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| **World Radiocommunication Conference (WRC-19) Sharm el-Sheikh, Egypt, 28 October – 22 November 2019** |  |
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| PLENARY MEETING | **Addendum 2 to Document 4-E** |
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| Director, Radiocommunication Bureau | |
| REPORT OF THE DIRECTOR ON THE ACTIVITIES OF THE RADIOCOMMUNICATION SECTOR | |
| part 2 | |
| EXPERIENCE IN THE APPLICATION OF THE RADIO REGULATORY PROCEDURES AND OTHER RELATED MATTERS | |

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# 1 Introduction

This Part of the Bureau’s report summarizes the experience of the Radiocommunication Bureau in administering the Radio Regulations (RR), including the difficulties and inconsistencies encountered in the application of the relevant provisions.

The Report is submitted to WRC-19 for consideration under agenda item 9.2. As for the other issues that could not be associated with any specific agenda item, except agenda item 9.2, the Conference may wish to consider appropriate mechanisms for fixing the problems reported, including the option of formulating suitable agenda item(s) for the next Conference. In considering WRC-19 agenda item 9.2, the following footnote in the WRC-19 agenda shall be taken into account: “This agenda item is strictly limited to the Report of the Director on any difficulties or inconsistencies encountered in the application of the Radio Regulations and the comments from administrations.”

# 2 Preparation of the Radio Regulations (2016 edition)

## 2.1 General comments

The edition of the Radio Regulations reflecting the changes decided by WRC‑15 was published during the fourth quarter of 2016 in all ITU languages

## 2.2 Errors, inconsistencies and out-of-date provisions

### 2.2.1 Typographical and other apparent errors (including incorrect references)

In the preparation of the 2016 edition of the RR, the Bureau has corrected the typographical errors that were noticed in the 2012 edition and which were reported to WRC-15.

In addition, the Bureau introduced those consequential changes and amendments to the RR as necessitated by the decisions of WRC-15, for which the Bureau received explicit authorizations from WRC-15.

Subsequent to the publication of the 2016 edition, a number of typographical and other apparent errors in different languages were detected in that edition. These errors, as summarized in Table 1, are submitted to WRC‑19 in the appropriate format for their consideration, with a view to obtaining the necessary approval for correcting them in the forthcoming edition of the RR.

Table 1

List of typographical and other apparent errors discovered in the 2016 edition of the RR

| Language | Page | Incorrect or missing text | Correct text |
| --- | --- | --- | --- |
|  | Vol. 1 | Articles |  |
| R | **96** | **5.312** *Дополнительное распределение*: в Армении, Азербайджане, Беларуси, Российской Федерации, Грузии,Казахстане, Узбекистане, Кыргызстане, Таджикистане, Туркменистане и Украине полоса частот 645–862 МГц, в Болгарии полосы частот 646–686 МГц, 726–758 МГц, 766−814 МГц и 822−862 МГц и в Польше полоса частот 860–862 МГц до 31 декабря 2017 года распределены также воздушной радионавигационной службе на первичной основе. (ВКР-15) | **5.312** *Дополнительное распределение*: в Армении, Азербайджане, Беларуси, Российской Федерации, Грузии,Казахстане, Узбекистане, Кыргызстане, Таджикистане, Туркменистане и Украине полоса частот 645–862 МГц, в Болгарии полосы частот 646–686 МГц, 726–758 МГц, 766−814 МГц и 822−862 МГц и в Польше полоса частот 860–862 МГц до 31 декабря 2017 года,[[1]](#footnote-1) распределены также воздушной радионавигационной службе на первичной основе. (ВКР-15) |
| R | **105** | **5.351** Полосы 1525–1544 МГц, 1545–1559 МГц, 1626,5–145,5 МГц и 1646,5–1660,5 МГц не должны использоваться для фидерных линий какой-либо службы. Однако в исключительных случаях администрация может разрешить осуществлять связь через космические станции, использующие эти полосы частот, земной станции любой из подвижных служб, расположенной в определенном фиксированном пункте. | **5.351** Полосы 1525–1544 МГц, 1545–1559 МГц, 1626,5–145,5 МГц и 1646,5–1660,5 МГц не должны использоваться для фидерных линий какой-либо службы. Однако в исключительных случаях администрация может разрешить осуществлять связь через космические станции, использующие эти полосы частот, земной станции любой из подвижных спутниковых служб, расположенной в определенном фиксированном пункте. |
| All | **141** | **5.480** *Additional allocation:* in Argentina, Brazil, Chile, Cuba, El Salvador, Ecuador, Guatemala, Honduras, Paraguay, the Netherlands Antilles, Peru and Uruguay, the frequency band 10-10.45 GHz is also allocated to the fixed and mobile services on a primary basis. In Colombia, Costa Rica, Mexico and Venezuela, the frequency band 10-10.45 GHz is also allocated to the fixed service on a primary basis.      (WRC-15) | **5.480** *Additional allocation:* in Argentina, Brazil, Chile, Cuba, El Salvador, Ecuador, Guatemala, Honduras, Paraguay, Curaçao, Sint Maarten (Dutch part), and the Caribbean Netherlands (Bonaire, Sint Eustatius and Saba), Peru and Uruguay, the frequency band 10-10.45 GHz is also allocated to the fixed and mobile services on a primary basis. In Colombia, Costa Rica, Mexico and Venezuela, the frequency band 10-10.45 GHz is also allocated to the fixed service on a primary basis.     (WRC-15) |
| F | **217** | **11.44B** Une assignation de fréquence à une station spatiale sur l'orbite des satellites géostationnaires est considérée comme ayant été mise en service, lorsqu'une station spatiale sur l'orbite des satellites géostationnaires ayant la capacité d'émettre ou de recevoir sur cette fréquence assignée, a été déployée à la position orbitale notifiée et maintenue à cette position pendant une période continue de 90 jours. L'administration notificatrice en informe le Bureau dans un délai de 30 jours à compter de la fin de la période de 9026, 27. Lorsqu'il reçoit les renseignements envoyés au titre de la présente disposition, le Bureau les met à disposition sur le site web de l'UIT dès que possible et les publie dans la BR IFIC. La Résolution **40 (CMR-15)** s'applique. | **11.44B** Une assignation de fréquence à une station spatiale sur l'orbite des satellites géostationnaires est considérée comme ayant été mise en service, lorsqu'une station spatiale sur l'orbite des satellites géostationnaires ayant la capacité d'émettre ou de recevoir sur cette fréquence assignée, a été déployée à la position orbitale notifiée et maintenue à cette position pendant une période continue de 90 jours. L'administration notificatrice en informe le Bureau dans un délai de 30 jours à compter de la fin de la période de 90 jours26, 27. Lorsqu'il reçoit les renseignements envoyés au titre de la présente disposition, le Bureau les met à disposition sur le site web de l'UIT dès que possible et les publie dans la BR IFIC. La Résolution **40 (CMR-15)** s'applique. |
| R | **237** | **15.20** § 12 В случае если какая-либо станция совершает серьезное нарушение, обнаружившие его администрации должны сделать соответствующее представление администрации, в юрисдикции которой находится эта станция. | **15.20** § 12 В случае если какая-либо станция совершает серьезное нарушение, обнаружившие  его администрации должны сделать соответствующее представление администрации, под юрисдикцией которой находится эта станция. |
| R | **237** | **15.26** § 18 Если это практически осуществимо и при условии достижения соглашения между заинтересованными администрациями, случай вредных помех может быть рассмотрен непосредственно их специально назначенными радиоконтрольными станциями или путем непосредственной координации между их эксплуатирующими организациями. | **15.26** § 18 Если это практически осуществимо и при условии достижения соглашения между заинтересованными администрациями, случай вредных помех может быть рассмотрен непосредственно их специально назначенными станциями контроля излучений или путем непосредственной координации между их эксплуатирующими организациями. |
| R | **238** | **15.29** § 21 В случаях, когда для устранения вредных помех требуются срочные меры, администрации должны общаться между собой наиболее быстрым способом и, при условии предварительного разрешения заинтересованных администраций, обмен сведениями может осуществляться непосредственно между специально назначенными станциями международной системы радиоконтроля. | **15.29** § 21 В случаях, когда для устранения вредных помех требуются срочные меры, администрации должны общаться между собой наиболее быстрым способом и, при условии предварительного разрешения заинтересованных администраций, обмен сведениями может осуществляться непосредственно между специально назначенными станциями международной системы контроля излучений. |
| R | **238** | **15.31** § 23 Если случай вредных помех оправдывает подобный шаг, администрация, в юрисдикции которой находится приемная станция, испытывающая помехи, должна информировать об этом администрацию, в юрисдикцию которой входит передающая станция, служба которой подвергается помехам, сообщая ей все возможные сведения. | **15.31** § 23 Если случай вредных помех оправдывает подобный шаг, администрация, под юрисдикцией которой находится приемная станция, испытывающая помехи, должна информировать об этом администрацию, под юрисдикцией которой находится передающая станция, служба которой подвергается помехам, сообщая ей все возможные сведения. |
| R | **238** | **15.32** § 24 Если для опознавания источника, определения характеристик и для определения ответственности за вредные помехи необходимы дополнительные наблюдения и измерения, администрация, в юрисдикции которой находится передающая станция, служба которой подвергается помехам, может обратиться с просьбой о сотрудничестве к другим администрациям, в частности к администрации, в юрисдикции которой находится приемная станция, испытывающая помехи, или к другим организациям. | **15.32** § 24 Если для опознавания источника, определения характеристик и для определения ответственности за вредные помехи необходимы дополнительные наблюдения и измерения, администрация, под юрисдикцией которой находится передающая станция, служба которой подвергается помехам, может обратиться с просьбой о сотрудничестве к другим администрациям, в частности к администрации, под юрисдикцией которой находится приемная станция, испытывающая помехи, или к другим организациям. |
| R | **238** | **15.33** § 25 В случаях, когда вредные помехи возникают в результате излучений от космических станций, администрации, в юрисдикции которых находятся эти мешающие станции, должны по запросу от администрации, в юрисдикции которой находится станция, подвергающаяся помехам, предоставить текущие орбитальные данные, необходимые для определения положений космической станции, если они не известны из других источников. | **15.33** § 25 В случаях, когда вредные помехи возникают в результате излучений от космических станций, администрации, под юрисдикцией которых находятся эти мешающие станции, должны по запросу от администрации, под юрисдикцией которой находится станция, подвергающаяся помехам, предоставить текущие орбитальные данные, необходимые для определения положений космической станции, если они не известны из других источников. |
| R | **238** | **15.34** § 26 Определив источник и характеристики вредных помех, администрация, в юрисдикции которой находится передающая станция, служба которой подвергается помехам, должна информировать администрацию, в юрисдикции которой находится передающая станция, создающая помехи, предоставляя ей все полезные сведения для того, чтобы эта администрация могла принять все необходимые меры для устранения помех. | **15.34** § 26 Определив источник и характеристики вредных помех, администрация, под юрисдикцией которой находится передающая станция, служба которой подвергается помехам, должна информировать администрацию, под юрисдикцией которой находится передающая станция, создающая помехи, предоставляя ей все полезные сведения для того, чтобы эта администрация могла принять все необходимые меры для устранения помех. |
| R | **238** | **15.35** § 27 Получив сведения о том, что станция, находящаяся в ее юрисдикции, считается причиной возникновения вредных помех, администрация должна как можно скорее подтвердить получение этой информации с использованием наиболее оперативных из имеющихся средств. Такое подтверждение не означает принятия на себя ответственности. (ВКР-2000) | **15.35** § 27 Получив сведения о том, что станция, находящаяся под ее юрисдикцией, считается причиной возникновения вредных помех, администрация должна как можно скорее подтвердить получение этой информации с использованием наиболее оперативных из имеющихся средств. Такое подтверждение не означает принятия на себя ответственности. (ВКР-2000) |
| R | **238** | **15.36** § 28 В тех случаях, когда вредные помехи причиняются службе безопасности, администрация, в юрисдикции которой находится приемная станция, испытывающая помехи, может также обратиться непосредственно к администрации, в юрисдикции которой находится станция, создающая помехи. Такая же процедура может иметь место в других случаях, при условии предварительного согласия администрации, в юрисдикции которой находится передающая станция, служба которой подвергается помехе. | **15.36** § 28 В тех случаях, когда вредные помехи причиняются службе безопасности, администрация, под юрисдикцией которой находится приемная станция, испытывающая помехи, может также обратиться непосредственно к администрации, под юрисдикцией которой находится станция, создающая помехи. Такая же процедура может иметь место в других случаях, при условии предварительного согласия администрации, под юрисдикцией которой находится передающая станция, служба которой подвергается помехе. |
| R | **239** | **15.38** § 30 Если службе, осуществляемой земной станцией, причиняются вредные помехи, то администрация, в юрисдикции которой находится приемная станция, испытывающая такие помехи, может также обратиться непосредственно к администрации, в юрисдикции которой находится мешающая станция. | **15.38** § 30 Если службе, осуществляемой земной станцией, причиняются вредные помехи, то администрация, под юрисдикцией которой находится приемная станция, испытывающая такие помехи, может также обратиться непосредственно к администрации, под юрисдикцией которой находится мешающая станция. |
| R | **239** | **15.39** § 31 Если, несмотря на принятие мер согласно описанной выше процедуре, вредные помехи не прекращаются, администрация, в юрисдикции которой находится передающая станция, служба которой подвергается помехам, может обратиться к администрации, в юрисдикции которой находится мешающая станция, с сообщением о неправильностях или нарушениях в соответствии с положениями раздела V. | **15.39** § 31 Если, несмотря на принятие мер согласно описанной выше процедуре, вредные помехи не прекращаются, администрация, под юрисдикциией которой находится передающая станция, служба которой подвергается помехам, может обратиться к администрации, под юрисдикциией которой находится мешающая станция, с сообщением о неправильных действиях неправильных действиях или нарушениях в соответствии с положениями раздела V. |
| R | **239** | **15.40** § 32 При наличии специализированной международной организации для какой-либо определенной службы сообщения о неправильностях или нарушениях, касающиеся вредных помех, создаваемых или испытываемых станциями этой службы, могут направляться одновременно как в такую организацию, так и соответствующей администрации. | **15.40** § 32 При наличии специализированной международной организации для какой-либо определенной службы сообщения о неправильных действиях неправильных действиях или нарушениях, касающиеся вредных помех, создаваемых или испытываемых станциями этой службы, могут направляться одновременно как в такую организацию, так и соответствующей администрации. |
| R | **241** | **16.3** Каждая администрация или совместная служба контроля, созданная двумя или несколькими странами, или международная организация, принимающая участие в международной системе контроля излучений, назначает централизирующее учреждение, которому следует адресовать все запросы по контролю и посредством которого данные контроля передаются Бюро или в централизирующие учреждения других администраций. | **16.3** Каждая администрация или совместная служба контроля, созданная двумя или несколькими странами, или международная организация, принимающая участие в международной системе контроля излучений, назначает централизующее учреждение, которому следует адресовать все запросы по контролю и посредством которого данные контроля передаются Бюро или в централизирующие учреждения других администраций. |
| R | **241** | **16.7** Бюро должно вести регистрацию результатов, которые сообщаются ему контрольными станциями, принимающими участие в системе международного контроля излучений, и должно периодически готовить для издания Генеральным секретарем сводки полученных полезных данных контроля с указанием списка станций, приславших эти данные. | **16.7** Бюро должно вести регистрацию результатов, которые сообщаются ему станциями контроля излучений, принимающими участие в международной системе контроля излучений, и должно периодически готовить для издания Генеральным секретарем сводки полученных полезных данных контроля с указанием списка станций, приславших эти данные. |
| R | **241** | **16.8** Если администрация, представляя результаты наблюдений, проводимых одной из ее контрольных станций, участвующих в системе международного контроля, заявляет Бюро, что она точно опознала излучение, которое не соответствует настоящему Регламенту, Бюро должно обратить внимание соответствующей администрации на эти наблюдения. | **16.8** Если администрация, представляя результаты наблюдений, проводимых одной из ее станций контроля излучений,, участвующих в международной системе контроля, заявляет Бюро, что она точно опознала излучение, которое не соответствует настоящему Регламенту, Бюро должно обратить внимание соответствующей администрации на эти наблюдения. |
| R | **261** | **20.7** § 3 *Список IV – Список береговых станций и станций специальной службы.* (ВКР-07) | **20.7** § 3 *Список IV – Список береговых станций и станций специальных служб.* (ВКР-07) |
| R | **359** | **39.3** 3) Если лицензия не может быть предъявлена или если обнаружены явные неправильности, правительства или администрации могут произвести осмотр радиоустановок, для того чтобы удостовериться, что они соответствуют положениям настоящего Регламента. | **39.3** 3) Если лицензия не может быть предъявлена или если обнаружены явные неправильные действия неправильные действия, правительства или администрации могут произвести осмотр радиоустановок, для того чтобы удостовериться, что они соответствуют положениям настоящего Регламента. |
| R | **385** | **49.3** 3) Если лицензия не может быть предъявлена или если обнаружены явные неправильности, то правительства или администрации могут произвести осмотр радиоустановок, для того чтобы удостовериться, что они соответствуют положениям настоящего Регламента. | **49.3** 3) Если лицензия не может быть предъявлена или если обнаружены явные неправильные действия неправильные действия, то правительства или администрации могут произвести осмотр радиоустановок, для того чтобы удостовериться, что они соответствуют положениям настоящего Регламента. |
| R | **414** | **52.262** Частоты, присвоенные береговым станциям для передачи данных, должны быть указаны в Списке береговых станций и станций специальной службы (Список IV). Этот Список должен также содержать любую другую полезную информацию, касающуюся службы, осуществляемой каждой береговой станцией. (ВКР-12) | **52.262** Частоты, присвоенные береговым станциям для передачи данных, должны быть указаны в Списке береговых станций и станций специальных служб (Список IV). Этот Список должен также содержать любую другую полезную информацию, касающуюся службы, осуществляемой каждой береговой станцией. (ВКР-12) |
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|  |  |  |  |
| --- | --- | --- | --- |
| All | **AP 30, Annex 4, p. 573** | under assumed free-space propagation conditions, the power flux-density at any test point within the service area of the overlapping frequency assignments in the Plan does not exceed the following values: | under assumed free-space propagation conditions, the power flux-density at any test point within the service area of the overlapping frequency assignments in the Plan exceeds the following values: |
| E | **AP 30A, Article 4, footnote 6, p. 625** | 6 Whenever, under this provision, an administration acts on behalf of a group of named administrations, all members of that group retain the right to respond in respect of their own networds or systems. | 6 Whenever, under this provision, an administration acts on behalf of a group of named administrations, all members of that group retain the right to respond in respect of their own networks or systems. |
| E | **AP 30B, Annex 4, § 2.1** | 2.1 the calculated16 Earth-to-space single-entry carrier-to-interference (*C/I)u* value at each test point associated with the allotment or assignment under consideration is greater than or equal to a reference value that is 30 dB, or *(C/N)u* + 9 dB17, or any already accepted Earth-to-space single-entry *(C/I)u*18, whichever is the lowest; | 2.1 the calculated16 Earth-to-space single-entry carrier-to-interference (*C/I)u* value at each test point associated with the allotment or assignment under consideration is greater than or equal to a reference value that is 30 dB, or *(C/N)u* + 9 dB17, or any already accepted Earth-to-space single-entry *(C/I)u* value18, whichever is the lowest; |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| All | **AP  42-3, p.795** | PJA-PJZ | Netherlands (Kingdom of the) - Netherlands Antilles | PJA-PJZ | Netherlands (Kingdom of the) – Curaçao, Sint Maarten (Dutch part), and the Caribbean Netherlands (Bonaire, Sint Eustatius and Saba) |

### 2.2.2 Inconsistencies, provisions that are lacking clarity

2.2.2.1 There are still some inconsistencies in the 2016 edition of the Radio Regulations. Some of these inconsistencies are summarized in Table 2, with a view to bringing them to the attention of WRC‑19 which may wish to propose corrective action.

Table 2

Inconsistencies in the RR, provisions that are lacking clarity

| # | Language | Page – provision | Nature of inconsistency | Possible corrective action |
| --- | --- | --- | --- | --- |
|  |  | Volume, page | ARTICLES/APPENDIX | ARTICLES/APPENDIX |
|  |  | Volume 1 | Article 5 | Article 5 |
| 1 | All | 137 (RR5-101) | Footnote No. **5.475**, which refers only to the aeronautical radionavigation service but is included in the last row of the Table for the band 9 300-9 500 MHz in all Regions, meaning that it applies to more than one service in that part of the table | To move the reference to No. **5.475** in the table for the band 9 300-9 500 MHz to the row containing the primary allocation to the RADIONAVIGATION service |
| 2 | All | 145 (RR5-109) | Footnote No. **5.499**, which refers to an additional allocation in some countries of Region 3, is listed in the Table for the band 13.4-13.65 GHz in Region 1 | To remove No. **5.499** from the band 13.4-13.65 GHz in Region 1 of the Table of Frequency Allocations |
| 3 | All | 159 (RR5-123) | Footnote No. **5.533**, which refers to the radionavigation service, is listed in the Table for the band 24.65-24.75 GHz in Region 3, despite the fact that the band is not allocated to the radionavigation service | To remove No. **5.533** from the band 24.65-24.75 GHz in Region 3 of the Table of Frequency Allocations |
|  |  |  | Article 11 | Article 11 |
| 4 | All | 218 | Inconsistency between No. **11.48** and § 8 of Annex 1 to Resolution **552**: 30 days after 7 years should be added to No. **11.48** | MOD  11.48 If, after the expiry of the period of seven years from the date of receipt of the relevant complete information referred to in No. **9.1** or **9.2** in the case of satellite networks or systems not subject to Section II of Article **9** or in No. **9.1A**in the case of satellite networks or systems subject to Section II of Article **9**, the administration responsible for the satellite network has not brought the frequency assignments to stations of the network into use, or has not submitted the first notice for recording of the frequency assignments under No. **11.15**, or, where required, has not provided the due diligence information pursuant to Resolution **49 (Rev.WRC‑15)** , as appropriate, the corresponding information published under Nos. **9.1A**, **9.2B** and **9.38**, as appropriate, shall be cancelled, but only after the administration concerned has been informed at least six months before the expiry date referred to in Nos. **11.44** and **11.44.1** and, where required, § 10 of Annex 1 of Resolution 49 (Rev.WRC‑15) 27*bis*.     (WRC‑15)  ADD  27*bis*11.48.1 If the information pursuant to Resolution **552 (Rev.WRC-15)** has not been provided, the corresponding information published under No. **9.38** shall be cancelled 30 days after the end of the seven-year period following the date of receipt by the Bureau of the relevant complete information under No. 9.1A. |
|  |  | **Volume 3** | **Resolutions** | **Resolutions** |
|  | Spanish | 141 (RES157-1) | The title of Res. **157 (WRC-15)** in Spanish refers to “nuevos sistemas en las órbitas de los satélites geoestacionarios”, while in English it refers to “new non-geostationary-satellite orbit systems” | Align the title of Res. **157 (WRC-15)** in Spanish with the correct title in English. |
|  | All | 364 (RES647-2) | Footnote 2 in Res. **647 (Rev.WRC-15)** stipulates that “Resolution 646 (Rev.WRC-15) includes considering paragraphs to the effect that the term “public protection radiocommunication” refers to radiocommunications used by responsible agencies and organizations dealing with maintenance of law and order, protection of life and property and emergency situations”, However, this definition of the term “public protection radiocommunication” in not consistent with the definition in *considering a)* of Res. **646 (Rev.WRC-15)**, which stipulates that “the term “public protection radiocommunication” refers to radiocommunications used by agencies and organizations responsible for the maintenance of law and order, protection of life and property and emergency situations”. | Align the definition of the term “public protection radiocommunication” in footnote 2 of Res. **647 (Rev.WRC-15)** with the definition of that term in *considering* *a)* of Res. **646 (Rev.WRC‑15)** |

The Bureau has also received from ITU-R Study Group 1 and Working Party 1A two Notes on Inconsistencies in Appendix **7 (Rev.WRC-15)** (see Annex 1 to [Document 1/226](https://www.itu.int/md/R15-SG01-C-0226/en) and Annex 14 to [Document 1A/340](https://www.itu.int/md/R15-WP1A-C-0340/en)). The Bureau analysed these documents and includes its results in Addendum 1 to this document.

