



Document RRB24-1/15-E
22 March 2024
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MINUTES*

OF THE

95th MEETING OF THE RADIO REGULATIONS BOARD

4–8 March 2024

Present: Members, RRB

Mr Y. HENRI, Chair
Mr A. LINHARES DE SOUZA FILHO, Vice-Chair
Mr A. ALKAHTANI, Mr E. AZZOUZ, Ms C. BEAUMIER, Mr J. CHENG,
Mr M. DI CRESCENZO, Mr E.Y. FIANKO, Ms S. HASANOVA,
Ms R. MANNEPALLI, Mr R. NURSHABEKOV, Mr H. TALIB

Executive Secretary, RRB

Mr M. MANIEWICZ, Director, BR

Précis-writers

Mr P. METHVEN, Ms C. RAMAGE

Also present: Ms J. WILSON, Deputy Director, BR, and Chief, IAP

Mr A. VALLET, Chief, SSD
Mr C.C. LOO, Head, SSD/SPR
Mr J. CICCROSSI, acting Head, SSD/SSC
Mr J. WANG, Head, SSD/SNP
Mr A. KLYUCHAREV, SSD/SNP
Mr B. BA, acting Chief, TSD, and Head, TSD/TPR
Mr K. BOGENS, Head, TSD/FMD
Ms I. GHAZI, Head, TSD/BCD
Mr D. BOTHA, SGD
Ms K. GOZAL, Administrative Secretary

* The minutes of the meeting reflect the detailed and comprehensive consideration by the members of the Radio Regulations Board of the items that were under consideration on the agenda of the 95th meeting of the Board. The official decisions of the 95th meeting of the Radio Regulations Board can be found in Document RRB24-1/14(Rev.1).

Subjects discussed	Documents
1 Opening of the meeting	-
2 Adoption of the agenda	RRB24-1/OJ/1(Rev.1)
3 Report by the Director, BR	RRB24-1/8+Add.1-5 RRB24-1/DELAYED/1
4 Rules of Procedure	
4.1 List of Rules of Procedure	RRB24-1/1
4.2 Draft Rules of Procedure	CCRR/71
Comments from Administrations	RRB24-1/9
5 Request for the cancellation of the frequency assignments to satellite networks under No. 13.6 of the Radio Regulations	
5.1 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the BRITE satellite network under No. 13.6 of the Radio Regulations	RRB24-1/3
5.2 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the KOSPAS satellite network under No. 13.6 of the Radio Regulations	RRB24-1/4
5.3 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the MESBAH satellite network under No. 13.6 of the Radio Regulations	RRB24-1/5
5.4 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the SJ-9 satellite network under No. 13.6 of the Radio Regulations	RRB24-1/7
6 Requests to extend the regulatory time-limit to bring/bring back into use the frequency assignments to satellite networks	
Submission by the Administration of Solomon Islands requesting an extension of the regulatory time-limit to bring into use the frequency assignments to the SI-SAT-BILIKIKI satellite system	RRB24-1/12
7 Issues regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran	
Submission by the Administration of the Islamic Republic of Iran regarding the provision of Starlink satellite services in its territory	RRB24-1/10
Submission by the Administration of Norway regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran	RRB24-1/11
Submission by the Administration of the United States of America regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran	RRB24-1/13

Further submission by the Islamic Republic of Iran in response to the submissions from the Administrations of Norway and the United States regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran

RRB24-1/DELAYED/2

- 8** Submission by the Administration of the State of Israel requesting that the date of receipt of the original NSL-1 satellite system filing be maintained
- 9** Confirmation of the next meeting for 2024 and indicative dates for future meetings
- 10** Other business
- 11** Approval of the summary of decisions
- 12** Closure of the meeting

RRB24-1/2(Rev.1)

1 Opening of the meeting

1.1 The **Chair** opened the 95th meeting of the Radio Regulations Board at 1400 hours on Monday, 4 March 2024, welcomed the Board members and congratulated Mr Linhares de Souza Filho on his appointment as Vice-Chair and Ms Hasanova on her appointment as Chair of the Working Group on the Rules of Procedure.

1.2 He said that the Board and its members had made a valuable contribution, not only through its thorough report, to the success of the 2023 World Radiocommunication Conference (WRC-23) and the 2023 Radiocommunication Assembly (RA-23) and thanked them for their efforts.

1.3 He reminded all Board members that, in line with paragraph 98 of the ITU Constitution, they were expected to refrain from intervening in decisions directly concerning their respective administration, and that the Board's deliberations were strictly confidential. He wished them a very fruitful meeting and thanked the members in advance for their usual support and collegiality and the Bureau for its indefectible support.

1.4 The **Director of the Radiocommunication Bureau**, speaking also on behalf of the Secretary-General, likewise welcomed the Board members. He said that WRC-23 had been extremely successful, managing to strike balanced outcomes that satisfied all parties and addressed sensitive geopolitical issues. The conference, in addressing priorities across the whole Sector, had reinforced the image of the Bureau and the ITU secretariat, the Board and the entire ITU--R community. The hard work and diligent support of the Board and its members had been much appreciated in that regard. He congratulated the Chair, the Vice-Chair and the Chair of the Working Group on the Rules of Procedures on their appointments and wished the Board a successful meeting.

1.5 **Mr Azzouz**, the outgoing Chair, congratulated Mr Henri on his appointment as Chair and Mr Linhares de Souza Filho and Ms Hasanova on their appointments. He thanked members for their hard work and dedication at RA-23 and WRC-23 and congratulated the Director and the Bureau on the success of the conference.

2 Adoption of the agenda (Document RRB24-1/OJ/1(Rev.1))

2.1 **Mr Botha (SGD)** drew attention to two late submissions (Documents RRB24-1/DELAYED/1 and 2). He said that Document RRB24-1/DELAYED/1 contained a submission from the Administration of the Islamic Republic of Iran withdrawing its request for an extension of the regulatory time-limit to bring back into use the frequency assignments to the IRANSAT-43.5E satellite network.

2.2 Document RRB24-1/DELAYED/2 was a further submission from the Administration of the Islamic Republic of Iran in response to the submissions from the Administrations of Norway and the United States regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran and might therefore be considered alongside those submissions. The further submission had not, however, been received within the regulatory deadline stipulated in the rules of procedure on the Board's internal arrangements.

2.3 He also drew attention to Addenda 1-3 and 5 to Document RRB24-1/8, issued since the publication of the preliminary draft agenda and related to the cases of harmful interference to broadcasting stations in the VHF/UHF bands between Italy and its neighbouring countries. Those addenda would be considered alongside § 4.1 of the Director's report. Addendum 4 to Document RRB24-1/8, meanwhile, described a possible need for new rules of procedure and might be considered alongside the other submissions under item 4 on the Rules of Procedure.

2.4 The **Chair** said that Addendum 4 could be considered under item 4.1, on the list of rules of procedure, but there was no need to reassign the document to that item on the agenda. Document

RRB24-1/DELAYED/1 requested no action from the Board and could be simply noted under the present item, while Document RRB24-1/DELAYED/2 could be considered for information purposes alongside the other submissions under item 7.

2.5 **Mr Azzouz, Mr Talib, Ms Beaumier and Ms Hasanova** agreed that Document RRB24-1/DELAYED/2 could be considered at that meeting for information purposes under agenda item 7.

2.6 **Ms Beaumier** proposed that Document RRB24-1/DELAYED/1 be noted in conjunction with § 1 of the Director's report (Document RRB24-1/8), on actions arising from the 94th meeting of the Board, as it related to agenda item 5.5 of that meeting. **Mr Talib** agreed.

2.7 The **Chair** said that, in his view, the purpose of § 1 of the Director's report was to inform the Board that the requested actions arising from the last Board meeting against the various agenda items had been duly completed rather than to trigger extra information on those items.

2.8 **Mr Azzouz** recalled Document RRB23-3/DELAYED/1, also on the withdrawal of an extension request, and noted that it had been considered under agenda item 3 at the Board's 93rd meeting.

2.9 The draft agenda was **adopted** as amended in Document RRB24-1/OJ/1(Rev.1). The Board **decided** to consider Document RRB24-1/DELAYED/1 under agenda item 3 and Document RRB24-1/DELAYED/2 under agenda item 7 for information.

3 Report by the Director, BR (Documents RRB24-1/8 and Addenda 1-5 and RRB24-1/DELAYED/1)

3.1 The **Director** introduced his customary report in Document RRB24-1/8. He noted that the format of the report had been changed. Hyperlinks had been included and all the tables were now set out in the body of the document, rather than the annexes, for ease of reading.

3.2 Referring to § 3, on the implementation of cost recovery for satellite network filings, he noted that, as detailed in § 3.1, one coordination request concerning a filing from the Administration of Israel had been cancelled as a result of non-payment of invoices. As reflected in § 3.2, the Bureau was preparing the information requested by the Expert Group on Decision 482 at its first meeting in January 2024. The second meeting was likely to be held in conjunction with the meeting of ITU-R Working Party 4A in May 2024.

3.3 Referring to § 7 on the implementation of Resolution **35 (WRC-19)**, he noted that frequency assignments to two satellite systems had been suppressed due to failure to comply with the milestones. Such action showed the clear effect of Resolution **35 (WRC-19)**.

3.4 Referring to § 8, he said that the Bureau was informing the Board of its decision to accept, on an exceptional basis, the late resubmission of the frequency assignments to the GW satellite network of the Administration of China under No. **11.46**.

Actions arising from the last RRB meeting (§ 1 of Document RRB24-1/8 and Document RRB24-1/DELAYED/1)

3.5 The **Chair**, referring to §5.5 of Table 1, drew attention for information to Document RRB24-1/DELAYED/1, in which the Administration of the Islamic Republic of Iran withdrew its request for an extension of the regulatory time-limit to bring back into use the frequency assignments to the IRANSAT-43.5E satellite network. He expressed some surprise that the administration had submitted a request to the Board on 1 October 2023 for the extension of the regulatory time-limit to bring back into use the frequency assignments to the IRANSAT-43.5E satellite network and then actually brought back into use those frequency assignments a matter of days later, before the Board meeting in October 2023, without so much as mentioning that as a possibility. He asked the Bureau for more

information in that regard and also in relation to the SICRAL 2A and SICRAL 3A satellite networks, for which the Board had requested additional information and none had been forthcoming.

3.6 **Mr Vallet (Chief, SSD)** said that the frequency assignments to the IRANSAT-43.5 satellite network (§ 5.5 of Table 1) had been brought back into use on 6 October 2023, with the Bureau duly informed on 31 January 2024 at the end of the 90-day period. The Bureau was still conducting its customary checks. Concerning the SICRAL 2A and SICRAL 3A filings (§ 5.6 of Table 1), the Administration of Italy had informed the Bureau in February 2024 that the frequency assignments to the satellite networks had been brought into use at the end of January 2024. The Bureau had subsequently received an official email from the Administration of Italy indicating that it would not be pursuing its request to the 94th Board meeting. Once the 90-day period had elapsed, the Bureau would begin examining the conformity of the information on the bringing into use of the frequency assignments.

3.7 The Board **noted** § 1 of Document RRB24-1/8, on actions arising from the decisions of the 94th Board meeting. Under the actions related to agenda item 5.5 of the 94th Board meeting, the Board noted for information Document RRB24-1/DELAYED/1, in which the Administration of the Islamic Republic of Iran withdrew its request for extension of the regulatory time-limit to bring back into use the frequency assignments to the IRANSAT-43.5E satellite network as a result of having brought back into use the frequency assignments concerned before the regulatory time-limit in October 2023 and thanked the administration for providing the information.

3.8 In response to information provided by the Bureau, the Board also **noted** under agenda item 5.6 of the 94th Board meeting that the Administration of Italy had informed the Bureau in February 2024 that the frequency assignments to the SICRAL 2A and SICRAL 3A satellite networks had been brought into use at the end of January 2024 and consequently there was no need to extend the regulatory time-limit to bring into use the frequency assignments to those satellite networks.

Processing of filings for terrestrial and space systems (§ 2 of Document RRB24-1/8)

3.9 **Mr Vallet (Chief, SSD)** drew attention to the tables concerning the processing of space notices in § 2 of Document RRB24-1/8. The time-limits for the processing of filings had been reasonably well respected, there were no specific backlogs and the number of filings being treated was within the usual limits. However, a surge was expected in the light of WRC-23 decisions as some administrations would submit coordination requests or advance publication information before the 1 January 2025 date of entry into force.

3.10 The **Chair** said that treatment times for space coordination and notification had been increasing beyond the regulatory time-limits, primarily because of the impact of WRC-23, in particular the renewed interest by administrations to take account of WRC-23 results immediately after the conference, and the usual ITU end-of-year break. He was confident that the delays would decrease in the coming weeks.

3.11 **Mr Azzouz** agreed that treatment times had been too long in some cases.

3.12 **Mr Vallet (Chief, SSD)**, responding to a comment from **Mr Azzouz**, said that no graph had been included with respect to Tables 2-9 and 2-11 since those tables represented the first stage of treatment leading to the Part I-S examination. Instead, graphs concerning the overall Part I-S, Part II-S and Part III-S examinations had been included after Tables 2-10 and 2-12.

3.13 **Mr Ba (acting Chief, TSD)**, drawing attention to Tables 2-1 to 2-4 on the processing of terrestrial notices in Document RRB24-1/8, noted that there had been no revision of findings for frequency assignments to stations of terrestrial services during the reporting period.

3.14 Responding to comments from **Mr Azzouz**, he agreed that subheading 2.1 on review of findings of terrestrial assignments recorded in the Master Register could be placed after the tables in

future reports. The totals given in Tables 2-1 and 2-3 included active cases from previous periods, as indicated in the footnote.

3.15 The **Chair** said that further clarification might be useful in future reports, particularly when the figures in tables did not reflect a running total.

3.16 The Board **noted** § 2 of Document RRB24-1/8, on the processing of filings for terrestrial and space systems, and encouraged the Bureau to continue to make all efforts to process the filings within the regulatory time-limits.

Implementation of cost recovery for satellite network filings (§ 3 of Document RRB24-1/8)

3.17 **Mr Vallet (Chief, SSD)**, drawing attention to Table 3-2, said that the HERMES-IOT network of the Administration of Israel had been cancelled due to non-payment of invoices. The outstanding payment would be added to the accounts receivable of the Member State.

3.18 **Mr Azzouz** requested the Bureau to report to the Board on the second meeting of the Council Expert Group on Decision 482.

3.19 The Board **noted** §§ 3.1 and 3.2 of Document RRB24-1/8, on late payments and Council activities, respectively, relating to the implementation of cost recovery for satellite network filings.

