90th Anniversary
CCIR/ITU-R Study Groups
(1927-2017)

Radiocommunication Bureau (BR)

Circular Letter
CR/418

1 May 2017

To Administrations of Member States of the ITU

Subject: **Minutes of the 74th meeting of the Radio Regulations Board**

Pursuant to the provisions of Nos. 13.18 of the Radio Regulations and in accordance with §1.10 of Part C of the Rules of Procedure, please find attached the approved minutes of the 74th meeting of the Radio Regulations Board (20 – 24 February 2017).

These minutes were approved by the Members of the Radio Regulations Board by electronic means and are available on the RRB pages of the ITU web site.

François Rancy
Director

Annex: Minutes of the 74th meeting of the Radio Regulations Board

Distribution:

- Administrations of Member States of ITU
- Members of the Radio Regulations Board

Annex

Radio Regulations Board
Geneva, 20-24 February 2017

INTERNATIONAL TELECOMMUNICATION UNION

Document RRB16-3/12-E
9 November 2016
Original: English

MINUTES*

OF THE

74TH MEETING OF THE RADIO REGULATIONS BOARD

20- 24 February 2017

Present: Members, RRB
Mr I. KHAIROV, Chairman

Mr M. BESSI, Vice-Chairman

Mr N. BIN HAMMAD, Mr D. Q. HOAN, Mr Y. ITO, Ms L. JEANTY, Mr S.K. KIBE, Mr S. KOFFI, Mr A. MAGENTA, Mr V. STRELETS, Mr R.L. TERÁN, Ms J.C. WILSON

Executive Secretary, RRB
Mr F. RANCY, Director, BR

Précis-Writers
Mr T. ELDRIDGE and Ms A. HADEN

Also present: Mr M. MANIEWICZ, Deputy Director and Chief, IAP
Mr Y. HENRI, Chief, SSD
Mr N. VASSILIEV, Chief, TSD
Mr A. MATAS, Head, SSD/SPR
Mr M. SAKAMOTO, Head, SSD/SSC
Mr J. WANG, Head, SSD/SNP
Ms I. GHAZI, Head, TSD/BCD
Mr K. BOGENS, Acting Head, TSD/FMD
Mr W. IJEH, BR Administrator
Mr D. BOTHA, SGD
Mr B. ABOU CHANAB, IAP
Ms K. GOZAL, Administrative Secretary
Ms C. GIMENEZ, Administrative Secretary

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* 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 74th meeting of the Board. The official decisions of the 74th meeting of the Radio Regulations Board can be found in Document RRB17-1/8.

	Subjects discussed	Documents
1	Opening of the meeting	-
2	Report by the Director of BR	RRB17-1/3 + Add. 1-5(Rev.1)
3	Consideration of rules of procedure	CCRR/58; RRB16-2/3(Rev.4 + 5), RRB17-1/4
4	Consideration of rules of procedure – List of proposed rules	RRB16-2/3(Rev.4 + 5)
5	Submission by the Administration of the United Arab Emirates requesting an extension of the date of bringing into use of the frequency assignments of the YAHSAT-G5-43W satellite network	RRB17-1/1
6	Submission by the Administration of the Russian Federation requesting an extension of the regulatory time-limit to bring into use the frequency assignments of the GOMS-14.5W satellite network	RRB17-1/6
7	Consideration of harmful interference to the radio astronomy service from emissions of the Iridium satellite system (HIBLEO-2) in the frequency band 1 610.6-1 613.8 MHz	RRB17-1/2, RRB17-1/5
8	Confirmation of the dates of the next meeting and meeting schedule for 2017-2019	-
9	Presentation on “Radio Regulations Article 5 Table of Frequency Allocations” software	-
10	Approval of the summary of decisions	RRB17-1/8
11	Closure of the meeting	-
12	Submission by the Administration of Papua New Guinea requesting a decision from the Radio Regulations Board to reinstate the Part B and notification filings of the AFRISAT 3W-PKU satellite network	RRB16-3/7
13	Submission by the Administration of Qatar on the examination of the F-SAT-N5 satellite networks (B1FR transmit beam)	RRB16-3/8, RRB16-3/DELAYED/1-3
14	Submission by the Administration of Luxembourg requesting the revision of the examination of the LUX-30B-G4-19.2E satellite network under Articles 6 and 8 of Appendix 30B	RRB16-3/9
15	Election of the chairman and vice-chairman of the Board for 2017	-
16	Confirmation of the dates of the next meeting and meeting schedule for 2017	-
17	Celebration of the 110th anniversary of the Radio Regulations and ITU World Radiocommunication Seminar 2016	-
18	Approval of the summary of decisions	RRB16-3/11
19	Closure of the meeting	-

1 Opening of the meeting

1.1 The **Chairman** opened the meeting at 1400 hours on Monday, 20 February 2017 and welcomed all participants.

1.2 The **Director**, speaking on his own behalf and that of the Secretary-General, welcomed participants.

2 Report by the Director of BR (Document RRB17-1/3 and Addenda 1-5(Rev.1))

2.1 The **Director** introduced his customary report in Document RRB17-1/3 and Addenda 1-5(Rev.1), highlighting two positive developments since the previous meeting: first, the switching off of Italian television broadcasting stations that had been interfering with neighbouring countries; and second, the successful outcome of a multilateral frequency coordination meeting between the Administrations of Algeria, France, Libya and Morocco, with virtually all problems having been resolved. He drew attention to Annex 1 to Document RRB17-1/3, summarizing the actions arising from the 73rd meeting of the Board, including the organization of the multilateral meeting on 14-16 February 2017.

2.2 **Mr Henri (Chief SSD)**, introducing those parts of the Director's report dealing with space systems, drew attention to Annex 3 showing the Bureau's work on the processing of filings related to space services. He provided updated information covering January 2017. Regarding the current backlog in the processing of satellite networks, including in particular the treatment of coordination requests, which currently took more than six months as compared to a regulatory time-limit of four months, the Bureau is making all efforts, including staff reallocation, to reduce the backlog that should have disappeared by fall this year. The backlog was linked to an increase in the number of networks received in 2016 (511 coordination requests compared to 444 in 2015 and 314 in 2014), increased complexity of these networks (including non-GSO mega constellations), and delays related to the implementation of WRC-15 decisions (new FSS allocations, API changes) in the registration software package. With regard to the Plans, processing was expected to speed up with the arrival of a new staff member at the beginning of February 2017. Annex 4 to the Director's report listed satellite network filings for which payment had been received after the due date but prior to the BR IFIC meeting dealing with the matter. The Bureau continued to take those filings into account. No filings had been cancelled as a result of non-payment during the period under consideration. Tables 5, 6 and 7 in § 5 of the Director's report showed the suppression of networks under various provisions of the Radio Regulations, including No. 13.6. The Bureau was now asking more detailed questions regarding bringing into use of satellite networks, and administrations were providing responses more routinely. The Board was invited to note that the Bureau had accepted the request for suspension received more than six months following the date of suspension as listed in Table 8 of § 6 of the Director's report. Finally, § 7 of the report outlined an improvement to the worst-case approach to correct the interference calculation from an analogue FM-TV signal to a wideband digital signal.

2.3 **Mr Vassiliev (Chief TSD)**, introducing the sections of the Director's report dealing with terrestrial systems, said that as shown in Annex 2 to the report the Bureau had processed more than 53 000 notices during the period 1 September to 31 December 2016. No review of findings of terrestrial assignments recorded in the Master Register had been carried out during that period. With regard to harmful interference and infringements of the Radio Regulations, he drew attention to § 4.1 of the report, which provided summary statistics of cases and reports, and to § 4.2, which dealt specifically with harmful interference to broadcasting stations in the VHF/UHF bands between Italy and its neighbouring countries. Italy had confirmed the switch-off of television transmissions on frequencies that had been causing interference. After the Director's report had been finalized, information had been received from four administrations. In Addendum 1 to Document RRB17-1/3, the Administration of Slovenia reported positively on the elimination of interference to television broadcasting but stated that the situation regarding FM sound broadcasting frequencies remained unchanged. In Addendum 2, the Administration of Croatia confirmed a decrease in interference

regarding television broadcasting but no progress with respect to FM sound broadcasting. In Addendum 3, the Administration of Switzerland listed cases where interference exceeded acceptable levels. In Addendum 4, the Administration of Italy provided a status report on progress in switching off television broadcasting stations that were interfering with neighbouring countries, and provided details of preliminary actions taken towards solving interference cases in the FM band with regard to Malta, France, Monaco, Slovenia, Croatia and Switzerland. Finally, Addendum 5(Rev.1) contained a summary record of the multilateral frequency coordination meeting between the Administrations of Algeria, France, Libya and Morocco in regard to the GE06 Plan. A statement by the Algerian Administration to be communicated to the Board was contained in Annex 3 to Addendum 5(Rev.1), to the effect that the administration would come back to the Board if it was not satisfied by the outcome of the meeting. The meeting had been successful, with 511 assignments coordinated and only 18 remaining for further discussion. All the administrations involved had expressed satisfaction with the good progress and results achieved, and committed themselves to continue the coordination process in the future in the same spirit of cooperation. The problems would be solved by technical means and no decision was required from the Board.

2.4 The **Chairman** congratulated the Director and the Bureau, as well as the administrations concerned, on the excellent results concerning Italy and Algeria. **Mr Magenta**, **Ms Jeanty**, **Mr Bessi**, **Mr Koffi** and **Mr Hoan** endorsed those congratulations. **Ms Jeanty**, **Mr Bessi** and **Mr Hoan** nevertheless also stressed that contacts between administrations should continue in both cases until the remaining problems were solved.

