point interference, depending on the location of the stations (transmitter/receiver) involved in the calculations.

### 7.4.4 BR Geographic Information Systems

The BR GIS Task Force, comprised of staff from all BR departments, has been established to harmonize GIS activities in the BR. An initial activity of the Task Force was to implement the BR GIS Platform using GeoServer. Its current activity is to transfer all relevant radio-meteorological data (geospatial data catalogue) and other relevant datasets currently in the IDWM to the server. This data will be made available to users via Open Geospatial Consortium (OGC) compliant web services. The BR is implementing GIS functionalities in its web tools using the open source OpenLayers library.

The ITU is a member of the UN Geospatial Network, a coalition of entities within the UN system that is tasked to strengthen the coordination and coherence of geospatial information management within the United Nations system. The BR participates in the Steering Committee of this network and leads the ITU Inter-Sectorial Task Force on Geospatial Information Management.

### 7.4.5 Maritime Service Publications Project

The BR is currently implementing a project, in close cooperation with the TSB, to modernise the ITU maritime publications (List V, List IV and Maritime Manual). The objective of the project is to improve the user experience of the publications, including the replacement of the current CD-ROM format. The project requires the creation of a sales platform to purchase and download digital publications, the development of desktop and mobile applications to search and retrieve information and anti-counterfeit solutions that include a mobile application for inspectors to check the validity of publications onboard vessels.

### 7.4.6 HITS (Harmful Interference to Terrestrial Services)

The development of a new online platform for the treatment of reports of harmful interference and infringements, concerning terrestrial services was started. This system is called HITS (Harmful Interference to Terrestrial Services). The database structure is under design to fit the requirements of the new system. Additionally, the correspondences being exchanged between the BR and the Administrations are reviewed to make them available in HITS. The work continues on the user interface.

## 7.5 Business Continuity and Disaster Recovery (both Space and Terrestrial Services)

Work on further strengthening the ITU Risk Management Framework continued in 2022, with the BR's full participation in the Inter-Sectoral Task Force Working Group on Risk Management. In addition, BR management took part in face-to-face tabletop training sessions organized by the ITU Organizational Resilience Management System (ORMS) coordinator involving an external consulting company who are expert in the modelling of relationships between business-critical functions. These activities resulted in new or revised versions of Activity Recovery Plans (ARPs) which will be periodically updated, in the application of the ITU Business Continuity Policy.

## 7.6 Cloud Computing

In 2022, the BR worked with the IS department on establishing the terms of reference for a BR Cloud Migration Task Force. The draft terms of reference have been reviewed by RMC members and the work of the Task Force started in March 2023. The driving force for cloud computing adoption in the BR is the need to improve business continuity and disaster recovery. The work of the Task Force will contribute to the deliverables to satisfy Resolution 217 (Bucharest, 2022).

# 8 Outreach

Outreach activities include dissemination of information and assistance to membership, the publication of ITU-R outputs, the organization of, and participation in, seminars and workshops, as well as the development and maintenance of communication and promotion tools. The purpose of these activities is to ensure that the outputs produced by the ITU-R Sector (regulations, recommendations, reports, and handbooks) are disseminated worldwide so that they may form the basis for the formulation of national and regional policies and decisions for the use of the radio spectrum. To carry out these activities, the BR relies on close cooperation with the other Bureaux and Sectors, the ITU regional and area offices, and the relevant international organisations and national authorities.

## 8.1 Publications

### 8.1.1 Regulatory publications

*Radio Regulations and Rules of Procedure*

The 2020 edition of the Radio Regulations was published in September 2020. Following the 2019 World Radiocommunication Conference, a 2021 edition of the Rules of Procedure has been published. A second update was published in April 2022.

BR also published eleven HFBC schedules every year in accordance with RR Article **12**.

### 8.1.2 Service publications

#### 8.1.2.1 Background and general observations

#### The Bureau prepares and issues the following service publications, as specified in Article 20 of the Radio Regulations.

* BR IFIC − International Frequency Information Circular
* List IV − List of Coast Stations and Special Service Stations
* List V − List of Ship Stations and Maritime Mobile Service Identity Assignments
* List VIII − List of International Monitoring Stations
* Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services

#### 8.1.2.2 List of Coast Stations and Special Service Stations (List IV)

#### This List contains information notified to the ITU (i.e. Call Sign, MMSI, geographical coordinates, transmitting and receiving frequencies, etc.) of coast stations that provide watch-keeping using digital selective calling techniques, public correspondence service, medical advice, navigational and meteorological warnings, notices to navigators and radio time signals, etc.

#### The List of Coast Stations and Special Service Stations (List IV) is published every two years, in CD‑ROM format. One edition of List IV was published in December 2021.

Information pertaining to this list is made available via the online information system ITU Maritime mobile Access and Retrieval System (MARS). A compilation of all changes notified to the ITU is provided on the web every six months.

#### 8.1.2.3 List of Ship Stations and Maritime Mobile Service Identity Assignments (List V)

This List contains information notified to the ITU on Ship, Coast and Search and Rescue (SAR) Aircrafts Stations, Accounting Authority Identification Codes (AAICs), and contact information for notifying administrations.

The List of Ship Stations and Maritime Mobile Service Identity Assignments (List V) is published every year, in CD‑ROM format. One edition of List V was published in April 2022.

Information pertaining to this List is also made available via the online information system MARS. A compilation of all changes notified to the ITU is provided on the web every three months.

