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| **Public Consultation** |
| **Earth Station Regulations** |
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| **Commencement Date: 22 September 2015**  **Response Date: 20 October 2015** |

Preface and Notes to Potential Respondents

TRA Regulations “Earth Stations”, Version 1.0” dated 5 August 2009 sets the technical rules for Earth Station authorization. In keeping with its values of transparency and sector engagement, the TRA wishes to consult on these regulations and proposed changes.

The purpose of this document is to invite comments from any organizations that would be impacted by the proposed changes in this document, which the TRA will then consider prior to making a final decision.

All concerned should respond to this consultation in writing to the TRA on or before the response date stated on the front cover of this document. The comments which are contained in any response to this consultation should be clearly identified with respect to the specific question in this consultation to which such comments refer. Any comments which are of a general nature and not in response to a particular question should be clearly identified as such.

Responses to this consultation should be made in writing and provided electronically in MS Word format, on or before the response date stated on the front cover of this document. Responses must be accompanied by the full contacts details (contact name, e-mail address and phone and fax numbers) of the respondent to:

[**spectrumconsultation@tra.gov.ae**](mailto:spectrumconsultation@tra.gov.ae)

Telecommunications Regulatory Authority

P.O. Box 26662

Abu Dhabi, UAE

Respondents are advised that it will be the general intention of the TRA to publish in full the responses received to this consultation. Additionally, the TRA may, at its discretion generate and publish a “Summary of Responses” document at the conclusion of this consultation. Accordingly, the Summary of Responses may include references to and citations (in whole or in part) of comments which have been received. The TRA recognizes that certain responses may include commercially sensitive and confidential information which the respondent may not wish to be published. In the event that a response contains confidential information, it shall be the responsibility of the respondent to clearly mark any information which is considered to be of a confidential nature.

In any event the respondent shall be required to submit two versions of its response to the TRA as follows:

* A full copy of its response in MS Word format with any confidential information clearly marked. The TRA will not publish the Word document and will only use it for internal purposes.
* A publishable copy of its response in Adobe PDF format. The TRA will publish the PDF version in its entirety. Thus, the respondent should take care to redact any commercially sensitive and confidential information in the PDF version of its response.

By participating in this consultation and by providing a PDF version of its response the respondent expressly authorizes the TRA to publish the submitted PDF version of its response in full.

It should be noted that none of the ideas expressed or comments made in this consultation document will necessarily result in formal decisions by the TRA and nothing contained herein shall limit or otherwise restrict the TRA’s powers to regulate the telecommunications sector at any time.

If any Person or entity seeks to clarify or discuss any part of this outline can request for a meeting in writing again to the above E-mail before and then TRA will set the meetings in the period from 11-13 October 2015 so that formal comments can still be received by **1200 hours on 20 October 2015.**

Consultation Schedule

22 September 2015: Publishing of consultation document

11-13 October 2015: Meetings with stakeholders if requested by stakeholders

20 October 2015: Close of consultation

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# Introduction

## The TRA is in the process of reviewing the spectrum regulations related to the authorization of Earth Stations as detailed in the Articles of “Regulations: Earth Stations, Version 1.0” dated 5 August 2009.

## Following a competitive tender process, the TRA appointed specialist telecoms market consultants LS telcom (“the Consultants”) to undertake review of the existing regulations.

## The Consultant has examined the spectrum regulations for spectrum authorizations as described in “Regulations: Earth Stations, Version 1.0” dated 5 August 2009 and compared these against those in a series of benchmark countries. The benchmark countries used consisted of a combination of countries where relevant spectrum regulations are publicly available and whose spectrum regimes are well developed. Focus has been set on countries from ITU-Region 1 and countries within the region. Benchmark countries comprise:

* Germany
* Qatar
* Switzerland
* United Kingdom
* Ireland

## In examining the regulations for spectrum authorizations in the UAE and comparing them to international benchmarks, a number of principles have been used in guiding the proposals:

* Changes in the way services are defined or implemented in the UAE should be incorporated
* Changes in relevant ITU-R publications and industry changes should be incorporated to reflect latest developments and changes in technology
* Wherever possible technical information and frequency tables should be presented in line with the text, references to annexes should be avoided
* Wherever possible references to ITU-R publications and industry standards should be used instead of repeating text from these documents
* Non-technical regulations should be reduced to the relevant service specific regulations to avoid unnecessary overlap with other more general TRA regulations
* The different technical regulations reviewed should be harmonized in terms of structure and wording

## The remainder of this document is structured as follows:

* Section 2 presents details the Consultants proposed changes to the regulatory instrument
* Section 3 presents a summary of the proposed changes.