2.5 Responding to a query by **Mr Bessi**, the **Director** confirmed that further meetings were already scheduled between the Administration of Italy and other administrations concerned in regard to the 700 MHz spectrum clearance and migration of the broadcasting service below 694 MHz.

2.6 **Mr Strelets** said that the outcome of the multilateral frequency coordination meeting showed that the Board had taken the right decision in response to Algeria's request to the 73rd meeting. The approach employed in bringing administrations together to find technical solutions with the assistance of the Director and Bureau provided a template for future work. The same was true in the case of harmful interference from Italy to neighbouring countries, where the Director had achieved remarkable results. Indeed, the roadmap and the practical experience acquired in influencing operators to eliminate interference, methods for releasing the second digital dividend and other aspects constituted an interrelated set of legal, technical, financial and organizational measures that should be brought to the attention of ITU-R Study Group 1 with a view to their study and use by other countries. Referring to § 4.1 of the Director's report, dealing with harmful interference, he noted that in Resolution 205 (Rev.WRC-15) on the protection of the systems operating in the mobile-satellite service in the frequency band 406-406.1 MHz, the conference had considered that long-term protection against harmful interference of the Cospas-Sarsat satellite system operating in the MSS in the frequency band 406-406.1 MHz was vital to the response times of emergency services and had resolved to request administrations not to make new frequency assignments within the adjacent frequency bands (405.9-406.0 MHz and 406.1-406.2 MHz) under the mobile and fixed services. It had also instructed the Director of BR not only to continue monitoring to identify the source of any unauthorized emission in the band 406-406.1 MHz but also to organize monitoring to assess the impact of unwanted emissions from systems operating in the adjacent bands on MSS reception in the band 406-406.1 MHz. He asked the Bureau how those provisions were implemented in practical terms and whether it had witnessed cases of interference in the band.

2.7 **Mr Vassiliev (Chief TSD)** said that the Bureau was actively following up the conference's decision to request administrations not to assign frequencies in the bands adjacent to 406-406.10 MHz. A monitoring programme for the band 406-406.1 MHz was already operating and feedback was expected by June 2017 from ITU-R Working Party 1C, Cospas-Sarsat and the European FM 22 Monitoring and Enforcement group on the monitoring of unwanted emissions in the adjacent bands that might affect Cospas-Sarsat. If a viable proposal was presented, it could be implemented

during the current year. He undertook to clarify how many interference cases had been reported in the context of Resolution 205 (Rev.WRC-15).

2.8 The **Chairman,** stressing the importance of Cospas-Sarsat, suggested that the Board take up the matter at its 75th meeting. Referring to space services, he commended the Bureau on its efficiency in updating the MIFR over the past six years by suppressing satellite networks under various provisions of the Radio Regulations. Recognizing the Bureau's heavy workload, he expressed concern at the recent deterioration in treatment times, especially in the publication of coordination requests for satellite networks where treatment time had been between six and seven months as compared to the regulatory time-limit of four months.

2.9 **Mr Henri (Chief SSD)** observed that 2016 had been an exceptional year, with the decisions of WRC-15 triggering a flood of submissions by administrations prior to the entry into force of the new provisions on 1 January 2017. Work was now continuing on preparing and examining the received submissions, and staff had been reassigned to tackle this momentary difficulty He was confident that treatment times would soon be reduced to meet the regulatory limit by fall this year.

2.10 **Mr Bessi** said that the WRC-15 decision to suppress API could be expected to lighten the Bureau's workload.

2.11 **Mr Strelets** recalled the discussion at the Board's 73rd meeting and in particular the remark by the Director that if the Bureau could not decrease the treatment time so as to respect the regulatory limit of four months, that would demonstrate the need for additional resources (§ 3.14 of Document RRB16-3/12 - Minutes of the 73rd meeting). For January 2017, the treatment time for coordination requests publication was six and a half months, while the treatment time for processing of networks under Articles 6 and 7 of Appendix 30B was eight months. With regard to the latter, the Board had considered a submission by the Administration of Luxembourg at its previous meeting (§ 14 of Document RRB16-3/12 - Minutes of the 73rd meeting) and had been obliged to take steps to ensure that treatment delay did not jeopardize the administration's rights. Council Decision 482, under which administrations paid ITU for services, constituted a contractual agreement. The Union would be liable for any losses incurred by administrations if it failed to provide services in a timely manner. In his view, the Bureau needed additional financial resources to engage experts and update software. The Bureau's optimism seemed to be based on the status quo, but surely the submission of new non-GSO systems with huge constellations of satellites would add an enormous burden to the Bureau's work. It was unacceptable that the Bureau had been in breach of the regulatory time-limit since March 2016. The Board should reflect on how to assist the Bureau, perhaps by raising the matter at the Council, which could reallocate resources from other ITU programmes.

2.12 The **Director**, referring to statistics on coordination requests publication as presented in Table 2 of Annex 3 to Document RRB17-1/3, noted that usually around 30 networks were received per month but that nearly four times that number had been received in December 2015, three times in May 2016 and four times in December 2016. The long treatment time arose not only from the number of networks but also their complexity. Staff had been reallocated, but if it proved impossible to reduce treatment time to within the regulatory limit, then additional resources would be needed. That would imply additional funds and related budgetary implications, a subject that would have to be addressed by administrations in the Council. Responding to a comment by **Mr Strelets**, he assured the Board that the advertisements for candidates to replace Mr Henri (Chief SSD) and Mr Matas (Head SSD/SPR), who were soon to retire, were ready to be sent out and the objective was to ensure an seamless transition at the time of their retirement.

2.13 **Mr Ito** felt optimistic about the Bureau's ability in the longer term to cope with its workload. Administrations generally requested a few slots for each satellite network in order to be sure of securing a position, and around two-thirds of filings were eventually suppressed. Perhaps the Board should look at the current regulations to see how the process could be improved.

2.14 The **Director** observed that the tables in Annex 3 to Document RRB17-1/3 did not fully reflect reality in that they did not capture the complexity of networks. Furthermore, the peaks in submissions reflected "strategic" filings rather than real networks.

2.15 **Mr Bessi** considered that the Board could rely on the Director to solve the problem.

2.16 **Ms Jeanty** agreed with Mr Bessi but said that the burden of complex non-GSO systems would not go away. She thanked Mr Strelets for raising the concern and considered that comments by the Board would alert administrations to the matter, which would have to be discussed in the Council.

2.17 **Ms Wilson** supported Mr Bessi and Ms Jeanty.

2.18 The **Chairman** suggested that the Board conclude on the Director's report as follows:

"The Board thanked the Director of the Radiocommunication Bureau for the Report and information provided in Document RRB17-1/3 and its Addenda.

The Board noted with satisfaction the significant progress that has been made in resolving the situation of harmful interference caused to television broadcasting stations of neighbouring countries of Italy and expressed confidence that, in the near future, the remaining interference into television services will be completely eliminated through ongoing activities.

Concern was expressed, however, that the neighbouring countries of Italy still experience interference from some FM sound broadcasting stations of Italy. The Board expressed optimism about the fact that this issue will also be addressed urgently and consistently on the basis of the goodwill of all parties concerned, in the same spirit as in the case of television broadcasting.

The Board decided to instruct the Director of BR to continue to report on a regular basis concerning the progress in the case of harmful interference from Italy to the broadcasting services of its neighbouring countries.

The Board noted with satisfaction the positive results achieved during the multilateral frequency coordination meeting between the Administration of Algeria and the Administrations of France, Libya and Morocco, for the revision of the status of the coordination of a number of GE06 assignments of the Administration of Algeria. The Board noted with appreciation the goodwill and constructive approach that were demonstrated by the concerned administrations.

The Board noted the expansion of the workload of BR resulting from the increased number and complexity of satellite filings received during the last fifteen months. The Board expressed concern that this has caused an infringement of the regulatory time-limit of four months for the processing of coordination requests. The Board requested the Director to make all efforts to get back to the regulatory limit as soon as possible. The Board also noted that the resolution of this problem may have financial implications that are under the responsibility of Council."

2.19 It was so **agreed**.

2.20 The Director's report in Document RRB17-1/3 and Addenda 1-5(Rev.1) was **noted**.

3 Consideration of rules of procedure (Circular Letter CCRR/58; Documents RRB16-2/3(Rev.4) and (Rev. 5) and RRB17-1/4)

3.1 The **Chairman** drew attention to the documents before the meeting relating to draft rules of procedure. Document RRB16-2/3(Rev.4) contained an updated list of proposed rules of procedure; the list had been approved by the Board by correspondence in accordance with the decision taken by the Board at its 73rd meeting and posted on the ITU website in accordance with Article 13 of the Radio Regulations. Circular Letter CCRR/58 contained the draft rules of procedure that had been sent out to administrations for comment and were before the Board for consideration at the present meeting. Document RRB17-1/4 contained the comments that had been received from administrations, namely Moldova, Papua New Guinea, France and the United States.