Reports of harmful interference and/or infringements of the Radio Regulations (RR Article 15) (§ 4 of Document RRB24-1/8)

3.20 The Board **noted** § 4 of Document RRB24-1/8, containing statistics on harmful interference and infringements of the Radio Regulations.

Harmful interference to broadcasting stations in the VHF/UHF bands between Italy and its neighbouring countries (§ 4.1 of and Addenda 1, 2, 3 and 5 to Document RRB24-1/8)

3.21 **Mr Ba (acting Chief, TSD)** said that since the Director's report had been prepared, the Bureau had received communications from the Administrations of Malta, Slovenia, Italy and Croatia, set out in Addenda 1, 2, 3 and 5, respectively. According to the update provided by the Administration of Malta (Addendum 1), the provision of VHF/UHF digital broadcasting services was not affected by Italian transmissions, but FM sound broadcasting services continued to be affected. In its communication (Addendum 2), the Administration of Slovenia reported that there had been no improvement in the FM interference situation and that the Italian Administration continued to ignore the rules and obligations emanating from the Radio Regulations and the ITU Constitution and Convention.

3.22 Addendum 3 contained an update in which the Administration of Italy reported on developments with respect to the Adriatic-Ionian DAB agreement. A meeting of the Adriatic-Ionian Group had been scheduled for 29 February 2024 with the aim of finalizing the agreement that had been on hold for more than one year due to differences between the Administrations of Italy and Slovenia regarding the interpretation and application of ITU rules, and Slovenian notifications of the addition of FM stations in the GE84 Plan. The Italian Administration also reported that the DAB interference case reported on block 12C by the Administration of Malta had been resolved. There had, however, been no progress in the interference case affecting the Administrations of Croatia and Slovenia, and the Italian Administration was continuing to use DAB blocks 7C and 7D on a temporary basis until the regional DAB agreement was finalized. With regard to the FM broadcasting situation, the Italian Administration noted that, when finalized, the report of the national working group on the FM frequency band would have to be considered at the appropriate administrative and political levels. In respect of cross-border cases with Switzerland, Slovenia, Croatia and Malta, the Administration of Italy indicated that priority was being given to the national working group rather than to interventions on the ground. The report concluded with a summary of the situation between Italy and France, noting

that the two administrations had met on 14 February and that the French Administration was willing to take into account the existing radio situation. Two more meetings between the two administrations had been planned.

3.23 Addendum 5 contained an update in which the Administration of Croatia reported that additional FM interference cases had been identified and that Italian T-DAB stations continued to operate on blocks not in line with the GE06 Plan.

3.24 The **Chair** thanked all administrations having reported on the status of the too-long-standing interference issue between Italy and its neighbouring countries and said that some progress was being made, albeit at a slower pace than the Board would have liked. He hoped that the meeting of the Adriatic-Ionian Group on 29 February had demonstrated the willingness of the concerned parties to reach agreement since that would be an important milestone in helping to resolve pending interference issues. He noted that various bilateral discussions were also ongoing but that detailed information on defined milestones and timelines from Italy were still missing for the subsequent implementation and migration.

3.25 **Ms Mannepalli**, noting the lack of progress with respect to FM sound broadcasting, asked whether the Administration of Italy had responded in Addendum 3 to the Board's requests at its 94th meeting to fully commit to implementing all the recommendations resulting from the June 2023 multilateral coordination meeting and to providing a detailed action plan for implementing the working group's activities, with clearly defined milestones and timelines, and to make a firm commitment for the plan's implementation.

3.26 **Mr Ba (acting Chief, TSD)** said that it was his understanding from Addendum 3 that the Administration of Italy would be able to provide the detailed action plan requested once the national working group on the FM frequency band had finalized its report and the internal discussions had been concluded. A meeting focusing on the priority list of FM sound broadcasting stations would be held in May.

3.27 **Ms Ghazi (Head, TSD/BCD)** said that she would hope to be able to provide further information to the Board after the annual multilateral coordination meeting in May 2024. When the national working group had been established, the affected administrations, notably Croatia and Slovenia, had been hopeful that progress would be achieved. However, the Italian Administration had indicated that the recommendations emanating from the group would not be mandatory and there was no guarantee that they would result in high-level decisions. Certain issues had also been made conditional on the conclusion of the Adriatic-Ionian agreement.

3.28 Responding to a request for clarification from the **Chair** regarding the priority list of FM sound broadcasting stations, she said that agreement had been reached at a multilateral meeting in 2016 to reduce the number of interference cases to be resolved to a more manageable number (the priority list). The Croatian and Slovenian Administrations, which had recorded the most interference cases, had agreed to reduce the number to be resolved from around 400 to 40. However, as no cases had been resolved after a number of years and as a concession to the Administration of Italy and a gesture of goodwill, they had agreed at the multilateral meeting in 2023 that the Italian Administration should focus on eliminating harmful interference to a single station of the Croatian and Slovenian Administrations, respectively.

3.29 **Mr Fianko** said that he strongly believed that the wide-scale adoption of DAB by the Italian Administration held the key to improving or even totally resolving the complicated FM situation, and the Board might wish to urge the administrations concerned to encourage the digitization process while working to address existing FM interference cases. The situation concerning the Administrations of Slovenia and Italy and the Ionian-DAB agreement was rather frustrating with the former administration delaying the signature of the agreement because the latter was objecting to the

notification of the addition of some FM stations to the GE84 Plan. Both parties should try and find a way forward, and it would be helpful for the Italian Administration to make some concessions as a gesture of goodwill.

3.30 **Mr Azzouz** thanked the Administrations of Italy and Malta for their efforts and cooperation to resolve the issues concerning the use of frequency block 12C and noted with satisfaction that the provision of VHF/UHF digital broadcasting services in Malta was not affected by Italian transmissions. With respect to harmful interference to Croatian and Slovenian stations, he said that the Board should encourage all administrations concerned to finalize the signature of the DAB agreement for possible migration of some FM stations to DAB. On the issue of cross-border cases, the Board should encourage the Administration of Italy to expedite completion of the report of the national working group on the FM frequency band and to take all necessary measures to resolve FM sound broadcasting interference. Welcoming the cooperation between the Administrations of France and Italy, he said that all administrations concerned should be encouraged to cooperate to resolve cross-border interference issues. The Administration of Italy should be urged to take all possible action to cease the operation of all uncoordinated FM sound broadcasting stations. Lastly, the Board should instruct the Bureau to continue providing assistance to the administrations concerned and to report on progress to future Board meetings.

3.31 **Mr Ba (acting Chief, TSD)**, responding to a question from **Mr Azzouz**, said that at the bilateral meeting on 14 February 2024, the Administrations of France and Italy had agreed to continue the discussions. Two further meetings were planned, including to continue examining some entries in the GE84 Plan and the case of Radio Nostalgie in Bonifacio.

3.32 **Ms Hasanova** said that, although there had been some progress since the Board's previous meeting, including between the Administrations of Italy and Montenegro, the Board had been discussing the long-standing issue of harmful interference between Italy and its neighbouring countries for years. There had been no improvement in the FM interference situation between the Italian Administration and the Administrations of Croatia, Malta and Slovenia; in fact, the Administration of Croatia had identified 170 more cases of harmful interference from Italian broadcasting stations compared to 2023. She agreed that the Administration of Italy should be strongly urged to resolve the interference issues and cease the operation of all uncoordinated FM sound broadcasting stations. She noted that conditions appeared to be being placed on the signature of the DAB agreement and sought clarification in that regard.

3.33 **Mr Talib** said that, although progress had been made with respect to DAB interference cases, many issues remained unresolved. The Administration of Italy had not provided a clear and concise response to the requests made by the Board at its previous meeting. The Board should call for progress in resolving cases of harmful interference to FM broadcasting stations and for tangible results in time for the Board's 96th meeting.

3.34 **Ms Beaumier** said that, like other Board members, she had mixed reactions to the information provided. Some progress had been made in resolving DAB harmful interference cases and the Board had still to learn the outcome of the meeting of the Adriatic-Ionian Group on 29 February 2024. She had also been encouraged by the strong commitment shown by the Administration of Italy to only use DAB blocks 7C and 7D on a temporary basis and to migrate the current transmissions to the frequency blocks allocated to the Administration of Italy once the Adriatic-Ionian agreement had been signed. The Board should continue to encourage all concerned parties to conclude that agreement as soon as possible. The situation with FM broadcasting, however, was not as positive. Although some progress had been made in bilateral discussions with the Administration of France, there had been no progress at all in resolving the outstanding harmful interference cases, or even in addressing the priority list. Moreover, the Administration of Croatia had identified additional harmful interference cases. The Administration of Italy had not provided all

the information requested by the Board in its previous decisions, including clearly defined milestones and timelines in respect of the activities of the national working group and implementation of its output, and there was no sense that the process would be concluded in the near future. As the Italian Administration had indicated that it was now giving priority to the national working group rather than to any intervention on the ground, it was now even more necessary for the Board to have clear timelines. The interference issue had been persisting for decades and it was not acceptable that the Board did not have more clarity and commitment from the Administration of Italy.

3.35 **Mr Linhares de Souza Filho** observed that the issue of harmful interference between Italy and its neighbouring countries was listed as a special topic on the Board's website, with the first report having been submitted in 2011. Although the cases of harmful interference to television broadcasting stations appeared to have been resolved, interference to FM sound broadcasting stations persisted and he was uncertain whether the DAB agreement would really solve the issue. The Italian Administration should provide information on the migration to DAB once the agreement had been signed by all concerned parties as the Board needed to have a complete picture. For example, if administrations wished to deploy analogue FM would they still be protected? The Board should repeat its request for an action plan, with clear timelines, and encourage the signature of the DAB agreement. The GE84 Agreement must be respected for all administrations.

3.36 The **Chair** observed that the Italian Administration appeared to have linked certain elements associated with the resolution of the harmful interference to FM broadcasting stations to the conclusion of the Adriatic-Ionian DAB agreement, but what would happen if the signature of the agreement took years? The Italian Administration had yet to provide clearly defined milestones and timelines. In its conclusion, the Board should send a very strong message with a focus on the one identified priority FM sound broadcasting station of each of the Administrations of Croatia and Slovenia. Responding to a comment from **Mr Fianko**, he said that although the Administrations of Croatia and Slovenia might have preferred the Italian Administration to use other GE06 rights instead of blocks 7C and 7D, the Board might still wish to note in its conclusion the use of those DAB blocks on a temporary basis, as it was part of an approach to immediately resolve some interference cases.

3.37 **Mr Azzouz** said that the Board needed to strike a careful balance in its conclusion. If the Italian Administration was requested to focus on individual specific stations, it should not delay its efforts to cease the operation of all uncoordinated FM sound broadcasting stations.

3.38 The **Chair** proposed that the Board conclude on the matter as follows:

“The Board considered in detail § 4.1 of, and Addenda 1, 2, 3 and 5 to, Document RRB24-1/8, on harmful interference to broadcasting stations in the VHF/UHF bands between Italy and its neighbouring countries. The Board noted that:

- a number of meetings had been convened between the Administration of Italy and its neighbours and further such meetings had been scheduled;
- the use of the digital audio broadcasting (DAB) frequency block 12C between the Administrations of Italy and Malta and the case of harmful interference to one FM broadcasting station between the Administrations of Italy and Montenegro had been resolved;
- there was a strong commitment by the Administration of Italy to only use DAB blocks 7C and 7D on a temporary basis with the objective of immediately resolving some interference cases.

While the Board thanked the administrations that had reported on the status of the situation, it noted with grave concern the reports received of a large number of additional cases of harmful interference. Furthermore, the Board continued to express its profound disappointment at the extremely slow progress towards resolving cases of harmful interference to FM sound broadcasting stations. The Board continued to strongly urge the Administration of Italy to:

- fully commit to implementing all the recommendations resulting from the June 2023 multilateral coordination meeting;
- take all necessary measures to eliminate harmful interference to the FM sound broadcasting stations of its neighbouring countries, focusing on the priority list of FM sound broadcasting stations and particularly on the priority FM sound broadcasting station of the Administrations of Croatia and Slovenia as identified at the multilateral coordination meeting in 2023;
- cease the operation of all uncoordinated FM sound broadcasting stations and DAB stations not contained in the Plans of the GE84 and GE06 Agreements, respectively.

The Board continued to encourage the Administration of Italy to consider the migration of FM stations to DAB as an opportunity to assist in resolving the long-standing cases of harmful interference to FM broadcasting stations of its neighbouring countries; however, such migration efforts should not detract from other direct efforts to resolve harmful interference to FM broadcasting stations. Furthermore, the Board urged all administrations to continue their coordination efforts in goodwill and to sign coordination and migration agreements of broadcasting stations as soon as such agreements were reached.

The Board reiterated its request to the Administration of Italy to provide a detailed action plan for implementing the FM Working Group's recommendations, with clearly defined milestones and timelines, to make a firm commitment to the plan's implementation and to report to the 96th Board meeting on progress in that regard.

The Board thanked the Bureau for the support provided to the administrations concerned and kindly instructed the Bureau to:

- continue providing assistance to those administrations;
- continue reporting on progress on the matter to future Board meetings and to report to the 96th Board meeting on the outcome of the multilateral coordination meeting scheduled for May 2024.”

3.39 It was so **agreed**.

Implementation of Nos. 9.38.1, 11.44.1, 11.47, 11.48, 11.49, 13.6 and Resolution 49 (Rev.WRC-19) of the Radio Regulations (§ 5 of Document RRB24-1/8)

3.40 The Board **noted** § 5 of Document RRB24-1/8, on the implementation of Nos. **9.38.1, 11.44.1, 11.47, 11.48, 11.49, 13.6** and Resolution **49 (Rev.WRC-19)** of the Radio Regulations.

Review of findings to frequency assignments to non-GSO FSS satellite systems under Resolution 85 (WRC-03) (§ 6 of Document RRB24-1/8)

3.41 **Mr Vallet (Chief, SSD)**, drawing attention to Table 6-1 of Document RRB24-1/8, on the status of the Article 22 equivalent power flux-density review, said that, since the previous Board meeting, the Bureau had published seven non-GSO satellite systems. Responding to a question from the **Chair**, he said that the Bureau would continue to reduce the backlog, which was around two years, and hoped to be able to eliminate it in 2025. Progress in that regard would be delayed significantly, however, if the Bureau received many modifications to coordination requests submitted under the rules of procedure on No. **9.27**. It was planning to implement Recommendation ITU-R S.1503-4 by developing new software. It would also request that new calculation methods be taken into account.