### 2.2.3 Outdated provisions

The 2016 edition of the RR contains several provisions, especially in Article 5, which make reference to past dates. In some cases, these past dates define the period of validity of a frequency allocation and the concerned provisions are now obsolete (or will become obsolete by the end of WRC‑19).

Table 3 contains a list of some RR texts that may require updates and they are brought to the attention of WRC‑19, for consideration and for undertaking appropriate updates, where required.

Table 3

Texts in the RR that may require updates

| # | Page | Current RR text that may require update | Possible course of action |
| --- | --- | --- | --- |
|  | Volume 1, ARTICLE 5 | | |
| 1 | 94 | **5.295** … In Mexico, the use of IMT in this frequency band will not start before 31 December 2018 and may be extended if agreed by the neighbouring countries. (WRC-15) | Modify the footnote, since the reference to 2018 is outdated |
| 3 | 95 | **5.308A**… In Belize and Mexico, the use of IMT in this frequency band will not start before 31 December 2018 and may be extended if agreed by the neighbouring countries. (WRC-15) | Modify the footnote, since the reference to 2018 is outdated |
| 4 | 96 | 5.312 *Additional allocation*:  in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency band 645-862 MHz, in Bulgaria the bands 646-686 MHz, 726-758 MHz, 766-814 MHz and 822-862 MHz, and in Poland the frequency band 860-862 MHz until 31 December 2017, are also allocated to the aeronautical radionavigation service on a primary basis.    (WRC‑15) | Modify the footnote, since the allocation of the band 860-862 MHz to the aeronautical radionavigation service in Poland refers to a past date |
| 5 | 96 | 5.313A …. In China, the use of IMT in this band will not start until 2015. | Modify the footnote, since reference to 2015 is outdated |
| 6 | 97 | **5.323**  *Additional allocation:* in Armenia, Azerbaijan, Belarus, the Russian Federation, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the band 862-960 MHz, in Bulgaria the bands 862-890.2 MHz and  900-935.2 MHz, in Poland the band 862-876 MHz until 31 December 2017, and in Romania the bands 862-880 MHz and 915-925 MHz, are also allocated to the aeronautical radionavigation service on a primary basis... (WRC-12) | Modify the footnote, since the allocation of the band 862-876 MHz to the aeronautical radionavigation service in Poland refers to a past date |
| 7 | 179 | **5.562B** In the bands 105-109.5 GHz, 111.8-114.25 GHz, 155.5-158.5 GHz and 217-226 GHz, the use of this allocation is limited to space-based radio astronomy only. (WRC-2000) | Remove the band 155.5- 158.5 GHz because the allocation to the Earth exploration-satellite (passive) and space research (passive) services shall terminate on 1 January 2018, according to No. **5.562F** |
| 8 | 182 | **5.562F** In the band 155.5-158.5 GHz, the allocation to the Earth exploration-satellite (passive) and space research (passive) services shall terminate on 1 January 2018. (WRC-2000) | To suppress the footnote, since the allocation to the Earth exploration-satellite (passive) and space research (passive) services shall terminate on 1 January 2018 |
| 9 | 182 | Band 155.5-158.5 GHz  EARTH EXPLORATION-SATELLITE (passive)  FIXED  MOBILE  RADIO ASTRONOMY  SPACE RESEARCH (passive) 5.562B    5.149 5.562F 5.562G | Band 155.5-158.5 GHz  FIXED  MOBILE  RADIO ASTRONOMY    5.149 |
| 10 | 182 | **5.562G** The date of entry into force of the allocation to the fixed and mobile services in the band 155.5-158.5 GHz shall be 1 January 2018. (WRC-2000) | To suppress the footnote, since the allocation shall enter in force on 1 January 2018 |
| **Volume 1, ARTICLE 22** | | | |
| 11 | 293 | **22.5H.6** These limits apply into geostationary-satellite system earth stations located in Region 2 west of 140° W, north of 60° N, pointing toward geostationary satellites in the broadcasting-satellite service at 91° W, 101° W, 110° W, 119° W and 148° W with elevation angles greater than 5°. This limit is implemented during a transition period of 15 years. | To suppress Table **22-4C**, No. **22.5H.6** and to remove references to Table **22-4C** in No. **22.5I** since the transition period of 15 years started on 1 January 2002 (date of entry into force of the Final Acts of WRC-2000) and therefore ended on 1 January 2017 |
|  | Volume 2, APPENDICES | | |
|  | 265 | **AP17-1**  This Appendix is separated into two annexes:  Annex 1 contains the existing frequency and channelling arrangements in the high-frequency bands for the maritime mobile service, in force until 31 December 2016.  Annex 2 contains the future frequency and channelling arrangements in the high-frequency bands for the maritime mobile service, as revised by WRC-12, which enter into force on 1 January 2017. (WRC-12) | **Reason:** Suppress the text because after 1 January 2017 Annex 1 is abolished and Annex 2 entered into force. |
|  | 266 - 294 | **AP17-2** – **AP17-30**  ANNEX 1\* (WRC-15)  **Frequencies and channelling arrangements in the high-frequency bands for the maritime mobile service, in force until 31 December 2016** (WRC-12) | Suppress completely Annex 1 because it was valid until 31 December 2016 |
|  | 295 | **AP17-31**  ANNEX 2 (WRC-15)  Frequency and channelling arrangements in the high-frequency bands for the maritime mobile service, which enter into force on 1 January 2017 (WRC-12) | Frequency and channelling arrangements in the high-frequency bands for the maritime mobile service (WRC-19)  Reason: Modify because Annex 2 entered into force on 1 January 2017. |
|  | 302 | **AP17-38**  *w)* Administrations that intend to use Annex 2 to introduce data transmissions before 1 January 2017 for stations operating in the maritime mobile service shall not cause harmful interference to nor claim protection from stations in the maritime mobile service operating in accordance with Annex 1 of this Appendix and are encouraged to coordinate bilaterally with affected administrations. | Suppress or modify note *w)* because the date in force of this note is until 1 January 2017 |
|  | 327 | \* From 1 January 2019, channel 2027 will be designated ASM 1 and channel 2028 will be designated ASM 2. | Modify this note because of reference to 1 January 2019 |
|  | 328 | **AP18-4**  *m) …*  \* From 1 January 2019, channel 2027 will be designated ASM 1 and channel 2028 will be designated ASM 2.  *mm)* …  \* From 1 January 2019, channel 2027 will be designated ASM 1 and channel 2028 will be designated ASM 2. | Modify notes *m)* and *mm)* because of reference to 1 January 2019 |
|  | 329 | **AP18-5**  *w)* In Regions 1 and 3:  Until 1 January 2017, …  From 1 January 2017, ….  *wa)* In Regions 1 and 3:  Until 1 January 2017,  From 1 January 2017,  *x)* From 1 January 2017, | Modify notes *w), wa), x)* because of reference to 1 January 2017 |

### 2.2.4 Updates resulting from changes in countries names

In July 2018, the ITU Secretary-General has received official communications from the Ministry of Information, Communications and Technology of the Kingdom of Eswatini informing about the change of its country name from “Swaziland” to “Eswatini”.

In February 2019, the ITU Secretary-General has received a communications from the Permanent Mission of the Republic of North Macedonia to the United Nations Office in Geneva informing about the change of name of the country from “the Former Yugoslav Republic of Macedonia” to “Republic of North Macedonia”.

These changes in these two country names were subsequently confirmed by the relevant entities of the United Nations.

As a result, the references to “Swaziland” and “the Former Yugoslav Republic of Macedonia” need to be updated as indicated in Table 4 below.

Table 4

Texts in the RR that require updates of some country names

| # | Page | Current RR text that may require update | Possible course of action |
| --- | --- | --- | --- |
|  | Volume 1, ARTICLE 5 | | |
| 1 | 46 | **5.70** *Alternative allocation:* in Angola…Swaziland…the band 200-283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis. (WRC-12) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 2 | 52 | **5.87** *Additional allocation:* in Angola…Swaziland, the band 526.5-535 kHz is also allocated to the mobile service on a secondary basis. (WRC‑12) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 3 | 54 | **5.107** *Additional allocation:* in Saudi Arabia…Swaziland, the band 2 160-2 170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis... (WRC-12) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 4 | 58 | **5.123** *Additional allocation:* in Botswana…Swaziland…the band 3 900-3 950 kHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **9.21**. | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 5 | 71 | **5.161B** *Alternative allocation:* in Albania…The Former Yugoslav Rep. of Macedonia…the frequency band 42-42.5 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-15) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 6 | 71 | **5.162A** *Additional allocation:* in Germany…The Former Yugoslav Republic of Macedonia…the band 46-68 MHz is also allocated to the radiolocation service on a secondary basis… (WRC-12) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 7 | 72 | **5.164** *Additional allocation:* in Albania…Swaziland…the frequency band 47-68 MHz…(WRC-15) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 8 | 73 | **5.169** *Alternative allocation:* in Botswana…Swaziland…the band 50-54 MHz is allocated to the amateur service on a primary basis…(WRC-12) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 9 | 73 | **5.171** *Additional allocation:* in Botswana…Swaziland…the band 54-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 10 | 79 | **5.211** *Additional allocation:* in Germany…The Former Yugoslav Republic of Macedonia…the frequency band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis. (WRC-15) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 11 | 79 | **5.212** *Alternative allocation:* in Angola…Swaziland…the band 138-144 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-12) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 12 | 79 | **5.214** *Additional allocation:* in Eritrea…The Former Yugoslav Republic of Macedonia…the band 138-144 MHz is also allocated to the fixed service on a primary basis. (WRC-12) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 13 | 81 | **5.221** Stations of the mobile-satellite service in the frequency band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania…The Former Yugoslav Republic of Macedonia… Swaziland… (WRC-15) | To replace the names “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” and “Swaziland” by “Eswatini” in this footnote |
| 14 | 87 | **5.252** *Alternative allocation:* in Botswana…Swaziland…the bands 230-238 MHz and 246-254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **9.21**. | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 14 | 91 | **5.275** *Additional allocation:* in Croatia…The Former Yugoslav Republic of Macedonia…the frequency bands 430-432 MHz and 438-440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-15) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 16 | 91 | **5.280** In Germany…The Former Yugoslav Republic of Macedonia… the band 433.05-434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications... (WRC-07) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 16 | 94 | **5.296** *Additional allocation:* in Albania…The Former Yugoslav Republic of Macedonia…Swaziland…the frequency band 470-694 MHz is also allocated on a secondary basis to the land mobile service…(WRC-15) | To replace the names “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” and “Swaziland” by “Eswatini” in this footnote |
| 16 | 100 | **5.331** *Additional allocation:* in Algeria…The Former Yugoslav Republic of Macedonia…the band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis… (WRC-12) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 19 | 103 | **5.346** In Algeria…Swaziland…the frequency band 1 452-1 492 MHz is identified for use by administrations listed above wishing to implement International Mobile Telecommunications (IMT)…(WRC-15) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 20 | 105 | **5.349** *Different category of service:* in Saudi Arabia…The Former Yugoslav Republic of Macedonia…the allocation of the band  1 525-1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 5.33). (WRC‑07) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 21 | 111 | **5.382** *Different category of service:* in Saudi Arabia…the Former Yugoslav Republic of Macedonia…the allocation of the frequency band 1 690-1 700 MHz to the fixed and mobile… (WRC‑15) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
| 22 | 116 | **5.401** In Angola…Swaziland…the frequency band 2 483.5-2 500 MHz was already allocated on a primary basis to the radiodetermination-satellite service before WRC-12.... (WRC-15) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 23 | 122 | **5.429A** *Additional allocation:* in Angola…Swaziland…the frequency band 3 300-3 400 MHz is allocated to the mobile… (WRC-15) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 24 | 122 | **5.429B** In the following countries of Region 1 south of 30° parallel north: Angola…Swaziland…the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT)… (WRC-15) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 25 | 132 | **5.453** *Additional allocation:* in Saudi Arabia…Swaziland…the band 5 650-5 850 MHz is also allocated to the fixed and mobile services on a primary basis… (WRC-12) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 26 | 138 | **5.468** *Additional allocation:* in Saudi Arabia…Swaziland… the frequency band 8 500-8 750 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-15) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 27 | 149 | **5.505** *Additional allocation:* in Algeria…Swaziland…the frequency band 14-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-15) | To replace the name “Swaziland” by “Eswatini” in this footnote |
| 28 | 149 | **5.508** *Additional allocation:* in Germany…The Former Yugoslav Rep. of Macedonia…the band 14.25-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-12) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in this footnote |
|  | Volume 2, APPENDICES | | |
| 29 | 132 | **AP5-26**  NOTE 9 - Instead of the values in the Table, the pfd coordination thresholds -142.5 dB(W/m2) in 4 kHz and -124.5 dB(W/m2) in 1 MHz for the MSS and -152 dB(W/m2) in 4 kHz and -128 dB(W/m2) in 1 MHz for the RDSS shall apply in Albania…The Former Yugoslav Rep. of Macedonia…(WRC-12) | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in Note 9 |
| 30 |  | **AP18-6**  *Specific note*  *x)* From 1 January 2017, in Angola…Swaziland…the frequency bands 157.125-157.325 and 161.725-161.925 MHz (corresponding to channels: 82, 23, 83, 24, 84, 25, 85, 26 and 86) are designated for digitally modulated emissions. | To replace the name “Swaziland” by “Eswatini” in note *x)* |
| 31 | 798 | **AP42-6**  Z3A-Z3Z The Former Yugoslav Republic of Macedonia  3DA-3DM Swaziland (Kingdom of) | To replace the names “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” and “Swaziland” by “Eswatini” in the Table of allocation of international call sign series |
|  | Volume 3, RESOLUTIONS | | |
| 32 | 342 | **RES608-2**  *recognizing*  *b)* that up to the end of WRC-2000, use of the RNSS in the frequency band 1 215-1 260 MHz was subject only to the constraint that no harmful interference was caused to the radionavigation service in Algeria…The Former Yugoslav Rep. of Macedonia… | To replace the name “The Former Yugoslav Rep. of Macedonia” by “North Macedonia” in *recognizing b)* |

## 2.3 Considerations concerning the preparation of future editions of the RR

2.3.1 For the preparation of the 2016 edition of the RR the Bureau followed the previous practices, especially with respect to the content of Volume 3, notably:

– only the most recent version of a provision, Resolution or Recommendation was included in the 2016 edition of the Radio Regulations, with the understanding that the most recent version cancels and replaces all of the former versions of the same provision, Resolution or Recommendation;

– that the suppressed Resolutions and Recommendations become ineffective at the time of the signing of the final acts of a conference and, consequently, thus they could not be included in the forthcoming edition of the Radio Regulations, irrespective of whether they are referred to in some of the regulatory provisions in force, or not.

The conference may consider reviewing systematically the references in the Radio Regulations to old or suppressed versions of previous WRC Resolutions or Recommendations.

# 3 Experience in the application of the radio regulatory procedures

This section summarizes the experiences of the Bureau in the application of the procedures referred to in Articles, Appendices, Resolutions and Recommendations of the RR, where appropriate. It also contains summaries on some of the issues raised at RRB meetings which, in the opinion of the RRB, may require consideration by WRC-19.

## 3.1 Articles of the Radio Regulations

### 3.1.1 Article 4 of the Radio Regulations

#### 3.1.1.1 RR No. 4.6

RR No. **4.6** stipulates 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”.

In a Note dated 2 November 2017 to the Director of the Radiocommunication Bureau, ITU-R Working Party (WP) 7D indicated that at its October 2017 meeting, it had received input Document 7D/106 addressing issues with No. **4.6** of the Radio Regulations. This document discusses the origin of No. **4.6** of the Radio Regulations, noting its contradictory nature and inconsistency with the Radio Regulations at large. Such inconsistencies have often resulted in protracted arguments at ITU-R meetings.

WP 7D respectfully requested that the Radiocommunication Bureau Director considers these issues and takes appropriate action for their resolution.

These issues were brought to the attention of the RRB at its 77th meeting on 19-23 March 2018, where the Board concluded that the requested modification to the Regulations is outside its purview. It instructed the Director to include this matter in the Report to WRC-19.

### 3.1.2 Article 5 of the Radio Regulations

#### 3.1.2.1 Coordination requirement under RR No. 9.7 for an inter-satellite link of a geostationary space station communicating with non-geostationary space station, as referred to in RR No. 5.328B

As stated in RR No. **5.328B**, for systems and networks in the radionavigation-satellite service (space-to-space) in the bands 1 215‑1 300 MHz and 1 559-1 610 MHz, the provisions of RR Nos. **9.7**, **9.12**, **9.12A** and **9.13** shall apply with respect to other systems and networks in the radionavigation-satellite service (space-to-space).

In addition, in § 6.4 of the rules of procedure of RR No.**11.32**, it is stated that the Rule does not apply to cases in which the need for coordination under RR No. **9.11A**, **9.12A** or **9.13**, as the cases may be, is mentioned in a footnote to the Table of Frequency Allocation. Therefore, it is understood that the coordination under RR No. **9.7** is required for an inter-satellite link of a geostationary space station communicating with non-geostationary space station under RR No. **9.7** in the frequency bands referred to in RR No. **5.328B.**

The Bureau has encountered a difficulty in the examination and the application of RR No. **9.7** to this case since it is not clear as to what criteria or method should be used in the establishment under this provision of the coordination requirements for space-to-space links. As a result of the difficulty and considering that coordination is effected for the link of non-GSO space station communicating with GSO space station, the Bureau does not identify for such links coordination requirements under RR No. **9.7**.

In order to fulfil the requirements of RR No. **5.328B** and of § 6.4 of the Rule of Procedure relating to RR No. **11.32**, the Conference may wish to instruct the Bureau to establish coordination requirements for such link of a GSO station based on frequency overlap similar to that of a non-GSO station until such time as some other criteria or method is established.

#### 3.1.2.2 Notification or coordination under RR 9.21 of “IMT” stations

WRC-15 identified a number of frequency bands for IMT subject to some regulatory and technical conditions. Such conditions may include an obligation to obtain agreement under No. **9.21**, comply with certain pfd limits, operate on a non-interference/non-protection basis with respect to some services to which the respective frequency bands are also allocated. These conditions were established, for example, in footnotes Nos. **5.308A**, **5.341A**, **5.346**, **5.429F**, **5.430A** and some others.

In order to verify such conditions during the examination of IMT notifications and distinguish IMT stations from other stations in the mobile service, the Bureau introduced a new symbol for Nature of Service: ***IM*** *– IMT station in the mobile service* and informed administrations about this new symbol through Circular Letter CR/391 of 26.02.2016.

Following the publication of the Circular Letter, the Bureau received questions on whether IMT stations with symbol IM can be notified in the bands allocated to the mobile service but not identified for IMT. Due to the absence in the RR of any provisions that limit the usage of IMT stations to the bands specially identified for IMT, the Bureau would accept notification of IMT stations in the bands non-identified for IMT.

The Conference may wish to consider this issue and take any action, it deems appropriate.

#### 3.1.2.3 RR No. 5.429F

RR No. **5.429F** identifies the frequency band 3 300-3 400 MHz for the implementation of IMT in 6 countries in Region 3. Out of these 6 countries, Cambodia and India and Pakistan have an allocation of this band to the mobile service, pursuant to No. **5.429**.However, in Lao P.D.R., the Philippines and Viet Nam the band 3 300-3 400 MHz is not allocated to the mobile service. Given the fact that IMT is an application in the mobile service, IMT stations have no rights to operate in Lao P.D.R., the Philippines and Viet Nam until the respective allocation to the mobile or land mobile service in these countries is made. The three administrations mentioned above may wish to either delete their names from No. **5.429F** or attempt to join the allocation to the mobile service made for some Region 3 countries by No. **5.429** or No. **5.429E**.