#### 8.1.2.4 List of International Monitoring Stations (List VIII)

#### The List of International Monitoring Stations (List VIII) contains the addresses and other relevant information of centralizing offices, including detailed information related to monitoring stations measuring terrestrial and space emissions. A direct download facility is available, free of charge, with TIES access.

One edition of this List was published in December 2022.

#### 8.1.2.5 List of service publications issued

Table 8.1.2.5-1 below summarizes the different publications for the period 2019-2022:

Table 8.1.2.5-1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | 2019 | 2020 | 2021 | 2022 |
| BR IFIC (International Frequency Information Circular) | 25 | 25 | 26 | 25 |
| List IV (List of Coast Stations and Special Service Stations) | Edition of 2019(December) |   | Edition of 2021(December) |   |
| List V (List of Ship Stations and Maritime Mobile Service Identity Assignments) | Edition of 2019 (April) | Edition of 2020 (April) | Edition of 2021 (April) | Edition of 2022 (April) |
| List VIII (List of International Monitoring Stations) | Edition of 2019 (December)  |   |   | Edition of 2022(December)  |
| Maritime Manual |   | Edition of 2020 (November)  |   |   |

###

### 8.1.3 Study Groups publications

Since RAG-22, the ITU‑R Study Groups publications continued to be developed in accordance with Resolution ITU-R 1-8.

The full list of ITU-R Questions, ITU-R Recommendations and ITU-R Reports approved since RAG‑22 can be found in Addendum 1 to this document.

### 8.1.4 ITU-R Publications downloads

#### 8.1.4.1 Radio Regulations and the Rules of Procedure

Concerning these regulatory documents, Table 8.1.4.1-1 shows the number of deliveries for the RR‑2016 and RR-2020 editions. Following up on the request of the 2021 RAG meeting, both pdf and WORD versions of the RR-2020 edition are available for free download from the ITU website [here](https://www.itu.int/en/publications/ITU-R/pages/publications.aspx?parent=R-REG-RR-2020&media=electronic) and WORD versions are also available for free download from [here](https://www.itu.int/hub/publication/r-reg-rr-2020/). Table 8.1.4.1-2 shows the total number of downloads during the same period for the Rules of Procedure. The 2021 edition of the Rules of Procedure was published in June 2021, taking into account the decisions of WRC-19. The edition has subsequently received two updates as a result of new and modified rules of procedure approved by the Radio Regulations Board.

Table 8.1.4.1-1

Number of deliveries of the Radio Regulations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **RR-16** | **2019** | **2020 (2016 ed and 2020 ed)** | **2021RR-20** | **2022****RR-20** |
| **Hard copies sold** | 182 | 2016 ed:  59  2020 ed: 1 170 | 274 | 117 |
| **DVD’s sold** | 1 063 | 2016 ed: 482  2020 ed: 5 061 | 3 855 | 1638 |
| **Free downloads** | 47 974 | 2016 ed: 36 416 2020 ed: 4 236 | 18 092 | 13467 |
|  |  |  |

Table 8.1.4.1-2

The Rules of Procedure (downloads)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **2019** | **2020** | **2021** | **2022** |
| **ROP(Rules of Procedure)** | 10 014 | 10 882 | 10 539 | 11887 |

#### 8.1.4.2 ITU-R Recommendations

As a result of the free online access policy, ITU-R Recommendations are accessed and downloaded worldwide. From January 2019 to December 2022, more than seven million downloads of ITU-R Recommendations, from the ITU website, were recorded. Table 8.1.4.2-1 summarizes their distribution by year and series. At this time, there are 1 205 ITU-R Recommendations in force.

Table 8.1.4.2-1

Distribution of ITU-R Recommendations (downloads)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SERIES | 2019 | 2020 | 2021 | 2022 | TOTAL | % |
| P | 403129 | 385614 | 410918 | 347953 | **1547614** | 21.80% |
| M | 374649 | 327720 | 365675 | 314920 | **1382964** | 19.48% |
| BT | 264823 | 226737 | 231981 | 218403 | **941944** | 13.27% |
| SM | 175237 | 171165 | 196660 | 169755 | **712817** | 10.04% |
| F | 189675 | 154672 | 147667 | 116539 | **608553** | 8.57% |
| BS | 153839 | 142699 | 166563 | 143107 | **606208** | 8.54% |
| S | 131788 | 108174 | 123593 | 87801 | **451356** | 6.36% |
| SA | 57035 | 46718 | 43137 | 33274 | **180164** | 2.54% |
| V | 39831 | 40634 | 47032 | 44707 | **172204** | 2.43% |
| BO | 35550 | 26816 | 23173 | 16489 | **102028** | 1.44% |
| RS | 31476 | 26823 | 23253 | 19350 | **100902** | 1.42% |
| TF | 24566 | 24077 | 22729 | 18211 | **89583** | 1.26% |
| SF | 23517 | 19381 | 16720 | 13102 | **72720** | 1.02% |
| BR | 22003 | 17101 | 15009 | 9838 | **63951** | 0.90% |
| RA | 15173 | 12315 | 10777 | 9169 | **47434** | 0.67% |
| SNG | 4924 | 3319 | 2548 | 1987 | **12778** | 0.18% |
| IS | 1802 | 1280 | 1366 | 1203 | **5651** | 0.08% |
| PI | 511 | 372 | 206 | 143 | **1232** | 0.02% |
| TOTAL | **1949528** | **1735617** | **1849007** | **1565951** | **7100103** | 100.00% |

#### 8.1.4.3 ITU-R Reports

As ITU-R Recommendations, ITU-R Reports have been promulgated worldwide touching most of the audiences and contributing to good technical practices in certain aspects of radiocommunications. From January 2019 to December 2022, more than one million downloads of ITU‑R Reports, from the ITU website, were recorded. Table 8.1.4.3-1 summarizes their distribution by year and series. Currently, there are 616 ITU-R Reports in force.