3.42 The Board **noted** § 6 of Document RRB24-1/8, on the review of findings to frequency assignments to non-GSO FSS satellite systems under Resolution **85 (WRC-03)**

Implementation of Resolution 35 (WRC-19) (§ 7 of Document RRB24-1/8)

3.43 **Mr Vallet (Chief, SSD)**, introducing § 7 of Document RRB24-1-/8, noted that, since the Board's 94th meeting, the frequency assignments to the MCSAT-2 LEO-1 and MCSAT-2 LEO-2 satellite systems had been suppressed. The first milestone had not been achieved in respect of those networks and the constellation should therefore have been reduced. The Bureau, not having received any information to that effect from the notifying administration (France), had sought further clarification under No. **13.6**. The administration had replied that those satellite systems were no longer in operation and could be suppressed. He drew attention to Table 7-1, which presented the status of Resolution **35 (WRC-19)** submissions, and to Table 7-2, which provided details on satellite system deployments by frequency bands.

3.44 The **Chair** noted the positive benefit of Resolution **35 (WRC-19)** and said that it might be of interest in the future, e.g. at WRC-27, to consider a similar approach in respect of non-GSO systems that were not currently within the envelope of Resolution **35 (WRC-19)**.

3.45 Responding to questions from **Mr Azzouz** and **Ms Hasanova**, **Mr Vallet (Chief, SSD)** said that Table 7-1 set out all the Resolution **35 (WRC-19)** submissions that had been published, including those that had met the M3 milestone criteria. The Bureau could remove from the table those cases that had completed the process if the Board wished. Where the expiry of the current milestone was outdated, it was because the processing of the next milestone had not been finalized. Should the Board wish, the Bureau could remove the reference to the publication of the previous milestone when the next one had been attained. From the references 'M1/NO', it should be understood that milestone M1 had not been reached. Failure to reach a milestone, however, did not mean cancellation of a network; measures should be taken by the administration concerned to reduce its size. The footnotes provided further information. The Bureau would be pleased to tailor the content of the table to suit the Board. The figures in red in Table 7-2 indicated that the number of deployments was insufficient to attain Milestone 1; the administrations concerned would therefore have to take action to reduce the total number of satellites.

3.46 The **Chair** said that the milestone process was still in its early stages and that the information presented in Table 7-1 might need to be reviewed in the future in the light of further experience. It might be useful if a footnote were added to the table providing details about satellite system deployments under Resolution **35 (WRC-19)** (Table 7-2) to explain the figures in red.

3.47 The Board **noted** § 7 of Document RRB24-1/8, on progress towards implementation of Resolution **35 (WRC-19)**.

Resubmission of notified frequency assignments to the GW satellite network (§ 8 of Document RRB24-1/8)

3.48 **Mr Vallet (Chief, SSD)**, introduced § 8 of Document RRB24-1/8, in which the Bureau set out the reasons for its decision to accept, on an exceptional basis, the late resubmission by the Administration of China of the frequency assignments to the GW satellite network under No. **11.46**.

3.49 With regard to § 8 of Document RRB24-1/8, dealing with the resubmission of notified frequency assignments to the GW satellite network of the Administration of China, the Board **noted** the actions taken by the Bureau in accepting the late resubmission of the frequency assignments to the satellite network under No. **11.46**.

3.50 Having considered in detail the report of the Director, as contained in Document RRB24-1/8 and in Addenda 1 to 5, the Board **thanked** the Bureau for the extensive and detailed information provided.

4 Rules of Procedure

4.1 List of Rules of Procedure (Document RRB24-1/1)

4.1.1 **Mr Vallet (Chief, SSD)** introduced Document RRB24-1/1, containing lists of proposed rules of procedure and reflecting the impact of WRC-23 decisions on the Rules of Procedure. Attachments 1, 2, 3 and 4 to the document contained, respectively, a preliminary list of WRC-23 decisions which could require review of existing rules or addition of new rules of procedure relating to provisions of the Radio Regulations; a preliminary list of WRC-23 decisions which could require new rules of procedure; preliminary lists of existing rules of procedure which might require updates and of proposed new rules of procedure that could be required (not related to WRC-23 decisions); and a list of WRC decisions reflected in the minutes of WRC-23 plenary meetings that might be candidates for rules of procedure or require modifications to existing rules of procedure.

4.1.2 He said that Document RRB24-1/1 was a living document and would be updated for each meeting. The proposed modifications to, and additions of, rules of procedure in Attachments 1 and 2 had been tentatively assigned to either the Board's 96th or 97th meeting, with those requiring only simple editorial changes anticipated for the former and those requiring more substantive preparation and discussion anticipated for the latter. Work remained ongoing on Attachment 4 and would be completed in due course, with the final list submitted to the Board for review and circulated among administrations.

4.1.3 The **Chair** noted that WRC-23 had, in multiple resolutions, included text instructing that the Bureau, having exhausted the application of other regulatory measures, submit unresolved cases of harmful interference to the Board "for review and the necessary actions", the meaning and application of which the Board might wish to consider at some point. Similarly, the Board might consider the requirement included by WRC-23 in several resolutions that notifying administrations submit "a firm, objective, actionable, measurable and enforceable commitment" alongside Appendix 4 information and how that might differ in practice from a single "commitment". Regarding WRC-23 decisions reflected in the minutes of plenary meetings, the working group might also consider the inclusion of the notion of "neighbouring countries", as mentioned in the minutes of the 8th and 12th plenary meetings, in Attachment 4.

4.1.4 **Ms Beaumier** said that the proposed schedule reflected in the attachments seemed reasonable. Responding to a comment from **Ms Hasanova**, she understood that those draft modifications scheduled for discussion at the 96th meeting would be sufficiently simple so as not to require drafts to be submitted in advance, but that could be confirmed in the working group. Sharing a query of **Mr Azzouz**, she took it that no Board meeting had yet been anticipated for discussion of the decision included in Attachment 4 as the Bureau was still compiling an exhaustive list and would circulate all the relevant decisions once they had been extracted from the minutes and compiled, at which point the Board could deal with them all together.

4.1.5 The **Chair** invited the Working Group on the Rules of Procedure to consider the document in greater detail and the next steps.

4.1.6 **Mr Vallet (Chief, SSD)** introduced Addendum 4 to Document RRB24-1/8, which identified two subjects of possible new rules of procedure. The first was the coexistence of Nos. **5.254** and **5.255**, which resulted in two types of MSS allocation for non-GSO systems in the frequency bands 312 - 315 MHz and 387 - 390 MHz. No. **5.254** provided for an additional allocation subject to No. **9.21**, while No. **5.255** provided for a secondary allocation subject to No. **9.11A**. Thus, frequency assignments to non-GSO MSS systems in the frequency bands 312 - 315 MHz (Earth-to-space) and 387 - 390 MHz (space-to-Earth) were subject to the provisions of both No. **5.254** and No. **5.255**, as currently worded. To avoid the superimposing of the coordination procedure under No. **9.11A** and agreement-seeking procedure under No. **9.21**, the Bureau proposed the introduction of a new rule of

procedure to clarify that only the provisions of No. **5.255** should apply to such frequency assignments. Where, however, filings covered the entire frequency ranges provided for under No. **5.254**, i.e. 235 – 322 MHz and 335.4 - 399.9 MHz, that footnote would apply and not No. **5.255**. If that approach was established in a rule of procedure, certain modifications would need to be made to No. **9.11A**. If adopted, the rule might also be a candidate for application of No. **13.0.1**.

4.1.7 The second subject was the submission of very low values for the maximum power spectral density for emissions of frequency assignments to satellite networks or systems. The issue of excessive or unrealistic characteristics in filings had been discussed at WRC-15 and WRC-19. ITU-R had been instructed to consider the matter further, but it had not yet arrived at any conclusions. The Bureau had already noted a practice of GSO networks being filed with very low maximum power spectral density values, even below -100 dBW/Hz, but had also recently noted a sharp increase in the practice for non-GSO system filings. It was not clear whether such values were reflective of operation. While GSO networks could not operate at such levels, non-GSO systems had more flexibility as altitude and antenna gain could be factors. However, once such power values were recorded in the MIFR or submitted for coordination, they imposed significant constraints on subsequently submitted frequency assignments and posed major challenges to coordination under No. **9.11**. In some cases, such levels had been decreased to meet the stringent power flux-density (pfd) limits under Article **21**, but the Bureau had informed administrations that that was not necessary and that they could include a remark in their filings to the effect that no emission would be measurable in territories where such stringent limits applied, such as over the territory of the United States in Region 2 in the frequency band 1 518-1 525 MHz.

4.1.8 There had been three relevant cases worth noting, one where the administration had, upon being contacted by the Bureau, agreed to remove the very low power levels and make the necessary corrections. In the case of the TARD-1S non-GSO system, meanwhile, the notifying administration had responded with link budget calculations for inclusion in a CR/C special section to clarify the nature of operation and protection. In the case of the SI-SAT-CHIRI system, however, which involved very low values for maximum power spectral density in one frequency band only (1 518 - 1 525 MHz) in order to comply with Article **21** pfd limits over the territory of the United States, the notifying administration had requested that the filing remain as notified but had not submitted any link budget calculations. In the absence of further instructions, the Bureau had issued a favourable finding for the filing and published additional information provided by the administration, as reproduced in Addendum 4 to the Director's report (Document RRB24-1/8).

4.1.9 The Bureau was requesting guidance from the Board for the handling of such cases. Furthermore, to identify very low values for power spectral density at the time of submission, it was proposing a modification to the space validation rules, which, when a value below -100 dBW/Hz was entered, would generate a fatal error for GSO networks and a warning message for non-GSO systems. The practice followed by the Bureau would also be a candidate for application of No. **13.12A b)** and a consequential rule of procedure to clarify that, when the submitted maximum power spectral density value was below -100 dBW/Hz, frequency assignments to GSO networks were not receivable and frequency assignments to non-GSO systems only receivable if clarifications were provided, along with example link budget calculations demonstrating that the submitted carrier-to-noise ratio was met with sufficient interference margin so as not to undermine coordination. The Bureau would prepare a draft rule of procedure if the Board so wished.

4.1.10 **Ms Beaumier** said that she agreed with the approach taken by the Bureau with respect to the submission of very low values for maximum power spectral density and with the proposal to reflect that approach in a rule of procedure. With regard to the overlap of Nos. **5.254** and **5.255**, some clarifications were needed. While the current text of No. **5.254**, introduced in 1971 and last modified in 2003, did not specify category of service, direction of transmission or type of orbit, it would likely

have been envisaged only for application to GSO networks, which would then make No. **5.255** easier to understand. In any case, some clarification of the overlap of the two provisions was clearly needed.

4.1.11 **Ms Mannepalli** said that the submission of very low power levels for emissions of frequency assignments was a serious issue and recalled a submission by an administration to WRC-23 concerning CubeSats fulfilling bringing-into-use or bringing-back-into-use conditions and having a wide range of frequencies with very low power levels. It was understood that GSO networks could not be operated with such levels below -100 dBW/Hz. For non-GSO systems it was important to have link budget calculations. More information was required for the case of the SI-SAT-CHIRI system. In general, she supported the proposal of the Bureau on that issue.

4.1.12 **Mr Cheng** said that a new rule of procedure was needed to clarify the application of Nos. **5.254** and **5.255** to eliminate any ambiguity. The submission of very low power levels for emissions of frequency assignments was a cause for concern, given the significant constraints that would be imposed on subsequently submitted frequency assignments using normal power levels. He fully agreed with the Bureau's proposed approach to processing such filings and that a new rule of procedure might be needed. He suggested that both issues be included in the Board's report to WRC-27 under Resolution **80 (Rev.WRC-07)**.

4.1.13 **Mr Azzouz** said that the Board's work to clarify the application of Nos. **5.254** and **5.255** would be very important, given the significant use of the bands concerned, including by Internet of Things satellites. With respect to the second issue, he asked whether the power values concerned single satellites only or also accumulated levels of constellations.

4.1.14 **Mr Vallet (Chief, SSD)**, responding to a question from **Ms Beaumier**, said that the only addition of wording by WRC-03 to No. **5.254** was "except for the additional allocation made in footnote **5.256A**" at the end of the provision. In some sub-bands of the frequency range in question, it had added a new allocation to the space operation service in certain countries, the compromise being that the new allocation was not protected by the general footnote stating that harmful interference should not be caused to services in the Table of Frequency Allocations. The lower frequency band had been moved lower to protect the radio astronomy service in the middle, but otherwise the text had not been changed. As there was no stated limitation in the footnote, the Bureau applied it to both GSO and non-GSO filings.

4.1.15 Responding to questions from **Ms Mannepalli**, he said that the overlap of the two footnotes posed a problem to application, hence the proposed rule of procedure. Normally, the Bureau would apply both footnotes, which was feasible at the coordination stage as it was possible to work through the different requirements. That approach became much more problematic at the notification and recording stages, as the finding was not the same depending on the provision. The link budget calculations for the TARD-1S system had been provided by the notifying administration but checked and found to be consistent, minus rounding, by the Bureau.

4.1.16 Responding to questions from **Mr Cheng**, he said that more details on the non-GSO filings containing very low power levels could be provided in time for the meeting of the Working Group on the Rules of Procedure, though the most significant cases had been included in the document. In the preceding two study cycles, limited progress had been made on the issue of excessive or unrealistic characteristics in filings. ITU-R Working Party 4A had been focusing on excessive power level values but had not drawn any conclusions. Otherwise, much of the discussion in the last study cycle had focused on preparations for WRC-23, given the challenges posed by the COVID-19 pandemic and having to meet virtually.

4.1.17 The **Chair** invited the Working Group on the Rules of Procedure to consider Addendum 4 to Document RRB24-8 in greater detail and the next steps.

4.1.18 Following meetings of the Working Group on the Rules of Procedure, **Ms Hasanova**, speaking in her capacity as the Chair of the working group, reported that the group had discussed and revised the list of rules of procedure contained in Document RRB24-1/1, agreeing to modify the lists contained in Attachments 1 and 2 to reflect an updated schedule for the consideration of the rules concerned, and to include the two topics described in Addendum 4 to the Director's report (Document RRB24-1/8), the application of Nos. **5.254** to the MSS in the frequency bands 312 - 315 MHz and 387 - 390 MHz and the submission of very low power levels for emissions of frequency assignments to satellite networks or systems, in Table 3-2 of Attachment 3. In addition, the working group had considered aspects related to the modification of the rules of procedure on Resolution **1 (Rev.WRC-97)**, agreeing to the request that the Bureau prepare preliminary draft modifications for the next meeting of the Board. She thanked members and the Bureau for their collaboration in those regards.

4.1.19 The **Chair** thanked the Chair of the Working Group on the Rules of Procedure and the members for their fruitful work and proposed that the Board should conclude as follows on the matter:

“Following a meeting of the Working Group on the Rules of Procedure, under the leadership of Ms S. HASANOVA, the Board revised and approved the list of proposed rules of procedure contained in Document RRB24-1/1, taking into account the proposals by the Bureau for the revision of certain rules of procedure and the proposals for new rules of procedure as contained in Addendum 4 to Document RRB24-1/8, and instructed the Bureau to publish the revised version of the document on the website.