#### 3.1.2.4 Use of the space research allocation in the band 14.5-14.8 GHz

Following the new allocation to the fixed-satellite service decided by WRC-15 in the band 14.5-14.8 GHz and subject to a number of conditions such as a minimum antenna diameter of 6 meters, a pfd limit at certain altitudes, separation distance from the border(s) and service areas limited only to countries listed in Resolutions **163 (WRC-15)** and **164 (WRC-15)**, the Bureau has received some requests for coordination for the use of the secondary allocation of the space research (Earth-to-space), which include parameters different from previously recorded for the service in these bands such as lower antenna gain of earth stations and greater use of typical earth stations. In some cases, these parameters of the space research earth stations are identical to those of earth stations in the fixed-satellite service contained in the same notice except antennal diameters and service areas. This evolution of the technical parameters of the space research service may have an impact on the sharing environment of the band 14.5-14.8 GHz.

The Conference may wish to invite ITU-R to monitor and study the situation.

### 3.1.3 Article 9 of the Radio Regulations

#### 3.1.3.1 Publication of API/C in BR IFIC

Under RR No. **9.1A**, the Bureau shall publish a general description of the satellite network or system for advance publication in a Special Section of the BR IFIC based on information sent under RR No. **9.30**. The Bureau currently publishes these information in an API/C special section. Considering that the Bureau already publishes the complete information received under RR No. **9.30** in its website “as-received”, and also makes available a list of unique frequency bands for the notice, there may not be a necessity to have this extra publication of API/C, the Bureau proposes to incorporate the list of unique frequency bands and their corresponding regulatory date limits in the CR/C special section, and removes the need to publish a separate API special section. Alternatively, the API/C special section could simply be made available on the Bureau’s website without being formally published in a special section.

#### 3.1.3.2 Increased use of RR No. 4.4 for satellite networks not subject to coordination

Since 2014, the Bureau has received an increased number of Advanced Publication Information (API) for non-geostationary satellite networks in frequency bands which are not allocated by RR Article **5** of the Radio Regulations for the type of foreseen service.

The most typical examples of API filings not in conformity with RR Article **5** are:

1) satellite network filings in the 902-928 MHz band which is allocated on a primary basis to the fixed service in Region 2 and designated for ISM in Region 2, but is also allocated on a primary basis to the mobile service and identified for IMT in other Regions and in 14 countries of Region 2;

2) satellite network filings in bands and services subject to coordination under RR Article **9** procedure but submitted under different service not allocated in RR Article **5**, as API under Sub-Section IA - not subject to coordination procedure under Section II of RR Article **9**;

3) satellite network filings in the frequency bands allocated to the amateur satellite service (RR No. **5.282**) but for other application in direct contravention of the provisions RR Nos. **1.56-1.57** of the Radio Regulations (definitions of amateur service and amateur-satellite service).

4) satellite network filings for inter-satellite applications in bands allocated only in the Earth-to-space or space-to-Earth directions.

Numbers of application of RR No. **4.4** to satellite networks are summarised in the table below (Note: a satellite network may contain more than one type of application of RR No. **4.4**).

|  |  |  |  |
| --- | --- | --- | --- |
|  | API | Notification | Comments |
| Passive sensor, space radio astronomy receiver, space detection of terrestrial signals | 15 | 11 | No risk of interference |
| Active sensor | 5 | 3 | Mainly related to the case of altimeters at 5 GHz |
| Carrier bandwidth extends beyond allocated frequency range | 8 | 4 | - |
| Use of frequency bands allocated to the amateur service but not to the amateur-satellite service (including the case of the ISM band 902-928 MHz in Region 2) | 13 | 1 | - |
| Use by a non-allocated space service of frequency bands allocated to another space service | 27 | 3 | This includes the use of inter-satellite links in bands allocated only in the Earth-to-space or space-to-Earth directions. |
| Expired allocation | - | 1 | - |
| Non-conformity with RR No. 21.16 | Not applicable  at API stage | 16 | These frequency assignments are however in conformity with the Table of Frequency Allocations |
| Other cases | 3 | 6 | - |

None of these frequency assignments was reported to the BR as causing harmful interference to any service of another administration.

At its 75th, 76th, 77th and 78th meetings, the Radio Regulations Board discussed the increasing number of non-geostationary satellite networks submitted under RR No. **4.4**. Such discussions led to the adoption of a revised version of the Rules of Procedure on RR No. **4.4**.

It should however be noted that, among the four most typical application of RR No. **4.4** tosatellite systems, the submissions of inter-satellite links in frequency bands not allocated to the inter-satellite service or to a space service in the space-to-space direction reflect new technological developments whereby terminals, that were initially designed to operate on Earth, can be put on board satellites. Such technological developments are being studied within ITU-R Working Parties 4A (see Annex 22 to [Document 4A/826](https://www.itu.int/md/R15-WP4A-C-0826/en)) and 4C (see Annex 8 to [Document 4C/417](https://www.itu.int/md/R15-WP4C-C-0417/en)). Both Working Parties informed the Director of the Bureau through Notes about their plan to complete the technical studies on this topic in the near future and to gather them in appropriate ITU-R Reports.

In view of the recent technical developments and the increasing number of submissions of inter-satellite links in frequency bands not allocated to the inter-satellite service or to a space service in the space-to-space direction, the Conference may wish to consider means to give recognition to these uses based on the conditions derived from studies by ITU-R Working Parties 4A and 4C in order to avoid interfering with existing systems operating in the same frequency bands.

#### 3.1.3.2*bis* Characteristics for inter-satellite links of a geostationary space station communicating with a non-geostationary space station which are not subject to the coordination procedure under Section II of Article 9

In accordance with No. **9.1**, for a satellite network or a satellite system not subject to the coordination procedure described in Section II of Article **9**, administrations shall send to the Bureau a general description of the network or system for advance publication in the BR IFIC with the characteristics listed in Appendix 4.

No. **9.2** states that the use of inter-satellite links of a geostationary space station communicating with a non-geostationary space station which are not subject to the coordination procedure under Section II of Article **9**, will require the application of the advance publication procedure.

However, in Annex 2 to Appendix **4**, there is only one column for advance publication of a geostationary-satellite network, and even though it is not explicitly stated in the column heading, it relates only to those geostationary-satellite networks subject to coordination.

The Conference may wish to add a note in No. **9.2** in order to indicate that, for networks using inter-satellite links of a geostationary space station communicating with a non-geostationary space station which are not subject to the coordination procedure under Section II of Article **9**, characteristics to be provided for advance publication in the BR IFIC will be the same as those listed for coordination of a geostationary-satellite network.

#### 3.1.3.3 Requirement under RR No. 9.4

RR No. **9.4** states that reports on the progress made in resolving any difficulties should be submitted to the Bureau. However, since the Bureau does not require this information in the examination of the notification for recording, it is not necessary to provide this information except if the notifying administration wishes to keep the Bureau informed about the progress of its project.

In practice, the Bureau receives extremely few reports under RR No. **9.4**.

Since the progress report mentioned in this provision is not used by administrations and does not play any role in the regulatory process of satellite networks not subject to coordination, the Conference may wish to consider suppressing the last two sentences of RR No. **9.4**, as follows.

**9.4** In the case of difficulties, the administration responsible for the planned satellite network shall explore all possible means to resolve the difficulties without considering the possibility of adjustment to networks of other administrations. If no such means can be found, it may request the other administrations to explore all possible means to meet its requirements. The administrations concerned shall make every possible effort to resolve the difficulties by means of mutually acceptable adjustments to their networks.

#### 3.1.3.4 Draft CR/D database made available in BR IFIC before publication of CR/D in accordance with RR No. 9.53A

Currently the Bureau, upon expiry of the deadline for comments and based on its records, creates a draft CR/D database per network. This database contains a listing of the administrations, which have submitted a disagreement under RR No. **9.52** within the regulatory four-month period. Before proceeding with the publication of the above information in a special section CR/D, the Bureau requests the notifying administration of each network to inform it of any additional comments concerning disagreements received from the affected administrations, which may not have been copied to the Bureau. This should be carried out by updating accordingly the draft CR/D database using SpaceCom software and return it to the Bureau within 30 days of the date of dispatch of the draft CR/D information telefax message. This draft CR/D procedure, which is not required in the Radio Regulations, has been introduced by the Bureau in order to provide an opportunity for the notifying administration to check comments from other administrations and add those not identified by the Bureau before an official publication (CR/D).

During the period 2017-2019, out of 518 satellite networks for which a special section CR/C was published and a draft CR/D information telefax and database were sent, only 20 satellite networks (pertaining to 7 notifying administrations) provided draft CRD information to the Bureau by validating Bureau’s findings through SpaceCom software and no modification/addition request through the draft CR/D procedure has been filed.

It is understood that administrations are now familiar with SpaceCom software and rarely make a mistake in submitting their comments to the Bureau. In view of this fact and considering the significant resources of the Bureau required for this process, the draft CR/D process allowing the notifying administration to verify received comments before the CR/D official publication might no longer be necessary.

The Bureau understands that this change will not only reduce its workload but also speed up the whole CR/D publication process. If there is any request from an administration for modification/addition to the list of comments received by the Bureau, such request will be treated as a modification to the Special Section CR/D.

In view of the above, the Bureau will implement the abovementioned changes to the draft CR/D procedure unless advised to the contrary by the Conference.

#### 3.1.3.5 Application of RR No. 9.19 to terrestrial services

RR No. **9.19** is related to coordination of transmitting terrestrial stations vis-à-vis typical earth station included in the service area of a space station in the broadcasting-satellite service in the bands shared with equal rights between these services, i.e. in the following bands: 620-790 MHz, 1 452-1 492 MHz, 2 310-2 360 MHz, 2 520-2 670 MHz, 11.7-12.75 GHz, 17.7-17.8 GHz, 40.5-42.5 GHz and 74-76 GHz.

Currently, the threshold values are available only for the band 11.7-12.7 GHz, as contained in Annex 3 of RR Appendix **30**. For all other bands the Bureau uses the Rules of Procedure on RR No. **9.19** establishing the criteria for coordination as a frequency overlap and the coordination distance of 1 200 km with respect to the territories on which typical BSS earth stations are located.

This distance was chosen from Table 3 of Appendix **7** to the RR as the maximum coordination distance for propagation mode (1) for frequencies below 60 GHz. It is a very conservative coordination distance that might overestimate real needs for coordination and result in considerable coordination burden for the administrations notifying transmitting terrestrial stations.

WRC-19 may wish to invite the relevant ITU-R Study Groups to develop more specific criteria for establishing coordination requirements under No. **9.19** in the above-mentioned bands.

#### 3.1.3.6 Comments relating to application of RR No. 9.21 to terrestrial services

The RR contain 42 footnotes referring to RR No. **9.21** that are applicable to terrestrial services: RR Nos. **5.61**, **5.87A**, **5.92**, **5.93**, **5.123**, **5.177**, **5.181**, **5.190**, **5.197**, **5.225A**, **5.251**, **5.252**, **5.259**, **5.279**, **5.292**, **5.293**, **5.295**, **5.296A**, **5.297**, **5.308**, **5.308A**, **5.309**, **5.312A**, **5.316B**, **5.322**, **5.323**, **5.325**, **5.326**, **5.341A**, **5.341C**, **5.346**, **5.346A**, **5.410**, **5.429D**, **5.429F**, **5.430A**, **5.431A**, **5.432B**, **5.434**, **5.441B**, **5.447** and **5.482**. The Bureau would like to draw the Conference’s attention to the two aspects of the application of these footnotes by administrations.

Firstly, during the reporting period of 2015-2019, the requests for the application of the procedure under RR No. **9.21** were related only to RR Nos. **5.177, 5.316B** and **5.430A** (from amongst the 42 footnotes that are applicable to terrestrial services).

Secondly, the criteria for identification of affected administrations required for the application of the RR No. **9.21** procedure are fully or partially available in the footnotes, e.g. RR No. **5.225A**, in the WRC Resolutions, e.g. Resolution **749 (Rev.WRC-15)**, or in the relevant Rules of Procedures, except for eight footnotes: RR Nos. **5.181**, **5.190**, **5.197**, **5.251**, **5.259**, **5.279**, **5.441B** and **5.482**, where no methodology and criteria for identification of affected administrations is available yet.

If WRC-19 approves new footnotes referencing RR No. 9.21, the Conference is invited to give instructions to the relevant Study Groups to develop them, in order to enable the Bureau to properly apply the RR No. 9.21 procedure.

#### 3.1.3.7 Classes of stations in the space operation service or providing space operation functions in the application of RR No. 1.23

Article **1** of the Radio Regulations defines both the space operation service (see No. **1.23**, class of station ET) and the space operation functions (space telemetry – see No. **1.133**, class of station ER, space telecommand – see No. **1.135**, class of station ED, space tracking – see No. **1.136**, class of station EK). No. **1.23** indicates that “These functions will normally be provided within the service in which the space station is operating.”

The Rules of Procedure on No. **1.23** clarifies how to examine under No. **11.31** notices with classes of stations related to these functions:

*“1 Number* ***1.23*** *states that the functions of the space operation service (space tracking, space telemetry, space telecommand) will normally be provided within the service in which the space station is operating. The question thus arises as to the appropriateness of considering frequency assignment notices with classes of stations performing these functions, to be in conformity with the Table of Frequency Allocations when the Table does not contain an allocation to the space operation service.*

*2 In the No.****11.31*** *examinations, notices concerned with space operation functions will be considered in conformity with the Table of Frequency Allocations (favourable finding) in the case where the assigned frequency (and the assigned frequency band) lies in a frequency band allocated to the:*

*– space operation service, or*

*– the main service in which the space station is operating (e.g. fixed-satellite service (FSS), broadcasting-satellite service (BSS), mobile-satellite service (MSS)).*

*3 In the case where the assigned frequency concerning space operation functions lies in a frequency band allocated to a service in which the space station has no operating function the No.* ***11.31*** *finding will be unfavourable.”*

Until recently, the Bureau had received many satellite network filings, where the class of stations symbols for the space operation service (ET) or the space operation functions (ER, ED, EK) have been used interchangeably, regardless of whether the intention was to use the space operation service, or whether the intention was to provide the space operations functions within the main service in which the space station is operating. This practice did not generate serious difficulties, because the frequency bands contained in the satellite network filings were either allocated to the main service (in such case, classes of station ER, ED, EK were treated as per the Rules of Procedure and class of station ET was considered as encompassing ER, ED or EK) or allocated to the space operation service and the main service under the same regulatory conditions (in such case, the Rules of Procedure cover cases of all classes of station).

As reported to the 79th and 80th meetings of the Radio Regulations Board, the Bureau has however received satellite network filings performing space operations in some of the frequency bands allocated to the space operation service and to other space services, but under different regulatory provisions. In such cases, distinguishing between the space operation service and the space operation functions provided under the main service of the space station is essential since it would lead to different status or forms of coordination.

In order to prevent further difficulties in examining frequency assignments used for space operations, the Bureau released a new version of the SpaceVal validation software (version 8.0.14), in which any use of the class of station symbol ET in a frequency band where there is no allocation for the space operation service results in a fatal error.

The frequency bands where an allocation to the space operation service coexists with allocations to various other space services under different regulatory provisions are the following: 137-138 MHz, 148-149.9 MHz, 267-272 MHz, 272-273 MHz, 400.15-401 MHz, 401-402 MHz, 433.75-434.25 MHz, 1 525-1 535 MHz, 7 145-7 155 MHz (see also section 8 to [Document RRB19-1/4](https://www.itu.int/md/R19-RRB19.1-C-0004/en) for a more detailed presentation of the status of the various space services in each band). In accordance with the Rule of Procedure on No. **1.23**, an assignment with ET class of station shall apply the regulatory provisions for the space operation service and an assignment with ED, EK or ER class of station shall apply the regulatory provisions relevant to the space service in which the space station is operating.

The co-existence of allocations to the space operation service and to other space services with different regulatory conditions raise the question of the intent of World Radiocommunication Conferences with regards to the applicability of No. **1.23**. Three alternative understandings could be considered:

1) The existence of an allocation to the space operation service indicates the intent to regulate how all space operations have to be conducted in the frequency band and No. **1.23** can not be used to benefit from the regulatory conditions of other allocated space services. This approach is relevant where the allocation to the space operation service is more restrictive than those to other space services (for example, in the frequency band 400.15-401 MHz, the allocation to the space operation service is on a secondary basis whereas the allocations to other space services are on a primary basis) or is operationally different from those to other space services (for example, in the frequency band 401-402 MHz, the allocation to the space operation service is in the space-to-Earth direction whereas the allocations to the other space services are in the Earth-to-space direction). In cases where the allocation to the space operation service is less restrictive than those to other space services, administrations may be given the choice to use No. **1.23** (i.e. with more stringent conditions than the use of the allocation to the space operation service) without conflicting with the intent of WRCs.

2) The existence of an allocation to the space operation service indicates the intent to allow general space operations under some specific regulatory conditions attached to the space operation services, without however preventing space stations operating frequency assignments to other space services in the same frequency band to use No. **1.23**. In such cases, frequency assignments with ED, EK or ER class of station would receive a favourable finding under No. **9.35**/**11.31** only if the satellite network contains at least one frequency assignment to one of the other space service allocated in the frequency band. In such case, they will be subject to the regulatory provisions applicable to the other space service.

3) The existence of an allocation to the space operation service does not indicate any intent with regards to the use of No. **1.23** in the frequency band. In such cases, frequency assignments with ET class of station will follow the regulatory provisions applicable to the space operation service and frequency assignments with ED, EK or ER class of station will follow the regulatory provisions applicable to the space service in which the space station is operating.

Different understanding may apply to different bands, depending on the intent of the WRC having decided the allocations to the various space services in each of the bands listed above. The Bureau will provide the Radio Regulations Board with an historical analysis of WRC’s decisions for each band.

In order to assist the Radio Regulations Board and the Bureau in choosing the most appropriate interpretation, the Conference is invited to provide guidance on the understanding to be chosen by default (i.e. when there is no document explicitly expressing the WRC’s intent with regards to the regulatory link between the space operation service and space operation functions provided under other space services).

### 3.1.4 Article 11 of the Radio Regulations

#### 3.1.4.1 Bringing back into use of a suspended assignment

According to RR No. **11.47**, there is a clear requirement for an administration to confirm the bringing into use within thirty days following the period provided under RR No. 11.44. However, under RR No. **11.49**, the requirement for informing the Bureau concerning the bringing back into use is to inform the Bureau “as soon as possible”.

In order for the Bureau to be informed about the start of the 90-day period required under RR No. **11.49.1**, the Conference may consider adding a similar deadline for bringing back into use.

#### 3.1.4.2 Coordination status of a satellite network during examination under RR Nos. 11.32 and 11.32A

##### 3.1.4.2.1 Examination under RR Nos.11.32 and 11.32A based on coordination agreement status at group levels of RR Appendix 4 notice forms

When notifying a satellite network, the coordination status with respect to affected administrations are communicated through the A5/A6 columns of the Notice Forms. The information in these specific columns are taken into consideration when carrying out examination of the satellite network under RR Nos. **11.32** and **11.32A**.

In addition to what is communicated in the notice forms, the Bureau experience situations when the notifying administration provide additional information through its cover letters, sometimes mentioning or listing the affected satellite networks that have or have not completed coordination or for which coordination is no longer required due to suppression or removal of the affected satellite networks.

The way in which this additional information is provided and presented by notifying administrations in letters can be different from one administration to the other. This creates difficulty to the Bureau in treating consistently such information and also significantly increases the time required to understand and to process such a notice.

Furthermore, these communications are received as letters and are not part of the RR Appendix **4** Notice Form information. They are therefore not reflected in the PART-IS, PART-IIS nor PART‑IIIS publications, where it could be considered by other administrations.

In consideration of the above and with the aim of having such coordination status reflected in a publication for transparency purposes, as well as facilitating the Bureau’s consistent and efficient approach in treating the information, the Bureau is developing a tool that would allow the notifying administration to convert information described above to a coordination status with respect to an affected administration at group levels of the notice form to either being complete, not completed or no longer required.

In this tool, which is to be used with the latest SRS\_ALL, the list of satellite networks published in the CR/C special section under RR No. **9.36.2** will be retrieved and the notifying administration will be able to indicate the satellite networks for which they have completed or not completed coordination. The tool will also indicate to the user those satellite networks that were previously identified and are no longer in the SRS\_ALL for reasons such as suppressions, removal because obsolete, etc. For these cases, the notifying administration can indicate that coordination is no longer required or that there has been an agreement already before the affected satellite network was removed.

These indications will be converted to coordination status with respect to an affected administration at group levels based on frequency overlap between the notified satellite network and the affected satellite network of an administration as shown in the example below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Notified satellite | Affected Sat1 (completed) | Affected Sat2 (not completed) | Affected Sat3 (completed) | Coordination status of notified satellite |
| Group 1 5925-6425 MHz | 6 300-6 700 MHz | 6 000-6 425 MHz | 5 925-6 725 MHz | Not completed |
| Group 2 5925-6725 MHz | Not completed |
| Group 3 6425-6725 MHz | Completed |

The Bureau wishes to inform administrations:

i) how the Bureau treats examination under RR Nos. **11.32** and **11.32A** using information contained in the A5/A6 columns of the Notice Form submitted during notification;

ii) that the Bureau encounters difficulties to consider and process in a consistent, efficient and transparent manner the coordination status of a satellite network from information received in letters and not in the RR Appendix **4** notice form;

iii) that the Bureau is developing a tool to facilitate administrations convert the information which they wish to communicate in cover letters to a coordination status with respect to an affected administration at group level in the RR Appendix **4** notice form so that this information could be appropriately published in the BR IFIC.

The Bureau seeks confirmation that the current method and that the described tool meets the needs of administrations in communicating their coordination status in relation to an affected administration.

##### 3.1.4.2.2 Indication of status of coordination under RR No. 9.7 with respect to satellite networks at notice level for examination under RR No. 11.32A

The Bureau has been experiencing situations when notifying administrations informed the Bureau, during the submission of the notification notice, that coordination under RR No. **9.7** has been completed with respect to specific satellite networks of certain administrations identified in the coordination requirements published in the CR/C Special Section under RR No. **9.36.2**.