Table 8.1.4.3-1

Distribution of ITU-R Reports (downloads)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SERIES | 2019 | 2020 | 2021 | 2022 | TOTAL | % |
| SM | 89083 | 101965 | 149392 | 105880 | **446320** | 29.08% |
| M | 99400 | 105681 | 118785 | 102742 | **426608** | 27.79% |
| BT | 57578 | 59805 | 75168 | 76421 | **268972** | 17.52% |
| BS | 22769 | 28707 | 35392 | 30002 | **116870** | 7.61% |
| P | 12628 | 14785 | 18142 | 15647 | **61202** | 3.99% |
| BO | 12663 | 14003 | 16812 | 16721 | **60199** | 3.92% |
| F | 13414 | 12411 | 15138 | 8623 | **49586** | 3.23% |
| S | 9484 | 10001 | 9918 | 9170 | **38573** | 2.51% |
| SA | 6429 | 5547 | 9042 | 5346 | **26364** | 1.72% |
| RS | 4138 | 4796 | 6343 | 4486 | **19763** | 1.29% |
| RA | 4175 | 4222 | 4834 | 4840 | **18071** | 1.18% |
| SF | 331 | 387 | 397 | 326 | **1441** | 0.09% |
| TF |   |   | 97 | 466 | **563** | 0.04% |
| BR | 99 | 72 | 61 | 88 | **320** | 0.02% |
| TOTAL | **332191** | **362382** | **459521** | **380758** | **1534852** | 100.00% |

#### 8.1.4.4 Handbooks

Following the BR director’s decision in 2017, all ITU-R Handbooks are now free to download at the ITU website. With a steady increase since then, more than 100 000 downloads were registered in 2022. Table 8.1.4.41 provides the distribution of ITU-R Handbooks on spectrum management series as well as other handbooks that are sold.

At this time, a total of 47 ITU-R Handbooks are published including the Spectrum Management Series.

Table 8.1.4.4-1

Distribution of ITU-R Handbooks on spectrum management series and other Handbooks

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Handbook** | **2019** | **2020** | **2021** | **2022** |
| **Spectrum Management Series (hard copies sold)** | 9 | 3 | 5 | 0 |
| **Other Handbooks (hard copies sold)** | 20 | 4 | 5 | 4 |
| **GRAND TOTAL** | **29** | **7** | **10** | **4** |
|  |  |  |  |  |
| **FREE downloads** | **68 507** | **79 961** | **126 201** | **134159** |

## 8.2 Seminars, workshops and other events

Since 2020, a new cycle of WRS/RRS events in the interim period between WRCs has started: WRS/RRS 2020-2023. Those Seminars aim at disseminating worldwide the updates contained in the Radio Regulations Ed. 2020 (with the decisions taken by WRC-19) along with its associated Rules of Procedure (RoP). Based on the prior WRS/RRS experiences, this WRS/RRS 2020-2023 cycle plans to conduct two biennial World Radiocommunication Seminars (WRS), complemented by eleven Regional Radiocommunication Seminars (RRS) (each one aimed to a different subregion), as follows:

TABLE 8.2.2-1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Language** | **2020** | **2021** | **2022** | **2023** |
| **Africa (Sub-Saharan): 2** |   |  |  |  |  |
| Africa | English/French |  | 5-16 JulyOnline |  | 19-23 JuneBrazzaville, Congo |
| **Americas: (3)** |  |  |  |  |  |
| South America | Spanish |  | 26 April-7 MayOnline |  |  |
| Meso America  | Spanish |  |  |  | 8-12 MayLa Havana, Cuba |
| Caribbean  | English | 13-24 JulyOnline |  |  |  |
| **Asia & Pacific: (3)** |  |  |  |  |  |
| Pacific Islands States | English |  |  | 15-20 December(Nadi, Fiji) |  |
| Central Asia | English | 19-30 OctoberOnline |  |  | 2Q |
| South Asia | English |  | 11-22 OctoberOnline |  |  |
| **Arab States (1)** | Arab/English |  |  | 13-24 MarchOnline |  |
| **CIS (1)** | Russian |  |  |  | TBD |
| **Europe (1)** | English |  |  | 30 August to 8 SeptemberOnline | [2Q] |
| **WRS (2)** | six UN official languages | 30 November-11 DecemberOnline Eastern Hemisphere: morningWestern Hemisphere: afternoon |  | 24-28October |  |

As in prior cycles, to optimize the necessary resources, this planning has the following principles:

* 1st semester 2020: no RRS/WRS, updating RR and associated software tools;
* 2nd semester 2023: no RRS/WRS: preparation of upcoming WRC-23;
* Two WRS per cycle (every 2 years): WRS-20 and WRS-22;
* The first WRS after a WRC (WRS-20) had a specific session devoted to explaining in detail, the modifications to the RRs introduced by the WRC;
* The two RRSs for Africa are scheduled in different years than the WRS, considering that the participation in RRS Africa is nearly twice as large as other RRSs, and allowing for an even distribution of the fellowship budget;
* RRSs are carried out in the predominant language(s) of the region, which helps reduce interpretation costs and allows for an easier exchange of information during the event;
* The programs of the RRSs are tailored to the specific needs of the region concerned;
* The last day(s) of each RRS are devoted to a Forum-type session, where panellists from outside the region could be invited to enlarge the scope of the discussions (provision of interpretation from/to English might become necessary for those days);
* Online format: due to the Covid-19 outbreak, WRS-20 and most of the RRS held in 2020, 2021 and part of 2022 were conducted online. This led to reshaping the format of exercises for station notifications: from hands-on Workshop to Tutorials. WRS-22 was held as a physical meeting with remote participation.