## Note that only those articles for which changes are proposed are discussed.

# Proposed Changes

## **New Article: Scope of Document**

### In order to define the scope of the document and give guidance on other relevant TRA regulations we propose to include a new article at the beginning of the document stating:

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| *0.1 This document comprises technical regulations for the Frequency Spectrum Authorization of Earth Stations in the Fixed Satellite Service. It shall be read in conjunction with the following documents available from the TRA website at www.tra.gov.ae:*  0.1.1 *Spectrum Allocation and Assignment Regulations*  *0.1.2 Spectrum Fees Regulation*  *0.1.3 Interference Management Regulations*  *0.1.4 National Spectrum Plan and National Table of Frequency  Allocation* |

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| Question 1: | Do Stakeholders have any views on the proposed introduction of a new article defining the scope of document and relevant other regulations? |

### The new article will limit the scope of document to technical regulations for Earth stations in the fixed satellite service.

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| Question 2: | Do Stakeholders agree on the proposed scope “technical regulations for the authorization of Earth Stations in the Fixed Satellite Service”? |

## **Entities that can apply for Earth Station authorization (Article 2)**

### Currently Article 2.2 limits the entities that may apply for authorization of Earth Stations to licensees. We propose to open Earth Station authorization to other entities authorized by the Authority.

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| Question 3: | Do Stakeholders have any comments on the proposed opening of Earth Station authorization to entities aside licensees? |

## **Types of Earth Stations (Article 4)**

### Currently Article 4 defines two categories for Earth Stations for which authorizations will be issued: We propose to change the term “Typical Earth Stations” to “Transportable Earth Stations” and the term “Specific Earth Stations” to “Permanent Earth Station”. We furthermore propose to move Article 4 under Article 2.

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| Question 4: | Do Stakeholders have any views on the proposed rewording of Earth Station categories? |

### In addition to that we propose to add an article clarifying the authorization of VSAT and DSNG earth stations in the fixed satellite service with the following text:

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| *VSAT and DSNG earth stations are defined as single uncoordinated earth stations in the fixed satellite service that usually operate under a network. They can be either transportable or permanent as defined in the article above.* |

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| Question 5: | Do Stakeholders have any comments on the proposed article to clarify authorization of VSAT and DSNG Earth Stations? |

## **Technical Requirements (Article 5)**

### We propose to extend the technical requirement listed in Article 5 by rewording Article 5.1 and adding a table of available frequency bands and major usage conditions as following:

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| *5.1 The Earth Station shall be operated in accordance to the provisions of the Radio Regulations and relevant ITU-R Recommendations. The following table provides guidance on available frequency bands and major usage conditions:* |

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| **Frequency Band** | **Application** | **Usage conditions** |
| 3.4 - 4.2 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 4.5 - 4.8 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 Other: 4.5 - 4.8 GHz: App 30B |
| 5.15 - 5.25 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 5.725 - 6.7 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11,21.12 |
| 6.7 - 7.075 GHz | (Earth-to-Space) (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11,21.12 Other: 6.725 - 7.025 GHz: App 30B |
| 7.25 - 7.75 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11, 21.12 |
| 7.9 - 8.4 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11, 21.12 |
| 10.7 - 11.7 GHz | (Space-to-Earth) (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 Other: 10.7 - 10.95 GHz App 30B 11.2 - 11.45 GHz App 30B |
| 12.5 - 12.75 GHz | (Space-to-Earth) (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11,21.12 |
| 12.75 - 13.25 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11,21.12 Off axis power limits(\*): RR 22.26 - 22.31, 22.37 Other: App 30 B |
| 13.75 - 14.8 GHz | (Earth-to-Space) | Power Limits:  13,75 – 14 GHz RR 21.8, 21.9, 21.11, 21.12 14-14.8 GHz: : RR 21.8, 21.9, 21.11  Of axis power limits(\*): 13.75 - 14 GHz: RR 22.26 - 22.31, 22.37 14 - 14.5 GHz: RR 22.26 - 22.30, 22.37 Other: RR 5.502, RR 5.503 |
| 15.43 - 15.63 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 17.3 - 17.7 GHz | (Earth-to-Space) (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 Other: App 30A |
| 17.7 - 18.4 GHz | (Space-to-Earth) (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 Other: 17.7 - 18.3 GHz App 30A |
| 18.4 - 19.3 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 19.3 - 19.7 GHz | (Space-to-Earth) (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 19.7 - 21.2 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 27.5 - 31 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 Off axis power limits(\*): 29.5 - 30 GHz: RR 22.32-22.39 |
| 37.5 - 41 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 41 - 43.5 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 47.2 - 47.5 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 47.5 - 47.9 GHz | (Earth-to-Space) (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 47.9 - 48.2 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 48.2 - 50.2 GHz | (Earth-to-Space) (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 50.4 - 51.4 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 71 - 76 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 81 - 84 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 84 - 86 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 123 - 130 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 158.5 - 164 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 167 - 174.5 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 209 - 226 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |
| 232 - 240 GHz | (Space-to-Earth) | Power Limits: RR 21.8, 21.9, 21.11 |
| 265 - 275 GHz | (Earth-to-Space) | Power Limits: RR 21.8, 21.9, 21.11 |