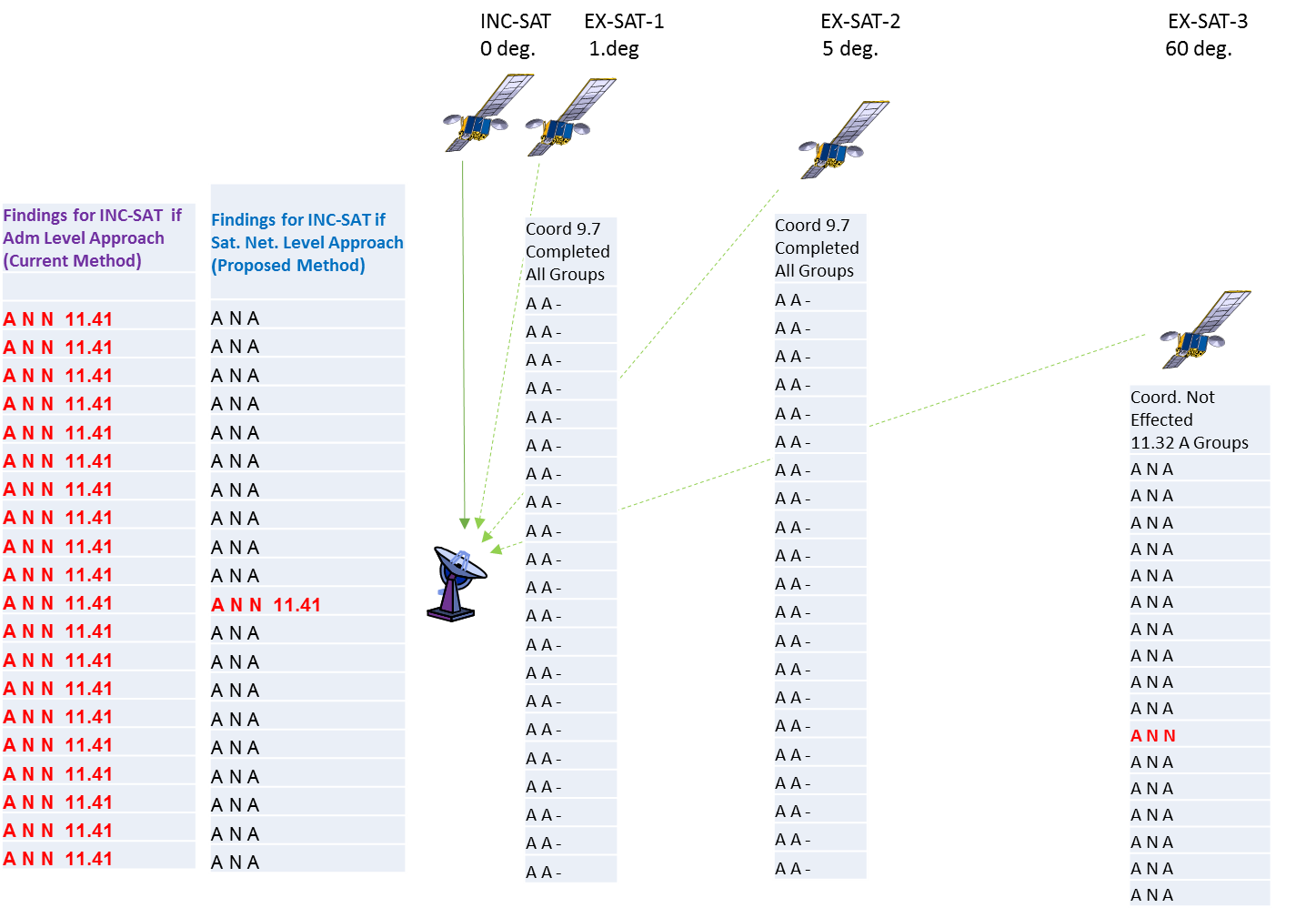
Currently, this type of information is received electronically or by fax and is not reflected in PART‑IS, PART-IIS or PART-IIIS publications.

The examination under RR No. **11.32A** with respect to another administration may arrive to different C/I results, and respective findings, depending on whether the list of satellite networks in the C/I analysis includes all the networks listed under RR No. **9.36.2**, or only those networks for which coordination under RR No. **9.7** has not been successfully completed, as informed by the notifying administration.

As an example, and noting that, in many cases when RR No. **11.32A** is requested, coordination is not completed with the closest adjacent affected satellite networks, the following case, which is not rare, may benefit from an approach at satellite network level:

• Incoming satellite network: INC-SAT from Administration AAA;

• Existing satellite networks: EX-SAT-1, EX-SAT-2 and EX-SAT-3 from Administration BBB, corresponding to three different operating agencies.



The findings for the INC-SAT satellite network depends on:

1) Administration level approach: coordination under RR No. **9.7** not completed with the EX-SAT-3 satellite network (even 1 group) implies the need for examination under RR No. **11.32A** with respect to all satellite networks because the notifying administration cannot claim completion of coordination with Administration BBB. Therefore, all groups get unfavourable findings due to the impact of closely located EX-SAT-1 satellite network to the INC-SAT satellite network (even if coordination with this satellite network was completed).

2) Satellite network level approach: only the EX-SAT-3 satellite network is considered during the examination under RR No. **11.32A** because the notifying administration indicated that coordination is not completed only with this satellite network and requested the Bureau to examine C/I ratios only with it.

|  |
| --- |
| In order to ensure transparency and accuracy in the notification process, the Conference may decide whether a C/I analysis performed under RR No. **11.32A** at network level is useful or not.  In such a case:  i) the Bureau would develop a software module that would complement the notification submissions allowing notifying administrations to indicate, at notice level, the status of coordination under RR No. **9.7** with respect to each individual satellite network identified under RR No. **9.36.2** that will be considered later in the C/I examination accordingly;  ii) the list of satellite networks could be published at notice level, if required, with the indications of coordination completed, not completed, or no longer required with respect to satellite networks of an affected administration. Depending whether administrations wish this information to be seen and how it is to be made available, the publication of such a list may require some supporting regulatory text in the Radio Regulations;  iii) it should be recognized that maintenance of such a list will be additional workload to the Bureau. |

#### 3.1.4.3 Possible revision to the implementation of No. 11.47 with respect to provisional recordings

In accordance with No. **11.47**, all frequency assignments notified in advance of their being brought into use shall be entered provisionally in the Master Register. Any frequency assignment to a space station provisionally recorded under this provision shall be brought into use no later than the end of the period provided under No. **11.44**. Unless the Bureau has been informed by the notifying administration of the bringing into use of the assignment, it shall, no later than fifteen days before the end of the regulatory period established under No. **11.44,** send a reminder requesting confirmation that the assignment has been brought into use within that regulatory period. If the Bureau does not receive this confirmation within thirty days following the period provided under No. **11.44**, it shall cancel the entry in the Master Register.

The information concerning the date of bringing into use is provided through item **A.2.a** of Appendix **4**, the date (actual or foreseen, as appropriate) of bringing the frequency assignment (new or modified) into use.

Currently, when the Bureau receives frequency assignments in a notification notice where the information in item **A.2.a.** contains a date that is later than the date of receipt of the notice, but within the regulatory period established under No. **11.44**, the Bureau publishes this information with a code (A in column 13B3) indicating that this is a foreseen date. When the date indicated in item **A.2.a** passes, the Bureau sends a reminder to the notifying administration requesting the administration to confirm the date, otherwise the Bureau changes the date to the end of the regulatory period established under No. **11.44**.

In most cases, the Bureau receives no response and therefore updates the database with the date corresponding to the end of the regulatory period and then publishes the revised date in a Part I-S. In some cases, the notifying administration responds with a new foreseen date of bringing into use, with which the Bureau will update the database and publish the new date in a Part I-S. The Bureau will repeat the actions described above when the new foreseen date expires.

The Bureau has reviewed this practice, which generates a number of administrative correspondences for the administrations and the Bureau, and presents two alternate options for consideration by the Conference, as follows:

1) Removal of the requirement to submit under item **A.2.a** foreseen dates of bringing into use (i.e. a date later than the date of receipt of the notification notice): this requires a change in the description of item **A.2.a** in Annex 2 of Appendix **4**. In this option, the item **A.2.a** will be provided only if the bringing into use is confirmed or that the 90-day period indicated in No. **11.44B2** is in progress.

2) Automatic extension of the foreseen dates of bringing into use in the database to the end of the regulatory period established under No. **11.44** if no confirmation had been received by the Bureau within 4 months from the foreseen date of bringing into use: no publication will be issued for this revision of the date of bringing into use, but this information will be visible on the BR website. This option does not require any change in the current Radio Regulations.

The Conference is invited to consider the above options and provide guidance to the Bureau on the approach to be adopted with respect to the foreseen date of bringing into use of provisional recordings in the Master Register.

### 3.1.5 Comments relating to Article 19 of the Radio Regulations

Sections II and VI of Article 19 govern the allocation and use of maritime identification digits (MIDs).

MIDs are allocated to administrations by the Bureau in accordance with provision No. **19.36**, which states “a second or subsequent MID should not be requested unless the previously allocated MID is more than 80% exhausted in the basic category of three trailing zeros and the rate of assignments is such that 90% exhaustion is foreseen”.

Furthermore, No. **19.114** instructs administrations to “take particular care in assigning ship station identities with six significant digits (i.e. having three-trailing-zero identities), which should be assigned only to ship stations which can reasonably be expected to require such an identity for automatic access on a worldwide basis to public switched networks…”.

The three trailing zeros provision within the ship station identity numbers is specified in paragraphs 3 to 6 of Annex 1 of Recommendation ITU-R 585-7, which is incorporated by reference to RR.

The September 2019 meeting of SG 5 adopted the revised Recommendation ITU-R 585-7 with the deletion of the three trailing zeros provisions for ship station identity numbers (MMSIs) contained in Paragraphs 3 to 6 of Annex 1, since they are no longer required for the routing of shore-originated calls to Inmarsat maritime mobile earth stations. These Inmarsat B and M standards are decommissioned and limitations in shore facilities no longer exist. It should be noted that Inmarsat C terminals are still operational in the GMDSS, but do not require three trailing zeros. The revised Recommendation has been submitted for approval by the Radio Assembly, 2019.

If the revised Recommendation ITU-R 585-7 is approved by the Radio Assembly 2019, the Conference may wish to revise provision No. **19.36** with a view to removing the three trailing zeros provision and supressing provision No. **19.114**. This would allow to increase in the capacity of the relevant MIDs by a factor of 1 000. A possible option for the revised provision Nos. **19.36** and **19.114** could be:

**19.36** § 17 Each administration has been allocated one or more maritime identification digit (MID) for its use. A second or subsequent MID should not be requested unless the previously allocated MID is more than 80% exhausted and the rate of assignments is such that 90% exhaustion is foreseen. (WRC-19)

### 3.1.6 Article 20 of the Radio Regulations

This Article lists the publications that shall be issued by the Secretary-General. According to Nos. **20.2** – **20.6** these publications shall include, *inter alia*, the International Frequency List containing:

20.4 *a)* particulars of frequency assignments recorded in the Master International Frequency Register;

20.5 *b)* the frequencies prescribed by these Regulations for common use by certain services;     (WRC‑07)

20.6 *c)* the allotments in the Allotment Plans included in Appendices 25, 26 and 27.

Bearing in mind that in year 2000 the publication of the International Frequency List was replaced by the publication of the BR International Frequency Information Circular (BR IFIC) and given that BR IFIC includes all information listed in Nos. **20.4** – **20.6**, Article 20 could be updated as follows:

– No. **20.2** should read:§ 2 The International Frequency Information Circular (BR IFIC) (former List I − The International Frequency List);

– No. **20.3** should read: The BR IFIC shall contain

– “Preface to the International Frequency List (IFL)” should be replaced by “Preface to the International Frequency Information Circular (BR IFIC) in the following provisions: Nos. **11.13**, **13.7**, **13.9**, Appendix **1** (page AP1-1), Appendix **26** (page AP26-4, Note a)), Article 10 of Appendix **30** (pages AP30-26 and AP30-31), Article 11 of Appendix **30** (pages AP30-65, AP30-80), Article 9 of Appendix **30A** (pages AP30A-29, AP30A-32), Article 9A of Appendix **30A** (pages AP30A-65 and pages AP30A-81), Recommendation **63 (WARC-79)**;

– “IFL” should be replaced by “BR IFIC” in No. **13.10**;

– “the International Frequency List” should be replaced by “the Master International Frequency Register” in Recommendation **36 (WRC-97)**.

### 3.1.7 Article 21 of the Radio Regulations

#### 3.1.7.1 Power flux-density (pfd) limits in RR Article 21 applicable to the mobile-satellite service in the frequency band 40-40.5 GHz

During the course of its examinations, the Bureau noted that the pfd limits no longer existed for the allocation to the mobile-satellite service in the frequency band 40-40.5 GHz in Table **21-4** of RR Article **21** of the Radio Regulations since WRC-2000. However, there was no change to the status of the mobile-satellite service in the Table of Frequency Allocation with respect to terrestrial services and pfd limits remain applicable for the fixed-satellite service in the same frequency band as well as to the fixed-satellite and mobile-satellite services in the adjacent band 37.5-40 GHz.

The origin of this discrepancy is that the mobile-satellite service was inadvertently removed at WRC‑2000 from RR Table **21-4** following modifications to this Table under WRC-2000 agenda item 1.4. As a result, pfd was not calculated for such frequency assignments in the band 40-40.5 GHz during examination under RR No. **9.35/**No. **11.31** for 111 satellite networks at the coordination stage and 2 satellite networks at the notification stage or recorded in MIFR.

The Conference may wish to reinstate the missing mention to mobile-satellite service in the frequency band 40-40.5 GHz in RR Table **21-4** and instruct the Bureau to review the frequency assignments already published.

#### 3.1.7.2 Scaling factor in the definition of Article 21 pfd limits applicable to non-GSO satellite systems in the fixed-satellite service in the frequency band 17.7-19.3 GHz

In the frequency band 17.7-19.3 GHz, pfd limits for non-GSO satellite systems are subject to a scaling factor X decided by WRC-2000 and contained in No. **21.16.6** as follows:

**“21.16.6** The function *X* is defined as a function of the number, *N*, of satellites in the non-geostationary satellite constellation in the fixed-satellite service, as follows:

 dB for      *N*  ≤ 50

 dB for  50 < *N* ≤ 288

 dB for      *N* > 288

In the band 18.8-19.3 GHz, these limits apply to emissions of any space station in a non-geostationary-satellite system in the fixed-satellite service for which complete coordination or notification information, as appropriate, has been received by the Radiocommunication Bureau after 17 November 1995, and which was not operational by that date.”

Noting that studies performed before WRC-2000 have not addressed cases of non-GSO satellite systems having more than 1 000 satellites, and that the linear increase of X for N>288 may lead to values that render extremely difficult to meet these pfd limits and may therefore invite artificial split of single systems, the Conference may wish to invite ITU-R to study the appropriateness of the equations contained in No. **21.16.6** for non-GSO satellite systems having more than 1 000 satellites.

### 3.1.8 Need to review RR articles and provisions related to aeronautical services

During the discussions on WRC-19 agenda item 1.10 concerning the Global Aeronautical Distress and Safety System (GADSS) at various ITU-R meetings, the Bureau received some requests for clarifications concerning the application and validity of certain provisions of the RR Articles related to aeronautical services.

These requests were due to the fact that some modes of operation of aeronautical radio applications employed in the past are no longer in use, and because of introduction of new aviation technologies, which may not be covered by or consistent with the current RR provisions. Some examples of such provisions are listed below:

ARTICLE 28

Radiodetermination services

28.16 § 9 In the absence of prior arrangements, an aircraft station which calls a radio direction-finding station for a bearing shall use for this purpose a frequency on which the station called normally keeps watch.

*The question on No.* ***28.16*** *has been raised whether all radio direction-finding stations still have a frequency to keep watch and how to apply this provision if there is no a watch frequency. This question is also relevant for No.* ***28.17****.*

ARTICLE 36

Authority of the person responsible for the station

36.3 § 3 Except as otherwise provided for in these Regulations, the person responsible, as well as all the persons who may have knowledge of any information whatever obtained by means of the radiocommunication service, are placed under the obligation of observing and ensuring the secrecy of correspondence.

*The question on No.* ***36.3*** *has been raised on whether this provision is consistent with operation of some aeronautical communication systems, for example ADS-B, where the information about flight parameters is broadcast openly. This question is also relevant for Nos.* ***36.4*** *and* ***37.11****.*

ARTICLE 37

Operator’s certificates

37.1 § 1 1) The service of every aircraft station and every aircraft earth station shall be controlled by an operator holding a certificate issued or recognized by the government to which the station is subject. Provided the station is so controlled, other persons besides the holder of the certificate may use the radiotelephone equipment.

*The question on No.* ***37.1*** *has been raised if this provision is consistent with some aeronautical usage, e.g. with a possible GADSS function when an operator is not able to control and disable certain equipment activated in distress situations. This question is also relevant for No.* ***37.3****.*

37.3.1 The term “automatic communication devices” is intended to include such equipment as teleprinters, data transfer systems, etc.

*[[2]](#footnote-2)The question on No.* ***37.3.1*** *has been raised if teleprinters are still in use.*

ARTICLE 39

Inspection of stations

39.4 4) In addition, inspectors have the right to require the production of the operators’ certificates, but proof of professional knowledge may not be demanded.

*The question on No.* ***39.4*** *has been raised on how to apply this provision to UAVs. This question is also relevant for No.* ***39.5****.*

The above-mentioned cases are examples and do not cover all aeronautical-related provisions that may need a review.

Consequently, WRC-19 may wish to establish an agenda item for WRC-23 on the revision of the RR articles for aeronautical services and other related provisions to provide consistency with the current and future aviation operational usage.

It should be noted that WRC-15 has attempted to review outdated information in certain parts of the Radio Regulations, except for Articles 1, 4, 5, 6, 7, 8, 9, 11, 13, 14, 15, 16, 17, 18, 21, 22, 23 and 59. This was done under issue 9.1.4 “Updating and rearrangement of the Radio Regulations Agenda” and Resolution **67 (WRC-12)**. However, this work resulted in no change to the RR, mainly due to the lack of input contributions. A more focused agenda item may achieve better results.

## 3.2 Appendices to the Radio Regulations

### 3.2.1 Appendix 4

For reasons of readability, all the proposed changes respectively to Annexes 1, 1bis and 2 to RR Appendix **4** as well as additional suggestions and remarks from the Bureau are contained in Attachment 2.

Concerning Annex 2 to Appendix **4**, the Bureau notes that the single Method of the CPM report on WRC-19 agenda item 7, Issue H addresses a number of issues concerning non-GSO submissions that were raised by the Bureau during the 2015-2019 study cycle. The Bureau considers that this single Method has the potential to facilitate the process of examination of compliance with the epfd limits contained in Article **22** thanks to harmonized parameters submitted by administrations. The changes to Annex 2 to Appendix **4** proposed in this single Method for Issue H are not incorporated in Attachment 2.

### 3.2.2 Appendix 5

#### 3.2.2.1 Coordination trigger in the frequency band 17.7-17.8 GHz under RR No. 9.11

RR No. **9.11** is related to coordination of a space station in the broadcasting-satellite service in any band shared on an equal primary basis with terrestrial services and where the broadcasting-satellite service is not subject to a plan, in respect of terrestrial services.

RR Appendix **5** states that the following frequency bands shall be subject to coordination under No. **9.11**: 620-790 MHz, 1 452-1 492 MHz, 2 310-2 360 MHz, 2 535-2 655 MHz, 17.7-17.8 GHz and 74-76 GHz. RR Appendix **5** specifies detailed conditions for application of RR No. **9.11** only for the bands 2 630-2 655 MHz and 2 605-2 630 MHz (they are provided in Resolution **539 (Rev.WRC-03)** for non-GSO BSS (sound) systems pursuant to RR Nos. **5.417A** and **5.418**, and directly in these provisions for GSO BSS (sound) networks).

Currently there is a pfd limit in RR Article **21** for the fixed-satellite service in the band 17.7-17.8 GHz, and it may be noted that the Rules of Procedure on RR No. **9.36** for establishing coordination requirements for transmitting space stations vs. terrestrial services under RR No. **9.21** mentioned that, when no coordination threshold pfd value is applicable for service A, but a pfd limit (in RR Article **21**, a footnote or a Resolution) is applicable to another space service (service B) in the same frequency band, the value of this pfd limit is used as a threshold pfd value for service A. If such value is not exceeded, an administration is not potentially affected with respect to symbol 9.21/C. If that value is exceeded, an administration on whose territory the limit is exceeded is considered as potentially affected with respect to symbol 9.21/C.

By using the same principle, in examination of coordination request for the broadcasting-satellite service under RR No. **9.11** in the band 17.7-17.8 GHz, the Bureau currently establishes coordination requirements using the value of the pfd limit contained in RR Article **21** for the fixed-satellite service as coordination threshold. If such value is not exceeded, an administration is not potentially affected with respect RR to No. **9.11**. If that value is exceeded, an administration on whose territory the limit is exceeded is considered as potentially affected with respect to RR No. **9.11**.

The Conference may wish to consider this practice of the Bureau, which has been used for a long time without any contestation, and confirm it by including the pfd values of RR Article **21** in RR Appendix **5** as coordination threshold pfd values for coordination under RR No. **9.11** in the frequency band 17.7-17.8 GHz.

### 3.2.3 Appendix 27

Section I of Part II of RR Appendix **27** contains the description of regional and domestic air route areas (RDARAs). Some of these areas mention the borders of Sudan. Due to the partition of the ITU Member State “Sudan (Republic of the)” into two separate States – Republic of the Sudan and Republic of South Sudan, Republic of the Sudan has no longer borders with the following countries: the Democratic Republic of the Congo in provisions Nos. **27**/114and **27**/116,with Kenya in provisions Nos. **27**/117and **27**/121, with Uganda and Kenya in provision No. **27**/130, and the Democratic Republic of the Congo and Uganda in provisions Nos. **27**/132and **27**/133.

In view of the above, the Conference may wish to modify the above-mentioned provisions of RR Appendix **27** as follows:

MOD

**27**/114 *Regional and Domestic Air Route Area – 4 (RDARA-4)*

From the point 30° N 39° W, and through the points 10° N 20° W, 05° S 20° W, to the point 05° S 12° E. Thence along the border between the Rep. of the Congo and Angola, then along the northern border of the Dem. Rep. of the Congo, and the borders of the Rep. of the Congo, of the Central African Republic and the South Sudan. Thence north along the western borders of South Sudan and the Sudan. Along the western border of Egypt, northwards to the Mediterranean and along the Mediterranean and Atlantic coasts of North Africa to the point 30° N 10° W. West along the 30° N parallel to close the area at 30° N 39° W.