The above planning has been duly coordinated/and adjusted with ITU Regional Offices (ROs) as well as pertinent regional groups, considering the challenges arising from the current outbreak and the subsequent changes of format (online events), and its implications on the involved ITU Staff (BR, ROs).

**8.2.1** **World Radiocommunication Seminars (WRS)**

2022 World Radiocommunication Seminars (WRS-22)

The WRS-22 was conducted from 24 to 28 October 2022.

The WRS-22 Plenary was held on Monday, 24 October 2022, as a physical meeting with remote participation that was open to both the ITU-R membership and also to the general public. This session covered radiocommunication-related matters, the application of ITU Radio Regulations and trends in various radiocommunication services. Participants were also introduced to the activities and work of the ITU-R Study Groups, the Radio Regulations Board, the Radiocommunication Assembly (RA) and the World Radiocommunication Conference (WRC). This session was conducted in the six UN official languages.

The WRS-22 plenary sessions were attended by 540 participants from 123 countries.

WRS-22 Terrestrial and Space Workshops were held from Tuesday 25 to Friday 28 October 2022. These hands-on workshops were held in parallel and organized as physical meetings only and were limited to participation by ITU-R membership. During the four-day WRS-22 space and terrestrial workshops, participants received hands-on experience with ITU notification procedures, as well as with the software, databases and electronic publications made available by the Radiocommunication Bureau to the ITU membership. Tailored sessions were also available for both beginners and advanced users of BR software tools. The sessions were mainly conducted in English and French.

The WRS-22 workshop sessions were attended by 427 participants from 92 countries who took part in activities offered during the week-long event. BR provided 23 fellowships.

**8.2.2** **Regional Radiocommunication Seminars (RRS)**

As a complement to the biennial WRS, the BR maintained its strategy for regional outreach through the organization of Regional Radiocommunication Seminars (RRS) aimed to visit every developing region worldwide, fostering human capacity building on the use of the radio-frequency spectrum and satellite orbits, in particular the application of the provisions of the ITU Radio Regulations.

RRSs are jointly organized with the spectrum management authorities of host countries, in close cooperation with relevant regional organizations and the ITU regional/areas offices. Their agendas include two days of theoretical sessions and one or two days of workshops on terrestrial and space services. They are complemented by a one or two-day forum, dedicated to spectrum-related topics of particular interest to the region. Due to the Covid-19 pandemic outbreak, the duration and working hours were adapted to accommodate the different time zones in the world.

In 2022, three RRSs were conducted as follows:

− ITU Regional Radiocommunication Seminar 2022 for the Arab States (RRS-22-Arab States)

− ITU Regional Radiocommunication Seminar 2022 for Europe (RRS-22-Europe)

− ITU Regional Radiocommunication Seminar 2022 for Asia and the Pacific (RRS‑22‑Asia-Pacific)

Details on the RRS held in 2022 can be found in Table 8.2.2-2.

Table 8.2.2-2

ITU Regional Radiocommunication Seminars (2022)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Date | RRS | Place | Host | Cooperation | Forum Topics | Lang. | Parts/Adms | Fellowships |
| **2022** |
| 13-24 March 2022 | RRS-22-Arab States | E-meeting | − | Arab Spectrum Management Group (ASMG)ITU Regional Office for Arab States | • National Frequency Allocations Tables and NFAT Tools.• Modern spectrum management and monitoring.• Regional scope for maritime services.• Non-GSO constellations.• UHF refarming.• 6 GHz sharing.• 5G licensing model.• Round Table on Regional scope on WRC-23 Agenda Challenges. | A & E | 185/51 | N/A |
| 30 August to 8 September 2022 | RRS-22-Europe | E-meeting | − | ITU Regional Office for Europe | • Tools on National Frequency Table Allocations and RR Article **5** Viewer.• Evolution of 5G in Europe.• Modern spectrum management and monitoring.• Round Table on Regional scope on WRC-23 Agenda Challenges. | E | 286/83 | N/A |
| 15-20 December 2022 | RRS-22 Asia-Pacific | Nadi, Fiji | [Ministry of Communications](http://www.fiji.gov.fj/) (MOC) of Fiji | [Pacific Islands Telecommunications Association (PITA)](https://www.pita.org.fj/)[Department of Infrastructure, Transport, Regional Development, Communications and the Arts](https://www.infrastructure.gov.au/) (DITRDCA) of the Government of AustraliaITU Regional Office for Asia and the Pacific | • National Frequency Allocations Tables and NFAT Tools.• Modern spectrum management and monitoring.• Digital Terrestrial Broadcasting for TV (TDT) and Audio (DAB).• National Plan Frameworks for Emergency Communications.• Trends on IMT-2020 (5G).• Other terrestrial broadband systems: Fixed; HAPS/HIBS; RLAN.• GSO and non-GSO broadband satellite systems.• Spectrum pricing.• Round Table on Regional scope on WRC-23 Agenda Challenges. | E | 80/40 | 11 (funded and granted by BR and DITRDCA Australia) |

### 8.2.3 Planned World and Regional Radiocommunication Seminars for 2022-2023

Based on the WRS/RRS 2020-2023 planning (Table 8.2.2-1), the following seminars are being considered for 2023:

* RRS-23-Americas; Havana, Cuba; 8 to 12 May 2023, to be conducted in Spanish;
* RRS-23-Africa; Brazzaville, Congo; 19 to 23 June 2023, to be conducted in English and French.