3.2 **Mr Bessi**, as Chairman of the Working Group on the Rules of Procedure, introduced Document RRB16-2/3(Rev.4). He noted, with particular regard to the draft rules of procedure on Nos 1.112 and 5.312A, that their dates of application should coincide with the date of entry into force of the provisions in question. He also said that the Board would have to decide whether it wished to retain in Attachment 4 the reference to consideration of matters relating to the receipt of correspondence regarding coordination under Appendices 30 and 30A (WRC-15 8th plenary meeting, Documents 398 and 505), which was to have been considered at the present meeting. The Board might deem it appropriate to adopt a case-by-case approach to the issue and thus not include a note in the Rules of Procedure.

3.3 **Mr Henri (Chief SSD)**, addressing the latter matter raised by Mr Bessi, said that the Bureau endeavoured to contact all administrations to ensure that they replied within the regulatory periods under Article 4 of Appendices 30 and 30A, did its best to clarify any late responses and could submit individual cases to the Board for consideration if the need arose. The Bureau's response to the issue was to continue its efforts as just explained noting that the implementation of Resolution 907 (Rev. WRC-15) by end-2017 should alleviate most of the concerns relating to the receipt and sending of correspondence concerning the planned and unplanned services procedures. The Bureau therefore considered that it was not necessary to cover the matter in a note in the Rules of Procedure; the reference to it in Document RRB16-2/3 could therefore be deleted.

3.4 It was so **agreed.**

3.5 The **Chairman** invited the Board to take up the draft rules of procedure in Circular Letter CCRR/58 along with the comments on them by administrations in Document RRB17-1/4.

3.6 **Mr Strelets** said that all members of the Board were at liberty to participate in discussions on any of the draft rules of procedure before the meeting even if their administration had submitted comments, since the rules of procedure were a matter that concerned all administrations; the provisions of No. 98 of the ITU Constitution should not apply in the present instance.

3.7 It was so **agreed**.

MOD rule on No. 1.112

3.8 **Mr Henri (Chief SSD)** introduced the draft modified rule, recalling the modification made to it by the Board at its 73rd meeting further to the decisions taken by WRC-15 to discontinue the API procedure for satellite systems subject to the Article 9 coordination procedure. The modifications proposed at the present meeting were intended to clarify the notion of non-GSO systems, and in particular to clarify the Bureau's approach regarding the acceptance and processing of extremely large numbers of non-GSO satellites as endorsed by WRC-15. He drew attention to the comments and amendments proposed by the Administrations of France and the United States (Annexes 3 and 4 to Document RRB17-1/4, respectively), which appeared to clarify the text proposed by the Bureau without altering its basic intention. He noted that, depending on the changes made to the rule on No. 1.112, it might be necessary to make consequential changes to other existing rules, for example the rule on the receivability of forms of notice.

3.9 The **Chairman** stressed the importance of the draft rule under consideration given its bearing on the definition of a satellite network or system and its introduction of the concept of orbital plane. Having commented briefly on the amendments proposed by France and the United States, he invited the Board to consider the draft modified rule put forward by the Bureau along with the amendments proposed by the two administrations.

3.10 **Mr Strelets** said that any discussion regarding No. 1.112 of the Radio Regulations was extremely sensitive since, as pointed out by Mr Kibe at the Board's 73rd meeting, the definitions in Article 1 of the Radio Regulations were fundamental to the activities of ITU-R, and any decision taken by the Board in the form of a rule should be considered subject to endorsement by the WRC. The Board would have to cover its interpretation of the definition in its report under Resolution 80

(Rev. WRC-07), and should perhaps consider its approval of a revised rule on No. 1.112 as provisional.

3.11 **Mr Bessi** said that any rule of procedure approved by the Board would have to be in conformity with the Radio Regulations, and would remain applicable until such time as the WRC adopted regulations that made it redundant, at which point it could be deleted. A rule of procedure could not be deemed "provisional". He nevertheless noted that modification of the rule on No. 1.112 could affect the receivability of notices under Appendix 4. The United States raised the same point, saying that the receipt of notices should be addressed under a new or modified rule on receivability that was self-contained, with the cross-reference to No. 1.112 removed. The Board should bear those comments in mind. In his view the proposals put forward by France were acceptable, and could be combined with those put forward by the United States. The United States' proposals were acceptable with the exception of their modification to subparagraph *c)* of the draft rule which would read "This satellite system may be covered by one Appendix 4 notice": that amendment would have repercussions on the receivability of notices. If it were discarded, he could support retaining all the other amendments put forward by the United States combined with those by France, as the resulting text would remain within the terms of the definition in No. 1.112.

3.12 **Ms Wilson** endorsed Mr Bessi's points regarding the need for rules of procedure to be in conformity with the Radio Regulations in force, citing § 2.1.1.2 of the Board's internal arrangements and working methods (Part C of the Rules of Procedure). No rule of procedure could be considered "provisional".

3.13 **Mr Magenta** observed that the changes proposed to the rule on No. 1.112 had been sent out for comment, and appeared to be endorsed by all administrations save two, which were proposing changes to the draft proposed by the Bureau. Could the Board now change the procedure regarding No 1.112 based on the two administrations' comments without further consulting all other administrations? In his view it could, in the knowledge that if other administrations disagreed with the decisions taken by the Board they could make their disagreement known. However, if the Board approved a modified rule of procedure, it could not do so on a "provisional" basis.

3.14 The **Chairman** said that administrations had had ample time to study the proposed modifications to the rule on No. 1.112, consideration of which had already been deferred from the 73rd to the present meeting following a request by the United States. If the Board further deferred discussion of the draft rule, it would presumably have to send out new correspondence to administrations informing them of the proposals by France and the United States. The Board should proceed with discussion of the proposals before the meeting.

3.15 **Ms Jeanty** recalled the Board's previous discussions on whether certain rules of procedure could be considered "provisional" and the conclusion reached that they could not – although one might maintain that all rules were to be deemed provisional until the following WRC. As to whether the proposed amendments before the present meeting regarding No. 1.112 should be sent out for a second round of comments, only under very special circumstances should such a departure from normal practice be adopted. The Board should proceed with discussion of the contributions before the present meeting.

3.16 The **Chairman** invited the Board to take up the draft modified rule on No. 1.112 put forward by the Bureau along with the amendments proposed by the two administrations.

3.17 A detailed discussion of the draft rule and proposals ensued, in the course of which the following main comments were made and agreements reached.

3.18 Regarding the first paragraph of the draft rule and the changes proposed to the last sentence thereof, **Ms Wilson** said that the intention in the United States' proposals was having over-specific references in the first paragraph, leaving the second paragraph of the rule to deal with specific cases of satellite networks. The United States was also proposing that a new or modified rule of procedure be developed to deal with the receipt of notices under Appendix 4.

3.19 The **Director** said that the reference to "A.4.b.4" in the text proposed by the Bureau was intended to set forth in the introductory paragraph precisely where the problem laid, identifying the discrepancy between Article 1 and Appendix 4 of the Radio Regulations, before going on to a solution determining what could be treated as one satellite network requiring the submission of one notice rather than potentially, in some cases, thousands. No. 1.112 referred to "only one satellite" in a network, whereas A.4.b.4 referred to "For each orbital plane … the number of satellites in the orbital plane", implying not only that there could be more than one satellite per orbital plane, but also that there could be more than one orbital plane.

3.20 **Mr Strelets, Mr Bessi** and **Mr Hoan** considered it important to keep the reference to A.4.b.4, for the reasons given by the Director.

3.21 **Mr Henri (Chief SSD)** noted that, in conflict with the definition of a "satellite network" in No. 1.112, item A.4.b.4 allowed both for more than one orbital plane and more than one satellite per orbital plane. That had been manageable when item A.4.b.4 had been introduced and constellations had comprised identical orbital planes and identical satellites, but new non-GSO mega-constellations could now contain different orbital planes and thousands of satellites, with different numbers of satellites per plane depending on where service was provided.

3.22 **Ms Wilson** said that she did not object to retaining the reference to A.4.b.4, but failed to see how it could be cited as the direct grounds ("According to A.4.b.4") for stating that one notice for a non-GSO network could cover more than one orbital plane and more than one satellite per orbital plane. She could agree with a suggestion by the **Chairman** to replace "According to" by "taking into account". Noting that rules of procedure had to comply with the Radio Regulations, she said that the rule on No. 1.112 must therefore comply not only with the definition of "satellite network" in No. 1.112 but also with that of "satellite system" in No. 1.111.

3.23 The **Chairman** suggested that the text would be simplified by deleting the last sentence of the first paragraph of the rule, given that its substance was covered by the second paragraph and its subparagraphs.

3.24 **Mr Strelets** said that the entire logic of the draft rule would be lost if the last sentence of the first paragraph was deleted. The reference to item A.4.b.4 must be retained. The discrepancy between No. 1.112 and Appendix 4 clearly needed to be resolved by means of a rule of procedure, either on No. 1.112 or on Appendix 4. The issue would have to be addressed by the WRC and covered in the Board's report under Resolution 80 (Rev. WRC-07).

3.25 **Ms Wilson** suggested referring to "A.4.b" rather than item "A.4.b.4".

3.26 **Mr Henri (Chief SSD)** considered that such a reference would be acceptable, although it would point less precisely to where the discrepancy between No. 1.112 and Appendix 4 lay.

3.27 It was **agreed** to retain the wording of the first paragraph of the draft rule as contained in Circular Letter CCRR/58.

3.28 Regarding the second paragraph of the draft rule, it was **agreed** to adopt the structure in the United States' proposal, i.e. comprising the introductory phrase "On the basis of the above" followed by four subparagraphs containing complete sentences.