MOD

**27**/116 *Sub-Area 4B*

From the point 21° N 31° W, through the points 10° N 20° W, 05° S 20° W to 05° S 12° E. Thence along the southern border of the Rep. of the Congo and the Central African Republic to the junction between the Dem. Rep. of the Congo, South Sudan and the Central African Republic. Along the western border of South Sudan and the Sudan to the point 12° N 22° E. Thence along the N'Djamena parallel to the Nigerian border. Then westward along this border to the point 13° 12' N 10° 45' E, through Zinder and Gao, to the point 21° N 31° W.

MOD

**27**/117 *Regional and Domestic Air Route Area – 5 (RDARA-5)*

From the point 41° N 40° E to the point 37° N 40° E. Then along the border between Turkey and Syrian Arab Republic to the Mediterranean coast. Thence to the common border of Libya and Egypt on the North African coast excluding Cyprus. Southward along the western border of Egypt, and the Sudan, and South Sudan to the border of Kenya. Thence east along the northern border of Kenya, then south along the border between Kenya and Somalia and to the East African coast at 02° S 41° E. Then through the point 02° S 73° E to 37° N 73° E. Then east along the border betweenAfghanistan and Pakistan, and west along the northern borders of Afghanistan and the Islamic Republic of Iran to the Caspian Sea. Then along the northern border of the Islamic Republic of Iran and Turkey to close the area at 41° N 40° E.

MOD

27/121 *Sub-Area 5D*

From the junction of Egypt, Libya and the Sudan southward along the western border of the Sudan and South Sudan to the border of Kenya. Thence along the northern border of Kenya. Then south along the border between Kenya and Somalia to the east African coast, at the point 02° S 42° E. Then through the points 02° S 54° E, 13° N 54° E, 13° N 52° E to the point 12° N 44° E. Thence northwest along the middle of the Red Sea to 24° N 37° E. Thence along the southern border of Egypt to close the sub-area.

MOD

27/130 *Regional and Domestic Air Route Area – 7 (RDARA-7)*

From the South Pole along the 20° W meridian to 05° S. Then along the 05° S parallel to 12° E. Thence along the border between the Rep. of the Congo and Angola, then along the northern border of the Dem. Rep. of the Congo, along the border between Uganda and South Sudan, and the borders between Kenya and South Sudan, Ethiopia and Somalia, to the point 02° S 42° E. Then to 02° S 60° E and along the 60° E meridian to 11° S, then through the points 11° S 65° E, 40° S 65° E, 40° S 60° E to the South Pole.

MOD

**27**/132 *Sub-Area 7B*

From the point 05° S 10° E to 05° S 12° E. Thence along the border between the Rep. of the Congo and Angola, then along the northern border of the Dem. Rep. of the Congo, to the junction of the borders of Uganda, the Dem. Rep. of the Congo and South Sudan. Thence along the eastern borders of the Dem. Rep. of the Congo, Rwanda, Burundi, and the Dem. Rep. of the Congo. Thence along the southern borders of the Dem. Rep. of the Congo and Angola to the coast of the South Atlantic. Thence to the point 17° S 10° E, and then to the point 05° S 10° E.

MOD

27/133 *Sub-Area 7C*

From the junction of the borders of Uganda, the Dem. Rep. of the Congo and South Sudan along the western borders of Uganda and Tanzania, and then along the southern border of Tanzania to the coast. Thence through the points 11° S 41° E, 11° S 60° E, 02° S 60° E, to 02° S 41° E and thence to the east coast of Africa. Then north along the eastern border of Kenya, then west along the northern borders of Kenya and Uganda to close the sub-area at the junction of the borders of the Dem. Rep. of the Congo, South Sudan and Uganda.

### 3.2.4 Appendices 30 and 30A

#### 3.2.4.1 Mandatory application of § 4.1.16 before requesting § 4.1.18/4.1.18*bis*

§ 4.1.18 of RR Appendices **30** and **30A** indicates that § 4.1.16 of the same Appendices should first be duly applied by the notifying Administration before requesting the provisional entry under § 4.1.18. Nevertheless, the language used in § 4.1.16 is “should” instead of “shall”, which implies a non-mandatory nature in the context of the Radio Regulations.

In this connection, in application of RR No. **11.41** of the Radio Regulations, which is similar to § 4.1.18, the notifying Administration “shall” indicate to the Bureau that efforts have been made to effect coordination with those administrations whose assignments were the basis of the unfavourable findings under RR No. **11.38** (see RR No. **11.41.2** of the Radio Regulations).

The Conference may wish to revise the text of § 4.1.16 to make mandatory the efforts to achieve an agreement before any request to apply § 4.1.18.

Possible revisions to §§ 4.1.16/4.2.20 of both RR Appendix **30** and Appendix **30A** are as follows:

MOD

4.1.16 In case of disagreement on the part of an administration whose agreement has been sought, the requesting administration shall first endeavour to solve the problem by exploring all possible means of meeting its requirement. If the problem still cannot be solved by such means, the administration whose agreement has been sought should endeavour to overcome the difficulties as far as possible, and shall state the technical reasons for any disagreement if the administration seeking the agreement requests it to do so.

MOD

4.2.20 When an administration proposing to modify the characteristics of a frequency assignment or to make a new frequency assignment receives notice of disagreement on the part of an administration whose agreement it has sought, it shall first endeavour to solve the problem by exploring all possible means of meeting its requirement. If the problem still cannot be solved by such means, the administration whose agreement has been sought should endeavour to overcome the difficulties as far as possible, and shall state the technical reasons for any disagreement if the administration seeking the agreement requests it to do so.

#### 3.2.4.2 Reminder in case of agreement for a specified period

In accordance with §§ 4.1.13 and 4.2.17 of Article 4 of RR Appendices **30** and **30A**, the agreement of the administration affected may be obtained in accordance with this Article for a specified period. When the specified period goes beyond the regulatory time-limit for bringing into use, as established under §§ 4.1.3 or 4.2.6 of Article 4 of RR Appendices **30** and **30A**, the assignment in the List in case of Regions 1 and 3 or in the Plan in case of Region 2 shall lapse unless the agreement of the administration affected is renewed. The corresponding entry in the Master Register will also be removed.

In order to remind the notifying Administration of the consequence in case the agreement is not renewed, it is suggested to add a footnote in Article 4 of RR Appendices **30** and **30A**, as following:

ADD (Footnote to §§ 4.1.13 and 4.2.17 of Article 4 of RR Appendices 30 and 30A)

Unless the Bureau has been informed by the notifying administration of the renewal of the agreement, it shall, no later than 30 days before the end of the specified period, send a reminder to the notifying administration.

#### 3.2.4.3 Reminder before the expiry of the first 15 years

In accordance with § 4.1.24 of RR Appendices **30** and **30A**, no assignment in the List shall have a period of operation exceeding 15 years, counted from the date of bringing into use, or 2 June 2000, whichever is later. Upon request by the responsible administration received by the Bureau at the latest three years before the expiry of this period, this period of operation may be extended by up to 15 years on condition that all the characteristics of the assignment remain unchanged.

The Bureau has observed that certain administrations had informed the Bureau of the request for extension later than three years before the expiry period. As the responsible administrations confirmed that the subject frequency assignments have been brought into use and continue to be in use and that all the characteristics of the assignments remain unchanged, the Bureau has accepted such requests and has reported these cases to the Radio Regulations Board. In addition, the Bureau has started to send reminders to notifying administrations one month before the deadline for receipt of such requests. At its 78th meeting (16-20 July 2018), the Board endorsed the actions taken by the Bureau.

In view of the above, the Conference may wish to add a footnote in Article 4 of RR Appendices **30** and **30A**, as follows:

ADD (Footnote to § 4.1.24 of Article 4 of RR Appendices 30 and 30A)

Unless the request has been received by the Bureau, it shall, no later than 30 days before the deadline for receipt of such a request, send a reminder to the notifying administration.

#### 3.2.4.4 Absolute satellite antenna gain value less than −10 dBi

The Bureau drew the attention of the WRC-15 on this issue through the Director’s report (see § 3.2.5.2.3 of Document 4(Add.2(Rev.1)). WRC-15 decided to refer this issue to the appropriate ITU Study Group for further consideration. Nevertheless, during its last study cycle, the relevant ITU Study Group has not yet come to a conclusion. In the absence of such recommendation from ITU Study Group, the Bureau will continue with its current practice, i.e. the Bureau requests notifying administrations to delete the antenna contours that results in a minimum absolute antenna gain value less than −10 dBi.

#### 3.2.4.5 Multiple earth stations per submission (maximum 3)

In verifying the technical characteristics of a submitted satellite network, administrations are requested to limit the number of the corresponding downlink and feeder-link earth stations preferably to a maximum of three. The reason for this request is to limit the number of entries in the Appendix 4 database only to the necessary ones.

Following this practice, notifying Administrations may keep full flexibility for their coordination process while reducing the complexity of the submitted networks, as well as the size of the master databases and the GIBC/MSPACE output databases in subsequent Bureau‘s examinations.

The Conference is kindly requested to confirm or otherwise this practice.

#### 3.2.4.6 Rule of procedure on RR No. 5.510

Rule of Procedure on footnote RR No. **5.510** addresses the sharing between FSS feeder-link networks for the BSS in Region 2 and the Regions 1 and 3 BSS feeder-link Plan and List (outside Europe) in the 14.5-14.8 GHz. WRC-15, when discussing the new allocation to the fixed-satellite service in this frequency band under Agenda item 1.6, reconfirmed the use of the band 14.5-14.8 GHz for BSS feeder-links in the FSS (Earth to-space) in Region 2 is in accordance with the Table of Frequency Allocations;

In view of the above and as this Rule is stable since its approval, it is thus suggested to reflect the sharing situation directly in the Radio Regulations and suppress this Rule of Procedure.

An example of the modified relevant provisions is provided below:

MOD (§ 4.1.1 of RR Appendix 30A)

*d)* having a feeder-link frequency assignment in the frequency bands 14.5-14.8 GHz and 17.8-18.1 GHz in Region 2 in the fixed-satellite service (Earth-to-space) to a space station in the broadcasting-satellite service, or a frequency assignment in the frequency band 14.5‑14.75 GHz in countries listed in Resolution **163 (WRC‑15)** and in the frequency band 14.5-14.8 GHz in countries listed in Resolution **164** **(WRC‑15)**, in the fixed-satellite service (Earth-to-space) not subject to a Plan, which is recorded in the Master Register or which has been coordinated or is being coordinated under the provisions of No. 9.7, or under § 7.1 of Article 7, with a necessary bandwidth, any portion of which falls within the necessary bandwidth of the proposed assignment.     (WRC‑19)

MOD (Title of Article 7 of RR Appendix 30A)

ARTICLE 7     (Rev.WRC‑19)

Coordination, notification and recording in the Master International   
Frequency Register of frequency assignments to stations in the fixed-satellite service (space-to-Earth) in Region 1 in the frequency band 17.3-18.1 GHz and   
in Regions 2 and 3 in the frequency band 17.7-18.1 GHz, to stations in the fixed‑satellite service (Earth-to-space) in Region 2 in the frequency bands 14.5‑14.8 GHz and 17.8‑18.1 GHz, to stations in the fixed-satellite service (Earth-to-space) in countries listed in Resolution 163 (WRC‑15) in the frequency band 14.5‑14.75 GHz and in countries listed in Resolution 164 (WRC‑15) in the frequency band 14.5-14.8 GHz where those stations are not for feeder links for the broadcasting-satellite service, and to stations in the broadcasting-satellite service in Region 2 in the frequency band 17.3-17.8 GHz when frequency assignments to feeder links for broadcasting-satellite stations in the frequency bands 14.5-14.8 GHz and 17.3-18.1 GHz in Regions 1 and 3 or   
in the band 17.3-17.8 GHz in Region 2 are involved28

MOD (§ 7.1 of RR Appendix 30A)

7.1 The provisions of No. 9.729and the associated provisions under Articles 9 and 11 are applicable to transmitting space stations in the fixed-satellite service in Region 1 in the frequency band 17.3-18.1 GHz, to transmitting space stations in the fixed-satellite service in Regions 2 and 3 in the frequency band 17.7-18.1 GHz, to transmitting earth stations in the fixed-satellite service in Region 2 in the frequency bands 14.5-14.8 GHz and 17.8‑18.1 GHz, to transmitting earth stations in the fixed-satellite service in countries listed in Resolution **163 (WRC‑15)** in the frequency band 14.5-14.75 GHz and in countries listed in Resolution **164 (WRC‑15)** in the frequency band 14.5-14.8 GHz where those stations are not for feeder links for the broadcasting-satellite service, and to transmitting space stations in the broadcasting-satellite service in Region 2 in the frequency band 17.3-17.8 GHz.     (WRC‑19)

#### 3.2.4.7 Coordination arc for Article 2A in 14 GHz

Rule of Procedure on § 2A.1.2 records the decision of WRC-15 on the criterion to be applied for coordination among assignments intended to provide the space operation functions and services not subject to a Plan in the 14.5-14.8GHz. This coordination shall be effected using the provisions of RR No. **9.7** of the Radio Regulations.

As the decision of the Plenary of WRC-15 was not reflected in the Final Acts and the Radio Regulations edited in 2016, it is suggested to modify Appendix **5** to incorporate such a decision and to suppress the corresponding Rule of Procedure.

An example of the modified relevant part of RR Appendix **5** is provided below:

TABLE 5-1 (*continued*)     (Rev.WRC‑19)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Reference of Article 9 | Case | Frequency bands (and Region) of the service for which coordination is sought | Threshold/condition | Calculation  method | Remarks |
| No. **9.7** GSO/GSO (*cont.*) |  | 9) All frequency bands, other than those in 1), 2), 2*bis*), 3), 4), 5), 6), 6*bis)*, 7) and 8), allocated to a space service, and the bands in 1), 2), 2*bis*), 3), 4), 5), 6), 6*bis*), 7) and 8) where the radio service of the proposed network or affected networks is other than the space services listed in the threshold/ condition column, or in the case of coordination of space stations operating in the opposite direction of transmission | i) Bandwidth overlap, and  ii) Value of ∆*T/T* exceeds 6% | Appendix **8** | In application of Article 2A of Appendix **30** for the space operation functions using the guardbands defined in § 3.9 of Annex 5 of Appendix **30**, the threshold/condition specified for the FSS in the bands in 2) applies.  In application of Article 2A of Appendix**30A** for the space operation functions using the guardbands defined in § 3.1 and 4.1 of Annex 3 of Appendix**30A**, the threshold/condition specified for the FSS in the bands in 2) and 7) apply, as appropriate |

#### 3.2.4.8 Section 6 of Annex 1 of RR Appendix 30

Section 6 of Annex 1 to RR Appendix **30** contains criteria to determine if an FSS administration is considered as being affected under § 4.1.1 e) or § 4.2.3 e) of Article 4 of the same Appendix by a new or modified assignment in the Regions 1 and 3 List or a proposed modification to the Region 2 Plan, as appropriate.

An FSS administration is considered as being affected if the power flux-density (pfd) values produced by an incoming BSS assignment anywhere over any portion of the service area of its overlapping frequency assignments in the fixed-satellite service in Region 1, 2 or 3 are equal to or greater than the applicable pfd limits.

Other Sections of Annex 1, notably Section 4 having the similar criteria, specify that an administration is considered as being affected if the applicable limits are exceeded.

The Bureau when applying the criteria in Section 6 considers an administration is being affected if the pfd values produced by an incoming BSS assignment exceed the applicable pfd limits.

In view of the above, it is suggested to align the conditions in Section 6 with other Sections in Annex 1 to RR Appendix **30**. An example of the revised text is provided below:

MOD (Paragraph 6 of Annex 1 of RR Appendix 30)

With respect to § 4.1.1 *e)* of Article 4, an administration is considered as being affected if the proposed new or modified assignment in the Regions 1 and 3 List would result in an increase in the power flux-density over any portion of the service area of its overlapping frequency assignments in the fixed-satellite service in Region 2 or Region 3 by more than 0.25 dB above that resulting from the frequency assignments in the Plan or List for Regions 1 and 3 as established by WRC-2000.

With respect to § 4.2.3 *e)*, an administration is considered as being affected if the proposed modification to the Region 2 Plan would result in an increase in the power flux-density over any portion of the service area of its overlapping frequency assignments in the fixed-satellite service in Region 1 or 3 by more than 0.25 dB above that resulting from the frequency assignments in the Region 2 Plan at the time of entry into force of the Final Acts of the 1985 Conference.

With respect to § 4.1.1 *e)* or 4.2.3 *e)* of Article 4, with the exception of cases covered by Note 1 below, an administration is considered as not being affected if the proposed new or modified assignment in the Regions 1 and 3 List, or if a proposed modification to the Region 2 Plan, gives a power flux-density anywhere over any portion of the service area of its overlapping frequency assignments in the fixed-satellite service in Region 1, 2 or 3 of less than or equal to:

…

NOTE 1 - With respect to § 4.1.1 *e)* of Article 4, an administration in Region 3 is considered as not being affected if the proposed new or modified assignment in the Regions 1 and 3 List in the orbital arc 105° E-129° E gives a power flux-density anywhere over any portion of the territory of the notifying administration within the service area of its overlapping frequency assignments in the fixed-satellite service in the orbital arc 110° E-124° E of less than or equal to:

…

#### 3.2.4.9 Calculation of ΔT/T in Section 2 of Annex 4 to RR Appendix 30A

In § 3.2.6.11 of Document 4(Add.2(Rev.1)) of the Director’s Report to WRC-15, the Bureau presented the issue relating to the use of power density for the calculation of ΔT/T under § 2 of Annex 4 to RR Appendix **30A**. Specifically, it is proposed to use the maximum power densities per hertz averaged over the worst 1 MHz instead of power densities per hertz averaged over the necessary bandwidth of the feeder-link carriers in the Δ*T*/*T* calculation specified in Section 2 of Annex 4 to RR Appendix **30A**.

WRC-15 considered and confirmed the suggestion of the Bureau. Therefore, it is suggested to reflect this into the section 2 of Annex 4 of RR Appendix **30A**.

MOD

# 2 Threshold values for determining when coordination is required between transmitting feeder-link earth stations in the fixed-satellite service in Region 2 and a receiving space station in the Regions 1 and 3 feeder-link Plan or List or a proposed new or modified receiving space station in the List, in the frequency band 17.8‑18.1 GHz     (WRC‑19)

With respect to § 7.1, Article 7, coordination of a transmitting feeder-link earth station in the fixed-satellite service with a receiving space station in a broadcasting-satellite feeder link in the Regions 1 and 3 feeder-link Plan or List, or a proposed new or modified receiving space station in the List, is required when the power flux density arriving at the receiving space station of a broadcasting-satellite service feeder link of another administration would cause an increase in the noise temperature of the feeder-link space station which exceeds a threshold value of Δ*T*/*T* corresponding to 6%, where Δ*T*/*T* is calculated in accordance with the method given in Appendix 8.     (WRC‑19)

#### 3.2.4.10 Non-applicability of Resolution 49 for submissions under Article 2A

*Resolves* 1 of Resolution **49 (Rev.WRC-15)** specifies which satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service is subject to the administrative due diligence procedure contained in Annex 1 to that Resolution. As far as satellite networks subject to RR Appendices **30** and **30A** are concerned, paragraph 2 of Annex 1 indicates that only certain requests for modifications of the Region 2 Plan under the relevant provisions of Article 4 of RR Appendices **30** and **30A** or any request for additional uses in Regions 1 and 3 under the relevant provisions of Article 4 of RR Appendices **30** and **30A** shall be subject to the administrative due diligence procedure. Therefore, submissions under Article 2A of RR Appendices **30** and **30A** are not subject to the administrative due diligence procedure.

This understanding was also explicitly confirmed by WRC-03 when adopting the provisions contained in Article 2A of both RR Appendices **30** and **30A**. In [Document 370](https://www.itu.int/md/R03-WRC03-C-0370/en), which was approved during the 14th Plenary meeting of WRC-03 (see [Document 410](https://www.itu.int/md/R03-WRC03-C-0410/en)), a number of statements related to these Appendices can be found, in particular “*4 Committee 6 confirmed that the provisions of Resolution 49 (Rev.WRC-03) do not apply to space operation functions supporting the BSS and its associated feeder-link submitted under Article 2A of Appendices 30 and 30A.*”

However, as it is not clearly mentioned in Resolution **49 (Rev.WRC-15)**, the Bureau has received Due Diligence information for Article 2A submissions from certain Administrations. The Bureau indicated to those administrations that Article 2A submissions are not subject to the administrative due diligence procedure and thus the Bureau would not publish the submitted information.

In view of the above, the Conference may wish to add a footnote to Article 2A of RR Appendices **30** and **30A** to indicate that Article 2A submissions are not subject to Resolution **49 (Rev.WRC-15)**, as follows:

ADD (A footnote to Article 2A of both RR Appendix 30 and Appendix 30A)

XX Resolution **49 (Rev.WRC-15)** does not apply.

### 3.2.5 Appendices 30B

#### 3.2.5.1 Removal of the mandatory 2-year period before bringing into use from § 6.1 of Article 6

In accordance with § 6.1 of RR Appendix **30B**, when an administration intends to convert an allotment into an assignment or to introduce an additional system or modify the characteristics of assignments in the List that have been brought into use, it shall, not earlier than eight years and not later than two years before the planned date of bringing the assignment into use, send to the Bureau the information specified in RR Appendix **4**.

However the actual or foreseen date of bringing into use of the frequency assignment is submitted in notification under Article 8 of RR Appendix **30B** only, as indicated in item A.2.a of Annex 2 of RR Appendix **4**. Therefore it is not possible for the Bureau to examine the date of bringing into use when a submission is received under § 6.1 of RR Appendix **30B**.

Furthermore, as stipulated in the § 1.2 of RR Appendix **30B**, the procedures prescribed in this Appendix shall in no way prevent the implementation of assignments in conformity with the national allotments of the Plan.