As indicated above, this 2023 planning is currently coordinated/and adjusted with ITU ROs as well as pertinent regional groups, taking also into consideration any regional challenge that may arise.

### 8.2.4 Other events

BR experts kept attending and providing support to several events such as those organized by Specialized UN Agencies and by Regional Telecommunication Organizations, as well as non-ITU Conferences and Symposia. The BR also organized Seminars and Workshops and responded to Assistance requests from the Member States such as:

* SADC Capacity Building Workshop on Satellite issues
* ITU/ATU Workshop on implementation of WRC-19 agenda item 1.4
* ITU Reg. Sem. Europe & CIS - Spectrum & Broadcast
* ITU/ITSO Training for Americas
* ITU/ Smart Seas (Caribbean) Project Workshop on Smart Seas Toolkit (safety at sea for small-scale fishers)

## 8.3 Assistance to the Member States, in particular in developing countries and LDCs

### 8.3.1 Assistance to administrations of developing countries

The Bureau continued assisting Administrations of developing countries in areas such as:

* Supporting national spectrum management activities in the rapidly changing regulatory environment (see Resolution **7 (Rev.WRC-19)**) and providing technical assistance in the field of space radiocommunication (Resolution **15 (Rev.WRC-03)**) either in ITU headquarters or in the field.
* Participation in the meetings of the regional coordination groups, as requested by Article 12 of the Radio Regulations.
* Provision of assistance in long-term spectrum roadmap for mobile broadband and assignment for mobile broadband (IMT)

During 2020 direct technical assistance in progress were concluded. No new direct requests were received.

### 8.3.2 Assistance to Regional Groups

The BR continued its participation in the meetings of the regional coordination groups (e.g. HFCC), as requested by Article 12 of the Radio Regulations, providing the necessary assistance and collaboration, as follows:

#### 8.3.2.1 Assistance to ATU

**PRIDA**: The Policy and Regulatory Initiative for Digital Africa (PRIDA) project, is an initiative by the African Union, European Union and ITU. It also includes Regional Economic Communities, ATU, Regional Regulatory Associations, National Regulators, and other stakeholders. The BR, jointly with BDT, is actively participating in the Action "*Increasing wireless broadband penetration through improved and harmonized spectrum utilization and regulations*". The BR participated in the PRIDA Project Technical Committee meeting held in June 2022 that approved three training sessions proposed by the BR (spectrum monitoring, aeronautical services and maritime services) to be organised this year in cooperation with BR, ICAO and IMO.

## 8.4 Strategic Partnerships, including inter-sector cooperation

### 8.4.1 Cooperation with ITU-D

BR works closely with the BDT on issues of mutual interest to ITU-R and ITU-D. The BR has participated in relevant meetings of ITU-D Study Groups, Rapporteur Groups, and TDAG, where liaison activities have involved topics such as spectrum management, digital broadcasting and migration from analogue systems, the transition towards and implementation of IMT, and broadband wireless access technologies.

#### 8.4.1.1 GSR

The ITU Global Symposium of Regulators was not held in 2022.

#### 8.4.1.2 World Telecommunication/ICT Indicators Symposium, WTIS

The WTIS was not held in 2022.

#### 8.4.1.3 Spectrum Management Training Programme (SMTP)

Since 2013, the BR has actively participated in a joint project with the BDT to develop the Spectrum Management Training Programme (SMTP) through its different phases: design, material preparation, peer review, and pilot test. Several updates occurred over the years and BR performed regularly a review of the material contained in the current SMTP. Recent updates were performed to include the outcomes from WRC-19/RA-19.

### Considering the resources necessary to maintain/update this tool and its importance for many administrations, a discussion is currently taking place in BDT to verify if SMTP could be further enhanced or migrated to a different tool.

## 8.5 Membership

### 8.5.1 ITU Membership

Tables 8.5.1-1 to 8.5.1-3 show the Membership by Sector and Region, along with the associated contributions in 2022 and the evolution of the number of ITU-R Sector Members, Associates and Academia during the period 2018 to 2022.

Table 8.5.1-1



Table 8.5.1-2



Table 8.5.1-3



### 8.5.2 ITU-R Membership

Table 8.5.2 shows the evolution of the number of ITU-R Sector Members, Associates, and Academia during the period 2018 to 2022.

Table 8.5.2

Evolution of the ITU-R membership since 2018

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **2018** | **2019** | **2020** | **2021** | **2022** | **2022 vs 2018** | **% Increase** |
| **Sector member Members** | 264 | 272 | 275 | 278 | 278 | 14 | 5.3% |
| **Associate** | 20 | 21 | 22 | 28 | 38 | 18 | 90% |
| **Academia\*** | 147 | 156 | 161 | 161 | 171 | 24 | 16.33% |

|  |
| --- |
| *\*As per the PP-14 decision, Academia membership encompasses all 3 ITU sectors* |

## 8.6 Communication and promotion

### 8.6.1 Websites and databases

The on‐going performances of ITU-R websites, including related databases and other information management systems, are maintained and ensured constantly by BRWeb team (brweb@itu.int).