The Board also considered aspects relating to the modification of the rules of procedure on Resolution **1 (Rev.WRC-97)** and gave guidance to the Bureau on preparing preliminary draft modifications to those rules of procedure to be provided to the 96th Board meeting for further consideration.”

4.1.20 It was so **agreed**.

4.2 Draft Rules of Procedure (Circular Letter CCRR/71)

Comments from Administrations (Document 24-1/9)

4.2.1 **Mr Vallet (Chief, SSD)** said that Circular Letter CCRR/71, containing draft modified rules of procedure on No. **9.21** and consequential changes to the rules of procedure on No. **9.36**, had been distributed among administrations. The Bureau had received comments from the Administration of the Russian Federation, which objected to the proposed modifications. In the view of the administration, the modifications ultimately excluded the protection of typical earth stations under the agreement-seeking procedure of No. **9.21** and risked undermining the protection of operating space services in that regard. Furthermore, the administration claimed that the modifications contradicted existing provisions of the Radio Regulations, citing Nos. **5.430A**, **5.431A**, **5.432B** and **5.434**, the Rules of Procedure and decisions from past WRCs, including WRC-23, and added that they might entail changes in the sharing conditions for the frequency bands 1 610 - 1 626.5 MHz, 2 520 - 2 670 MHz and 5 150 - 5 216 MHz.

4.2.2 Responding to a question from the **Chair**, he said that, in the view of the Bureau, the modifications were not excluding the protection of typical earth stations in general; rather, they excluded earth stations notified as part of a satellite network. As stated in the first paragraph of the proposed new § 4, typical earth stations notified as earth stations under No. **11.17** would still be taken into account. Furthermore, in the C-band, including the frequency band 3 400 – 3 700 MHz, which appeared to be the main focus of the administration's attention, typical earth stations were protected by the pfd hard limit provided for in the cited provisions of Article **5**, rather than by the provisions of Nos. **9.21** and **9.18**, which were applied when coordinating, on a case-by-case and first-come-first-

served bases, the stations with other, specific stations as the pfd value at the border was computed based on certain assumptions and some earth stations might diverge in operation from the parameters used to determine the limit. That had been the compromise arrived at by WRC-07 in determining the limit. The value of the pfd coordination trigger used to compute coordination distance in application of No. **9.21** had been chosen to be the same as the pfd hard limit ($-154.5 \text{ dB(W/m}^2 \text{ 4 kHz)}$) as a matter of consistency of the Rules of Procedure with the above-mentioned provisions of Article **5**, rather than to replace the hard limit with application of No. **9.21**. Having different values would likely have led to further problems.

4.2.3 In view of the comments from the Administration of the Russian Federation, he suggested that some changes be made to the wording of the proposed modifications to eliminate any ambiguity. Beginning the second paragraph of § 4 with “however” might suggest a deviation from the established provisions of the Radio Regulations; what followed, though, was more of an explanation of the meaning of § 2 of Appendix **5**. In addition, it would be more technically correct to write “the frequency assignments to a satellite network which contains associated earth stations”.

4.2.4 **Mr Azzouz** suggested that such a clarification on the protection mechanisms, in particular for the frequency band 3 400 – 3 700 MHz, be included in the Board’s decision.

4.2.5 **Mr Cheng** questioned whether that was necessary given that that had been an example referred to by the Administration of the Russian Federation in suggesting how the Board should pursue its modification of the rules of procedure on Nos. **9.21** and **9.36**; stating the Board’s decision in that regard should suffice.

4.2.6 **Ms Beaumier** supported the inclusion of such a clarification in the Board’s decision as it was not possible to expand on the matter in the rule itself because it extended beyond the scope of the application of the rule. Furthermore, other administrations might share the same misunderstanding and it would be helpful to clarify that at the earliest opportunity.

4.2.7 The **Chair** said that there were likely others who had similarly misunderstood that the proposed modifications of the rules of procedure could be eliminating one of the protection mechanisms for FSS stations vis-à-vis IMT stations in that frequency band, which was not the case; thus, clarifying the protection mechanisms in the Board’s decision would be helpful. **Mr Azzouz** and **Ms Hasanova** agreed.

4.2.8 Following meetings of the Working Group on the Rules of Procedure, **Ms Hasanova**, speaking in her capacity as Chair of the working group, reported that the group had considered the draft modified rules of procedure on Nos. **9.21** and **9.36** in view of the comments received from the Administration of the Russian Federation and had agreed on updated modified draft rules of procedure on the two provisions, as reflected in the Annex to the summary of decisions, contained in Document RRB24-1/14(Rev.1). She thanked members and the Bureau for their collaboration in that regard.

4.2.9 The **Chair** proposed that the Board should conclude on the matter as follows:

“The Board discussed the draft rules of procedure circulated to administrations in Circular Letter CCRR/71, along with the comments received from an administration, as contained in Document RRB24-1/9. Regarding the proposed draft modified rules of procedure on Nos. **9.21** and **9.36**, the Board noted the following points:

- The intention of the draft modifications to the rules of procedure on Nos. **9.21** and **9.36** was not to exclude typical earth stations, since frequency assignments to such specific or typical earth stations having been notified separately as earth stations in accordance with Nos. **11.2** and **11.9**, and in accordance with No. **11.17**, could still form the basis of objections.

- Concerning the 3 400 – 3 700 MHz range, the protection of typical stations was specifically afforded by the application of the pfd hard limit of $-154.5 \text{ dB(W/m}^2 \cdot 4 \text{ kHz)}$ at the border of countries, as provided in Nos. **5.430A**, **5.431A**, **5.432B**, **5.431B** and **5.434**, while No. **9.21** was an agreement-seeking procedure with respect to both the fixed and the fixed-satellite services and No. **9.18** was used for the coordination of those terrestrial stations with earth stations, including those having technical characteristics exceeding the parameters used by WRC-07 to determine the hard limit, where such coordination was required.
- The value of the coordination trigger pfd used to compute the coordination distance in application of No. **9.21** had been chosen to be the same as the pfd hard limit, namely $-154.5 \text{ dB(W/m}^2 \cdot 4 \text{ kHz)}$, as a matter of consistency of the Rules of Procedure with the abovementioned provisions of Article **5** of the Radio Regulations.

Consequently, the Board approved the rules of procedure with modifications, as contained in the Annex to the summary of decisions.”

4.2.10 It was so **agreed**.

5 Request for the cancellation of the frequency assignments to satellite networks under No. 13.6 of the Radio Regulations

5.1 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the BRITE satellite network under No. 13.6 of the Radio Regulations (Document RRB24-1/3)

5.1.1 **Mr Loo (Head, SSD/SPR)** introduced Document RRB24-1/3, in which the Bureau justified its request to cancel the frequency assignments to the BRITE satellite network of the Administration of Austria, for which the period of validity had expired.

5.1.2 The **Chair** observed that the Bureau had acted in accordance with No. **13.6** in all four cases before the Board by requesting the administrations concerned to provide evidence of the continuous operation of the satellite networks and to identify the actual satellite in operation. He noted that the Bureau had received no response to the two reminder letters sent to each administration concerned.

5.1.3 He proposed that the Board should conclude on the matter as follows:

“The Board considered the request by the Bureau as contained in Document RRB24-1/3 for a decision on the cancellation of the frequency assignments to the BRITE satellite network under No. **13.6** that had a period of validity until 25 February 2023. The Board further considered that the Bureau had acted in accordance with No. **13.6** and had requested the Administration of Austria to provide evidence of continuous operation of the BRITE satellite network and to identify the actual satellite which was currently in operation, followed by two reminders, to which no response had been received. Consequently, the Board instructed the Bureau to cancel the frequency assignments to the BRITE satellite network in the Master International Frequency Register (MIFR).”

5.1.4 It was so **agreed**.

5.2 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the KOSPAS satellite network under No. 13.6 of the Radio Regulations (Document RRB24-1/4)

5.2.1 **Mr Loo (Head, SSD/SPR)** introduced Document RRB24-1/4, in which the Bureau justified its request to cancel the frequency assignments to the KOSPAS satellite network of the Russian Federation, which had been recorded in the Master Register without a period of validity.

5.2.2 In response to questions from **Mr Fianko, Ms Mannepalli** and the **Chair**, he confirmed that the Administration of the Russian Federation had provided the information sought with respect to all the other satellite networks listed in the annex to Document RRB24-1/4. The KOSPAS satellite network had been notified many years previously when no period of validity had been mandatory.

5.2.3 The **Chair** proposed that the Board should conclude on the matter as follows:

“The Board considered the request by the Bureau as contained in Document RRB24-1/4 for a decision on the cancellation of the frequency assignments to the KOSPAS satellite network under No. **13.6** that had been recorded in the MIFR without a period of validity. The Board further considered that the Bureau had acted in accordance with No. **13.6** and had requested the Administration of the Russian Federation to provide evidence of continuous operation of the KOSPAS satellite network and to identify the actual satellite which was currently in operation, followed by two reminders, to which no response had been received. Consequently, the Board instructed the Bureau to cancel the frequency assignments to the KOSPAS satellite network in the MIFR.”

5.2.4 It was so **agreed**.

5.3 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the MESBAH satellite network under No. 13.6 of the Radio Regulations (Document RRB24-1/5)

5.3.1 **Mr Loo (Head, SSD/SPR)** introduced Document RRB24-1/5, in which the Bureau justified its request to cancel the frequency assignments to the MESBAH satellite network of the Islamic Republic of Iran, which had been recorded in the Master Register without a period of validity.

5.3.2 **Mr Azzouz** said that the Bureau should be encouraged to improve the accuracy of the database.

5.3.3 Responding to a question from the **Chair, Mr Vallet (Chief, SSD)** confirmed that a period of validity had been a mandatory requirement when the MESBAH network had been notified, but the Bureau had initially failed to notice that it had not been provided. The Bureau had subsequently been evaluating the accuracy and completeness of the database. As it had informed WRC-23, it had completed its review of the period of validity and there were no longer any satellite networks in the MIFR without a period of validity. It would continue to review other fields in the database.

5.3.4 The **Chair** proposed that the Board should conclude on the matter as follows:

“The Board considered the request by the Bureau as contained in Document RRB24-1/5 for a decision on the cancellation of the frequency assignments to the MESBAH satellite network under No. **13.6** that had been recorded in the MIFR without a period of validity. The Board further considered that the Bureau had acted in accordance with No. **13.6** and had requested the Administration of the Islamic Republic of Iran to provide evidence of continuous operation of the MESBAH satellite network and to identify the actual satellite which was currently in operation, followed by two reminders, to which no response had been received. Consequently, the Board instructed the Bureau to cancel the frequency assignments to the MESBAH satellite network in the MIFR.”

5.3.5 It was so **agreed**.

5.4 Request for a decision by the Radio Regulations Board to cancel the frequency assignments to the SJ-9 satellite network under No. 13.6 of the Radio Regulations (Document RRB24-1/7)

5.4.1 **Mr Loo (Head, SSD/SPR)** introduced Document RRB24-1/7, in which the Bureau justified its request to cancel the frequency assignments to the SJ-9 satellite network of the Administration of China, for which the period of validity had expired.

5.4.2 The **Chair** proposed that the Board should conclude on the matter as follows:

“The Board considered the request by the Bureau as contained in Document RRB24-1/7 for a decision on the cancellation of the frequency assignments to the SJ-9 satellite network under No. **13.6** that had a period of validity until 14 October 2022. The Board further considered that the Bureau had acted in accordance with No. **13.6** and had requested the Administration of China to provide evidence of continuous operation of the SJ-9 satellite network and to identify the actual satellite which was currently in operation, followed by two reminders, to which no response had been received. Consequently, the Board instructed the Bureau to cancel the frequency assignments to the SJ-9 satellite network in the MIFR.”

5.4.3 It was so **agreed**.

6 Requests to extend the regulatory time-limit to bring/bring back into use the frequency assignments to satellite networks

Submission by the Administration of Solomon Islands requesting an extension of the regulatory time-limit to bring into use the frequency assignments to the SI-SAT-BILIKIKI satellite system (Document RRB24-1/12)

6.1 **Mr Loo (Head, SSD/SPR)** introduced Document RRB24-1/12, in which the Administration of Solomon Islands provided further information to support its request to extend the regulatory time-limit to bring into use the frequency assignments to the SI-SAT-BILIKIKI satellite system. It addressed the requests made by the Board at its 94th meeting for additional details. Annex 1 to the administration’s report contained a notarized affidavit from the operator, Pangea, confirming the in-house manufacture of the Dreamcatcher payload; existence of a contract between Othernet Inc, the Pangea parent company, and Orbital Astonautics Ltd (OrbAstro), the orbital infrastructure provider; completion of extensive electrical and radio-frequency testing by Pangea and flight-acceptance testing and integration by OrbAstro; and the launch of the mission, as well as updating the Board on the status of the hosted payload and the course of events that had led to its failure, including attempts to resolve the technical failure. Annex 2 provided a redacted copy of the first and signature pages of the hosted payload service contract between Othernet and OrbAstro. Annex 3 contained an archived extract from the SpaceX website confirming the inclusion of the GUARDIAN-ALPHA host satellite on the SpaceX Falcon-9 v1.2 Transporter 6 launch vehicle (Transporter 6). Annex 4 contained public-domain information, an extract from Jonathan’s Space Report, confirming the failure of GUARDIAN-ALPHA to eject from the Transporter 6 dispenser with its hosted payload. Annex 5 provided documentation confirming the capability of Dreamcatcher to transmit and receive on the notified frequency assignments. Lastly, Annex 6 contained an e-mail from OrbAstro to Pangea confirming completion of flight-acceptance testing and integration of the hosted payload.

6.2 The administration had explained in detail how the situation met the four criteria to qualify as a case of *force majeure* and provided a rationale for the requested 36-month extension. The affidavit also stated that the Dreamcatcher development programme had begun much earlier, in mid-2020, than the effective date of the contract between Othernet and OrbAstro. It also recalled that Pangea had initially been informed by OrbAstro, and thus reported to the Board, that OrbAstro had been unable to communicate with GUARDIAN-ALPHA and concluded that its electrical power system had failed, rendering it impossible to communicate with the host and command it to switch on the electrical power supply to the hosted payload. Further investigation had revealed, however, that GUARDIAN-ALPHA had not ejected from the Transporter 6 dispenser and had been destroyed when the dispenser re-entered the Earth’s atmosphere, as confirmed by the sworn affidavit. The administration said that attempts to identify an interim solution had not borne fruit, as no existing in-orbit satellite could be found to bring into use the filing. It also confirmed that it had been unable to

initiate work in earnest on the replacement project as funding was contingent on the extension being granted and the original filing being retained, although some initial activities had commenced.