In view of the above, the Conference may wish to modify the § 6.1 of RR Appendix **30B** as follows:

MOD

**6.1** When an administration intends to convert an allotment into an assignment or when an administration, or one acting on behalf of a group of named administrations3, intends to introduce an additional system or modify the characteristics of assignments in the List that have been brought into use, it shall, not earlier than eight years before the planned date of bringing the assignment into use, send to the Bureau the information specified in Appendix **4**4,5.

#### 3.2.5.2 Relocation of downlink test-points following the application of § 6.16

Under § 6.16 of RR Appendix **30B** an administration may at any time to inform the Bureau about its objection to being included in the service area of any assignment, even if this assignment has already entered in the List. The Bureau shall exclude the territory and remove the test points that are within the territory of the objecting administration from the service area.

The Bureau noted that for assignments of some networks (especially those published before WRC‑15 when only maximum 20 test points are allowed for each service area), the application of § 6.16 of RR Appendix **30B** may lead to only few test points remaining in the service area and thus reduce the protection to the assignments. If all test points of an assignment are removed, even though there are still territories inside its service area, the assignment has to be cancelled.

Considering that downlink test points of an assignment are used for its protection and do not have any impact on the evaluation of interference from the assignment to the other allotment and assignments, it is proposed to allow the notifying administration to relocate the downlink test points of an assignment when § 6.16 of RR Appendix **30B** is applied.

The Conference may wish to add a footnote to § 6.16 of RR Appendix **30B** as follows:

MOD

6.16An administration may at any time during or after the above-mentioned four-month period inform the Bureau about its objection to being included in the service area of any assignment, even if this assignment has been entered in the List. The Bureau shall then inform the administration responsible for the assignment and exclude the territory and test pointsXX that are within the territory of the objecting administration from the service area. The Bureau shall update the reference situation without reviewing the previous examinations.

ADD (Footnote to § 6.16 of RR Appendix 30B)

XX The administration responsible for the assignment may request to move the downlink test points from the excluded territory to a new location within the remaining part of the service area.

#### 3.2.5.3 Two-month deadline in § 8.5 of Article 8

§ 8.5 of Article 8 of RR Appendix **30B** requires thatfollowing receipt of a complete notice under § 8.1 of that Appendix, the Bureau shall publish the content of the notice “within not more than two months”. This requirement is in line with the RR No. **11.28** of the Radio Regulations for the non-planned satellite services.

However, in accordance with § 8.1 of RR Appendix **30B**, a notification shall be submitted when the relevant procedure of Article 6 has been successfully applied. The Bureau understands that a notification under Article 8 of RR Appendix **30B** isnot receivableif the corresponding assignments have not been entered in the List.

The Bureau’s current practice for publication of notification under Article 8 of RR Appendix **30B** is following:

• if the assignments have entered in the List when the notification is received, the Bureau will publish the notification as soon as possible.

Otherwise,

• if the examination of the corresponding assignments in submission under § 6.17 reaches a favourable finding and the assignments enter in the List, the Bureau will publish the notification together the AP30B/A6B Special Section;

• if the examination of the corresponding assignments in submission under § 6.17 reaches an unfavourable finding and the assignments are returned, the notification is not receivable and will be returned to the notifying Administration.

Therefore, the processing and publication of the notification under Article 8 of RR Appendix **30B** depends on the status of the corresponding assignments and the time required for the processing of time for submission under Article 6 of RR Appendix **30B**. As there is no time-limit for the publication of Article 6 submissions, it is not consistent to have a time-limit for publication of notification.

In view of the above, the Conference may wish to remove the two-month limit for publication of notification under Article 8 of RR Appendix **30B**. The following modification to § 8.5 RR of Appendix **30B** could be considered by the Conference for this purpose:

MOD

8.5 Complete notices shall be marked by the Bureau with their date of receipt and shall be examined in the date order of their receipt. Following receipt of a complete notice the Bureau shall publish its contents, with any diagrams and maps and the date of receipt, in the BR IFIC, which shall constitute the acknowledgement to the notifying administration of receipt of its notice.     (WRC‑19)

#### 3.2.5.4 Use of earth station antenna radiation pattern specific to RR Appendices 30 and 30A for submissions under RR Appendix 30B

In the Bureau’s Antenna Pattern Library, all the RR Appendix **30B** reference earth station antenna patterns are expressed as a function of D/Lambda and the value of D/Lambda is derived using the submitted maximum antenna gain.

However, the Bureau receives also certain submissions under Articles 6 and 8 of RR Appendix **30B** in which antenna pattern of the associated receiving earth station is MODRES (APERR\_007V01). This antenna pattern is used for Regions 1 and 3 BSS Plan. The D/Lambda is calculated using a fixed frequency of 12.1 GHz and antenna diameter is required as an input parameter.

As 12.1 GHz does not fall within the RR Appendix **30B** downlink bands (i.e. 10.70-10.95 GHz and 11.20-11.45 GHz) and antenna diameter is not a mandatory item to be submitted for RR Appendix **30B** submissions in accordance with RR Appendix **4,** the use of this antenna pattern for RR Appendix **30B** submissions leads to inaccurate estimation of interference from other networks. Therefore, when receiving such submissions, the Bureau proposes the notifying Administration to use an alternative antenna pattern (i.e. a standard AP30B reference pattern). Some Administrations accept the proposal of the Bureau but some insist to keep the submitted pattern of MODRES.

In view of the above, the Conference is invited to advise whether the Bureau should continue to accept the MODRES antenna pattern in new Appendix **30B** submissions.

#### 3.2.5.5 Alignment of coverage and service area for submissions under RR Appendix 30B

In the Note to item B.3.b.1 of Annex 2 to Appendix **4** of the Radio Regulations, it is mentioned that administrations should, to the extent practicable, align the coverage of a steerable beam with its service area. Such an alignment would notably prevent unrealistic protection requirements on the uplink part.

However the Bureau receives certain submissions with fixed beams where the coverage and the service area are not aligned. In these cases, the Bureau requests notifying Administrations to align the coverage area to the associated service area. Most of the administrations insist in keeping the submitted coverage area, indicating that the requirement in the Note to item B.3.b.1 of Annex 2 to Appendix **4** does not apply to fixed beams.

In the view of the above, the Conference may wish to remove the indication of “steerable” in the Note to item B.3.b.1 of Annex 2 to RR Appendix **4**.

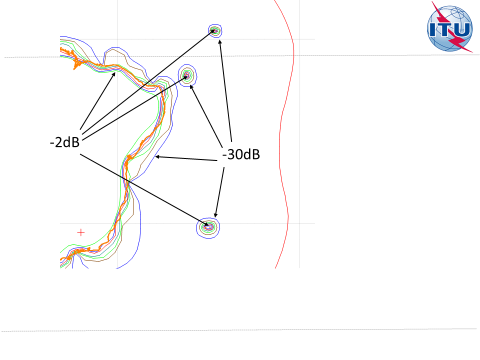
#### 3.2.5.6 Grid points at sea in the examination using the methods of Annex 4 of Appendix 30B

The final service area of Appendix **30B** satellite networks often includes few territories due to the difficulty to obtain the explicit agreement for including those territories into the service area**.** The diagram of the service area shall normally be the borders of the territories or a contour encompassing the territories whose responsible administrations gave agreement under § 6.6 of Appendix **30B**. However, the Bureau noted that some notifying administrations submitted a global or regional contour with the exclusion of the territories of all administrations that did not give the explicit agreement to be included in the service area. The service area is then mostly composed of sea.

In accordance with the paragraph 2.2of Annex 4 of Appendix **30B**, the examination of the downlink (space-to-Earth) of a network considers the *C/I* degradation of other assignments on their test points and grid points inside the service area. However, if areas in the sea are included in the service area, the *C/I* degradation will be calculated also on grid points at sea. In other words, the downlink examination provides protection to assignments both on land and sea.

The purpose of the introduction of the downlink *C/I* examination at grid points by WRC-07 was to discourage administrations from submitting holes (low gain area) in satellite antenna gain diagrams. The protection of service area at sea was obviously not the intention of the decision of WRC-07. As all the test points are located on land and the service area of an allotment of an administration is limited to its territory, those networks whose service areas include sea might enjoy more protection than allotments. In addition, grid points at sea close to the coasts of administrations which didn’t agree to be included in the service area can prevent those administrations to notify a satellite network operating on their own territory because of the additional protection that is provided by the grid points at sea.

For example, in the diagram below, a satellite network which provides service only inside its own territory has very narrow and close gain contours along coastal lines and on the islands in order to protect the grid points at sea of the satellite networks of other Administrations.



In views of the above, the Bureau proposes that only grid points that are located on land and inside the service area should be considered in addition to test-points in application of paragraph 2.2 of Annex 4 to Appendix **30B**. The Conference is invited to endorse this proposal.

#### 3.2.5.7 Proposed modifications to § 6.19 of RR Appendix 30B

In the examination under item a) of § 6.19 of RR Appendix **30B**, the Bureau shall verify that the agreements of the administrations identified under § 6.6 of RR Appendix **30B** have been explicitly obtained. However, the service area of the notice submitted under § 6.17 may include the territories that were not included in the corresponding notice submitted under § 6.1 and thus were not identified in examination under § 6.6 of Appendix **30B**.

The Bureau understands that the notifying administration has to explicitly obtain the agreements of all the administrations whose territories are included in the final service area of an assignment in order to include it in the List as indicated in the Rule of Procedure on § 6.6 of Appendix **30B**. In view of the above, the Conference may wish to modify item a) of § 6.19 of RR Appendix **30B**: An example of the modification is given below:

MOD

6.19 Upon receipt of a complete notice under § 6.17, the Bureau shall examine each assignment in the notice:

*a)* with respect to the agreement of those administrations whose territories are included in the service area;

#### 3.2.5.8 Proposed modifications to §6.21 of Appendix 30B

A notice submitted under § 6.17 of Appendix **30B** has toreceive a favourable finding under § 6.19, § 6.21 and § 6.22 of that Appendix before its assignments can enter in the List.

In the examination under § 6.21 of Appendix **30B**, the Bureau shall verify if the affected administrations indicated in an AP**30B**/A6A Special Section published under § 6.7 and whose agreements have not been provided are still considered as being affected by the final characteristics of the subject network submitted under § 6.17.

However, it is not clearly mentioned in § 6.21 of Appendix **30B** how to deal with cases where an assignment is identified as affected under § 6.21 by the final characteristics of the network under examination but was not identified as affected under § 6.5. Such cases should normally be considered under § 6.22 of Appendix **30B**. However, the Bureau recently found a situation where the examination under § 6.22 could not identify the affected networks due to changes of their reference situation.

The Bureau understands that the notifying administration of the satellite network under examination has to obtain the agreement of the administration responsible for the additionally identified assignment in the same way as for administrations which were initially identified as affected under § 6.5 and are still affected under § 6.21. Otherwise, unfavourable finding shall be given.

If the Conference concurs with the above understanding, the Bureau would like to propose the following modifications to the text of § 6.21 in order to eliminate any ambiguity:

6.21 When the examination with respect to § 6.19 of an assignment received under § 6.17 leads to a favourable finding, the Bureau shall use the method of Annex 4 to examine if there is any administration and the corresponding:

a) allotment in the Plan;

b) assignment which appear in the List at the date of receipt of the examined notice submitted under § 6.1

c) assignment for which the Bureau has previously received complete information in accordance with § 6.1 and has conducted the examination under § 6.5 of this Article at the date of receipt of the examined notice submitted under § 6.1

considered as being affected and whose agreement has not been provided under § 6.17.

#### 3.2.5.9 Assignments with global or regional coverage but small service area in Appendix 30B

In accordance with § 6.6 of Appendix **30B** and its associated Rule of Procedure, a notifying Administration shall obtain explicit agreement from other Administrations in order to include their territories in the final service area submitted under § 6.17 of Appendix **30B**. Due to the difficulty to obtain such agreements, the Bureau observed an increased number of assignments in the List with a global or regional coverage but relatively small service area. The discrepancy between service area and coverage may cause difficulties for the subsequently submitted networks to enter in the List.

As an example, administration A proposes a new satellite network X whose service area is limited to its own territory and administration B has a network Y in the List. If the receiving satellite coverage of network Y encompasses the territory of administration A and have high relative satellite antenna gain inside that territory, network X would have to protect the network Y even if the territory of administration A is geographically far away from the service area of network Y. However, should the coverage and service area of network Y be aligned, i.e. the coverage does not encompass the territory of administration A, the network Y might not be identified by network X because of the geographic separation. Thus a better alignment between the service area and coverage would increase the compatibility between both satellite networks and thus improve the efficient use of Appendix **30B** orbit and spectrum resources.

In view of the above, the Conference may wish to address the above-mentioned issue and make the alignment of the service area and coverage area mandatory.

#### 3.2.5.10 Update of Article 10 of Appendix 30B

Since WRC-15, some allotments have been reinstated from the List or converted into assignments that were subsequently entered in the List. The reinstatement or entry in the List have been published in Special Sections of BR IFIC and included in the Appendix **30B** master database. The changes are indicated below.

The allotments of two administrations were reinstated in application of § 6.33 *b)* or § 6.33 *c)* of Article 6 of Appendix **30B**:

4 500-4 800 MHz, 6 725-7 025 MHz

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| SDN00001 | 23.55 | 29.30 | 10.30 | 3.00 | 1.90 | 131.00 | −9.3 | −39.0 | \*/MB15 |
| SDN00002 | 23.55 | 29.40 | 16.70 | 2.60 | 2.40 | 171.00 | −9.6 | −39.3 | \*/MB15 |
| USA00000 | −101.30 | −93.90 | 36.80 | 8.20 | 3.60 | 172.00 | −0.9 | −38.3 | \*/MB16 |
| USAVIPRT | −101.30 | −64.50 | 17.80 | 1.60 | 1.60 | 90.00 | −9.6 | −41.4 | \*/MB16 |

10.7-10.95 GHz, 11.20-11.45 GHz, 12.75-13.25 GHz

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| SDN00001 | 23.55 | 29.30 | 10.30 | 3.00 | 1.90 | 131.00 | 5.3 | −24.0 | \*/MB15 |
| SDN00002 | 23.55 | 29.40 | 16.70 | 2.60 | 2.40 | 171.00 | 1.1 | −27.4 | \*/MB15 |

Col. 10 Remark \*/MB15 and \*/MB16: Note by the Secretariat (applicable when an asterisk (\*) appears in column 10): It is to be noted that this beam is intended to be implemented as part of a multi-beam network, operating from a single orbital location. Within any multi-beam network, the beams are the responsibility of a single administration, hence interference between them has not been taken into account during the Conference. The number which appears in the alphanumeric code that follows the asterisk serves to identify the multi-beam network concerned.

The allotments of three administrations have been converted into assignments and entered in the List of Appendix **30B**.

4 500-4 800 MHz, 6 725-7 025 MHz

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| B 00001 | −65.00 |  |  |  |  |  |  |  | 1 |
| B 00002 | −56.50 |  |  |  |  |  |  |  | 1 |
| BUL00000 | 56.02 |  |  |  |  |  |  |  | 1 |

10.7-10.95 GHz, 11.20-11.45 GHz, 12.75-13.25 GHz

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| B 00001 | −65.00 |  |  |  |  |  |  |  | 1 |
| B 00002 | −56.50 |  |  |  |  |  |  |  | 1 |
| BUL00000 | 56.02 |  |  |  |  |  |  |  | 1 |
| USA00000 | −101.30 |  |  |  |  |  |  |  | 1 |
| USAVIPRT | −101.30 |  |  |  |  |  |  |  | 1 |

Col. 10 Remark 1: Assignment converted from allotment.

The Conference is invited to update Article 10 of Appendix **30B** accordingly.

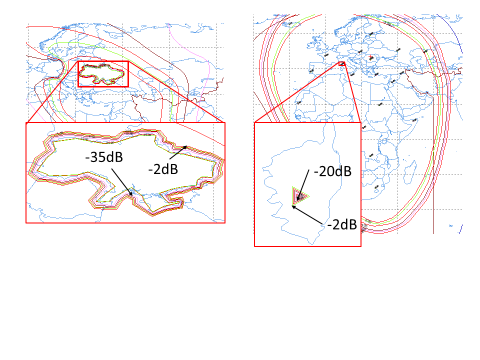
### 3.2.6 Issue common to Appendices 30, 30A and 30B: small holes and unrealistic gain contours in the satellite antenna gain diagrams to avoid coordination

The Bureau has witnessed that the introduction of grid points for downlink service areas in Appendix **30B** had a significant effect on reducing Part B submissions with downlink coverages containing holes around certain specific test-points to bypass the coordination requirement.

However, the Bureau still frequently observes, notably for submissions under § 6.17 of Appendix **30B**,that satellite antenna gain contours are shaped along the borders of Administrations whose Plan allotments are identified as being affected. In addition, for the uplink coverages, the Bureau observes that some administrations submit very close satellite antenna gain contours in order, for their reference situation, not to be degraded by allotments in the Plan and by other assignments already published or in the List. As antenna gain contours are very close to each other, that renders the uplink and downlink coverages clearly unrealistic.

With respect to Part B submissions in Appendix **30**, the Bureau still witnesses many submissions in Regions 1 and 3 with holes around Plan’s test-points in their satellite antenna gain diagram to bypass the coordination requirement.

Examples of the above mentioned satellite antenna gain contours are given in the two diagrams below.



When examining such submissions whose satellite antenna gain diagrams include holes or very close contours, the Bureau requests notifying administrations to modify the satellite antenna gain contours in order to make them realistic. Most notifying administrations reply by confirming that the submitted antenna gain contours are implementable on board their satellites.

In view of the above, the Conference is invited to examine the matter and give guidance on how to assess whether satellite antenna gain contours submitted under the procedures of Appendices **30**, **30A** and **30B** are realistic or not in practice and how the Bureau shall act with respect to those unrealistic contours.

## 3.3 WRC Resolutions

### 3.3.1 Resolution 49

In the Report of the Director to WRC-15 (see § 2.5 of Addendum 1 to Document CMR15/4, § 1 and Annex to Addendum 1 to Document 4(Add.1) and § 3.2.8 of Revision 1 to Document 4(Add.2)), the Bureau reported on its experience with the treatment of the due diligence information under Resolution **49 (Rev.WRC-12)** and presented a few suggestions to remove outdated provisions and overcome certain potential inconsistencies.

Following the endorsement by WRC-15 of the conclusions related to agenda item 9.2 contained in Document 416 (see §§ 1.39 to 1.42 of WRC-15 Document 505), in particular:

*“It was also recognized during discussion of the Director’s Report and its various addenda that some of the issues that were raised could benefit from study within ITU-R Study Groups. As such, the Radiocommunication Bureau is encouraged to refer these issues as soon as they are identified, and as appropriate, to the ITU-R for such study.”*

the Bureau submitted contributions (see Documents [4A/661](https://www.itu.int/md/R15-WP4A-C-0661/en) and [4A/768](https://www.itu.int/md/R15-WP4A-C-0768/en)) to ITU-R Working Party 4A to provide more time for consideration of issues related to Resolution **49 (Rev.WRC-15)** that could benefit from study in ITU-R. Based on discussions within ITU-R Working Party 4A on this topic, the Bureau updated its comments on this matter, which were also partly included in the Director’s Report to WRC-15.

In addition, it should be noted that, at its 73rd meeting held from 17 to 21 October 2016, the Radio Regulations Board adopted a Rule of Procedure concerning the applicability of *resolves* 1 of Resolution **49 (Rev.WRC-15)** to satellite networks in the fixed-satellite, mobile-satellite or broadcasting-satellite services for which the advance publication information was published under RR No. **9.1A**.

The Conference may wish to consider the four following aspects where Resolution **49** may need to be revised.

#### 3.3.1.1 Inclusion of the Rule of Procedure on Resolution 49 (Rev.WRC-15)

During its March 2018 meeting, the Radio Regulations Board “instructed the Bureau that the corresponding Rule of Procedure on Resolution **49 (Rev.WRC-15)** needs to be taken into account in the proposed revision of this document that would be submitted to WRC‑19.”

In accordance with *resolves* 1 of Resolution **49 (Rev.WRC-15)**, the administrative due diligence procedure shall be applied as from 22 November 1997 for a satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service for which the advance publication information was published under RR No. **9.2B**. However, WRC-15 suppressed the submission of API for satellite systems that are subject to coordination procedure in Section II of RR Article **9** and modified the provisions RR Nos. **9.1** and **9.2** accordingly, so that RR No. **9.2B** is nowapplicable only to API for satellite systems that are not subject to coordination procedure in Section II of Article **9**. But, in accordance with RR No. **A.9.4** and § 1 to Annex 1 to Resolution **49 (Rev.WRC‑15)**, Resolution **49** shall continue to be applied with respect to those satellite networks and satellite systems that are subject to coordination under RR Nos. **9.7**, **9.11**, **9.12**, **9.12A** and **9.13**.Therefore,theBoard understood that *resolves* 1 of Resolution **49 (Rev.WRC-15)** is also applicable for a satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service for which the advance publication information was published under RR No. **9.1A**.

A consequential amendment to *resolves* 1 is proposed in Attachment 1 to this document.

#### 3.3.1.2 Removal of outdated provisions

At the time of the initial adoption of Resolution **49** by WRC-97, a number of transitional measures were necessary to take into account cases of satellite networks already recorded in the MIFR or in the process of being recorded. These transitional measures have resulted in *resolves* 2 to 6 and are now fully implemented. Consequently they could now be suppressed.

No concerns were raised with this issue within ITU-R Working Party 4A.

#### 3.3.1.3 Submission of Resolution 49 information after the date of bringing into use

An administration notifying a satellite network under RR Article **11**, Article 5 of RR Appendices **30** and/or **30A** or Article 8 of RR Appendix **30B**, taking account of § 1, 2 or 3 of Annex 1 to Resolution **49 (Rev.WRC-15)** and in accordance with § 12 of Annex 1 to Resolution **49 (Rev.WRC-15)** “*shall send to the Bureau, as early as possible before the date of bringing into use, the due diligence information relating to the identity of the satellite network and the launch services provider specified in Annex 2 to this Resolution*”.

Consequently, the Bureau understands that the due diligence information specified in Annex 2 of Resolution **49 (Rev.WRC-15)** shall be received by the Bureau before the confirmed date of bringing into use. Otherwise it would not be in conformity with the provision of § 12 of Annex 1 to Resolution **49 (Rev.WRC-15)**.