Since Q3/22 focus is on the WRC-23 website and related activities and developments.

#### 8.6.1.1 New content management system (CMS) à WordPress

The following websites were launched in the fourth quarter of 2022 under WordPress CMS and in the six official languages of the Union:

* [WRC-23 event website](https://www.itu.int/wrc-23/)
* [RA-23 event website](https://www.itu.int/ra-23/)
* [Best of WRS](https://www.itu.int/bestofwrs/)
* [Network of Women for WRC-23 (NOW4WRC23)](https://www.itu.int/now4wrc23/)

These websites are being updated with relevant materials and information as they become available.

#### 8.6.1.2 Translation status

Availability status in the six ITU official languages refers to the landing pages of the various departments and topics (level 0) and the pages accessible via one click only (level 1).

This status is now reaching roughly 70%, taking into consideration that most of the 30% left is mainly due to some events webpages (e.g. SG activities/sessions, workshops, and regional events like RRS), as well as SSD webpages (formerly available only in English, French and Spanish, like ITU Publications pages on DMS), that are not yet being translated into the six official languages.

### 8.6.2 Promotion and media relations

In 2022, the primary focus of BR’s communications was related to BR's virtual meetings and webinars and promoting the work of the Bureau online and through social media.

**World Radiocommunication Conference 2023:**The promotion of the World Radiocommunication Conference 2023 (WRC-23) began in the third quarter of 2022 with the unveiling of its official visual identity and logo, which were designed in collaboration with the host country, the United Arab Emirates. To complement this launch, the [WRC-23 Newsroom](https://www.itu.int/wrc-23/newsroom/wrc-news/) was established on a WordPress platform, providing up-to-date press releases, articles, special editions of the ITU News magazine for WRC 2023, and other relevant materials and information available in all six official languages of the United Nations. During 2022, the Radiocommunication Bureau issued nine Members Communiqués and Press Releases. These included:

**Members communiqués**

* GE84 Plan optimization project for Africa: [New FM frequencies to expand radio’s reach in Africa](https://www.itu.int/en/mediacentre/Pages/MC-2022-01-31-FM-Frequencies-Africa.aspx)
* RRS Arab States: [Arab States put WRC-19 outcomes into practice](https://www.itu.int/en/mediacentre/Pages/MC-2022-04-04-Arab-States-WRC-19-outcomes-.aspx)
* RRS Europe: [Europe seeks efficient spectrum application](https://www.itu.int/en/mediacentre/Pages/MC-2022-09-12-Europe-efficient-spectrum.aspx)
* WRS2022: [World Radiocommunication Seminar shows how ITU Radio Regulations drive global communications](https://www.itu.int/en/mediacentre/Pages/MC-2022-10-31-WRS.aspx)
* Connecting the World from the Skies: [Space and air-based networks are key to reaching the 2.7 billion people still unconnected worldwide](https://www.itu.int/en/mediacentre/Pages/MC-2022-11-16-Space-air-based-networks-to-reach-unconnected-people.aspx)
* [Frequency allocations and sharing of spectrum top agenda ahead of World Radiocommunication Conference 2023](https://www.itu.int/en/mediacentre/Pages/MC-2022-12-7-sharing-spectrum-agenda-ahead-of-WRC-2023.aspx)

**Press Releases**

* [Fourth radio interface technology added to 5G standards](https://www.itu.int/en/mediacentre/Pages/PR-2022-02-24-5G-Standards.aspx)
* [UAE to host next year’s World Radiocommunication Conference (WRC-23) in Dubai](https://www.itu.int/en/mediacentre/Pages/2022-06-29-WRC23-Host-City.aspx)
* [ITU and UAE sign host country agreement for 2023 World Radiocommunication Conference in Dubai](https://www.itu.int/en/mediacentre/Pages/PR-2022-09-30-ITU-WRC-2023.aspx)

The Bureau also participated actively in several United Nations International Days which are directly related to the work of BR. These include World Radio Day, International Day of Women and Girls in Science, International Women’s Day, World Meteorological Day, International Day of Human Space flight, World Telecommunication and Information Society Day, World Oceans Day, World Maritime Day, International Moon Day, World Space Week, World Television Day, World Standards Day and International Civil Aviation Day. The BR communications team, in close collaboration with focal points, drafted articles and blogs which were published by ITUNews and UN News.

#### 8.6.2.1 FAQs, Media Backgrounders & ITU News

The following Frequently Asked Questions (FAQs), Backgrounders for the media, articles and ITU News magazines, and other resources continued to be developed or maintained during 2022.