3.29 It was **further agreed** to retain subparagraphs *a)* and *b)* as proposed by the United States, subject to the amendment, pursuant to discussion of subparagraph *d)* subsequently, of subparagraph *b)* to read: "... each satellite with its associated earth and space stations, as appropriate, …"

3.30 Regarding subparagraph *c)*, **Mr Strelets** endorsed the text proposed by the United States.

3.31 **Ms Wilson** noted that the United States' proposal for subparagraph *c)* was identical to France's, save that the United States proposed to delete the reference to "sets", which did not appear anywhere in the related regulations. She also noted that the United States' proposal obviously did not take account of the wording retained by the Board for the last sentence of the first paragraph of the rule.

3.32 The **Director** responded that the words "and for which A.4.b.4 of Appendix 4 requires the indication of the number of satellites" need therefore not be retained.

3.33 It was so **agreed.**

3.34 **Mr Hoan, Mr Strelets, Ms Wilson** and the **Director** said that the wording "is treated as one satellite network" would ensure that there was no contradiction between the rule of procedure and No. 1.112 itself.

3.35 **Mr Ito** questioned what precisely was meant by the words "having identical characteristics".

3.36 **Mr Strelets** said that the reference to identical characteristics in subparagraph *c)* was correct: even though orbital planes could have different characteristics, satellites in the same orbital plane must have the same characteristics. **Ms Wilson**, the **Director** and the **Chairman** agreed.

3.37 The **Director** warned against adopting a text allowing the submission of filings containing a single network comprising numerous systems, as that could have significant impact on processing times. It would be unwise to establish a definition of non-GSO network that allowed any system to be a single network.

3.38 **Mr Strelets** noted that the rule adopted by the Board must allow for the submission as single networks of real systems like Cospas-Sarsat, and, for example, navigation systems with different orbital planes (low orbit, high orbit, ellipse, and so on). He also noted that if the Board significantly altered the text initially sent out to administrations for comment, it would have to consider sending it out again for a further round of comments.

3.39 **Mr Bessi** said that discussion of subparagraph *c)* should focus on its basic intent, i.e. that of being general enough to cover all possible configurations of non-GSO systems comprising different orbital planes with satellites with identical characteristics in each. Moreover, the rule under consideration concerned definitions, whereas the problems alluded to by the Director related to the processing of notices and could therefore, if the Board saw fit, be addressed under the rule of procedure on the receivability of forms of notice. **Mr Strelets** endorsed those comments.

3.40 Turning at the invitation of the **Chairman** to subparagraph *d),* the **Director** noted that the only change proposed by the administrations having submitted comments was by the United States to add the words "or space" after "associated earth" in the text proposed in Circular Letter CCRR/58. The original intent of the Bureau's proposed text had been to indicate that the GSO component and the non-GSO components of the system were separate from one another and each intersatellite link was part of its respective network; the separation of the two networks effectively split the intersatellite link in two.

3.41 **Mr Strelets** said that addition of the words "or space" would appear to allow for systems comprising, for example, LEO satellites exchanging data between themselves and earth stations.

3.42 **Mr Hoan** supported addition of the words "or space", it being understood that the non-GSO space station was the system's "associated space station".

3.43 **Mr Bessi** asked whether the Bureau had received notifications for the kind of stations that would be covered by addition of the words "or space".

3.44 **Mr Henri (Chief SSD)** said that subparagraph *d)* addressed the concept of a combined satellite system comprising a GSO satellite and non-GSO satellites. Projects did indeed exist for such concepts, linked by intersatellite links. There would be one notification submission for the GSO space station and its associated earth stations, and another for the non-GSO network with its links to earth stations and space stations within it. In addition the intersatellite link between the GSO station and non GSO stations will be notified on both submissions. Addition of the words "or space" would probably best ensure that all configurations were covered.

3.45 The **Director** said that, with the explanations provided, the rule would have to cover non-GSO intersatellite links on one hand, and intersatellite links between the GSO and non-GSO networks

on the other. It would be better to add appropriate wording to both subparagraphs *c)* and *d)* rather than seek to cover all aspects in subparagraph *d)*. Regarding subparagraph *c*), he said that, as in subparagraph *b*), the intersatellite link was not fully a part of one network, but was split between networks. In order to cover such systems, he proposed that the following wording be added to subparagraph *c)*: "When these non-geostationary satellites are connected to each other by intersatellite links, these links may be notified as part of this satellite network."

3.46 **Ms Wilson** and **Ms Jeanty** supported the wording proposed by the Director. So too did **Mr Bessi,** who said he was also in favour of adding "or space" to subparagraph *d)* as that amendment would accommodate all possible configurations.

3.47 **Mr Ito** said that he preferred the original, shorter version of subparagraph *c)*, which was clearer, allowed for flexibility and would adequately cover what the Director was seeking to cover.

3.48 **Mr Hoan** suggested adding an additional subparagraph to the draft rule rather than modifying the existing subparagraphs, especially subparagraph *c)* which had given rise to virtually no comment by administrations.

3.49 **Mr Strelets** supported the additional text proposed by the Director for subparagraph *c)*, which to his understanding would accommodate different, real configurations and operating methods such as those of the Iridium network – in which intersatellite links were used to command satellites and which it would be incorrect to say comprised separate networks – and Globalstar – which operated very differently, through base stations. Regarding subparagraph *d)*, he reiterated his support for addition of the words "or space", which to his understanding would accommodate as a single network systems like the United States' Tracking and Data Relay Satellite System (TDRSS) and the Russian Federation's Satellite Data Relay Network (SDRN), which involved a special application with non-GSO LEO spacecraft working with GSO satellites to transmit data to Earth.

3.50 The **Director** said that to his understanding of subparagraph *d)* the draft rule would not mean that systems like TDRSS would be treated as a single network, but the opposite: the GSO network would be one network, and each non-GSO constellation would be a different network. To treat such networks as single networks would not be consistent with what was reflected in the text sent out to administrations for comment, with any of the comments made by administrations, or with the approach prevailing at present. Subparagraph *b)* made it necessary for the intersatellite links to be notified for each satellite in the system, and subparagraph *d)* did the same, establishing a clear separation between the GSO and non-GSO components of the system and splitting the intersatellite link between the two networks. **Mr Bessi** and the **Chairman** endorsed the Director's comments.

3.51 **Mr Strelets** said that it would be regrettable if systems which only operated through intersatellite links and were not linked to earth stations were not treated as single networks.

3.52 The **Director** suggested that the most appropriate way to accommodate all concerns would be to add the following sentence to subparagraph *d)*: "The intersatellite links connecting the non-geostationary satellites to the geostationary satellite of the system are to be notified for each of the satellite networks of the system."

3.53 It was **agreed** to add the additional sentence to subparagraph *d)* as proposed by the Director.

3.54 While **Mr Bessi** saw it as possibly superfluous to include the words "or space" in subparagraph *d*) given the additional sentence now added, **Ms Wilson** saw no reason not to include them; **Mr Ito** agreed with her, noting that the addition would cover interconnection between networks and facilitate understanding.

3.55 It was **agreed** that the words "and space", rather than "or space", should be added before "station" in subparagraph *d)*, it being clear to the Bureau that the association did not mean that the space station was included as such, but was simply associated as part of the network. The same wording should also appear in subparagraph *b)*

3.56 **Mr Strelets** noted that some systems, for example TDRSS and SDRN, had more than one GSO satellite, and that reference should therefore be made in the first line of subparagraph *d)*, to "one or more geostationary satellites", thus also bringing that subparagraph more into line with the definition of "satellite system" in No. 1.111.

3.57 The **Director** warned that to treat, for example, three geostationary satellite network on the orbital arc as a single network could give rise to scenarios in which administrations would have to coordinate for locations where they were not implicated at all, save in respect of intersatellite links. Moreover, if the text under discussion was applicable in regard to a single satellite, it would also be applicable to more than one.

3.58 **Mr Bessi** agreed with the Director, adding that the text of subparagraph *d)* must be in line with that of subparagraph *a)*.

3.59 **Ms Wilson** agreed with the Director and Mr Bessi. The rule of procedure should provide simply the basic elements of the approach and not add complexity.

3.60 Subject to further minor amendments to ensure clarity, the Board **agreed** to approve subparagraphs *c)* and *d)* as modified in the course of the discussion.

3.61 The Board **approved** the draft modified rule of procedure on No. 1.112 as amended, with effective date of entry into force 1 January 2017 pursuant to the WRC-15 decision (the full text of the revised rule is reproduced in Annex 1 to Document RRB17-1/8 – Summary of Decisions of the 74th meeting of RRB).

3.62 **Mr Bessi** noted that the rule of procedure thus approved for No. 1.112, and in particular subparagraphs *c)* and *d)* thereof, adequately covered the discrepancy between No. 1.112 and Appendix 4; it would therefore not be necessary in that regard to modify the rule of procedure covering receivability under Appendix 4.

ADD rule on No. 5.312A

3.63 **Mr Bogens (Acting Head TSD/FMD)** introduced the draft new rule on No. 5.312A, noting that it was similar to the new rule on No. 5.316B approved at the 73rd meeting for the purpose of avoiding unnecessary application of the No. 9.21 procedure. He noted that the Administration of France supported the new rule.

3.64 The draft new rule on No. 5.312A was **approved**, with effective date of application 1 January 2017 pursuant to the WRC-15 decision.