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| Question 6: | Do Stakeholders have any views on the proposed use of a frequency table to give guidance on available frequency bands and major usage conditions or on the included frequency bands and usage conditions? |

### In addition to that we propose to add the following articles with further technical conditions:

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| *5.2 Elevation angles for transmitting earth station antennas shall not be less than 3 degrees measured from the horizontal plane to the direction of maximum radiation.*  *5.3 Antenna radiation pattern shall comply with the minimum performance criteria as specified by Recommendation ITU-R S.465. For antennas installed after 1995 the antenna radiation pattern shall meet the minimum requirements as specified by ITU-R S.580.*  *5.4 All transmissions to the satellite must be authorized by the Satellite Operator and comply with the technical requirements and standards defined by the Satellite Operator.*  *5.5 It is internationally recognised that there is a need to protect aircraft avionics from the possibility of interference arising from earth stations operating in close proximity to airports. Consequently, the deployment of satellite earth stations in areas around and within the perimeter fences airports is not allowed.* |

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| Question 7: | Do Stakeholders have any comments on the proposed technical articles as listed above? |

## **Rewording of text on “Radio Frequency Coordination” to harmonise text over different regulations (Article 8)**

### Currently the Article “Radio Frequency Coordination” (Article 8) contains different texts in different spectrum regulations. We propose to use the following service independent text to harmonize the Article over all spectrum regulations:

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| ***Article (8) Spectrum Coordination and Notification***  *8.1 Coordination of Radio Frequencies for the radio stations at the national, regional and international levels shall be made through the Authority, as it is the sole body responsible for Radio Frequency coordination.*  *8.2 Notifying and Registering of Radio Frequencies of these Stations in the ITU shall be made through the Authority according to the procedures outlined in the Radio Regulations.*  *8.3 The applicant agrees to participate fully in any subsequent coordination procedures* |

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| Question 8: | Do Stakeholders have any views on the proposed use of a harmonized wording for the article on “Spectrum Coordination and Notification”? |

## **Deletion of sections to remove unnecessary overlap between regulations (Article 2, Article 3, Article 6, Article 7 and Article 9)**

### In order to remove unnecessary overlap in general regulatory statements within the document and with general procedures and regulations as stated in other TRA spectrum regulations like “Spectrum Allocation and Assignment Regulations”, “Spectrum Fees Regulation” or “Interference Management Regulations” we propose to delete the following articles:

* Article 2.1, 2.4, 2.5, 2.6
* Article 3.1, 3.3, 3.4, 3.5
* Article 6.8
* Article 7
* Article 9

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| Question 9: | Do Stakeholders agree to the proposed deletion of the articles listed above? |

## **Move of sections from Article 3, Article 4 and Article 6 under Article 2 to increase readability**

### Currently the Earth station regulation consists of 9 Articles detailing regulatory and technical requirements. In order to increase the readability of the document we propose to merge several articles with non-technical requirements to a re-named Article 2 “Frequency Spectrum uses related to Earth Stations”. More specifically we propose to move the following Sections / Articles under Article 2:

* Article 3.2
* Article 4
* Article 6.1 to 6.7

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| Question 10: | Do Stakeholders agree to the proposed merging of articles as stated above? |

# Summary of consultation questions

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| Question 1 | Do Stakeholders have any views on the proposed introduction of a new article defining the scope of document and relevant other regulations? |
| Question 2: | Do Stakeholders agree on the proposed scope “technical regulations for the authorization of Earth Stations in the Fixed Satellite Service”? |
| Question 3 | Do Stakeholders have any comments on the proposed opening of Earth Station authorization to entities aside licensees? |
| Question 4: | Do Stakeholders have any views on the proposed rewording of Earth Station categories? |
| Question 5: | Do Stakeholders have any comments on the proposed article to clarify authorization of VSAT and DSNG Earth Stations? |
| Question 6 | Do Stakeholders have any views on the proposed use of a frequency table to give guidance on available frequency bands and major usage conditions or on the included frequency bands and usage conditions? |
| Question 7: | Do Stakeholders have any comments on the proposed technical articles as listed above? |
| Question 8: | Do Stakeholders agree to the proposed deletion of the articles listed above? |
| Question 9: | Do Stakeholders agree to the proposed merging of articles as stated above? |
| Question 10: | Do Stakeholders agree to the proposed merging of articles as stated above? |