6.3 The **Chair** welcomed the additional information submitted by the Administration of Solomon Islands. Most of it, however, related to the sworn affidavit, which, while appreciated, might have been supplemented by information and evidence directly from OrbAstro or the launch provider to facilitate the Board's consideration further. For **Mr Fianko**, though, given that a sworn affidavit was acceptable in a court of law, it was sufficient to justify arguments and support other documents for the purposes of the Board.

6.4 **Ms Beaumier** and **Ms Mannepalli** welcomed the information and documentation provided but expressed some surprise that the redacted copy of the contract showed that it had been signed by both counterparts after the effective date of the contract and, in the case of Othernet, after the launch. They queried whether that was normal, acceptable practice. **Mr Loo (Head, SSD/SPR)** said that the Bureau was unable to provide any further information why the signature of the CEO of OrbAstro had been dated 11 January 2023 as compared to the date of the signature of the CEO of Othernet of 4 July 2022. **Ms Mannepalli** also noted with some surprise that Pangea, a wholly owned subsidiary, and its parent company shared the same chief executive officer.

6.5 Noting the change in the nature of the event being cited as a case of *force majeure*, **Ms Mannepalli** also expressed surprise that the operator had not been aware that GUARDIAN-ALPHA had not made it into orbit by the time of the original submission, given that the issue was originally submitted to the Board's meeting in June 2023, whereas the satellite had been launched in January 2023.

6.6 The **Chair** said that he was satisfied that the additional information had provided evidence of a contract for a hosted payload, with the capability to transmit and receive the notified frequencies, and its launch. The inability to communicate with GUARDIAN-ALPHA and, therefore, the Dreamcatcher payload, despite the efforts of OrbAstro, and the failure of GUARDIAN-ALPHA to eject from the Transporter 6 dispenser demonstrated that the event had been beyond the control of the administration or operator. Testing by Pangea and OrbAstro had not revealed any anomalies or potential issues with deployment; thus, the event could be deemed unforeseen. There also appeared to be a clear causal link between the inability to communicate with the Dreamcatcher payload and inability to bring into use the frequency assignments to the SI-SAT-BILIKIKI system. The Board might therefore reasonably conclude that the conditions of *force majeure* had been met. However, he was troubled by the lack of information on the long-term development of the whole project, which represented a constellation comprising some 300 satellites operating various frequency assignments on 38 orbital planes at altitudes of 300, 500, 550, 1 000 and 1 200 km. The Board only had information on one of those satellites. As presented by the administration, the notified frequency assignments to that entire system would be brought into use by that single hosted payload on a three-unit CubeSat to secure the system filing in the MIFR in the short term. While the Board had not requested information on the long-term project, he would feel more comfortable about the reality and context of the project if it had been provided.

6.7 **Ms Beaumier**, **Mr Linhares de Souza Filho**, **Ms Hasanova**, **Mr Alkahtani** and **Mr Fianko** were satisfied that the administration had provided the Board with the information it had requested at its 94th meeting and demonstrated that the case met the four criteria to qualify as *force majeure*. **Ms Beaumier** also shared concerns with respect to the long-term development plans for the project but noted that the Board had not requested information in that regard.

6.8 **Mr Azzouz** having thoroughly analysed the submission and compared it against the additional information requested by the Board at its previous meeting, likewise agreed that the administration had provided the requested evidence and demonstrated that the failure of GUARDIAN-ALPHA to eject from the Transporter 6 dispenser and subsequent destruction of the

host and Dreamcatcher hosted payload on re-entry qualified as a case of *force majeure*. More information on the whole project schedule would, however, have been appreciated.

6.9 **Mr Nurshabekov** said that the case could be considered as one of *force majeure* based on the information provided and welcomed the administration's attempts, albeit in vain, to identify an existing in-orbit satellite as an interim solution to bring the notified frequency assignments into use.

6.10 **Mr Loo (Head, SSD/SPR)**, replying to a question from **Mr Talib**, said that there were no details as to the nature of the flight-acceptance testing performed by OrbAstro, thus the Bureau could not itself say whether the testing had been comprehensive. The affidavit confirmed the completion of those tests and the tests performed by the operator prior to shipment of the payload to OrbAstro, which, following its testing, had e-mailed the operator to confirm that the satellite was qualified, testing had been completed and reports had been sent to SpaceX, as reproduced in Annex 6, which contained an image of inside the test pod.

6.11 **Mr Talib** said that, based on the information provided, the event qualified as a case of *force majeure*, but he would have wished to know whether the testing conducted had anticipated the type of technical issue that ultimately occurred.

6.12 **Ms Mannepalli** said that it was not clear from the information provided if the technical issues that had occurred had been tested for. At its 94th meeting, the Board had requested information on the results of the payload integration/tests and the flight acceptance tests but had only received a copy of the e-mail from OrbAstro and the affidavit from the operator saying that testing had been completed, without specifically mentioning electrical testing. It was critical to know that the payload had been able to draw power from GUARDIAN-ALPHA, which could have been tested. Nevertheless, based on the information provided, the event met the criteria to qualify as a case of *force majeure*.

6.13 **Mr Loo (Head, SSD/SPR)**, replying to questions from **Ms Hasanova**, said that the date of receipt of the notification published in the Part II information was 1 November 2023 as that had been the date of receipt of resubmitted notification information. The date of receipt of the initial notification had been 7 September 2021, well in advance of the seven-year regulatory time-limit. The note stating that the satellites would operate at the same time and not as mutually exclusive configurations stemmed from when there had been no concept of mutually exclusive configuration in Appendix 4. Administrations would provide a note to that effect at the beginning of the process to show that all orbits were intended to operate at the same time and then that note would be carried through to publication. Therefore, it was understood that the whole constellation would operate at the same time.

6.14 **Mr Cheng**, while welcoming the extra information provided by the administration, said that he was not convinced that that information had confirmed that Dreamcatcher had the capability to bring into use the frequency assignments to the SI-SAT-BILIKIKI system or that the case could qualify as one of *force majeure*. He had doubts that Dreamcatcher, a very small payload, was itself capable of bringing into use the notified assignments to a constellation of some 300 satellites with diverse orbital parameters. Moreover, it had been hosted on GUARDIAN-ALPHA, another small payload, for which the administration had submitted no information to demonstrate to the Board that the orbital parameters of GUARDIAN-ALPHA and Dreamcatcher were a sufficient match for all the notified SI-SAT-BILIKIKI frequency assignments to have been brought into use. In that regard, he recalled that both the Board's and the Director's report to WRC-23 had raised some concern regarding the application of No. 11.44C. He was hesitant to grant an extension without more details of the project and schedule for the entire constellation. No plan had been provided for the implementation of the whole system at the end of the seven-year regulatory time-limit. To his knowledge, the present case was the first instance of a non-GSO constellation where Resolution 35 (WRC-19) would not apply. The Board should be careful and thorough in its decision-making, as the outcome would set a

precedent for similar cases in the future. Nevertheless, he would be prepared to recognize the case as one of *force majeure* if that was the majority opinion of the Board.

6.15 The **Chair** said that it was regrettable that there was not yet a milestone-based approach similar to that contained in Resolution **35 (WRC-19)** for such filings in order to allow the Board to take decisions on bringing into use, safe in the knowledge that the administration would have to meet a certain satellite-deployment threshold after a given period of time. Resolution **35 (WRC-19)** did, however, instruct the Bureau to continue to identify and report on specific frequency bands in specific services for which there might be a problem similar to that which resulted in the creation of that resolution. Thus, the present case might warrant consideration in the Director's Report to WRC-27 in that regard. With respect to the lack of information on the destination of GUARDIAN-ALPHA, he recalled that the Board had not requested such information. The Board might, however, give the benefit of the doubt and reasonably assume that GUARDIAN-ALPHA would have reached an appropriate orbital plane and deployed Dreamcatcher at one of the altitudes associated with the SI-SAT-BILIKIKI system, given that the constellation planned for satellites at altitudes of 300, 500 and 550 km and that many satellites usually reached at least those altitudes. If the Board reverted back to the administration, he expected that evidence to that effect would be provided.

6.16 Noting the shared view of the Board to qualify the case as one of *force majeure*, he drew attention to the schedule for the replacement project and rationale for the requested 36-month extension. For him, the proposed schedule was overly formulaic, more the product of imitating existing patterns for a satellite project rather than a considered, substantiated time-frame based on discussions with stakeholders and backed up by evidence. The 36 months had not been sufficiently justified. For such a small satellite and hosted payload, the period from integration to launch could be much shorter with easier access to launch slots. Furthermore, holding the project in abeyance pending a decision by the Board was a decision by the operator and notifying administration, not related to the application of the recording process under the Radio Regulations, or to any decision by the Board. In doing so, the administration had seemingly, and quite remarkably, made the future of the project contingent on the Board's decision and retaining the original filing, which could easily be resubmitted if the extension was not granted, and cast doubt on the credibility of the project or the purported secured funding. Over a year had passed since the launch failure; even if the administration had not immediately known the exact status of GUARDIAN-ALPHA and Dreamcatcher or the reason behind that failure, more could and should have been done. In determining the appropriate extension, the Board should be wary of opening the door to inconsistent decisions on the length of extensions in the future.

6.17 **Ms Beaumier** said that the administration had gone some way to justifying its albeit very pro-forma schedule, recalling in particular its need to make arrangements with a different orbital infrastructure provider to host the replacement payload. She also noted that the administration would have been entitled to a three-year extension under No. **11.49** if the failure had occurred in orbit. Nevertheless, she agreed that the last 12 months of the schedule appeared to include time for contingency and was not fully justified. The lack of progress made on a replacement was also a concern, but it was somewhat understandable that the administration should not want to incur any financial commitments until there was regulatory certainty. However, based on the information provided, some preparatory work had been carried out. While no information on the access to funding had been provided, there were various reasons why it might depend on the failure being qualified as a case of *force majeure*, such as insurance coverage. It was not necessarily easy to tap into funding to begin again or unusual that an administration would begin operation of such a system with a prototype while it assessed its best options for subsequent deployment. There might be some doubt as to the credibility of the project, but there was also sufficient room for the Board to give the benefit of the doubt.

6.18 **Mr Talib, Ms Mannepalli and Ms Hasanova** agreed that the presented schedule was pro forma and lacking in detail and supporting information, and that the nine months spent pending a decision by the Board on the extension should be deducted from the requested length of extension.

6.19 **Mr Linhares de Souza Filho** recalled that the administration in its original submission to the Board in June 2023 had already been requesting an extension based on a total schedule of 36 months, i.e. before nine months had been spent pending a decision by the Board. He agreed that those nine months should be deducted from the requested extension and a clear signal sent that such practice was unacceptable.

6.20 **Mr Alkahtani** said that, in his view, the administration had demonstrated that it could not fund the project until the Board had granted an extension and the timeline was sufficient to grant a 36-month extension.

6.21 **Mr Nurshabekov** pointed out that the administration had referred to the 36 months requested as “the total minimum schedule” and was, by extension, not wholly convinced that it would be sufficient. He said, though, that 36 months was a long period and usually granted to larger, GSO network projects.

6.22 **Mr Fianko** suggested that the Board, as it had done in the past, inform the administration that it considered the case to meet the criteria of *force majeure* but wished to have concrete, substantiated information before committing to the length of extension.

6.23 The **Chair** said that he would prefer a decision to be taken at that meeting on the length of the extension, considering it unlikely that the administration would provide any further detail than it already had in its two submissions thus far and, as the regulatory time-limit had already passed, more time would need to be added to the extension. **Ms Beaumier** and **Ms Mannepalli** agreed, with the latter adding that the administration had also not provided any detail to substantiate its claim that the project to develop the Dreamcatcher payload had begun in mid-2020, much earlier than the effective date of the contract between Othernet and OrbAstro.

6.24 **Mr Azzouz** said that the requested extension was limited and qualified, bearing in mind that the 36 months would run from 30 June 2023 and that the administration was, in effect, requesting an additional, reasonable period of 27 months to develop and bring into use a new satellite.

6.25 The **Chair** said that, according to the ITU-R *Handbook on Small Satellites* and the CubeSat community, small satellites could be built and launched quickly, in as little as 18 months; for him, therefore, 18 months was the benchmark period. With those 18 months running from 30 June 2023, he would countenance an additional few months to allow for at least a year from the end of the present meeting of the Board in order to design, build and launch a new satellite.

6.26 **Mr Linhares de Souza Filho** noted that the chapter of the *Handbook on Small Satellites* in question referred to small satellites in a geostationary orbit and made no mention of a design stage. The project at hand was for a non-GSO system and might again require a prototype to be designed and built.

6.27 **Ms Beaumier** said that, if the Board wished to apply that benchmark, those 18 months would need to run from the decision to grant the extension and, therefore, to follow an additional nine months to bridge the period from the end of the regulatory period to the Board’s decision; she thus favoured an extension of 27 months in total. Such an approach should in no way, however, be taken as an endorsement of not advancing the project pending a decision by the Board. A total of 30 months would be the absolute maximum for her, but less than 27 months would only be acceptable if the Board clearly explained its rationale as it would in practice be granting less time than it had identified as the minimum. **Ms Hasanova** and **Mr Di Crescenzo** agreed.

6.28 **Mr Nurshabekov** said that more than 12 months had passed since the launch failure without the administration taking any concrete action towards a replacement satellite. The administration could in fact have reported the issue to the 92nd meeting of the Board. He thus suggested that those 12 months be deducted from the requested 36 and an extension of 24 months be granted.

6.29 The **Chair** said that the administration would likely not have been in possession of sufficient facts in time for the 92nd meeting, but it could clearly have submitted its request in a timely manner for the 93rd. He could agree to granting 22.5 months on the basis of 18 months plus 4.5 months, instead of the extra nine, as the administration had failed to submit its contribution to the 93rd meeting on time, or perhaps to as many as 24 months. The rationale would be to urge the administration into action, if it was a genuine project. It had not been very aggressive in its scheduling and some of the activities could be conducted in parallel.

6.30 **Ms Beaumier** said that the administration could have been late in submitting its contribution to the 93rd meeting for various reasons, including a possible lack of experience or available expertise.

6.31 **Mr Azzouz** agreed with the figure of 27 months but had arrived at that length differently, by reducing the amount of time allowed for between the completed integration of payload with host and the launch from 12 months to three.

6.32 **Mr Fianko, Mr Linhares de Souza Filho and Mr Talib** said that for the Board's decision to be meaningful, the extension granted had to provide a realistic time-frame to implement the project and should therefore factor in time lost since the end of the regulatory period. **Mr Fianko** added, however, that, in its decision, the Board should state that the practice of staying one's hand pending decision by the Board was unacceptable. For **Mr Talib**, the total extension should comprise at least 27 months. **Mr Linhares de Souza Filho** agreed that 27 months was the most balanced solution but could concede to an extension of 24 months on the rationale that certain activities would overlap; any less and it was likely the administration would return with further extension requests.