MOD rule on No. 9.19

3.65 **Mr Vassiliev (Chief TSD)** introduced the draft modified rule on No. 9.19, drawn up as decided at the 73rd meeting to reduce unnecessary coordination. He noted that the proposed substantive changes related solely to terrestrial stations. The current rule established coordination requirements on the basis of frequency overlap and power flux-density limits in the nearest frequency band or bands, where available. Of a total of nine frequency bands for transmitting terrestrial stations in the range 620 MHz to 76 GHz, however, power flux-density limits were available for only one, so using nearest band criteria was problematic. The draft modified rule proposed to introduce a coordination distance of 1 200 km, beyond which the application of No. 9.19 was not required. The Administration of France supported the draft rule but asked whether it would be feasible to use the value of 127 km instead of 1 200 km for the frequency band 74-76 GHz. The Bureau preferred a single criterion to a sudden jump from 1 200 km to 127 km. He recalled that WRC-15 had given Working Party 4A the task of coming up with specific criteria for each band. Responding to a comment by the **Chairman**, he said that the Bureau had raised the matter at WRC-15 but the conference had not changed any related provision of the Radio Regulations, hence the effective date of application of the modified rule was not linked to 1 January 2017.

3.66 **Mr Bessi**, supported by **Ms Wilson** and **Mr Koffi**, considered that the Bureau should use 1 200 km for all bands pending the outcome of the Working Party 4A studies.

3.67 The draft modified rule on No. 9.19 was **approved**, with effective date of application immediately after approval.

MOD rule on No. 9.36

3.68 **Mr Sakamoto (Head SSD/SSC)** introduced the draft modified rule on No. 9.36, which clarified the Bureau's current practice in identifying coordination requirements in regard to transmitting space stations versus terrestrial services. The comments by the Administration of the United States referred to the ongoing work of Working Party 4A, and the Administration saw no conflict between that work and the proposed modification of the rule.

3.69 The draft modified rule on No. 9.36 was **approved**, with effective date of application immediately after approval.

MOD rule on No. 11.43A

3.70 **Mr Henri (Chief SSD)**, introducing the draft modified rule on No. 11.43A, explained that the text had been amended to take account of the WRC-15 decision to suppress the API procedure for satellite systems subject to coordination under Article 9. No comments had been received from administrations concerning the draft modified rule.

3.71 The draft modified rule on No. 11.43A was **approved**, with effective date of application 1 January 2017 pursuant to the WRC-15 decision.

MOD rule on § 3 of Annex 3 to Appendix 30A

3.72 **Mr Wang (Head SSD/SNP)** introduced the draft modified rule on § 3 of Annex 3 to Appendix 30A, explaining that the new text took account of the WRC-15 decision that the use of power control should be extended to frequency assignments in the Regions 1 and 3 List. The modified rule clarified the Bureau's procedure. No comments had been received from administrations.

3.73 The draft modified rule on § 3 of Annex 3 to Appendix 30A was **approved**, with effective date of application immediately after approval.

ADD rule on § 6.6 of Appendix 30B

3.74 **Mr Wang (Head SSD/SNP)** said that the draft new rule on § 6.6 of Appendix 30B reflected the conclusion reached by the Board at its previous meeting in regard to a submission by the Administration of Papua New Guinea (§ 12 of Document RRB16-3/12 – Minutes of the 73rd meeting). According to the draft rule, if an identified administration neither commented on nor replied to a notifying administration's request, then it would be considered that the former administration disagreed to the inclusion of its territory in the intended service area of an assignment. The whole or partial inclusion of a territory without explicit agreement would lead to an unfavourable finding in the examination of a submission under §6.17 of Appendix 30B. Furthermore, an administration that agreed to the inclusion of its territory in the service area of an assignment might at any time withdraw its agreement. The comments received from the Administration of Papua New Guinea advocated an entirely different approach and indicated that the matter should be decided by a WRC.

3.75 **Mr Ito** observed that the alternative procedure proposed by the Administration of Papua New Guinea envisaged a notifying administration requesting the Bureau's assistance and considered that non-response to the Bureau's correspondence indicated agreement. That procedure differed from the Board's previous decision and would be difficult for the Board to accept.

3.76 **Ms Jeanty** recalled the discussion of the matter at the 73rd meeting and did not consider the alternative procedure proposed by the Administration of Papua New Guinea in accordance with the Radio Regulations and therefore not acceptable. She supported therefore the draft rule as proposed in Circular Letter CCRR/58. She pointed out that any administration could raise a matter at a WRC, so

that possibility was open to Papua New Guinea. Similarly, the Director could bring the matter to the attention of the WRC in his report to the conference, if he so wished. The Board had no further role to play.

3.77 **Mr Strelets** agreed with the previous speakers but considered that various aspects of the matter merited further thought and might well be taken up by the Board in its report under Resolution 80 (Rev. WRC-07), bearing in mind that the reference situation was deteriorating and it was becoming increasingly difficult for each new player to implement an allotment. In particular, the draft new rule failed to envisage the Bureau's assistance to the notifying administration in seeking explicit agreement from an affected administration, and moreover allowed an administration to withdraw its agreement to include its territory in a service area without any consequences.

3.78 **Ms Wilson** agreed with others, especially Ms Jeanty. With regard to the suggestion made by Mr Strelets that the matter might be covered in the Board's report under Resolution 80, she pointed out that neither the Bureau nor the Board were having difficulty in implementing the Radio Regulations in that regard. Apparently just one administration was facing difficulty.

3.79 **Mr Magenta** agreed with Ms Jeanty, Mr Strelets and Ms Wilson.

3.80 **Mr Strelets** observed that, while the Board might approve a rule of procedure, the conference might take a different view.

3.81 **Mr Koffi** expressed sympathy for Papua New Guinea but considered that the Board could not do otherwise than approve the draft rule. As previous speakers had said, the administration could raise the matter at the conference if it so wished.

3.82 The draft new rule on § 6.6 of Appendix 30B was **approved**, with effective date of application immediately after approval.

MOD rule on Part B, Section B6

3.83 **Mr Bogens (Acting Head TSD/FMD)** introduced the draft modified rule on Part B, Section B6, which gave the Bureau a protection criterion to identify potentially affected administrations under No. 9.21 in regard to certain new or modified footnotes adopted by WRC-15. The Administration of France requested the addition of an explanatory footnote to the rule indicating the origin of the power flux-density value. The Bureau saw no objection to including the text requested by France.

3.84 **Ms Wilson** proposed that the draft rule in Circular Letter CCRR/58 be amended as requested by the Administration of France.

3.85 It was so **agreed**.

3.86 The draft modified rule on Part B, Section B6, as amended, was **approved**, with effective date of application 1 January 2017 pursuant to the WRC-15 decision.

Decisions of WRC-15 reflected only in minutes of plenary meetings

3.87 **Mr Henri (Chief SSD)** noted that Annex 2 to Circular Letter CCRR/58 included decisions of WRC-15 that did not appear in the conference's Final Acts but were reflected in the minutes of its plenary meetings. At its 73rd meeting the Board had decided that such decisions would be included in the relevant rules of procedure in the form of notes along with the exact text approved in the plenary meeting. Such rules concerned Appendices 30, 30A and 30B. No comments had been received from administrations in that regard.

3.88 **Ms Wilson** raised the question of the effective date of application of such rules.

3.89 **Mr Bessi** said that there was no need to indicate a date because those rules simply indicated the Bureau's practice and were being included in the Rules of Procedure so that administrations could see them.

3.90 The **Chairman** suggested that the Board conclude as follows:

"The Board discussed in detail the draft Rules of Procedure circulated to administrations in Circular Letter CCRR/58, along with comments received from administrations (Document RRB17-1/4). The Board adopted the Rules of Procedure with modifications, as contained in Annex 1 [to the summary of decisions – Document RRB17-1/8], and agreed to include as notes to the Rules of Procedure those decisions of WRC-15 that do not appear in the Conference's Final Acts, but are reflected in the minutes of WRC-15 plenary meetings, as contained in Annex 2 [to the summary of decisions – Document RRB17-1/8]."

3.91 It was so **agreed**.

4 Consideration of rules of procedure – List of proposed rules (Document RRB16-2/3(Rev. 4) and (Rev.5))

4.1 Once the Board had concluded its consideration of the draft rules of procedure before the present meeting, **Mr Bessi**, speaking as Chairman of the Working Group on the Rules of Procedure, drew attention to the latest revisions that had been made to Document RRB16-2/3 pursuant to the decisions taken by the Board at the present meeting. He noted that there remained only one rule of procedure for the Board still to take up, at its 75th meeting, relating to the receivability of correspondence under Resolution 907 (Rev. WRC-15). He also drew attention to deletion in Attachment 4 of the reference to matters relating to the receipt of correspondence regarding coordination under Appendices 30 and 30A (WRC-15 8th plenary meeting, Documents 505 and 398), since that matter was to be taken up by the next WRC under Resolution 907 (Rev. WRC-15).

4.2 Following comments by **Ms Wilson**, it was **agreed** that all treatment of the rule on 1.112, which had been addressed by the Board at its previous and present meetings, would be consolidated under Attachment 2 to Document RRB16-2/3 (Rev.5).

4.3 The Board **agreed** to conclude on the document as follows:

"Based on information provided by the Bureau, the Board decided to update the list of proposed Rules of Procedure, as contained in Document RRB16-2/3(Rev.5), and instructed the Bureau to prepare the relevant draft Rules of Procedure."