FAQs:

* [ITU-R FAQ on Universal Time Scale (UTC) – Leap Second](https://www.itu.int/en/ITU-R/Documents/ITU-R-FAQ-UTC.pdf)
* [ITU-R FAQ on International Mobile Telecommunications (IMT)](https://www.itu.int/en/ITU-R/Documents/ITU-R-FAQ-IMT.pdf)
* [ITU-R FAQ on the Digital Dividend and the Digital Switchover (DSO)](https://www.itu.int/en/ITU-R/Documents/ITU-R-FAQ-DD-DSO.pdf)
* [ITU-R FAQ on Radio Regulations](https://www.itu.int/en/ITU-R/terrestrial/Pages/by-categories-faq.aspx?maincategorizedby=1)
* Backgrounders for the media and the general public were updated as necessary:
* Terrestrial Issues:
	+ [5G - Fifth Generation of Mobile Technologies (IMT-2020 and beyond)](https://www.itu.int/en/mediacentre/backgrounders/Pages/5G-fifth-generation-of-mobile-technologies.aspx)
	+ [5G, human exposure to electromagnetic fields (EMF) and health](https://www.itu.int/en/mediacentre/backgrounders/Pages/5G-EMF-health.aspx)
	+ [High-Altitude Platform Systems (HAPS)](https://www.itu.int/en/mediacentre/backgrounders/Pages/High-altitude-platform-systems.aspx)
	+ [Radiocommunications for keeping ships and people safe at sea](https://www.itu.int/en/mediacentre/backgrounders/Pages/Radiocommunications-for-keeping-ships-and-people-safe-at-sea.aspx)
* [ITU Study Groups](https://www.itu.int/en/mediacentre/backgrounders/Pages/itu-study-groups.aspx)
* [ITU-R: Managing the radio-frequency spectrum for the world](https://www.itu.int/en/mediacentre/backgrounders/Pages/itu-r-managing-the-radio-frequency-spectrum-for-the-world.aspx)
* Satellite issues:
	+ [Earth stations in motion (ESIM)](https://www.itu.int/en/mediacentre/backgrounders/Pages/Earth-stations-in-motion-satellite-issues.aspx)
	+ [Non-GSO satellite systems](https://www.itu.int/en/mediacentre/backgrounders/Pages/Non-geostationary-satellite-systems.aspx)
	+ [Non-GSO satellite systems with short-duration missions](https://www.itu.int/en/mediacentre/backgrounders/Pages/non-GSO-satellite-systems-with-short-duration-missions.aspx)
	+ [Satellite issues: Small SATS: Nano and Pico - short-duration missions](https://www.itu.int/en/mediacentre/backgrounders/Pages/non-GSO-satellite-systems-with-short-duration-missions.aspx)
	+ [Regulation of Satellite Systems](https://www.itu.int/en/mediacentre/backgrounders/Pages/Regulation-of-Satellite-Systems.aspx) (new backgrounder)

In 2022, our Radiocommunication Bureau received 68 media queries from specialized technical magazines and media expressing interest in our work. We promptly responded to each query, providing the requested information and maintaining positive relationships with the media outlets.

ITU News Hub:

The ITU News Hub was updated with the following:
In 2022, the Radiocommunication Bureau contributed articles to the Special edition of the ITU Magazine on ‘[Tech serving people and the planet](https://www.itu.int/hub/publication/s-gen-news-2022-1/) (digital solutions for all 17 Sustainable Development Goals)’. These were:

* Celebrating radio’s trust and accessibility By Mario Maniewicz, Director, ITU Radiocommunication Bureau
* Preparing for the next World Radiocommunication Conference
* New FM frequencies to expand radio’s reach in Africa
* The WRC-23 website and Booklet were also promoted in this and subsequent editions.

The Director of the Radiocommunication Bureau was a regular contributor to ITUNews articles, blogs and Podcasts. The following news blogs were published in 2022

* [Another step towards FM radio expansion in Africa](https://www.itu.int/hub/2022/02/fm-radio-expansion-africa-ge84-plan/)
* [In radio we trust: The role of technical standards](https://www.itu.int/hub/2022/02/radio-broadcast-technical-standards-itu-r/)
* [How space technologies improve our understanding of water systems](https://www.itu.int/hub/2022/02/space-technologies-water-systems/)
* [World Radio Day: Celebrating trust and accessibility](https://www.itu.int/hub/2022/02/world-radio-day-trust-accessibility/)
* [World Radio Day 2022 Podcast with BR Director Mario Maniewicz](https://soundcloud.com/ituproduction/itu-technologized-interview-with-mario-maniewicz-director-itu-radiocommunication-bureau-1)
* [Radio: The universal medium that leaves no one behind](https://news.un.org/en/story/2022/02/1111882)
* [ITU and space: Ensuring interference-free satellite orbits in LEO and beyond](https://www.itu.int/hub/2022/02/itu-space-interference-free-satellite-orbits-leo/)
* [An inside look at mobile broadband standards development](https://www.itu.int/hub/2022/02/mobile-broadband-standards-imt-5g/)
* [Why space science and spectrum are key for early warning systems and disaster risk reduction](https://www.itu.int/hub/2022/03/spectrum-key-for-early-warning-systems/)
* World Amateur Radio Day: [Young radio amateurs light up the air: Q&A with Philipp Springer](https://www.itu.int/hub/2022/04/young-radio-amateurs-philipp-springer-yota/)
* World Amateur Radio Day: [How to become a radio ‘ham’ in the digital era](https://www.itu.int/hub/2022/04/how-to-become-a-radio-ham-in-the-digital-era/)
* [Safeguarding radio astronomy on the Moon](https://www.itu.int/hub/2022/05/moon-based-radio-astronomy-spectrum/)
* [ITU’s ham radio station celebrates 60 years on air](https://www.itu.int/hub/2022/06/4u1itu-ham-radio-amateur-station-60-years/)
* [ITU’s maritime journey: Then and now](https://www.itu.int/hub/2022/06/seafarer-day-itu-maritime-publications/)
* [Space monitoring at the core of ITU Radiocommunication activities](https://www.itu.int/hub/2022/07/space-monitoring-facilities-oman-radiocommunication/)
* [ITU issues warning on interference with radio navigation satellite service](https://www.itu.int/hub/2022/08/warning-harmful-interference-rnss/)
* [ITU SpaceExplorer: Satellite frequency data at your fingertips](https://www.itu.int/hub/2022/09/itu-space-explorer-satellite-data-dashboards/)
* [World Maritime Day 2022: Leveraging technologies and regulations for greener shipping](https://www.itu.int/hub/2022/09/world-maritime-day-greener-shipping-regulations-technology/)
* World Space Week: [Geospatial data reveal a changing Earth](https://www.itu.int/hub/2022/10/geospatial-data-reveal-a-changing-earth/)
* [Synergies for outer space sustainability: Lessons from ITU experiences](https://www.itu.int/hub/2022/10/space-sustainability-synergies/)
* World TV Day 2022: [Why terrestrial TV broadcasting is crucial in times of crisis](https://www.itu.int/hub/2022/11/world-tv-day-television-emergency-broadcasting/)