6.33 **Mr Talib** suggested that the Board in its decision make reference to the administration's status as a developing country and specific constraints in that regard.

6.34 The **Chair** said that, as the case concerned a massive, expensive project intended for global service and coverage rather than for domestic nationwide service, that reference might be questioned. Similarly, suggestions that the administration was short on experience or expertise were wide of the mark: the Administration of Solomon Islands already had a number of filings for non-GSO systems involving substantial projects.

6.35 **Ms Mannepalli** also said that the Board should make no reference to the administration's status as a developing country as the administration itself had not invoked it.

6.36 The **Chair**, noting that there was a broad majority to grant an extension of 27 months, said that he would concede in the spirit of consensus and proposed that the Board should conclude on the matter as follows:

“With regard to the submission from the Administration of Solomon Islands as contained in Document RRB24-1/12, the Board thanked the administration for the comprehensive answers provided to the Board's questions from its 94th meeting. From the information provided, the Board noted the following points:

- The Dreamcatcher payload had been manufactured in-house by the satellite operator with the capability to bring into use the notified frequency assignments of the SI-SAT-BILIKIKI satellite system.
- Evidence had been provided of a contract between the hosted payload provider and the parent company of the satellite operator.

- Confirmation had been received of successful testing during the payload integration and flight acceptance phases of the project.
- The hosted payload, along with the host spacecraft, had failed to eject from the dispenser and had been destroyed during re-entry into the Earth's atmosphere.
- In the absence of information on the orbital characteristics of the host spacecraft GUARDIAN-ALPHA, it was unclear whether the Dreamcatcher hosted payload would have reached one of the notified orbital planes of the SI-SAT-BILIKIKI satellite system, but the filing provided numerous low altitude orbital options.
- The administration had requested that the regulatory time-limit of the SI-SAT-BILIKIKI satellite system be extended by 36 months to 30 June 2026.

The Board considered that the information provided constituted substantive evidence that all four conditions had been met for the situation to qualify as a case of force majeure due to a launch failure.

Regarding the length of the extension required to procure a replacement satellite, the Board noted that:

- access to funding did not allow the operator to start the procurement programme for the SI-SAT-BILIKIKI satellite system replacement until the requested extension was granted by the Board;
- according to the ITU *Handbook on Small Satellites* (Edition 2023, page 173), "small satellites can be built and launched quickly, in as little as 18 months";
- the 16 months planned for the delivery of the payload to the host up until the launch was not fully justified.

Taking the above into account, and also the Board's concerns about the inclusion of additional margins or contingencies, the Board concluded that the extension should not exceed 27 months. The Board was of the view that the length of the extension requested should not be justified based on the time required to obtain a decision from the Board. Efforts to bring into use the frequency assignments should not be held in abeyance pending the Board's decision.

Consequently, the Board decided to accede to the request from the Administration of Solomon Islands to extend the regulatory time-limit to bring into use the frequency assignments to the SI-SAT-BILIKIKI satellite network to 30 September 2025."

6.37 It was so agreed.

7 Issues regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran

Submission by the Islamic Republic of Iran regarding the provision of Starlink satellite services in its territory (Document RRB24-1/10)

Submission by the Administration of Norway regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran (Document RRB24-1/11)

Submission by the Administration of the United States of America regarding the provision of Starlink satellite services in the territory of the Islamic Republic of Iran (Document RRB24-1/13)

Further submission by the Islamic Republic of Iran in response to the submissions from the Administrations of Norway and the United States regarding the provision of

Starlink satellite services in the territory of the Islamic Republic of Iran (Document RRB24-1/DELAYED/2)

7.1 **Mr Vallet (Chief, SSD)** introduced Document RRB24-1/10, in which the Administration of the Islamic Republic of Iran provided an update to the Board on the continuing unauthorized provision of broadband Internet service by the Starlink satellite system in its territory. The administration requested that Board members strongly urge the responsible administrations to comply with Article **18** of the Radio Regulations as well as Resolutions **22 (WRC-19)** and **25 (Rev.WRC-03)** and the decision of the 94th meeting of the Board by taking immediate action to disable Starlink terminals operating within the territory of the Islamic Republic of Iran. The administration had communicated its measurements to the Administrations of Norway and the United States, as reflected in Annexes 1 and 2 to the document, and requested appropriate action, but, with Internet service still available in the country, it considered that none had been taken.

7.2 Following the 94th meeting of the Board, the Bureau had contacted the Administrations of Norway and the United States as instructed, and their replies could be found in Documents RRB24-1/11 and RRB24-1/13, respectively. Norway was the notifying administration for the STEAM-1/1B/2/2B satellite systems and the United States an associated administration, although the United States had been the notifying administration for some later filings for which the notified frequency assignments had not yet been brought into use. Both administrations stressed that neither they nor the operator had authorized the transmissions from the Starlink terminals identified by the Islamic Republic of Iran.

7.3 The Administration of Norway sought clarification as to the Board's reference to Resolution **25 (Rev.WRC-03)** in its decision at the previous meeting, as, in its view, the resolution did not apply to the Starlink system operating in the fixed-satellite service in frequency bands above 3 GHz. The administration claimed that the resolution covered global mobile personal communications by satellite (GMPCS) as defined by Recommendations ITU-R M.1343 and M.1480, which referred to the frequency band 1 - 3 GHz.

7.4 Both Norway and the United States pointed to licence obligations imposed on SpaceX as the operator of the Starlink satellite system which restricted operation of transmitting earth stations to only territories where authorization for such services had been received. The administrations had also referred to system measures which prevented the subscription of service for, or shipment of equipment to, locations in territories for which no service authorization had been received. Stressing that it was not possible to determine the intention of subscribers to import Starlink terminals for operation into territories where such operation had not been authorized, the United States said that, once the terminal had been purchased and service initiated in a territory where such service was authorized, it was not practicable to verify the whereabouts of every single user terminal communicating with the Starlink space stations. It added that the space station operator had permanently disabled the terminals, and deleted the associated accounts, reported by the Administration of the Islamic Republic of Iran.

7.5 In the view of Norway, all practical steps had been taken to prevent unauthorized transmissions of satellite earth stations, and it was not in a position to enforce further actions on the licensee under the various provisions of the Radio Regulations. Indeed, it pointed to WRC-27 agenda item 1.5 and its associated Resolution **14 (WRC-23)** as a suggestion of ambiguity in the regulatory instruments with respect to prevention of operation of unauthorized satellite earth stations. Nevertheless, the administration was committed to working closely with the Islamic Republic of Iran to resolve any cases of confirmed unauthorized transmissions from Starlink terminals and had provided an e-mail address for more direct communication on the matter.

7.6 In Document RRB24-1/DELAYED/2, the Administration of the Islamic Republic of Iran had responded to the communications from Norway and the United States. In its view, the scope of

Resolution **25 (Rev.WRC-03)** was broader than that of the two ITU-R Recommendations and applied in that case. It also suggested that there should be additional measures to ensure that terminals smuggled into its territory could not operate and provide unauthorized service there. Furthermore, it refuted the claims of the Administrations of Norway and the United States that the whereabouts of terminals could not be practicably tracked, as a service message appeared, in English and Persian (see Annex 1 to Document RRB24-1/DELAYED/2), once a terminal was switched on within Iranian territory, advising that Starlink be used with caution and assuring users that Starlink would not provide personal information to the authorities. Moreover, public statements on social media (see Annex 2 to Document RRB24-1/DELAYED/2) by the SpaceX founder clearly demonstrated the operator's knowledge of active terminals within Iranian territory. According to the administration, many illegal terminals were still operating within Iranian territory, despite the claims made by Norway and the United States, with the only terminals disabled being those used by the Administration of the Islamic Republic of Iran to conduct its measurements. It concluded by urging the Board to take a concrete decision to oblige the notifying and associated administrations to immediately cease Starlink service availability in the Islamic Republic of Iran.

7.7 The **Chair** said that, in his view, Resolution **25 (Rev.WRC-03)** applied to the case of the provision of Starlink services in the Islamic Republic of Iran as it covered all global satellite systems and stations intended to provide public personal communications through fixed, mobile and transportable terminals and was not limited to a specific technology. The references in the resolution to the ITU Constitution (*noting a*), Article **18** (*noting c*) and the right of each Member State to decide on its participation in those systems, and the obligations for entities and organizations providing international or national telecommunication services by means of those systems to comply with the legal, financial and regulatory requirements of the administrations in whose territory the services were authorized (*noting d*) were extremely relevant. Furthermore, *resolves* of Resolution **25 (Rev.WRC-03)** did not mention specific frequency ranges and was likewise highly pertinent in providing that administrations licensing global satellite systems and stations intended to provide public personal communications by means of fixed, mobile or transportable terminals should ensure, when licensing those systems and stations, that they could be operated only from the territory or territories of administrations having authorized such service and stations in compliance with Articles **17** and **18**, in particular No. **18.1**. **Mr Azzouz, Ms Beaumier, Mr Talib, Mr Fianko, Ms Mannepalli, Mr Cheng, Mr Alkahtani, Ms Hasanova and Mr Di Crescenzo** all shared the same view. **Ms Beaumier** recalled that, at the time of drafting, the focus of the resolution had certainly been GMPCS in frequency bands below 3 GHz, but it could not be inferred from the operative text of Resolution **25 (Rev.WRC-03)** that it should apply solely to that technology and those frequency bands.

7.8 With respect to the purported ambiguity in the regulatory instruments inferred by Norway from the adoption of provisional WRC-27 agenda item 1.5, the **Chair** said that, for him, there was no ambiguity as far as the provisions of Article **18**, *resolves* 1 and 2 of Resolution **22 (WRC-19)** and *resolves* of Resolution **25 (Rev.WRC-03)** were concerned. The reason for the adoption of that provisional agenda item had been related to further consideration of the enforcement of those provisions.

7.9 The Board might consider thanking the Administrations of Norway and the United States for their submissions but challenging them on whether further actions were possible. Norway had said that it was not in a position to enforce further obligations on the licensee, and the United States had stated that checking the location of every terminal communicating with a space station was not practicable. Impracticable did not, however, mean impossible. In addition, the measures reported by the two administrations in disabling the reported terminals and associated user accounts had been corrective rather than preventive. If press reports were to be trusted, and SpaceX had thus far not denied it, Starlink services were said to have been disabled over an area of Ukraine during the

Russian-Ukrainian conflict. Furthermore, coordination agreements, in particular with respect to the radio astronomy service, were often contingent on non-transmission in certain areas. In his view, there was more that could be done to prevent service transmission in territories where it had not been authorized. Moreover, tracking and management of earth stations communicating with space stations were vital to effective management of systems, which only had limited capacity and could be brought offline by overloads; thus, knowing where traffic was coming from was vital.

7.10 **Mr Azzouz** said that a particular aspect of the Starlink issue was that SpaceX was both operator and service provider, responsible for supplying equipment to users. It should, therefore, surely have the information and system to track connection locations and, if that location was found to be in a territory where service was not authorized, able to deny service. Relying on the reporting administration to identify the operation and location of smuggled terminals was not appropriate. Moreover, while he welcomed the information, actions and commitment of Norway and the United States, the administrations had only reported system measures preventing the legal import of such equipment into territories where service was not authorized and no such measures preventing operation and connection of terminals, legally obtained and activated elsewhere, once smuggled into such a territory. Licensing obligations were clearly insufficient. Thus, in view of the reported continued provision within Iranian territory of unauthorized service by Starlink, the Board should strongly urge the notifying and associated administrations to comply with Article 18, Resolutions 22 (WRC-19) and 25 (Rev.WRC-03), the ITU Constitution and Convention and the decision taken by the Board at its 94th meeting and stop and/or deny access to Starlink services in the Islamic Republic of Iran without that country's authorization.

7.11 **Ms Beaumier**, while welcoming the additional information provided by the Administrations of Norway and the United States, said that further clarifications were needed, in particular with regard to the warning message that appeared when users switched on terminals within Iranian territory. That message cast doubt on the administrations' claims that Starlink, subject to licence conditions to prevent service in territories where there was no authorization for such services, applied both contractual and operational limitations to prevent access to service in the Islamic Republic of Iran and that it was not possible to track the location of every terminal. The message suggested that Starlink knew terminals were operating in the country and where they were; thus, it could surely identify the terminals itself, without depending on reports from the Islamic Republic of Iran, and disable them. She welcomed the engagement of Norway and the United States and the intervention of the operator in disabling the terminals identified, but the Board should encourage them to be more proactive in resolving the issue.

7.12 **Mr Talib**, having been informed by **Mr Vallet (Chief, SSD)** that the Administration of Norway had, based on the information provided, not yet responded to the direct correspondence from its Iranian counterpart, said that it was important to encourage direct communication between the Administrations of Norway and the United States and the Administration of the Islamic Republic of Iran. The submissions of Norway and the United States suggested that it was technically possible to identify the location of terminals and, thus, it should be technically possible to deny service. Noting the reports of continued provision of unauthorized service in the Islamic Republic of Iran, he suggested that the Board reiterate its message to the Administrations of Norway and the United States, urging them to ensure the immediate cessation of Starlink service provision within Iranian territory.

7.13 **Mr Fianko** said that, given the global nature of Starlink's services and the perceived impact in many jurisdictions, the Board's decision on the matter would set the precedent for similar systems on the horizon. **Mr Linhares de Souza Filho**, **Mr Nurshabekov** and **Mr Di Crescenzo** also stressed that point. The Board needed to urge decisive action and strict regulatory compliance.

7.14 **Mr Fianko** went on to say that the reported system measures of preventing service subscription from, and shipment of terminals to, territories where service was not authorized fell short

of preventing transmission or restricting operation once terminals, through user behaviour, found their way to such territories. While *resolves* 2 of Resolution **22 (WRC-19)** did provide for the concept of practicability in the obligation to limit transmission to only those territories where administrations had authorized such transmission, it was difficult to accept that the operator did not have a technically feasible mechanism to identify terminal location. Similarly, there had to be a practical mechanism to prevent transmission over an entire territory. The Board should urge the administrations and operator to find practical ways to ensure compliance with Resolutions **22 (WRC-19)** and **25 (Rev.WRC-03)**.

7.15 **Ms Hasanova** and **Mr Alkahtani** agreed that the measures described by the Administrations of Norway and the United States were not sufficient. The operator appeared able to check the location of terminals and could therefore disable them, as it had done for the terminals reported by the Islamic Republic of Iran. Impracticability was not a valid reason not to do so. The Board should again reiterate that the administrations concerned should take proactive steps to stop all unauthorized transmission of service. **Ms Hasanova** also noted that it was the right of every Member State, under international law and a country's national law to decide whether to operate any telecommunication services and to provide an international telecommunication service in its national territory.