However, in practice, the Bureau has experienced the situation when the due diligence information submission was received after the confirmed date of bringing into use.

Notwithstanding this regulatory order in the submission of information, a strict enforcement of conformity with § 12 of Annex 1 to Resolution **49 (Rev.WRC-15)** would result in the cancellation of the frequency assignments that are already brought into use or intended to be notified in time. Therefore, the Bureau, until further guidance, has been accepting due diligence information submissions received after the confirmed date of bringing into use in the notification submission.

It should be noted that, under the current regulations, the deadlines where information concerning the bringing into use of a frequency assignment to a space station in the geostationary-satellite orbit should be submitted to the Bureau are spelt out in RR No. **11.44B** and RR No. **11.44B.2**. The Bureau may be informed about the bringing into use of an assignment after the event, therefore it may be impractical for the Bureau to strictly apply § 12 of Annex 1 to Resolution **49 (Rev.WRC‑15)**.

To better evaluate the above issue, the Bureau performed an analysis of the date of receipt of due diligence information notices in respect to the corresponding notified date of bringing into use, as recorded until the end of year 2018. The data query focused on the distribution of the percentage of notices that concern frequency assignments that are brought into use ±36 months from the date of receipt of the due diligence notice.

months

%

**DBiU occurs after receipt of notice**

**DBiU occurs before receipt of notice**

As can be seen from the above figure, the majority of notices (~70%) are received within a month or before the date of bringing into use, while a smaller fraction of notices are received after the date of bringing into use.

The February-March 2018 meeting of Working Party 4A acknowledged the concern raised by the Bureau and recognized that the issue raised should be addressed.

This difficulty in application of § 12 of Annex 1 to Resolution **49 (Rev.WRC-15)** could be addressed by requesting administrations to submit Resolution **49** information at the same time as notification, which could be implemented by amending §§ 4, 5 and 6 of Annex 1 to Resolution **49 (Rev.WRC-15)** and suppress § 12 of this Annex as shown in Attachment 1 to this document.

#### 3.3.1.4 Updates of due diligence information

Resolution **49 (Rev.WRC-15)** information (administrative due diligence) is supposed to be provided before the launch and beginning of operation of a satellite network.

Indeed, the information to be submitted refers to a contractual delivery window for the spacecraft manufacturer and a launch, or in-orbit delivery window for the launch service provider.

There is no provision today in Resolution **49 (Rev.WRC-15)** allowing administrations to update the due diligence information already provided for a satellite network – e.g. post-launch confirmation of information already provided, change of spacecraft for frequency assignments already recorded, or resumption of use following a suspension – especially when the regulatory deadline has elapsed.

In order to remedy the above issues, possible improvements to Resolution **49 (Rev.WRC-15)** might include:

– The submission of due diligence information at the time of bringing into use or resumption of operation of frequency assignments to a satellite network (this would provide all administration with greater transparency about the use of spectrum/orbit resources by real satellites).

– A formal requirement to renew the information whenever changes occur (requirement to be linked also with the suspension under RR No. **11.49**).

#### 3.3.1.5 Streamlining the submission of due diligence information

In conjunction with the proposals to keep up-to-date the due diligence information made above in § 3.3.1.4, the Bureau sees an opportunity to further streamline the submitted data under Resolution **49** by merging it with the submission of notification data. An immediate advantage of this would be the simplification of keeping updated the frequency assignments recorded in the MIFR with the corresponding due diligence information.

An example of this proposal could be done by integrating data elements currently contained in Annex 2 to Resolution **49 (Rev.WRC-15)** in Appendix **4** of the Radio Regulations, as shown in Attachment 2 to this document.

### 3.3.2 Resolution 55 (Rev.WRC-15) – submission of graphics in paper form

*Resolves* 6 of Resolution **55 (Rev.WRC-15)** states that, since 3 June 2000, all graphical data associated with the submissions addressed in *resolves* 1, 2 and 3 should be submitted in graphics data format compatible with the Bureau’s data capture software (graphical interference management system (GIMS)); submission of graphics in paper form, however, continues to be accepted.

With the improvement of the BR software, including the improvement in capture of diagrams directly in the GIMS software using the PC mouse as input device, as well as the implementation of the validation software that facilitates cross validation of electronic files of SNS mdb format and GIMS mdb format, the Bureau has not been receiving any more paper submissions in recent years.

The Conference is therefore invited to suppress the last phrase “submission of graphics in paper form, however, continues to be accepted” from *resolves* 6 of Resolution **55 (Rev.WRC-15)**.

### 3.3.3 Resolution 554 (WRC-12)

The World Radiocommunication Conference, Geneva, 2012 (WRC-12) modified the provisions on the use of the frequency band 21.4-22 GHz by BSS in Regions 1 and 3 which entered into force as of 18 February 2012.

The modifications included the introduction of Resolution **554 (WRC-12)** which deals with the application of pfd masks for BSS networks in the frequency band 21.4-22 GHz in Regions 1 and 3. Pursuant to *resolves* 1 of this Resolution, WRC-12 introduced a threshold pfd value in addition to the coordination arc of ±12 degrees to identify the administrations and satellite networks with which coordination is required under provision No. **9.7**.

Similarly, for submissions under the special procedure of Resolution **553 (Rev.WRC-15)**, pfd masks contained in Annex 2 to the Attachment of this Resolution are applicable.

These pfd masks were introduced as a means to have a more precise criteria to apply No. **9.7** and have the potential to reduce undue protection requirements in respect of incoming assignments. Further, the reduction of undue protection requirements would facilitate coordination of submissions of new networks and the use of pfd thresholds to identify coordination requirements would encourage the use of more homogenous technical parameters and support efficient spectrum usage.

Based on this understanding, the Bureau implemented the pfd masks in the GIBC/PXT program such that whenever an incoming assignment exceeded the pfd threshold over the service area of an existing assignment of a satellite network within a coordination arc of ±12 degrees, the existing administration and satellite network would be identified as affected under provision No. **9.7**.

However, the examination of whether an existing assignment exceeded the pfd threshold over the service area of an incoming assignment was not considered. As such, this is a departure from §1 of Appendix **5** where the frequency assignments that “might affect or be affected” shall be taken into account for identification of coordination requirements as well as from the current implementation of *T/T* under No. **9.7** where the identification of affected administrations and satellite networks are considered on the basis of both causing interference to, and/or receiving interference from, a potentially affected assignment of an existing network. Consequently, only the probability of harmful interference that may be caused to, and not by, existing satellite networks will be considered under No. **11.32A**.

Since the entry into force of Resolutions **553 (Rev.WRC-15)** and **554 (WRC-12)**, 13 BSS satellite networks have been recorded in the MIFR and brought into use in the frequency band 21.4-22 GHz in Regions 1 and 3. To date there has been no complaint of harmful interference affecting these frequency assignments.

In view of the above, the Conference may wish to confirm that the pfd masks are only applicable over the service area of frequency assignments of existing satellite networks and no assessment of pfd levels should be carried out in the service area of the incoming assignment.

In this regard, the Conference may wish to consider adding two additional *resolves* in Resolutions **553** and **554** to clarify the status of the incoming assignments:

*resolves*

that the pfd threshold values contained in this Resolution shall be applied only to identify the BSS frequency assignments in the 21.4-22 GHz frequency band in Regions 1 and 3 which might be affected;

that stations having BSS frequency assignments in the 21.4-22 GHz frequency band in Regions 1 and 3 shall not claim protection from other stations having BSS frequency assignments with an earlier date of receipt under No. **9.30**; No. **5.43A** does not apply.

### 3.3.4 Resolution 762 (WRC-15)

Resolution **762 (WRC-15)** instructs the Director of the Radiocommunication Bureau to report to WRC-19 the results and any potential difficulties relating to the implementation of this Resolution.

This Resolution introduces new criteria based on power-flux density to assess the potential for harmful interference under No. **11.32A** for fixed-satellite and broadcasting-satellite service networks in the 6 GHz and 10/11/12/14 GHz frequency bands not subject to a Plan.

In particular, No. **11.32A.2** establishes that these new power-flux density criteria shall be used for the application of No. **11.32A** with respect to the coordination procedure under No. **9.7** in the frequency bands 5 725-5 850 MHz (Region 1), 5 850-6 725 MHz and 7 025‑7 075 MHz (Earth-to-space) for satellite networks having a nominal orbital separation in the geostationary-satellite orbit of more than 7°, and in the frequency bands 10.95‑11.2 GHz, 11.45-11.7 GHz, 11.7-12.2 GHz (Region 2), 12.2‑12.5 GHz (Region 3), 12.5‑12.7 GHz (Regions 1 and 3) and 12.7-12.75 GHz (space-to-Earth) and 13.75-14.5 GHz (Earth-to-space) for satellite networks having a nominal orbital separation in the geostationary-satellite orbit of more than 6°. For all other cases subject to coordination under No. **9.7**, the existing methodology defined in Part B, Section B3 of the Rules of procedures and based on the carrier-to-noise ratio criteria is used.

The Bureau notes that *resolves* 1 and 2 of this Resolution refer to the identification of the potential to cause harmful interference when the pfd levels produced by the satellite network exceeds the threshold values within the service area of the potentially affected assignment (space-to-Earth) or at location in the geostationary-satellite orbit of the other FSS network (Earth-to-space), without referring to the interference source (i.e. whether the incoming satellite network is causing or receiving interference).

In this regard, the provisions of *resolves* 1 and 2 do not indicate whether the same criteria based on pfd levels should also be applied to a satellite network examined under No. **11.32A** in order to identify its potential to receive harmful interference from potentially affected assignment(s) of existing satellite network(s).

It should be noted that a notifying administration, when initiating coordination, may inform the Bureau of its intention to apply provision of Appendix **5**, § 6 *d i)* so that it accepts interference resulting from the frequency assignments referred to in No. **9.27**. However, no such requests have been received by the Bureau to date for any frequency assignments of satellite networks for which complete coordination information was received on or after 1 January 2017.

Taking into account *considering f)* and *g)* of Resolution **762 (WRC-15)**, the abovementioned potential difficulty and the absence of clear indication whether the pfd threshold of Resolution **762** should also be used to identify the potential of receiving harmful interference from existing networks, the Bureau took a conservative approach by continuing to apply the methodology defined in Part B, Section B3 of Rules of Procedure (i.e. using carrier-to-interference ratio) for identifying the probability for a frequency assignment of a satellite network submitted for examination under No. **11.32A** to receive harmful interference from an already-recorded frequency assignment of an existing satellite network.

The Conference is invited to confirm or otherwise whether this conservative approach should continue to be applied.

If this approach is confirmed, No. **11.32A.2** should be amended to clearly indicate that Resolution **762 (WRC-15)** should be used only to identify probability of causing harmful interference in space-to-Earth and Earth-to-space directions of transmission. In this regard, the Conference may wish to consider the following modification:

**11.32A.2** For the application of No. **11.32A** to evaluate the probability of causing harmful interference to frequency assignments of existing satellite networks with respect to the procedure for coordination under No. **9.7** in the frequency bands 5 725-5 850 MHz (Region 1), 5 850-6 725 MHz and 7 025-7 075 MHz (Earth-to-space) for satellite networks having a nominal orbital separation in the geostationary-satellite orbit of more than 7°, and in the frequency bands 10.95-11.2 GHz, 11.45‑11.7 GHz, 11.7-12.2 GHz (Region 2), 12.2-12.5 GHz (Region 3), 12.5-12.7 GHz (Regions 1 and 3) and 12.7-12.75 GHz (space-to-Earth) and 13.75-14.5 GHz (Earth-to-space) for satellite networks having a nominal orbital separation in the geostationary-satellite orbit of more than 6°, Resolution **762 (WRC-15)** shall apply. For other cases, the methodology shall be identified and included in the Rules of Procedure, if so required.

## 3.4 Other issues

### 3.4.1 Proposed use of terrain data for examination of terrestrial notices, establishment of coordination requirements and compatibility calculations of terrestrial stations

All examinations of terrestrial assignments and the identification of potentially affected administrations currently performed by the Bureau in the application of various procedures are made using propagation prediction models without detailed terrain profiles e.g. Recommendations ITU-R P.452 and P.1546, RR Appendix **7** and GE06 propagation models. This applies to some terrestrial plans, e.g. GE06 and coordination procedures, e.g. RR Nos. **9.16**, **9.18** and **9.21**.

At the same time, for some years the Bureau has been offering to the membership tools and online services that use terrain data from the Shuttle Radar Topography Mission (SRTM). SRTM3 is a global digital elevation model (DEM) having a horizontal spatial resolution of three arc seconds in latitude and longitude (about 90 meters) covering most of the world, except the latitudes above 60 degrees North.

Examples of the current usage of the SRTM3 data by the Bureau are given below:

• the software *TerRaNotice* for notice preparation uses SRTM3 data to calculate the effective antenna heights of notified stations;

• eBCD2.0, which is the BR online platform for on-demand calculations, offers propagation prediction calculations based on Recommendation ITU-R P.1812-4. These calculations use SRTM3 terrain profiles to evaluate signal levels in the frequency band 30 MHz-3 000 MHz at distances up to 3 000 km. It is to be noted that this tool is used by administrations and the Bureau for *what-if* studies and is not used for official examination of terrestrial assignments.

Another version of SRTM (SRTM1) with horizontal spatial resolution of one arc second in latitude and longitude (about 30 metres) is also freely available. SRTM1 is already currently under evaluation by the Bureau for use in those applications that already use SRTM3. It should be noted that *resolves* 1 of Resolution ITU-R 40-4 stipulates that “a terrain database with a 1 arc second horizontal resolution in latitude and longitude is suitable for worldwide methods of propagation prediction in the frequency range above 30 MHz”.

If terrain data were taken into account for the identification of potentially affected administrations in various regulatory procedures, this might shorten the list of coordination requirements and reduce coordination burden for administrations. Bearing this in mind, as an initial step, the Bureau is ready to incorporate SRTM1 terrain data complemented by other available digital terrain datasets for the latitudes above 60 degrees North into Bureau software for identification of affected administrations in the procedure of RR No. **9.21**, outside the frequency bands subject to regional frequency plans.

The Conference may wish to instruct the Bureau to simulate the examination of RR No. **9.21** notices in the non-planned bands using digital elevation models (DEM) and report the results to the Radio Regulations Board. The Board could subsequently decide, through the relevant Rules of Procedure, to use terrain data in the RR No. **9.21** examinations, and to report to the next WRC.

It may also be noted that the UN Committee of Experts on Global Geospatial Information Management (UN GGIM, <http://ggim.un.org/>) recently established a group (United Nation System Network) comprising representatives of a number of UN agencies to deal with geospatial information system matters. If the work of this group results in the adoption of a UN commonly agreed digital terrain model, the Bureau would implement and use that model.

### 3.4.2 Typical earth stations in the fixed-satellite service

At its 8th plenary meeting, WRC-15 approved the following text (see Document [CMR15/505](https://www.itu.int/md/R15-WRC15-C-0505/en), § 1.37):

*“In considering the issue of notification of typical earth stations in the fixed-satellite service in the Director’s Report (Document 4(Add.2)(Rev.1) § 3.2.3.8)), WRC-15 concluded that further ITU-R studies are needed before any regulatory decision can be made. For the purposes of these studies, WRC-15 agreed to instruct the Bureau to publish a Circular letter containing a common format according to which administrations may wish to submit to the Bureau, on a voluntary basis, characteristics and number of typical earth stations deployed in their countries, to the extent available, for information purposes only.”*

Circular Letter [CR/404](https://www.itu.int/md/R00-CR-CIR-0404/en) of 23 May 2016 then informed administrations that, pursuant to this decision, they may submit the above-mentioned information through a web-based platform.

As indicated in the WRC-15 decision, the collected data were intended to be used in further studies on the technical and regulatory issues related to the possible international recognition of typical earth stations in the fixed-satellite service (FSS), especially when used with very small antenna sizes and deployed ubiquitously.

The web-based platform for submission of data on typical FSS earth stations as well as the data received by the Bureau have been brought to the attention of ITU-R Working Party 4A (see [Document 4A/660](https://www.itu.int/md/R15-WP4A-C-0660/en)).

The Bureau has received submissions from only two administrations (see <https://www.itu.int/net4/ITU-R/space/TypicalESinFSS/TypicalESinFSS_Station/Posted>). Moreover, apart from the document from the Bureau, no other contributions have been submitted to ITU-R Working Party 4A on this topic.

In view of the lack of interest in pursuing studies on this topic, the Conference may wish to instruct the Bureau to terminate the collection of information on typical earth stations in the fixed-satellite service.

### 3.4.3 Excessive parameters

In the Director’s Report to WRC-15 (see Section 3.2.3.9 of Revision 1 to Addendum 2 of Document 4), the Bureau reported an issue of excessive or unrealistic characteristics of recorded frequency assignments of GSO satellite networks operating in the FSS, BSS, MSS and associated space operation functions.

WRC-15 requested the Bureau to refer this issue to ITU-R Working Party 4A, which took note of issues reported by the Bureau in Document 4A/52. In particular, the issue referring to the submitted value of carrier-to-noise ratio required for examination under RR No. **11.32A** was reviewed.

The Bureau is expecting that ITU-R Study Group 4 will continue deliberations for the other issues listed in Document 4A/52 in order to improve a situation currently leading to unnecessary coordination and inefficient use of spectrum/orbital resources.

In addition to the already reported issues, the Bureau considers that there are several parameters for which the Bureau could analyse the notified data of the assignments recorded in the MIFR and contact the notifying administration for clarification.

These parameters are:

1) Unrealistic antenna patterns

– high gain non-directional antennas; notified ND-EARTH antenna patterns with maximum antenna gain of more than 10 dB;

– low gain antennas using directional antenna patterns; typically having gain of equal or less 8 dBi and referring to reference antenna pattern of Appendix **8**, Rec. 465 and Rec. 580.

2) Constant antenna gain of transmitting space station towards GSO (required in frequency bands used in both direction of transmission) higher than the gain values derived from Recommendation S.672-4 when pointing antenna to two extreme points of equator relative to a nominal orbital position (−81.5 degrees and 81.5 degrees);

3) Very low maximum power spectral density of emission below −99 dBW/Hz.

The Bureau is seeking any advice WRC-19 may have in this regard.

ATTACHMENT 1

Possible DRAFT revision OF RESOLUTION 49[[3]](#footnote-3)1 (Rev.WRC‑15)

Administrative due diligence applicable to some   
satellite radiocommunication services

The World Radiocommunication Conference (Geneva, 2015),

considering

*a)* that Resolution 18 of the Plenipotentiary Conference (Kyoto, 1994) instructed the Director of the Radiocommunication Bureau to initiate a review of some important issues concerning international satellite network coordination and to make a preliminary report to WRC‑95 and a final report to WRC‑97;

*b)* that the Director of the Bureau provided a comprehensive report to WRC‑97, including a number of recommendations for action as soon as possible and for identifying areas requiring further study;

*c)* that one of the recommendations in the Director’s report to WRC‑97 was that administrative due diligence should be adopted as a means of addressing the problem of reservation of orbit and spectrum capacity without actual use;

*d)* that experience may need to be gained in the application of the administrative due diligence procedures adopted by WRC‑97, and that several years may be needed to see whether administrative due diligence measures produce satisfactory results;

*e)* that new regulatory approaches may need to be carefully considered in order to avoid adverse effects on networks already going through the different phases of the procedures;

*f)* that Article 44 of the Constitution sets out the basic principles for the use of the radio-frequency spectrum and the geostationary-satellite and other satellite orbits, taking into account the needs of developing countries,

considering further

*a)* that WRC‑97 decided to reduce the regulatory time-frame for bringing a satellite network into use;

*b)* that WRC‑2000 has considered the results of the implementation of the administrative due diligence procedures and prepared a report to the 2002 Plenipotentiary Conference in response to Resolution 85 (Minneapolis, 1998),

resolves

that the administrative due diligence procedure contained in Annex 1 to this Resolution shall be applied for a satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service for which the advance publication information under Nos. **9.1A** or **9.2B**, or for which the request for modifications of the Region 2 Plan under Article 4, § 4.2.1 *b)* of Appendices **30** and **30A** that involve the addition of new frequencies or orbit positions, or for which the request for modifications of the Region 2 Plan under Article 4, § 4.2.1 *a)* of Appendices **30** and **30A** that extend the service area to another country or countries in addition to the existing service area, or for which the request for additional uses in Regions 1 and 3 under § 4.1 of Article 4 of Appendices **30** and **30A**, has been received by the Bureau from 22 November 1997, or for which submission under Article 6 of Appendix **30B (Rev.WRC‑15)** is received on or after 17 November 2007, with the exception of submissions of new Member States seeking the acquisition of their respective national allotments[[4]](#footnote-4)2 for inclusion in the Appendix **30B** Plan,

**Reasons**: Incorporation of the Rule of Procedure on Resolution **49 (Rev.WRC-15)** following the decision of WRC-15 to suppress API for satellite networks subject to coordination and the instruction of the RRB to the Bureau at its 77th meeting (19-23 March 2018).

**Reasons**: Suppression of outdated *resolves* that have already been implemented.

further resolves

that the procedures in this Resolution are in addition to the provisions under Article 9 or 11 of the Radio Regulations or Appendices **30**, **30A** or **30B**, as applicable, and, in particular, do not affect the requirement to coordinate under those provisions (Appendices **30**, **30A**) in respect of extending the service area to another country or countries in addition to the existing service area,

instructs the Director of the Radiocommunication Bureau

to report to future competent world radiocommunication conferences on the results of the implementation of the administrative due diligence procedure.

ANNEX 1 TO RESOLUTION 49 (Rev.WRC‑15)

1 Any satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service with frequency assignments that are subject to coordination under Nos. **9.7**, **9.11**, **9.12**, **9.12A** and **9.13** and Resolution **33 (Rev.WRC‑03)**[[5]](#footnote-5)\*shall be subject to these procedures.

2 Any request for modifications of the Region 2 Plan under the relevant provisions of Article 4 of Appendices **30** and **30A** that involve the addition of new frequencies or orbit positions or for modifications of the Region 2 Plan under the relevant provisions of Article 4 of Appendices **30** and **30A** that extend the service area to another country or countries in addition to the existing service area or request for additional uses in Regions 1 and 3 under the relevant provisions of Article 4 of Appendices **30** and **30A** shall be subject to these procedures.