The following news blogs were published as part of the World Radiocommunication Seminar (WRS-22) promotion.

* [Global harmonization paves road to WRC-23](https://www.itu.int/hub/2023/01/global-spectrum-harmonization-wrc-process/)
* [The quest for a gender-balanced radiocommunication future](https://www.itu.int/hub/2023/01/wrs-22-the-quest-for-a-gender-balanced-radiocommunication-future/)
* [Regulation of satellites in Earth’s orbit](https://www.itu.int/hub/2023/01/satellite-regulation-leo-geo-wrs/)
* [How ITU-R study groups work](https://www.itu.int/hub/2022/12/wrs-22-how-itu-r-study-groups-work/)
* [Taking stock of terrestrial services](https://www.itu.int/hub/2022/12/taking-stock-of-terrestrial-services/)
* [Mobile broadband trends from 3G to 6G](https://www.itu.int/hub/2022/12/wrs-22-mobile-broadband-trends-from-3g-to-6g/)
* [Trends in maritime communications](https://www.itu.int/hub/2022/12/wrs-22-trends-in-maritime-communications/)
* [Tracking the latest broadcasting trends](https://www.itu.int/hub/2022/11/broadcasting-trends-tv-radio-wrs/)
* [New tools to help navigate and apply the Radio Regulations](https://www.itu.int/hub/2022/11/wrs-radio-regulations-software-tools/)

**8.6.2.2** **Branding communications, Sales and Marketing**

The branding and communication activities carried out during 2022 centered around using the new [ITU News Hub](https://www.itu.int/hub/) platform in collaboration with Sales and Marketing to promote the following ITU-R Publications, databases and software:

* [Space Explorer](https://www.itu.int/itu-r/space/apps/public/spaceexplorer/networks-explorer)
* [WRC-23 Booklet](https://www.itu.int/wrc-23/booklet-wrc-23/)
* [List V – List of Ship Stations and Maritime Mobile Service Identity Assignments 2022](https://www.itu.int/hub/publication/r-sp-lm-v-2022/)
* [Radio Regulation Navigation Tools](https://www.itu.int/hub/2022/11/wrs-radio-regulations-software-tools/)

**8.6.2.3** **Exhibitions and demos**

There were no exhibitions or demos organized during this period.

#### 8.7 Gender Equity

Promoting gender equality in all spheres of today’s digital society has never been more crucial as the world embarks on the Decade of Action to achieve the 2030 Agenda for Sustainable Development. Digital technologies are crucial to the attainment of all the 17 Sustainable Development Goals and increasing the share of women with access to and using digital technologies to better their lives - and by extension improve the lives of their families and society is a development challenge we all have a stake in.

The following activities were progressed in 2022:

### 8.7.1 RAG Correspondence Group on Gender

The activities of the RAG Correspondence Group on Gender (RAG CG-Gender) from the last RAG are described in their separate report (document [RAG/60-E](https://www.itu.int/md/R20-RAG-C-0060/en)) to this RAG meeting.

### 8.7.2 Network of Women for WRC-23 (NOW4WRC23)

At the global level, NOW4WRC23 includes a mentoring program that matches mentors and mentees who are participating in the work of the ITU-R and who have common areas of interest. At the regional level, the NOW4WRC23 initiative is led by Regional NOW4WRC23 CoChairs who carry out regional mentoring programs and workshops in conjunction with the meetings of their associated Regional Telecommunication Organizations.

A NOW4WRC23 session was held during the 2nd ITU Inter-Regional Workshop on WRC-23 Preparation. The session was well received with a presentation sharing regional activities from each of the regions.

**NOW4WRC23 Mentoring Program**

NOW4WRC23 focal points reported that there were lots of activities in the Regions. On the ITU side, they were able to make two presentations during WRS-22 where the attendance was quite high.

Concerning the mentoring program, there has been no significant increase in the number of mentors in the program. At this stage, the best way forward would be to work during events and get some feedback from participants. Some pairs are quite successful, and some are less dynamic. It may be possible to help participants unlock whatever issue they might have and identify how to improve their mentor/mentee relationship. An Excel sheet for the management of pairs was created.

A survey was launched where mentees were asked about their experience in other bodies regarding the representation of women.

# 9 Remaining follow-up actions requested by RAG at its meeting in 2022

The response to RAG’s requests at its 2022 meeting, as contained in the Summary of Conclusions (Administrative Circular [CA/260](https://www.itu.int/md/R00-CA-CIR-0260/en)), was carried out by the BR SGD and is presented in Section 9 of Addendum 1 to this document.

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