4.4 The **Chairman**, speaking on behalf of the entire Board, thanked Mr Bessi and Mr Bin Hammad, Chairman and Vice-Chairman respectively of the Working Group on the Rules of Procedure, as well as all members of the Bureau who had contributed, including Mr Botha, for all their hard work on the rules of procedure.

5 Submission by the Administration of the United Arab Emirates requesting an extension of the date of bringing into use of the frequency assignments of the YAHSAT-G5-43W satellite network (Document RRB17-1/1)

5.1 **Mr Matas (Head SSD/SPR)** introduced Document RRB17-1/1, in which the Administration of the United Arab Emirates requested an eight-month extension to the period for bringing into use the frequency assignments to its YAHSAT-G5-43W satellite network. Launch of the satellite intended to bring the network into use had been scheduled such as to ensure that the seven-year regulatory period for bringing into use under No. 11.44, namely 21 December 2016, would be respected. The launch had been delayed, however, owing to a problem involving a co-passenger issue resulting, according to the Administration of the United Arab Emirates, in a situation of *force majeure* as described in the submission. As a result of the problem, a new launch date for the satellite had been set for 14 February 2017, meaning that the regulatory period for bringing into use under No. 11.44 would not be respected. The United Arab Emirates was therefore requesting that a new deadline of 21 August 2017 be set for bringing its YAHSAT-G5-43W satellite network into use.

5.2 Responding to a question by the **Chairman**, **Mr Henri (Chief SSD)** confirmed that the satellite had indeed been launched successfully on 14 February 2017 and was *en route* for its orbital position at 43° W. It had been launched on the same flight as the Indonesian satellite Telkom-3S, for

which the Board had granted a regulatory extension at its 73rd meeting at the request of the Administration of Indonesia. It could be assumed that Indonesia's satellite would arrive at its orbital position in time to bring Indonesia's network into use by the extended deadline. The same could be assumed for the United Arab Emirates' satellite if the Board were to grant the requested eight-month extension.

5.3 **Mr Strelets** said that both the United Arab Emirates and Indonesia were to be congratulated on the successful launch of their satellites. He noted nevertheless that there appeared to be some confusion in the United Arab Emirates' submission as to whether the case should be regarded as a co-passenger issue or a case of *force majeure*. The WRC had made the Board competent to deal with both. In evoking *force majeure*, however, the United Arab Emirates sought to cite numerous instances of precedent in support of its request, which to his mind was inappropriate as the Board was required to deal with all cases of *force majeure* on a purely case-by-case basis. The opposite was true for co-passenger issues, for which jurisprudence had been clearly established. Quoting the decisions taken by WRC-12 at its thirteenth plenary meeting, he stressed that a clear distinction must be drawn between cases of *force majeure* and co-passenger delay, as the Board could grant time-limit extensions on either but should not mix the two. In his view, the Board should deal with the request as a co-passenger issue and should accede to it.

5.4 **Mr Bessi** endorsed Mr Strelets' comments. The Board should accede to the United Arab Emirates' request, especially in view of the fact that the satellite concerned had now been launched successfully.

5.5 **Mr Kibe**, endorsing the previous speakers' comments, said that the United Arab Emirates appeared to have been confronted by circumstances totally beyond their control resulting in the genuine need for a regulatory extension in order to bring their real network into use. The Board should grant the eight-month extension requested.

5.6 The **Chairman** commented that, despite the distinctions being drawn by Board members between cases of *force majeure* and co-passenger delay, administrations were free to present their requests in whatever way they saw fit in order to argue their cases as convincingly and fully as possible.

5.7 **Mr Hoan** said that the history of the authority given to the Board by the WRC to grant extensions for co-passenger issues and cases of *force majeure* could be traced back to WRC-07. The Board was fully competent to deal with instances of either, and on that basis he was in favour of acceding to the United Arab Emirates' request. He nevertheless asked whether the United Arab Emirates had submitted the Resolution 49 information and notification under Article 11 for the network in question. **Mr Matas (Head SSD/SPR)** confirmed that the Resolution 49 information and notification under Article 11 had been received.

5.8 **Ms Wilson** endorsed the comments made Mr Strelets and Mr Bessi. The case should be considered as one involving a co-passenger issue, and she could accept that a problem regarding a co-passenger on one launch could constitute grounds for asserting co-passenger problems on a subsequent launch ("ripple effect") and consequently grounds for granting a regulatory extension. She agreed that the Board should grant the United Arab Emirates' request.

5.9 **Mr Ito**, supported by **Mr Magenta**, said that the request before the Board could be dealt with under the umbrella of co-passenger delay and on that basis should be granted. There was no need for the Board to decide whether it met all the criteria for *force majeure*.

5.10 **Ms Jeanty** and **Mr Koffi** said that they could agree to consider the request as involving co-passenger delay, and on that basis accede to it.

5.11 The Board **agreed** to conclude on the matter as follows:

"The Board discussed in detail Document RRB17-1/1, which contains a submission from the Administration of the United Arab Emirates (UAE) with a request to extend the regulatory time-limit

for bringing into use the frequency assignments to the YAHSAT-G5-43W satellite network at 43°W in the frequency bands 28.65-30.0 GHz (Earth-to-space) and 18.85-20.2 GHz (space-to-Earth) for eight months, until 21 August 2017. The Board noted that information has been received confirming that the YAHSAT-G5-43W satellite was successfully launched on 14 February 2017.

Taking into account:

– its authority to provide a limited and qualified extension of the regulatory time-limit for bringing into use frequency assignments to a satellite network in the event of either a co-passenger delay or in a case of *force majeure*;

– that the delay in bringing into use of the frequency assignments of the YAHSAT-G5-43W satellite network is due to a co-passenger delay;

– that the Administration of UAE fulfilled all other requirements under the Radio Regulations, such as notification under Article **11** and submission of information required under Resolution **49 (Rev.WRC-15)**.

Consequently, the Board decided:

– to grant to the Administration of UAE an eight-month extension for the bringing into use of the frequency assignments to the YAHSAT-G5-43W satellite network at 43° W;

– to instruct BR to extend the regulatory deadline for the bringing into use of the frequency assignments to the YAHSAT-G5-43W satellite network at 43° W until 21 August 2017."

6 Submission by the Administration of the Russian Federation requesting an extension of the regulatory time-limit to bring into use the frequency assignments of the GOMS-14.5W satellite network (Document RRB17-1/6)

6.1 **Mr Matas (Head SSD/SPR)** introduced Document RRB17-1/6, containing a submission from the Administration of the Russian Federation requesting, on the basis of *force majeure*, an extension of the regulatory time-limit until 5 October 2019 to bring into use the GOMS-14.5W satellite network. The administration adduced circumstances to meet all four conditions of *force majeure*, namely the breakdown and loss of the ELEKTRO-L1 satellite in the course of deployment at the notified orbital position (14.5° W) during the 90-day period for bringing the GOMS-14.5W frequency assignments into use and the lack of a replacement satellite to bring the assignments into use by the regulatory deadline of 11 March 2017.

6.2 The **Chairman** noted that the Board always considered *force majeure* cases individually, on a case-by-case basis.

6.3 Responding to a query by **Mr Bessi**, **Mr Henri (Chief SSD)** informed the Board that the letter dated 12 October 2016 in Attachment 1 to Document RRB17-1/6 had been sent by the administration of the Russian Federation to the Director of BR under No. 11.44 of the Radio Regulations, informing the Bureau of the bringing into use as of 3 October 2016 of frequency assignments to the GOMS-14.5W satellite network on the basis of the ELEKTRO-L1 satellite deployed at 14.5° W. A satellite had indeed been in that position for slightly longer than one month. Furthermore, the Administration of the Russian Federation had provided the information required under Resolution 40 (WRC-15). Because of the incident with the satellite, however, the administration could not confirm operation for a 90-day period, as required under No. 11.44B.

6.4 **Ms Wilson**, supported by **Mr Magenta**, raised a difficulty in accepting the argument of *force majeure.* Surely the Administration of the Russian Federation could have suspended the use of the frequency assignments operated via the ELECTRO-L2 satellite at 76° E and moved it to 14.5° W in order to bring the frequency assignments at that latter orbital position into use in accordance with the regulatory time-limit, given that the assignments at 76° E had already been brought into use.

6.5 The **Chairman** said that the Board should consider the concern raised by Ms Wilson and Mr Magenta, bearing in mind the functionality of the GOMS series satellite networks, both in regard

to their role in making up the Russian space segment of an international meteorological network operating under the aegis of the World Meteorological Organization (WMO) and the Coordination Group for Meteorological Satellites (CGMS), and to their role in climate monitoring, surveillance of emergency situations and in the Cospas-Sarsat system.

6.6 **Mr Henri (Chief SSD)** informed the Board that, under the aegis of the WMO and the Coordination Group for Meteorological Satellites (CGMS), a number of organizations and administrations makes available satellites at defined orbital positions within the international meteorological network. Among those positions, 76° E is a key location for the Russian space segment of this network and a satellite had to be in operation there at all times to fulfil the goals of the meteorological network. The new-generation of meteorological satellite ELEKTRO-L2 could therefore not be moved from 76° E. The satellite ELEKTRO-L1 that moved at the arrival of ELEKTRO- L2 from 76° E to 14.5°W to enlarge the coverage area of the meteorological network had unfortunately ceased operation before completing the 90-day period for bringing into use the GOMS-14.5W frequency assignments, and no replacement satellite of that complexity was available in the market or in orbit that could be positioned at 14.5° W before the end of the satellite network regulatory time-limit.