7.16 **Ms Mannepalli** said that the submissions from the Islamic Republic of Iran had repeatedly demonstrated unauthorized transmissions from terminals in Iran. While the Administration of United States claimed it was impracticable to track the location of every terminal communicating with space stations, the evidence suggested that the warning message to users appeared every time terminals were switched on, representing a clear, systematic identification of location by the network. The Board should urge the administrations to prevent such unauthorized provision of service and comply with the regulations in force.

7.17 **Mr Linhares de Souza Filho** agreed and pointed to *recognizing d)* of Resolution **14 (WRC-23)**, which unambiguously stated that unauthorized use of non-GSO FSS and MSS earth stations was prohibited. The Administrations of Norway and the United States should be required to take operational measures to deny service access by Starlink terminals within any territory where such service was not authorized, including to terminals smuggled into such territories.

7.18 **Mr Cheng** said that he was not entirely satisfied with the responses from Norway and the United States to the Board's questions. The reported operational measures of Starlink to restrict access to service were limited to preventing access to terminal equipment by individuals located and ordering in territories where service was not authorized. Such measures were not sufficient to comply with the provisions of Resolutions **22 (WRC-19)** and **25 (Rev.WRC-03)**. No operational measures preventing transmission or denying service access over entire territories had been described. The Board needed a clear response on the warning message to users and why, if that message showed the network identifying user terminal location, the operator could not simply systematically disable access.

7.19 The **Chair** agreed that further clarifications were required from the Administrations of Norway and the United States, in particular on the warning message sent to users illegally using the Starlink system within the territory of the Islamic Republic of Iran, which suggested that the system automatically recognized the location of all terminals, and on the possibility of switching off transmission over the entire Iranian territory. The measures described by the administrations were more administrative in nature. The administrations needed to go beyond practicability and use all possible means to ensure regulatory compliance, and their own submissions suggested that it was possible. The Board should insist on urging the administrations to come into compliance with Article **18**, *resolves* 1 and 2 of Resolutions **22 (WRC-19)** and *resolves* of Resolution **25 (Rev.WRC-03)**.

7.20 He thus proposed that the Board should conclude as follows on the matter:

“The Board carefully considered Document RRB24-1/10 from the Administration of the Islamic Republic of Iran, Document RRB24-1/11 from the Administration of Norway and Document RRB24-

1/13 from the Administration of the United States of America, on the provision of Starlink satellite services in Iranian territory. The Board also noted Document RRB24-1/DELAYED/2 provided by the Administration of the Islamic Republic of Iran in response to the submissions of the Administrations of Norway and the United States, for information.

The Board thanked the Administrations of Norway and the United States for providing the information requested at the 94th Board meeting and also thanked the Administration of the Islamic Republic of Iran for the additional information provided.

The Board noted the following points:

- The Administration of Norway had questioned references to Resolution **25 (Rev.WRC-03)**, on the grounds that the resolution covered only applications of global mobile personal communications by satellite (GMPCS) in frequency ranges below 3 GHz.
- Both the Administrations of Norway and the United States had indicated that they imposed licensing obligations to limit operations of terminals to territories where authorization had been obtained.
- Both administrations had indicated that Starlink had contractual and operational limitations preventing individuals within the territory of countries where its services were not authorized from obtaining both network service and terminal equipment, based on the location of the account address and the terminal ID of the earth station.
- The Administration of the United States had indicated that it was not practicable for a space station operator to verify the location of every single user terminal that communicated with its space stations.
- Although the satellite operator, upon receipt of information of the Administration of the Islamic Republic of Iran had deleted user accounts from its list of authorized accounts and permanently disabled all terminals identified by the reporting administrations, the Administration of the Islamic Republic of Iran had indicated that the Starlink Internet service was still accessible within its territory.
- The satellite system was apparently able to determine the location of transmissions of satellite user terminals as originating from within the territory of the Islamic Republic of Iran, as such Starlink transmission triggered a warning message in English and Persian to the users.

The Board further noted that:

- *recognizing d)* of Resolution **14 (WRC-23)** stated that unauthorized use of non-GSO FSS and MSS earth stations was prohibited;
- according to reliable public information, the space operator had disabled Starlink services over specific areas in the past.

The Board concluded that Resolution **25 (Rev.WRC-03)** related to the provision of public personal communication by means of fixed, mobile or transportable terminals, without mentioning any specific frequency ranges in its *resolves* and, consequently, the services provided by the Starlink system were within the scope of the resolution.

The Board also concluded that, although the administrations had indicated that it might not be practicable for the space operator to verify all user terminal locations, the warning message in English and Persian to the users seemed to confirm the systematic checking of the user terminal location.

Consequently, the Board further reiterated that the provision of transmissions from within any territories where they had not been authorized was in direct contravention of the provisions of Article **18** and of *resolves* 1 and 2 of Resolution **22 (WRC-19)** and the *resolves* of Resolution **25 (Rev.WRC-03)**. The Board urged the Administration of Norway, as the notifying administration for

the relevant satellite systems providing Starlink services, and the Administration of the United States, as an associated administration to the notifying administration, to comply proactively with those provisions by taking immediate action to disable Starlink terminals operating within the territory of the Administration of the Islamic Republic of Iran.”

7.21 It was so **agreed**.

8 Submission by the Administration of the State of Israel requesting that the date of receipt of the original NSL-1 satellite system filing be maintained (Document RRB24-1/2(Rev.1))

8.1 **Mr Ciccorossi (acting Head, SSD/SSC)** introduced Document RRB24-1/2(Rev.1), in which the Administration of Israel requested that the date of receipt of the original NSL-1 satellite system filing submission (11 September 2017) be maintained in respect of the modification submitted on 1 August 2023. The administration considered that the increase in the aggregate interference-to-noise (*I/N* level) measured in terms of a cumulative distribution function (CDF), was very low and could be considered negligible. It had provided the results of simulations based on certain assumptions for the original system (with a coverage of less than 100 per cent of time) and the modified system (100 – per-cent-time coverage) showing *I/N* level of below –30 dB with a link degradation of less than 0.004 dB. The administration had also committed not to cause more interference in the time gaps originally not covered by the system.

8.2 The administration recalled that the Bureau had sought guidance from WRC-23 in respect of modifications under the rules of procedure on No. **9.27** where the increase in interference was technically low. The conference had not had sufficient time to discuss the issue and had noted that further study by ITU--R would be required. The administration had indicated that any delay in concluding the matter would affect the satellite project. It had therefore requested the Bureau to seek the views of the Board as to whether a potential very low increase in the *I/N* level, that could be viewed as negligible, could be considered acceptable to maintain the original date of receipt. If so, the Board was requested to authorize the Bureau to continue processing the filing with the original date of receipt.

8.3 Providing background information for Board members on the different orbital characteristics of the original and modified NSL-1 satellite system, he said that the original notification consisted of a total of 19 satellites distributed in 19 planes, with a polar inclination of between 89° and 93° and an operational altitude of 550 – 720 km. The modified submission, however, consisted of a total of 347 satellites distributed in 17 planes with an inclination of between 53.5° and 90° and an operational altitude of 520 – 810 km. The right ascension of the ascending node and longitude of the ascending node had been changed and the transmission characteristics had also been modified. The interference analysis provided by the administration had appeared to consider that all satellites in the original constellation were in operation, which was contrary to the information in the initial coordination request.

8.4 Although from the Bureau’s perspective, an increase in the *I/N* level representing a degradation of 0.004 dB could be considered negligible from the technical point of view, the *I/N* analysis provided by the administration had not considered worst-case scenarios with respect to latitude and the pointing avoidance mechanism, and the modification appeared to constitute a totally new system rather than a modification to the previous one. Indeed, according to correspondence from the notifying administration, all orbits in the notice were new orbits completely replacing the former orbits.

8.5 Responding to questions from the **Chair**, he said that, based on the assumptions in the administration’s analysis, the overall interference level had been reduced. The coverage of the

original NSL-1 orbits was visible for less than 100 per cent of the time in any examined test point whereas it was visible for 100 per cent of the time in the modified submission. While there would therefore be periods when interference was added, a value resulting in a link degradation of 0.004 dB was very low and almost unmeasurable.

8.6 **Mr Azzouz**, drawing attention to § 3.1.4.11.3 of the report of the Director to WRC-23 (Document WRC23/4(Add.2)), noted that the Bureau had sought clarification from WRC-23 in respect of certain *I/N* values, but that the issue had not been discussed due to lack of time and would require further study by ITU-R, as appropriate. He sought clarification of the *I/N* values in respect of the original and modified constellations.

8.7 Noting the extent of the changes in the orbital and transmission characteristics in the modified NSL-1 satellite system, as described by Mr. Ciccorossi, and adding that the changes reflected an increase in the number of satellites per orbit from one to around 20, and having analysed the changes in the NSL-1 satellite filing, he failed to see how the original date of receipt could be retained. What would be the situation with regard to the many coordination agreements concluded between 11 September 2017 and 1 August 2023 on the basis of the original filing, and in respect of any subsequent coordination claims? He was not in a position to support the request from the Administration of Israel to retain the date of receipt of the original NSL-1 filing, since that would open the back door to launching the modified satellite system without coordination and would constitute an unacceptable application of the Radio Regulations. If the modified satellite system was considered as a new filing, however, he would support a new date of receipt of 1 August 2023. He asked if the Bureau had received any similar requests from administrations; if so, they should be treated in the same manner.

8.8 The **Chair** agreed that WRC-23 had not had sufficient time to provide the guidance sought by the Bureau on the issue of *I/N* values and had concluded with standard text applying to all matters that had not been reviewed about the need for further study by ITU-R. Two issues had arisen in the case under consideration: what increase in the *I/N* level between an original and modified submission could be deemed as negligible; and the extent to which the characteristics of a system could be modified while being considered to remain within the envelope of the original constellation. He asked whether the Bureau had encountered cases in the past of such extensive modifications to an original coordination request.

8.9 **Ms Mannepalli**, drawing attention to the Director's report to the Board (Document RRB24-1/8), noted that the Bureau was not currently processing any modification of coordination requests received in the application of the rules of procedure on No. **9.27** with the intention to maintain the original date of protection. The last submission listed in Table 6-2 was dated 16 May 2023, yet the Israeli submission had been made on 1 August 2023.

8.10 **Mr Ciccorossi (acting Head, SSD/SSC)** said that the Bureau had stopped processing such CR/C modifications pending a decision of WRC-23 on certain *I/N* values for the processing of submissions under the rules of procedure on No. **9.27**. As no decision had been forthcoming, the Bureau was awaiting the Board's decision on the Israeli case before proceeding further. Responding to earlier questions, he said that the Bureau had received several modifications of coordination requests in the past that had presented challenging scenarios and had not been black or white cases. When the requested information or clarification provided by the administration was clear, the Bureau had tended to retain the original date of receipt. However, in the present case, it sought further guidance from the Board. Coordination agreements were given subject to certain basic assumptions, and it was sometimes important for operators to be aware of the types of modifications being made. According to the analysis provided, the *I/N* values in respect of the modification to the NSL-1 system were below -10 and -20 dB except where there had been no coverage from the original system.

8.11 **Ms Beaumier** pointed out that the Administration of Israel was simply asking the Board to consider whether it could accept the potential very low increase in *I/N* as negligible. The Board might be able to do so in the current case, but when would an increase not be deemed negligible? ITU-R Working Party 4A should be requested to undertake studies to determine such thresholds. She was confident that the Bureau would conduct its examinations to determine whether or not the technical assessment undertaken by the administration in support of its request was acceptable.

8.12 The issue regarding the extent of the modifications had not been part of the administration's original request and had been brought to the Board's attention by the Bureau. It would be useful if the Bureau could prepare a written summary of the modifications made. She asked whether the Bureau had already raised its questions about the significant changes to the satellite system with the Administration of Israel. She also understood that there were no comparable situations as previous cases of modifications to coordination requests had not entailed so many changes. The orbital parameters had been changed extensively in the modified submission, yet there was no regulatory guidance about the extent of modifications that could be considered acceptable. It would not be sufficient for the Board to say that too many modifications had been made; it would have to justify its decision. At all events, it would be useful for the Board to study the comparison provided by the Bureau before reaching its conclusion.

8.13 The **Chair** said that, while certain discussions and decisions at WRC-23 including on constellation modifications and tolerances, might help to inform the Board's discussions, no actual boundaries had been established regarding extensive changes between an original and modified non-GSO system coordination request.

8.14 **Mr Ciccorossi (acting Head, SSD/SSC)** said that the Bureau would be pleased to prepare a document comparing the original and modified submissions. The case had been brought to the Board because the Bureau could not hold the processing of CR/C requests in abeyance indefinitely. Further studies could take time and the administration, which had submitted its request on 1 August 2023, had indicated the importance of a quick decision. If the Board was unable to take a full decision at the present juncture, it might wish to instruct the Bureau to issue a qualified favourable finding that would subsequently be reviewed.

8.15 **Mr Cheng** said that he shared the concerns expressed by Mr Azzouz: the parameters had been so extensively changed that the system appeared to be a new one rather than a modification, and the case did not reflect the correct application of the rules of procedure on No. **9.27**. It was difficult for the Board to know what value was low enough to be considered negligible and he asked how much progress had been made in the ongoing studies in ITU-R Working Party 4A to include a methodology to assess the change in interference environment in relation to No. **9.12** when the characteristics of non-GSO FSS systems were modified.

8.16 **Mr Vallet (Chief, SSD)** said that ITU-R Working Party 4A had not yet met since WRC-23 and, given its workload, was unlikely to make much more progress on the issue at its meeting in May 2024. The **Chair** added that the working party would need time to consider the delicate and sensitive technical issue.

8.17 **Mr Alkahtani**, noting the extensive changes in the modification, said that the case required further study by the Bureau.

8.18 **Ms Hasanova** said that, although the Administration of Israel had provided an analysis demonstrating that the interference increase was negligible, significant modifications had been made to the filing. She agreed that further studies by ITU-R Working Party 4A were required. Furthermore, numerous satellite filings would have been received by the Bureau between 11 September 2017 and 1 August 2023, and a decision by the Board to accept the original date of receipt for such a modified filing could set a precedent for other administrations.

8.19 **Mr Linhares de Souza Filho** said that the nature of the interference referred to in the rules of procedure on No. **9.27** was not clear: was it maximum interference or interference at each percentile of time? Although there were some elements in the case under consideration suggesting that the interference increase was negligible (below -30 dB), the administration's interference analysis had not taken into account worst-case assumptions and the constellation was completely different to the original one. Further studies were required, and he was therefore not in favour of maintaining the original date of receipt at the present juncture.