3 Any submission of information under Article 6 of Appendix **30B (Rev.WRC‑07)**, with the exception of submissions of new Member States seeking the acquisition of their respective national allotments[[6]](#footnote-6)3 for inclusion in the Appendix **30B** Plan, shall be subject to these procedures.

4 For any satellite network subject to § 1 above, administrations shall send to the Bureau no later than [30] days following the receipt by the Bureau of the information about the date of bringing into use under No. **11.44** or about the date on which the recorded assignment is brought back into use under No. **11.49**, as appropriate, the due diligence information specified in Annex 2 to this Resolution.

5 An administration requesting a modification of the Region 2 Plan or additional uses in Regions 1 and 3 under Appendices **30** and **30A** under § 2 above shall send to the Bureau no later than [30] days following the receipt by the Bureau of the information about the date of bringing into use in accordance with the relevant provisions of Article 4 of Appendix **30** and the relevant provisions of Article 4 of Appendix **30A** or about the date of bringing back into use in accordance with the relevant provisions of Article 5 of Appendix **30** and the relevant provisions of Article 5 of Appendix **30A**, the due diligence information specified in Annex 2 to this Resolution.

6 An administration applying Article 6 of Appendix **30B** **(Rev.WRC‑07)** under § 3 above shall send to the Bureau no later than [30] days following the receipt by the Bureau of the information about the date of bringing into use in accordance with the relevant provisions of that Article or about the date of bringing back into use in accordance with the relevant provisions of § 8.17 of Appendix **30B**, the due diligence information specified in Annex 2 to this Resolution.

7 The information to be submitted in accordance with § 4, 5 or 6 above shall be signed by an authorized official of the notifying administration or of an administration that is acting on behalf of a group of named administrations.

8 On receipt of the due diligence information under § 4, 5 or 6 above, the Bureau shall promptly examine that information for completeness. If the information is found to be complete, the Bureau shall publish the complete information in a special section of the BR IFIC within 30 days.

9 If the information is found to be incomplete, the Bureau shall immediately request the administration to submit the missing information. In all cases, the complete due diligence information shall be received by the Bureau within the appropriate time period specified in § 4, 5 or 6 above, as the case may be, relating to the date of bringing the satellite network into use.

10 Six months before expiry of the period specified in Nos. **11.44**, **11.49**, §§ 4.1.3 or 4.2.6 of Article 4 of Appendices **30** and **30A**, or § 6.31 of Article 6 of Appendix **30B**and if the administration responsible for the satellite network has not submitted the due diligence information under § 4, 5 or 6 above, the Bureau shall send a reminder to the responsible administration.

11 If the complete due diligence information is not received by the Bureau within the time limits specified in this Resolution, the networks covered by § 1, 2 or 3 above shall be cancelled by the Bureau. The provisional recording in the MIFR shall be deleted by the Bureau after it has informed the concerned administration. The Bureau shall publish this information in the BR IFIC.

With respect to the request for modification of the Region 2 Plan or for additional uses in Regions 1 and 3 under Appendices **30** and **30A** under § 2 above, the modification shall lapse if the due diligence information is not submitted in accordance with this Resolution.

With respect to the request for application of Article 6 of Appendix **30B (Rev.WRC‑07)** under § 3 above, the network shall also be deleted from the Appendix **30B** List. When an allotment under Appendix **30B** is converted into an assignment, the assignment shall be reinstated in the Plan in accordance with § 6.33 *c)* of Article 6 of Appendix **30B (Rev.WRC‑07)**.

[*Option 1 for § 12, in answer to the difficulty raised in section 3.3.1.3: the submission of the Resolution 49 information at the time of notification would remove the need for § 12.*]

[*Option 2 for § 12, to implement possible updates as explained in section 3.3.1.4*]

12 The information submitted in accordance with § 4, 5 or 6 above shall be updated and resubmitted to the Bureau by the notifying administration not later than [3 months] after the actual commencement, or resumption, as appropriate, of use of the frequency assignments or after the end of life or relocation of the spacecraft associated with the submissions under § 4, 5 or 6 above, as necessary. For satellite networks for which the information submitted in accordance with § 4, 5 or 6 has been received by the Bureau by [LAST DAY OF WRC-19], the responsible administration shall submit to the Bureau a confirmation or an update of the due diligence information in accordance with Annex 2 to this Resolution no later than [LAST DAY OF WRC-19 + 6 MONTHS].

**Reasons**: Update of the due diligence information as necessary.

13 When an administration has completely fulfilled the due diligence procedure but has not completed coordination, this does not preclude the application of No. **11.41** by that administration.

ANNEX 2 TO RESOLUTION 49 (Rev.WRC‑15)

# A Identity of the satellite network

*a)* Identity of the satellite network

*b)* Name of the administration

*c)* Country symbol

*d)* Reference to the advance publication information or to the request for modification of the Region 2 Plan or for additional uses in Regions 1 and 3 under Appendices **30** and **30A**; or reference to the information processed under Article 6 of Appendix **30B** **(Rev.WRC‑07)**

*e)* Reference to the request for coordination (not applicable for Appendices **30**, **30A** and **30B**)

*f)* Frequency band(s)

*g)* Name of the operator

*h)* Name of the satellite

*i)* Orbital characteristics.

# B Spacecraft manufacturer[[7]](#footnote-7)\*

*a)* Name of the spacecraft manufacturer

*b)* Date of execution of the contract

*c)* Contractual “delivery window”

*d)* Number of satellites procured.

# C Launch services provider

*a)* Name of the launch vehicle provider

*b)* Date of execution of the contract

*c)* Launch or in-orbit delivery window

*d)* Name of the launch vehicle

*e)* Name and location of the launch facility.

ATTACHMENT 2

APPENDIX 4 (REV.WRC‑15)

Consolidated list and tables of characteristics for use in the  
application of the procedures of Chapter III

ANNEX 1

Characteristics of stations in the terrestrial Services

The 80th meeting of the Radio Regulations Board in March 2019 adopted the Rule of Procedure that made the data items Code Rate and Type of Modulation mandatory for notification of broadcasting stations subject to the GE75 Agreement. The consequential changes are proposed to Appendix **4**. In addition, it is proposed to extend the application of the data item Effective Height of the Antenna and make them mandatory for all broadcasting stations in the VHF/UHF bands up to 960 MHz, in order to enable analysis of compatibility between such stations.

TABLE 1    (Rev. WRC‑19)

Characteristics for terrestrial services

| **Column No.** | **Item identifier** | **Notice related to**  **Description of data items and requirements** | **Broadcasting (sound and television) stations in  the VHF/UHF bands up to 960 MHz, for the  application of No. 11.2 and No. 9.21** | **Broadcasting (sound) stations in the LF/MF  bands, for the application of No. 11.2** | **Transmitting stations (except broadcasting  stations in the planned LF/MF bands, in the HF  bands governed by Article 12, and in the  VHF/UHF bands up to 960 MHz), for the  application of No. 11.2 and No. 9.21** | **Receiving land stations, for the application of  No. 11.9 and No. 9.21** | **Typical transmitting stations, for the application  of No. 11.17** | **Maritime mobile frequency allotment, for the  application of plan modification under Appendix  25 (Nos. 25/1.1.1, 25/1.1.2, 25/1.25)** | **Broadcasting stations in the HF bands, for the  application of No. 12.16** | **Item identifier** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **7.3.2** | **7AA** | the code for the type of modulation  The type of modulation denotes the use of DSB, SSB or any new modulation techniques recommended by ITU‑R  In the case of a LF/MF broadcasting station, required for a digital assignment subject to the GE75 Regional Agreement |  | **+** |  |  |  |  | **X** | **7AA** |
| **7.3.x** | **7B3** | the code rate  Required for digital assignments subject to the GE75 Regional Agreement |  | **+** |  |  |  |  |  | **7B3** |

| **Column No.** | **Item identifier** | **Notice related to**  **Description of data items and requirements** | **Broadcasting (sound and television) stations in  the VHF/UHF bands up to 960 MHz, for the  application of No. 11.2 and No. 9.21** | **Broadcasting (sound) stations in the LF/MF  bands, for the application of No. 11.2** | **Transmitting stations (except broadcasting  stations in the planned LF/MF bands, in the HF  bands governed by Article 12, and in the  VHF/UHF bands up to 960 MHz), for the  application of No. 11.2 and No. 9.21** | **Receiving land stations, for the application of  No. 11.9 and No. 9.21** | **Typical transmitting stations, for the application  of No. 11.17** | **Maritime mobile frequency allotment, for the  application of plan modification under Appendix  25 (Nos. 25/1.1.1, 25/1.1.2, 25/1.25)** | **Broadcasting stations in the HF bands, for the  application of No. 12.16** | **Item identifier** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **9.3.3** | **9EC** | the effective height of the antenna, in metres, above the mean level of the ground between 3 and 15 km from the transmitting antenna, at 36 different azimuths in 10° intervals (i.e. 0°, 10°, ..., 350°), measured in the horizontal plane from True North in a clockwise direction  In the case of a transmitting station, required for an assignment subject to the GE06 Regional Agreement | **X** |  | **+** |  |  |  |  | **9EC** |

ANNEX 2

Characteristics of satellite networks, earth stations  
or radio astronomy stations2

# 1 Items A.1.f.2 and A.1.f.3

When reviewing the use of items A.1.f.2 and A.1.f.3 of Annex 2 to Appendix **4**, the Bureau noted that there may be a confusion regarding the applicability of No. **9.6.1** (“In the case of coordination of an assignment in a satellite network, an administration may act on behalf of a group of named administrations. Whenever, under this provision, an administration acts on behalf of a group of named administrations, all members of the group retain the right to respond in respect of their own services which could affect or be affected by the proposed assignment.”).

Historically, the Bureau has implemented this provision by creating symbols of “Intergovernmental satellite organizations” (see Table 2 of the Preface to the BR IFIC for Space Services), irrespective of the legal status of the group of administrations forming the entity. Such symbols are submitted to the Bureau under item A.1.f.3 of Annex 2 to Appendix **4**. Satellite filings bearing such a symbol are treated separately from filings submitted by the notifying administration on its own behalf: the notifying administration is labelled XXX/YYY, where XXX is the symbol of the notifying administration and YYY the symbol of the intergovernmental satellite organization, instead of being simply labelled XXX; moreover the satellite networks of XXX are listed in the coordination requirements of the satellite network of XXX/YYY if the relevant coordination thresholds are exceeded. This method ensures the appropriate implementation of No. **9.6.1**.

In parallel, the Bureau has also published a number of special sections listing several administrations under item A.1.f.2 of Annex 2 to Appendix **4**. In these cases, the notifying administration was always labelled XXX and no coordination requirements with other satellite networks of that notifying administration were considered. In other terms, No. **9.6.1** was not applied to these cases. Since this approach was never questioned by the notifying administrations submitting such satellite filings, the Bureau assumed that it corresponds to the desired course of action by these administrations.

However, since the compared wording of No **9.6.1** and of item A.1.f.2 of Annex 2 to Appendix **4** may be confusing, the Conference may wish to amend item A.1.f.2 as follows: “if the notice is submitted by the notifying administration in association with other administrations, the symbols of each of the administrations (see the Preface)”

# 2 Items B.4.b.2, B.4.b.3, B.4.b.4 required for non-GSO subject to coordination under Nos. 9.11A, 9.12 or 9.12A

## 2.1 Item B.4.b.2 - The satellite antenna gain G(θe) as a function of elevation angle (θe) at a fixed point on the Earth

The Bureau notes that this data element present particular difficulties both for administrations understanding what kind of information should be submitted under this item and the Bureau correctly interpreting this information.

In particular, for steerable beams antennas when antenna can be steered towards any point in the service area, in many cases administrations submit different notes, either indicating that this diagram is not submitted because gain will be constant or submitting this diagram with a constant gain.

Also, the Bureau has treated a case when administration submits the diagram and indicates that due to phased-array antenna used, the maximum gain of antenna would be a function of elevation angle. Basically, different information is submitted under B.4.b.2.

Also, for fixed-beam antennas for systems utilizing orbits with orbit eccentricity greater than 0, satellite gain would be also a function of the transmitting satellite altitude which will be changing in time. In this regard, it is not clear for which particular satellite position it is provided.

In addition the term “fixed point on the Earth” is confusing because the elevation of any fixed point on the Earth with respect to the satellite would be constantly changing following the move of the NGSO satellite.

Definition of elevation angle in Recommendation ITU-R SM.1413 (RDD ref: S126b): the appropriately spaced angular value, measured in the *vertical plane from the direction of maximum gain in an upward direction; Integer (in the range −10 to 90), in degrees,* even potentially implies the use satellite centred elevation angle.

The variety of different information being provided under this item, makes it difficult to establish universal approach for using this information in regulatory examination such as under No. 21.16.

The Bureau considers several different options to clarify this data item:

1) Restricting *satellite antenna gain as a function of elevation angle of arrival above horizontal plan at the Earth’s surface* to be provided only for fixed beams while clarifying that it should be provided *for the minimum altitude of the space station above the surface of the Earth at which any satellite transmits* which is submitted under A.4.b.4.f;

2) Same as 1), plus introduction new data item for steerable beams which would provide *the maximum satellite antenna gain as a function of elevation angle of arrival above horizontal plan at the Earth’s surface* to account a possible variation in a maximum antenna gain due the use of phased-array antennas or electronically steered beams.

The Conference is invited to provide guidance on the understanding of this data item.

Under both options, the Bureau considers important to provide electronic tools to capture this information, so it can be used for an examination under No. 21.16.

## 2.2 Item B.4.b.3 - The spreading loss as a function of elevation angle (to be determined by equations or provided in graphical format)

The Bureau considers that, unlike B.4.b.2, this data element may not provide any additional information to be considered useful. Indeed, taking a constant satellite altitude, which is already known from satellite orbit parameters, the value of spreading loss can be unambiguously determined using a spreading loss equation.

Moreover, for systems utilizing orbits with orbit eccentricity greater than 0, spread loss would be also a function of the transmitting satellite altitude which will be changing in time. However, current description does not allow this information to be provided.

Also, the Bureau notes the cases when there is a discrepancy between submitted spreading loss information and actually calculated one. It is not clear what information should be used in this case for interference analysis or No. 21.16 examination.

Therefore, the Bureau considers this data element not valuable and potentially contradicting. The Conference is invited to consider removing this data element from RR Appendix **4**.

**2.3 Item B.4.b.4 - Beam peak e.i.r.p.**

This includes 4 data elements:

B.4.b.4.a the maximum beam peak e.i.r.p./4 kHz

B.4.b.4.b the average beam peak e.i.r.p./4 kHz

B.4.b.4.c the maximum beam peak e.i.r.p./1 MHz

B.4.b.4.d the average beam peak e.i.r.p./1 MHz

All these elements were introduced in Resolution 46 at WARC-92 however the Bureau was unable to identify a specific background for these data elements and how this information should be calculated/identified by the administrations. At the same time the Bureau receives requests from Administrations to explain the difference between ‘maximum beak peak’ and ‘average beam peak’ and how they should be averaged.

ITU-R Recommendation SM. 1413 describes them as:

– *the maximum equivalent isotropically radiated peak envelope power in the Beam averaged over 4 kHz/1MHz*;

– *the average equivalent isotropically radiated peak envelope power in the Beam averaged over 4 kHz/1MHz.*

It is not clear whether it is to be averaged in a time domain, spectral domain or averaged among all different emission peak e.i.r.p. In similar circumstances Rule of procedure under No. **5.364** defines peak (maximum) e.i.r.p as derived from a maximum power density of the assignment. And for mean (average) it is using a spectral mean e.i.r.p. density. This spectral mean e.i.r.p. of an assignment is obtained from its total power divided by its necessary bandwidth and multiplied by 4 kHz (or 1 MHz).

Using this definition of mean e.i.r.p the Bureau would like to seek confirmation:

1) to define the maximum beam peak e.i.r.p, maximum power spectral density of emission multiplied by reference bandwidth should be used.

2) to define the average beam peak e.i.r.p, maximum total peak power of emission divided by its emission bandwidth and multiplied by the reference bandwidth should be used.

Alternatively, the Bureau would like to seek confirmation whether these elements are still considered to be useful and be maintained, or no longer relevant and be suppressed.

# 3 Item A.17.d

WRC-15 modified item A.17.d to submit the mean power flux-density (pfd) produced at the Earth’s surface by any space borne sensor for the frequency band 9 900 – 10 400 MHz for a satellite system operating in the Earth exploration-satellite service (active) as defined in Table **21-4**. As the limits are dependent on the angles of arrival, the mean pfd has to be provided for each angle of arrival. The formula defining the mean pfd defined in Table **21-4** is given in No.**21.16.8**. TheBureau may calculate the mean power flux-density based on the angles of arrival if the information on the necessary bandwidth (item C.7a), which is not currently required for active or passive sensors, is submitted. The necessary bandwidth information is also required for the Bureau to examine the conformity of the submitted frequency assignments with respect to No. **5.474A**.

As stipulated by the Rules of Procedure on **A.17.d**, the Administrations shall provide, in addition to the relevant characteristics listed in Appendix **4**, the SAR emission bandwidth information under C.7.a (necessary bandwidth) for active sensors operating in the Earth exploration-satellite service (active) in the frequency band 9 900-10 400 MHz instead of submitting the mean pfd. The Bureau will then subsequently take account of this data element in the examination under No. **11.31** of the Radio Regulations.

Subsequently in order to assist administration in submitting this commitment, the Bureau has enhanced the SpaceCap software that would make it possible to provide the information while submitting the coordination request and notification.

In view of the above, the Bureau would like to suggest the Conference to include the said information in Appendix **4** of the Radio Regulations. An example of modification of item A.17.d to that end is provided below:

“the mean power flux-density produced at the Earth’s surface by any spaceborne sensor, as defined in No. **5.549A** for the frequency band 35.5‑36 GHz or the SAR emission bandwidth information under C.7.a (necessary bandwidth) for active sensors operating in the Earth exploration satellite service (active) for calculating the mean pfd as defined in Table **21‑4** for the frequency band 9 900‑10 400 MHz

Required only for satellite systems operating in

• the Earth exploration-satellite service (active) or space research service (active) in the frequency band 35.5-36 GHz

• the Earth exploration-satellite service (active) in the frequency band 9 900-10 400 MHz”

4 New Section in RR Appendix 4

See § 3.3.1.5 related to Resolution 49 for more information about the rationale for this new section.

| **Items in Appendix** | ***E - ADMINISTRATIVE DUE DILIGENCE INFORMATION*** |  |  |  | **Notification or coordination of a geostationary-satellite network (including space operation functions under Article 2A of Appendices 30 or 30A)** |  |  | **Notice for a satellite network in the broadcasting-satellite service under  Appendix 30 (Articles 4 and 5)** | **Notice for a satellite network  (feeder-link) under Appendix 30A  (Articles 4 and 5)** | **Notice for a satellite network in the fixed- satellite service under Appendix 30B  (Articles 6 and 8)** |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | *The administrative due diligence information is required only for the notification of a satellite network in the fixed-satellite service, mobile-satellite service or the broadcasting-satellite service. For a satellite network that has been notified in advance of the bringing into use of the assignments, these information may be provided when submitting the notification or at the time of confirmation of bringing into use.* |  | | | | | | | | |  |
| **E.1** | **IDENTITY OF THE SATELLITE NETWORK** |  | | | | | | | | |  |
| E.1.a | Reference to the identity of the satellite network |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.1.b | Reference to frequency group of assignments notified under Article 11 |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.1.c | Name of the satellite |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| **E.2** | **SPACECRAFT MANUFACTURER** |  | | | | | | | | |  |
| E.2.a | Name of the spacecraft manufacturer |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.2.b | Date of execution of the contract |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.2.c | Start date for the contractual “delivery window” |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.2.d | End date for the contractual “delivery window” |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.2.e | Number of satellites procured |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| **E.3** | **LAUNCH-SERVICES PROVIDER** |  | | | | | | | | |  |
| E.3.a | Name of the launch vehicle provider |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.3.b | Date of execution of the contract |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.3.c | Date of launch or in-orbit delivery  Required only if the administrative due diligence information is provided at the time of confirmation of bringing into use. |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.3.d | Start date for the launch or in-orbit delivery window  Required only if the administrative due diligence information is provided in advance of bringing into use. |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.3.e | End date for the launch or in-orbit delivery window  Required only if the administrative due diligence information is provided in advance of bringing into use. |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.3.f | Name of the launch vehicle |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.3.g | Name of the launch facility |  |  |  | **+** |  |  | **+** | **+** | **+** |  |
| E.3.h | Location of the launch facility |  |  |  | **+** |  |  | **+** | **+** | **+** |  |

# 5 Inconsistencies

The embedded document (in A3 format in order to contain the proposals and their rationale) lists a number of inconsistencies related to Annex 2 to Appendix **4**.



\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. *Editorial note: the modification should be disregarded if the deletion of text, referring to the past date is approved under 2.2.3 “Outdated provisions”* [↑](#footnote-ref-1)
2. 29 The provisions of Resolution **33 (Rev.WRC‑97)**\* are applicable to space stations in the broadcasting-satellite service for which the advance publication information or the request for coordination has been received by the Bureau prior to 1 January 1999.

   \* *Note by the Secretariat*: This Resolution was revised by WRC‑03 and WRC-15. [↑](#footnote-ref-2)
3. 1 This Resolution does not apply to satellite networks or satellite systems of the broadcasting-satellite service in the 21.4-22 GHz band in Regions 1 and 3. [↑](#footnote-ref-3)
4. 2 See § 2.3 of Appendix **30B (Rev.WRC‑07)**. [↑](#footnote-ref-4)
5. \* *Note by the Secretariat:* This Resolution was revised by WRC-15. [↑](#footnote-ref-5)
6. 3 See § 2.3 of Appendix **30B (Rev.WRC‑07)**. [↑](#footnote-ref-6)
7. \* NOTE − In cases where a contract for satellite procurement covers more than one satellite, the relevant information shall be submitted for each satellite. [↑](#footnote-ref-7)