6.7 **Ms Jeanty** said that she had initially had the same concern as Ms Wilson and Mr Magenta. Other solutions could have been chosen, but once having embarked in a certain direction those other solutions were no longer feasible. Something unexpected had happened and, based on the information provided in the document and by Mr Henri (Chief SSD), it seemed that all the conditions for *force majeure* had been met. The Board should grant the requested extension.

6.8 **Mr Magenta** said that the particular circumstances prevented the operator from using an alternative satellite to bring the assignments into use. Hence the case fulfilled the conditions for *force majeure* and the Board should grant the requested extension.

6.9 **Mr Bessi** agreed that the information provided by Mr Henri (Chief SSD) had clarified that the case was indeed one of *force majeure.* No other satellite with the required characteristics was available to bring the assignments into use, and the Board should grant the requested extension on the basis of *force majeure.* He noted that the lengthy extension, corresponding to three years following the cessation of operation of the ELEKTRO-L1 satellite at orbital position 14.5° W, was needed to allow the operator to place a new meteorological satellite at that position.

6.10 **Ms Wilson** welcomed the explanation given by Mr Henri (Chief SSD). Her initial concern had been that the operator could have put a replacement satellite at 14.5° W and that the first condition for *force majeure* would therefore not have been fulfilled. She now understood that no such replacement was possible and so she could support a decision by the Board to grant the requested extension on the basis of *force majeure.*

6.11 The **Chairman** thanked Ms Wilson for raising her initial concern, leading the Board to examine every detail of the specific case before it. He suggested that the Board conclude as follows:

"The Board discussed in detail Document RRB17-1/6, which contains a submission by the Administration of the Russian Federation requesting an extension of the regulatory deadline for bringing into use the frequency assignments to the GOMS-14.5W satellite network, which operates in the COSPAS-SARSAT system as part of the international meteorological network, and is used to monitor emergency situations.

Taking into account:

– the authority of the Board to provide a limited and qualified extension of the regulatory time-limit for bringing into use frequency assignments to a satellite network in the event of either a co-passenger delay or in a case of *force majeure*;

– that the Administration of the Russian Federation presented data confirming the move of the ELEKTRO-L1 satellite to orbital position 14.5° W and the use of the frequency assignments to the GOMS-14.5W satellite network;

– that the loss of satellite ELEKTRO-L1 was beyond the control of the Administration of the Russian Federation and its replacement at 14.5° W is not available within the regulatory time-limit.

Consequently, the Board decided:

– to grant an extension of three years to the Administration of the Russian Federation for bringing into use the frequency assignments to the GOMS-14.5W satellite network at 14.5° W;

– to instruct BR to extend the regulatory period of bringing into use the frequency assignments to the GOMS-14.5W satellite network to 5 October 2019."

6.12 It was so **agreed**.

7 Consideration of harmful interference to the radio astronomy service from emissions of the Iridium satellite system (HIBLEO-2) in the frequency band 1 610.6-1 613.8 MHz (Documents RRB17-1/2 and RRB17-1/5)

7.1 **Mr Sakamoto (Head SSD/SSC)** introduced Documents RRB17-1/2 and RRB17-1/5. The submission in Annex 1 to Document RRB17-1/2 from the Administrations of Latvia, Lithuania, the Netherlands, Spain and Switzerland concerned the Iridium satellite system (HIBLEO-2) causing harmful interference to the radio astronomy service in the frequency band 1 610.6-1 613.8 MHz. The Iridium downlink was being operated in a frequency band where it had a secondary allocation, while the radio astronomy service operated on a primary basis in an adjacent band. Footnote 5.372, which stated that harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services, was applicable across the frequency bands 1 610.0-1 626.6 MHz. Footnote 5.372 also refers to Article 29.13 of the RR, which stipulate that administration should take note of relevant ITU-R Recommendations with aim of limiting interference to Radio Astronomy. Harmful interference to European radio astronomy stations had been reported in July 1998, following the bringing into use of the Iridium satellite system. Since then, as outlined in Document RRB17-1/2, discussions had continued between Iridium and the European Science Foundation (ESF), which hosted the Committee on Radio Astronomy Frequencies (CRAF). In summary, the administrations reiterated their concern that the radio astronomy service had been suffering from unwanted emissions for a very long time, and future improvements through the Iridium NEXT constellation could not be properly assessed. The administrations and CRAF therefore requested the Board to consider inviting the Administration of the United States, as the notifying administration of the MSS satellite system HIBLEO-2, to cooperate in seeking remedies to prevent the Iridium NEXT generation satellite system from perpetuating the present harmful interference situation. They further requested the Board to consider instructing the Director of BR to take appropriate actions to help the administrations concerned to resolve the matter. Annex 2 to Document RRB17-1/2 contained copies of correspondence relating to the Bureau's response to a request for assistance from the Administration of the Netherlands, including a reply by the Administration of the United States. Document RRB17-1/5 contained a response by the Administration of the United States to Document RRB17-1/2, acknowledging that unwanted emissions from the first generation of satellites exceeded the thresholds given in Recommendation ITU-R RA.769-2 and expressing a commitment to ensure that protection criteria were met by the new generation of Iridium satellites, deployment of which was expected to be completed in 2018.

7.2 **Mr Ito** understood that, from a regulatory standpoint, a secondary allocation had to coordinate with a primary allocation, and that interference had to stop immediately. In order to obtain a total picture of the case, he asked whether the Bureau could clarify why after some 15 years of interference the matter was now being brought before the Board, and why out of many countries affected in Europe (for example the United Kingdom and Germany) as well as in the rest of the world, so few administrations had signed the letter of complaint.

7.3 **Mr Sakamoto (Head SSD/SSC)** said that the Radio Regulations required harmful interference to be eliminated but that the level of interference considered harmful to radio astronomy had been unclear when the Iridium satellites had initially been launched. The updated Recommendation ITU-R RA.769-2 now provided threshold levels but it would take time to achieve those levels. Meanwhile, the Iridium satellite system was already operating, and it would be difficult to immediately stop interference. He did not know why only specific administrations had signed the letter, but observed that various countries, including Germany, were members of CRAF, which was a signatory.

7.4 The **Director** said that he had no information about why certain administrations had made the complaint but he could guess possible reasons. First, radio astronomy observatories were costly and did not exist in every country. Second, not all observatories covered the Hydroxyl (OH) transition at rest frequency 1 612 MHz, which required special equipment. Third, several European countries might find it easier to work through CEPT's Electronic Communications Committee (ECC). Footnote 5.372 was clear, harmful interference had to be ceased, and the level at which interference was harmful was to be judged by the party suffering the interference.

7.5 **Mr Strelets** recalled encountering a similar problem concerning the Hydroxyl band in 1983. Nothing appeared to have changed. The astronomers had deployed convincing arguments to protect their measurement operations from the GLONASS radio navigation service, a primary service in the band concerned. The astronomers had exhibited great tenacity and in 1992 had obtained primary status too, like the satellite radionavigation service allocations already in place prior to that. In the GLONASS system, a phased plan had been implemented to free up frequency bands used by the radio astronomy service, and the number of frequencies used had been reduced from 24 to 12. Emissions from Iridium space stations had once more confronted astronomers with the same problem. In the 1990s, the band had been split between CDMA and TDMA systems, the idea being that there would be competition between the two systems. Over the past 20 years, however, the single TDMA system (Iridium) had become more successful than the various CDMA systems (for example, Globalstar). The next generation of TDMA satellites would be more powerful, jeopardizing radio astronomy unless additional measures were taken. The problem was international, not local, and had regulatory, technical and organizational aspects. Nevertheless, he felt comfortable with the case currently before the Board, because both sides seemed to be willing to meet half way to find a solution.

7.6 **Mr Bessi** agreed that the situation was comfortable. Iridium was using a contiguous band in a secondary capacity and radio astronomy had precedence. Despite an agreement between the parties, Iridium was still causing harmful interference to radio astronomy, but rather than simply insisting on the implementation of the Radio Regulations, the European administrations were asking the Administration of the United States, as notifying administration, to find a solution and the Bureau (through the Director) to help. In Document RRB17-1/5, the Administration of the United States exhibited a similar spirit of cooperation, mentioning the steps being taken to solve the problem, including the launch of some new satellites in January 2017. Perhaps the Bureau could assist the administrations in finding a technical solution pending the replacement of all the old satellites. The **Chairman** and **Mr Koffi** supported those remarks.

7.7 **Mr Henri (Chief SSD)** assured the Board that the Bureau had scrupulously followed the case for several years and been in relation with the involved parties to find a mutually acceptable solution. The Director's report to the WRC-15 had raised difficulties of sharing the band with radio astronomy (without making specific reference to Iridium). The only technical possibility for stopping the current harmful interference would be for Iridium to cease emissions in certain zones, an approach that was realistic. He hoped that the full deployment of Iridium NEXT would solve the problem. Meanwhile, the European administrations wanted data in order to be able to simulate the interference that would be caused once the Iridium NEXT satellites were operating. The Administration of the United States had done everything possible to expedite the deployment of Iridium NEXT, and the related order and FCC authorization specified that that Iridium shall not produce out of band emissions that cause detrimental interference to radio astronomy observations. Nevertheless, No. 4.6

of the Radio Regulations was somewhat ambiguous, stating that "For the purpose of resolving cases of harmful interference, the radio astronomy service shall be treated as a radiocommunication service. However, protection from services in other bands shall be afforded the radio astronomy service only to the extent that such services are afforded protection from each other." Thus the relationship between Iridium and radio astronomy was not simply one of primary and secondary status.