8.20 **Mr Nurshabekov** said that, as so many orbital parameters had been changed the original date of receipt should not be maintained. The NSL-1 satellite system should not be considered as a modified submission but as a new filing requiring new coordination with affected administrations. ITU-R Working Party 4A should conduct further studies and should also consider issues concerning low power spectral density levels, as mentioned in Addendum 4 to the Director's report (Document RRB24-1/8), which had not been considered in the previous study period.

8.21 **Mr Talib** said that the Board might wish to defer its decision until its 96th meeting, by which time the Bureau might have conducted its examinations and ITU-R Working Party 4A would have met and might be able to provide some guidance regarding thresholds for determining what increase in aggregate I/N level could be considered negligible. The analysis provided by the administration had not taken into account worst-case assumptions.

8.22 The **Chair** said that the Board was unlikely to receive additional technical information from Working Party 4A in time for its 96th meeting and should take a decision at the current meeting. The Bureau had indicated that, from its perspective, an increase in the I/N level representing a degradation of 0.004 dB could be considered negligible from the technical point of view.

8.23 **Mr Di Crescenzo** agreed that significant changes had been made to the network. It was difficult to evaluate the interference level and additional information could be useful.

8.24 The **Chair**, responding to a request from **Ms Hasanova**, said that the analysis from the Administration of Israel had been undertaken vis-à-vis a long list of affected networks that was considered exhaustive by that administration. **Mr Cicciorossi (acting Head, SSD/SSC)** added that the Bureau had not yet conducted its examination under the rules of procedure on No. **9.27**. If it identified any missing systems, the administration would be requested to provide further information.

8.25 **Mr Azzouz**, noting that the proposed changes might result in other administrations being affected, said that the Bureau's usual procedures and mechanisms should be applied and that the general issue should be transferred to ITU-R Working Party 4A for further study. Consideration might then also be given to the need to develop another rule of procedure.

8.26 The **Chair** recalled that an I/N value of -20 dB and below had been described as very low in the report of the Director to WRC-23 but precise thresholds should be studied by ITU-R Working Party 4A. He asked whether the Board would be prepared, in the present case, to consider an aggregate I/N value of -30 dB (resulting in a link degradation of less than 0.004 dB) as negligible. Any decision by the Board to maintain the original date of receipt based on the negligible I/N value would be conditional on the satellite system receiving favourable findings for all relevant regulatory examinations, including under the rules of procedure on No. **9.27**.

8.27 Noting the Bureau's comparison of the original and modified NSL-1 satellite system, he recalled that some Board members considered the changes to the orbital characteristics to the NSL-1 satellite system to be substantial and were of the view that, irrespective of the level of interference, the filing should be considered as a new one with a new date of receipt. However, there were no provisions in the Radio Regulations or in the Rules of Procedure or any guidance for determining what would actually qualify as a substantial change. Could the Board take a decision on the date of

receipt based on the change in parameters between the original and modified submission given that there were no technical or regulatory grounds to justify such a decision?

8.28 **Mr Vallet (Chief, SSD)** said that the Board should make clear in its conclusion the scope of application of its decision: would it be confined to the NSL-1 satellite system or apply by default to similar cases?

8.29 **Mr Linhares de Souza Filho** said that the Board might wish to take a provisional decision to maintain the original date of receipt, pending further information. Although a maximum *I/N* increase of -30 dB could be considered negligible from the technical point of view, it would be useful to know the thresholds to be applied. From a regulatory perspective, the submission was presented as a modification but appeared to be a new network.

8.30 **Ms Beaumier** said that, in her view, the Board could instruct the Bureau to accept a value of -30 dB as negligible and accede to the request to retain the original date of receipt in application of the rules of procedure on No. **9.27** subject to the Bureau's full examination of the coordination request as certain scenarios had not been considered. That said, the threshold for the maximum increase in the *I/N* level that could be considered as negligible in application of the rules of procedure required further study, and the Board should instruct the Bureau to request ITU-R Working Party 4A to address the issue as soon as possible. Any favourable finding from the Bureau would be qualified and subject to review once the results of those studies were known. The Board might wish to provide such guidance to the Bureau for any other cases when the *I/N* level was of a similar value.

8.31 There were no provisions in the Radio Regulations or Rules of Procedure that constrained the extent of modifications that an administration could submit to an original coordination request for a non-geostationary satellite system, the only requirements to maintain the original date of receipt being not to increase interference to, or protection from, other assignments. Although the Board might have concerns about the extent of the modified characteristics, it had no grounds on that basis to instruct the Bureau not to accept the request. ITU-R Working Party 4A might also be requested to study the matter.

8.32 **Mr Azzouz** emphasized that the system appeared to be a new one rather than a modification to the previous one. He wished to maintain his position and would be reluctant to maintain the date of receipt of the original NSL-1 submission. The Board should establish a new date of receipt for the modified filing of 1 August 2023 and the issue should be referred to ITU-R Working Party 4A for further study.

8.33 **Ms Mannepalli** agreed that the *I/N* value of -30 dB was very low and could be considered negligible. Although the Board understood that many of the orbital parameters of the system had been changed, it had no regulatory basis to justify a decision not to accede to the Israeli request on those grounds. The matter should be discussed further by ITU-R Working Party 4A and any decision might be applied retrospectively.

8.34 **Mr Alkahtani** said that the documentation provided by the Bureau clearly showed that the orbital characteristics had changed. The system appeared to be a new one and worst-case scenarios had not been taken into account by the administration in its interference analysis. The Board did not have sufficient data to conclude on the level of interference, and the matter should be studied further in ITU-R Working Party 4A.

8.35 **Mr Fianko** said that the Administration of Israel clearly wanted to move forward with the project and the Board should not await the results of further studies before taking its decision. Although there were no clear provisions to qualify the extent of modifications made to a submission, the administration had retained the original frequencies and had been careful to analyse the interference potential. However, it was not clear whether the interference level would still be considered as negligible when the worst-case assumptions were taken into account, and the Board

should instruct the Bureau to perform further analysis. If the results did not give rise to concerns and the interference threshold remained within a range that could be considered as negligible, the original date of receipt should be maintained.

8.36 The **Chair**, responding to a comment from **Mr Azzouz**, said that the Board had to take the information provided by the administration at face value. However, any decision to maintain the date of receipt of the original NSL-1 satellite system filing on the grounds that the aggregate *I/N* value was considered negligible would be conditional on the outcome of the Bureau's examinations, including under the rules of procedure on No. **9.27**. There were many different parameters to be taken into account in determining the overall interference level of the modified submission.

8.37 **Ms Beaumier** reiterated that the Board had not been asked whether or not it could accept the technical analysis provided by the administration, only whether or not it could accept an increase in the *I/N* value of -30 dB as negligible. Although the Bureau had indicated that it considered such an increase as negligible from a technical point of view, it still had to undertake its full examination. The Board had also not been asked to consider what limitations, if any, should apply in respect of modifications to an existing system. There were so many ways of modifying the characteristics of a constellation while remaining within the existing power envelope, which is why the issue should be brought to the attention of ITU-R Working Party 4A for its consideration. It was her understanding that, but for the very low potential increase in the *I/N* level, the Bureau would have processed the modification.

8.38 **Mr Cheng** said that, based on the application of the rules of procedure on No. **9.27**, the Board could not accept the request from the Administration of Israel until the results of the Bureau's analysis, which took into account worst-case assumptions, were available. The issue with respect to the extent of modifications to an existing system should be brought to the attention of ITU-R Working Party 4A.

8.39 The **Chair** said that if the Board concluded that a potential *I/N* increase of -30 dB could be considered as negligible, it should instruct the Bureau to issue a qualified favourable finding for the NSL-1 system and to maintain the original date of receipt pending the outcome of the results of the Bureau's examinations, including under the rules of procedure on No. **9.27**. The qualified favourable finding would be reviewed by the Bureau based on the results of the studies by ITU-R Working Party 4A on determining the acceptable increase in the aggregate *I/N* level to be considered as negligible. The Board might wish to draw the attention of the working party to the absence of regulatory provisions limiting the extent of modifications to a non-GSO satellite system.

8.40 **Mr Linhares de Souza Filho**, responding to an earlier comment from Mr Azzouz, said that although the modified constellation was much larger than the original, the equivalent isotropically radiated power reduction in the downlink was proportionally greater than the increase in the number of satellites. He observed that the *I/N* level might be increased in those parts where there had previously been no coverage. Depending on the results of the studies in ITU-R Working Party 4A, it might be necessary to update the rules of procedure on No. **9.27**.

8.41 Responding to questions from **Mr Alkahtani** and **Mr Talib**, the **Chair** said that the basis for the Board's decision to instruct the Bureau to give the NSL-1 satellite system a qualified favourable finding and to maintain the original date of receipt was the fact that there appeared to be no increase as such in the overall level of interference from the modified coordination request vis-à-vis the original given that the increase in the aggregate *I/N* level represented a degradation of 0.004 dB. Its decision was not based entirely on the studies undertaken by the administration; the Bureau had also indicated that such degradation could be considered negligible from a technical point of view and many Board members had concurred. However, the qualified favourable finding and retention of the original date of receipt were conditional on the satellite system receiving favourable findings for all other examinations, and on a review by the Bureau based on the results of the studies

by ITU-R Working Party 4A. The Board would consider any similar submissions in the future on a case-by-case basis. There was no need to instruct the Bureau to report to the next meeting of the Board on progress. The Board had given the Bureau instructions on how to treat the modification to the coordination request and had linked its decision to the results of studies in ITU-R Working Party 4A. There was likely to be no further action to be taken by the Board in respect of the case.

8.42 **Ms Beaumier**, responding to a suggestion from the **Chair**, said that it would be premature for the Board to include the case in its report to WRC-27 under Resolution **80 (Rev.WRC-07)**. It was sufficient at the present juncture for the Bureau to bring the case to ITU-R Working Party 4A, which would decide whether or not it wished to study the issue of extensive modifications to an original submission.

8.43 The **Chair** proposed that the Board should conclude as follows on the matter:

“Having considered in detail the request of the Administration of Israel as contained in Document RRB24-1/2(Rev.1) to maintain the original date of receipt of 11 September 2017 of the NSL-1 satellite system on the premise that the potential increase in interference from the modified satellite system could be viewed as negligible, the Board noted the following points:

- On 1 August 2023, the Administration of Israel had submitted a modification to the original coordination request of the NSL-1 satellite system received on 11 September 2017, supported by results of simulations demonstrating that the potential increase in the aggregate interference-to-noise (I/N), measured in terms of a cumulative distribution function (CDF), was negligible (resulting in an I/N level of -30 dB and a link degradation of less than 0.004 dB).
- The Bureau had reported to WRC-23 (§ 3.1.4.11.3 of Addendum 2 to Document CMR23/4), inviting it to consider a range of I/N values where the situations between the original and modified submissions should be compared (e.g. from -20 dB to 0 dB or a larger range if considered more appropriate) for processing of submissions under the rules of procedure on No. **9.27**. However, WRC-2-3 had not provided any decisions on the matter and had indicated that ITU-R would need to perform further studies on the issue.
- The Bureau indicated that, while it had not yet conducted its examination under the rules of procedure on No. **9.27**, it considered an aggregate I/N value of -30 dB as negligible (resulting in a link degradation of less than 0.004 dB) but needed to confirm that the Administration of Israel had used worst-case scenarios in its calculations.
- The modification to the NSL-1 satellite system consisted of several differences in its transmission and orbital characteristics.
- There were no provisions in the Radio Regulations or in the Rules of Procedure that limited the extent of modifications to the transmission and orbital characteristics of a satellite system to retain the original date of receipt provided that the operation of a modified satellite system might still be considered as within the envelope of operation of the original satellite system.

The Board concluded that an increase in the aggregate I/N level representing a degradation of 0.004 dB of a modified satellite system could be considered as negligible. Consequently, the Board decided to instruct the Bureau to provide the NSL-1 satellite system with a qualified favourable finding and that its original date of 11 September 2017 could be maintained. However, the Board indicated that the qualified favourable finding and the retention of the original date were conditional on the satellite system receiving favourable findings for all other examinations under the relevant provisions of the Radio Regulations and the Rules of Procedure, including the rules of procedure on No. **9.27**.

Furthermore, the Board instructed the Bureau to bring the case to the attention of ITU-R Working Party 4A and to review the qualified favourable finding of the NSL-1 satellite system filing based on

the results of Working Party 4A's studies on determining the acceptable increase in the aggregate *I/N* level to be considered as negligible.”

8.44 It was so **agreed**.

9 Confirmation of the next meeting for 2024 and indicative dates for future meetings

9.1 **Mr Botha (SDG)** said that the dates for future meetings remained unchanged but that the location had been updated to Room L for meetings until the end of 2025. Despite best efforts, some dates remained inconvenient for certain Board members, but the Union's busy meeting schedule left very little room for manoeuvre.

9.2 The Board **agreed** to confirm the dates for its 96th meeting as 24–28 June 2024 (Room L).

9.3 The Board further tentatively confirmed the dates for its subsequent meeting in 2024, as follows:

- 97th meeting: 11–19 November 2024 (Room L);

in 2025, as follows:

- 98th meeting: 17–21 March 2025 (Room L);
- 99th meeting: 14–18 July 2025 (Room L);
- 100th meeting: 3–7 November 2025 (Room L);

and in 2026, as follows:

- 101st meeting: 9–13 March 2026 (CCV Room Genève);
- 102nd meeting: 29 June – 3 July 2026 (CCV Room Genève);
- 103rd meeting: 26–30 October 2026 (CCV Room Genève).

10 Other business

10.1 **Mr Azzouz**, noting the large number of Board members whose second term would end prior to the 2026 plenipotentiary conference, suggested that two members likely to return for a second term be nominated to work closely with the Chairs of the Board's working groups to facilitate knowledge transfer in advance of WRC-27.

10.2 The **Chair** said that there was no pressing need to make those nominations at the current meeting but suggested that members consider the matter with a view to the Board reaching consensus on it during the year.

11 Approval of the summary of decisions (Document RRB24-1/14(Rev.1))

11.1 The Board **approved** the summary of decisions contained in Document RRB24-1/14(Rev.1).

12 Closure of the meeting

12.1 The **Chair** thanked Board members for their cooperation and teamwork, which had led to the successful conclusion of the meeting. He also thanked the Vice-Chair and the Chair of the Working Group on the Rules of Procedure for their efforts, the Director for his assistance, and the Bureau staff, including Mr Botha and Ms Gozal, for their support.

12.2 The **Director** congratulated the Chair on the successful conclusion of the meeting and thanked the Vice-Chair, the Chair of the working group and Board members for their contributions.

12.3 The **Chair** wished all members a safe journey home and closed the meeting at 1220 hours on Friday, 8 March 2024.

The Executive Secretary:
M. MANIEWICZ

The Chair:
Y. HENRI