7.8 **Mr Strelets** said that, despite expressing optimism that a solution would be found, the European administrations raised a series of important concerns in the "summary" section of their letter to the Director dated 9 January 2017, in Annex 1 to Document RRB17-1/2. It seemed that the simulation data provided so far had not been helpful but a series of measurements on the new satellites would begin in May 2017. Perhaps the Board should await an update at its next meeting.

7.9 **Mr Magenta** stressed that radio astronomy should be protected and he agreed with Mr Strelets.

7.10 **Mr Bin Hammad**, supported by **Mr Bessi**, said that the wisest course would be to urge all the administrations concerned to work together to resolve the problem. The Board could then revisit the case at its next meeting on the basis of the measurements that would be carried out, most likely in May.

7.11 **Mr Ito** pointed out that, in the present case, the regulations governing primary and secondary allocations had been set aside for 15 years while discussions continued in a friendly manner. Now perhaps a lack of trust was creeping in. Surely a few more meetings between the parties, with or without the presence of the Bureau, would serve to resolve the problem.

7.12 The **Chairman** invited Board members to comment on the sixth point of the summary in the letter from the European administrations, which stated that "Forcing European radio astronomers who operate on a primary basis in the frequency band 1 610.6-1 613.8 MHz to co-ordinate/notify their radio astronomy observations with/to the Iridium company in advance is effectively a down-grading of the primary allocation ...". He noted that radio astronomy required continuous measurements, so it was impossible to adopt an approach based on sharing operating times.

7.13 **Mr Strelets** said that the European administrations could not evaluate the effect of the Iridium NEXT satellites in terms of causing harmful interference. Iridium appeared to be putting the problem on the shoulders of the astronomers, an approach that should not be allowed. The Board should consider the regulatory aspects of the problem.

7.14 **Mr Bessi**, supported by **Mr Ito**, said that from a regulatory perspective, radio astronomy had the right to be protected. Various problems were listed in Document RRB17-1/2 but the European administrations were not calling on the Board for a regulatory decision.

7.15 **Mr Koffi** suggested that the Board affirm the regulatory point of view, then as requested by the European administrations ask the Administration of the United States to collaborate in solving the problem, and finally ask the Bureau to assist in that task. Document RRB17-1/2 raised a number of points but the Board did not need to go into them now. Indeed, the European administrations had not asked the Board to do so.

7.16 **Mr Strelets** agreed with Mr Koffi that the Board should focus on the regulatory point of view. He asked about the response to the letter dated 1 September 2016 from the Administration of the Netherlands requesting information, and about the results of the analysis mentioned in that letter.

7.17 **Mr Sakamoto (Head SSD/SSC)** said that the Administration of the United States had provided data but the Bureau had not received any reaction from the Administration of the Netherlands. The Bureau did not know about the results of the analysis carried out by the Netherlands but noted that recent real measurements aggregated new and old satellites and it was not clear that protection levels would be met. Such measurements were biased by the old satellites and continued to indicate out-of-band interference.

7.18 **Mr Magenta** said that the view expressed in the sixth point of the summary in the letter from the European administrations was correct. From a regulatory standpoint, the radio astronomy service had to be protected. But in the ITU tradition, the Board should try to create bridges, not walls. He hoped that new information would be available to the Board at its next meeting, enabling the Board to decide what action to take.

7.19 **Mr Henri (Chief SSD)** said that the sixth point of the summary expressed the view of the European administrations but was incomplete from a regulatory standpoint. With regard to out-of-band interference to radio astronomy, priorities and sharing were also regulated by No. 4.6 of the Radio Regulations.

7.20 **Mr Ito** said that regulations had to be respected, but the Board should look at the real situation and be patient. The parties had been in discussion for 15 years with a view to keeping both systems, and they should continue to talk. Some misunderstanding had arisen, but it appeared that correct data were unavailable because the results reflected aggregate interference.

7.21 The **Director** noted that the Administration of the United States in Document RRB17-1/5 agreed to comply with the protection afforded by Recommendation ITU-R RA.769-2 and No. 5.372. Perhaps the Board should simply encourage the administrations concerned to continue discussing the matter and look forward to a positive result.

7.22 The **Chairman** suggested that the Board conclude as follows:

"The Board carefully considered the submissions from the Administrations of Latvia, Lithuania, the Netherlands, Spain and Switzerland regarding the Iridium satellite system (HIBLEO-2) causing harmful interference to the radio astronomy service (RAS) in the band 1 610.6-1 613.8 MHz, as well as the additional information from the Administration of the United States, as contained in Document RRB17-1/5.

The Board noted that:

1. RAS has a primary allocation in the band 1 610.6-1 613.8 MHz and under RR Nos. **5.149**, **5.372** and **29.13** is entitled to protection from harmful interference caused by other services, especially from sources of interference generated on board spacecraft and aircraft.

2. The specific thresholds to protect RAS from harmful interference are provided in Recommendations ITU-R RA.769 and RA.1513.

3. The emissions from the first generation of the Iridium satellites have been causing and are still causing harmful interference to RAS in the frequency band 1 610.6-1 613.8 MHz.

4. The United States Federal Communications Commission in its Order and Authorization of the new Iridium satellites has ordered Iridium Constellation LLC to execute a plan to protect radio astronomy observations in the band 1 610.6-1 613.8 MHz under RR No. **5.372** so as not to cause harmful interference to RAS.

Consequently, the Board decided:

– to urge the United States, as the notifying administration of the MSS system registered as HIBLEO-2, to continue to cooperate with the concerned administrations and international organizations in order to avoid causing harmful interference to RAS;

– to instruct the Director of the Radiocommunication Bureau to take appropriate actions to assist administrations concerned in the resolution of this situation and report on the progress of this resolution at the 75th meeting of the Board."

7.23 It was so **agreed**.

8 Confirmation of the dates of the next meeting and meeting schedule for 2017-2019

8.1 **Mr Botha (SGD)** said that the Board's meeting schedule for the coming years had been drawn up taking various considerations into account: past practice with regard to when Board meetings were held in relation to major ITU conferences, depending also on their venues; meeting room availability; the need to maintain a sufficient and reasonably constant interval of around 15 weeks between Board meetings; major events in Geneva affecting hotel-room availability.

8.2 The Board **agreed** to confirm the dates of its 75th meeting as 17-21 July 2017, and to tentatively confirm the dates of its 76th meeting as 6-10 November 2017.

8.3 The Board **further agreed** to tentatively confirm the dates of its meetings in 2018 as follows:

77th meeting: 19-23 March 2018

78th meeting: 16-20 July 2018

79th meeting: 26-30 November 2018

8.4 **Mr Botha (SGD)** said that the following dates were very tentatively proposed for 2019:

80th meeting: 18-22 March 2019

81st meeting: 1-5 July 2019

82nd meeting: 14-18 October 2019

8.5 **Ms Wilson** raised the possibility of holding the 80th and 81st meetings say a week earlier than was being suggested, and wondered whether it would be possible, if the need arose, to extend the 81st meeting by a few days as had been done in 2015, since the Board would be finalizing its report under Resolution 80 (Rev. WRC-07) at that meeting.

8.6 **Mr Botha (SGD**) said that Ms Wilson's suggestion to advance the 80th and 81st meetings would depend on the dates of the 2019 Geneva Motor Show, since the show dictated room availability in Geneva; the **Deputy-Director** added that any extension of a Board meeting would also depend on the budget approved by the Council when it met in May 2017.

8.7 **Mr Strelets** commented that the present Board members could not impose dates on the new Board members who would be elected by PP-18 and take office in 2019. The Board should therefore not establish or even note the dates suggested for 2019 at the present stage.

8.8 It was so **agreed**.

9 Presentation on "Radio Regulations Article 5 Table of Frequency Allocations" software

9.1 **Mr Abou Chanab (IAP)** gave a presentation on the development and implementation of the "Radio Regulations Article 5 Table of Frequency Allocations" software.

9.2 Speaking on behalf of all members, the **Chairman** expressed the Board's appreciation to the Bureau for the software thus developed and implemented and the Board's gratitude to Mr Abou Chanab for his presentation.

10 Approval of the summary of decisions (Document RRB17-1/8)

10.1 The summary of decisions (Document RRB-17-1/8) was **approved**.

11 Closure of the meeting

11.1 **Mr Magenta, Mr Bessi, Mr Ito, Mr Strelets,** and the **Chairman** speaking on behalf of the entire Board, took the floor to pay tribute to Mr Henri and Mr Matas, who would be retiring shortly, for their invaluable contribution to the work of ITU, BR and the Board in particular over the years, and to wish them a long, happy and healthy retirement.

11.2 **Mr Henri (Chief SSD)** and **Mr Matas (Head SSD/SPR)** thanked the Board members for their kind words, stressing that it had always been a pleasure to work with the Board and its different members both past and present.

11.3 **Mr Magenta**, speaking for all members, commended the Chairman on his very able handling of his first meeting.

11.4 The **Chairman** thanked the previous speaker for his kind words, and expressed his gratitude and appreciation to everyone who had contributed to the successful outcome of the meeting. He closed the meeting at 1220 hours on Friday, 24 February 2017.

The Executive Secretary:
F. RANCY

The Chairman:
I. KHAIROV