



TANZANIA COMMUNICATIONS REGULATORY AUTHORITY

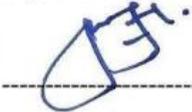
GUIDELINES FOR SATELLITE FILLINGS IN TANZANIA

First Version

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GUIDELINES FOR SATELLITE FILINGS IN TANZANIA

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Acronyms and Abbreviations

API	Advance Publication Information
BIU	Bringing into Use
BR	Radiocommunication Bureau
BR IFIC	BR International Frequency Information Circular
BSS	Broadcasting Satellite Service
FSS	Fixed Satellite Service
GSO	Geostationary Orbit
IFIC	International Frequency Information Circular
ITU	International Telecommunication Union
MIFR	Master International Frequency Register
MSS	Mobile Satellite Service
RoP	Rule of Procedures
RR	Radio Regulations
TCRA	Tanzania Communications Regulatory Authority

Definition of terms

Satellite filing	A process to obtain satellite spectrum and associated orbital slot/orbit(s) through the International Telecommunication Union (ITU) for recording in the Master International Frequency Register (MIFR) for international recognition and protection.
Notifying Administration	Administration requesting for assignment of orbital slot/orbit(s) to ITU and recording to the MIFR.
Planned Bands	Refers to bands of spectrum in the GSO orbital space set aside by ITU to ensure equitable access as governed by Appendices 30, 30A and 30B of the Radio Regulations.
Non-Planned Bands	These are bands that falls under GSO portion that does not fall under planned bands and all the bands of Non-GSO.
Satellite Operator	A legal person or entity that operates a space station to provide satellite transmission capacity or satellite facilities

1. Introduction

- 1.1** Before launching a satellite, one must obtain radio frequency spectrum and associated orbital position/orbit(s). Filing is a process to obtain satellite spectrum and associated orbit position/orbit(s) through the ITU for recording in the Master International Frequency Register (MIFR) for international recognition and protection.
- 1.2** A satellite network filing can only be submitted to the ITU by an administration of an ITU Member State in accordance with the provisions of the Radio Regulations (RR) and Rules of Procedures (RoP). These include compliance with the provisions of RR Article 5 (Table of Frequency Allocations), Article 9 (Procedures for effecting coordination with or obtaining agreement of other administrations), Article 11 (Notification and recording of frequency assignments), Appendices 30, 30A and 30B as well as obligations under Article 44 of the Constitution.
- 1.3** The Tanzania Communications Regulatory Authority (TCRA) is the notifying administration on behalf of the United Republic of Tanzania.
- 1.4** Satellite operator wishing to establish a network of one or more satellites through Tanzania shall make a request to TCRA for the submission of a new Satellite Network filing to ITU.

2. Objectives

To provide guidance to satellite operator(s) seeking to submit satellite filings to ITU through the administration of the United Republic of Tanzania.

3. Scope

These guidelines cover satellite services in GSO Networks and Non-GSO Systems.

4. Procedure for Satellite filing in Tanzania

An operator intending to launch a satellite under the name of Tanzania shall submit a request to TCRA for the submission of a new Satellite Network Filing or Notification for assignment in the: -

4.1 Non-Planned Bands under the provisions of Articles 9 and Article 11 of ITU RR. In this case an operator applies for an assignment in a given band, with a specified coverage and a particular orbital position or orbit constellation. These applications are filed by the notifying administration on behalf of the operator on a first-come-first-served basis. The steps in the coordination procedures for satellite networks in non-planned bands include Advance Publication Information (API) and Notification for satellite systems not subject to coordination, and Request for Coordination (CR) and Notification for systems subject to coordination.

4.2 Planned Bands under the provisions of Appendices 30 (Broadcasting-Satellite Service-downlink), 30A (Broadcasting-Satellite Service- feeder links), and 30B (Fixed-Satellite Service) of the ITU RR.

5. Procedure for operator making a filing request for Non Planned bands

As explained in part 4.1 of these guidelines, the access to satellite orbital positions and associated radio frequency spectrum in non-planned bands follows a first-come-first-served approach based on the principle that rights are acquired through negotiations with other administrations (i.e. coordination agreements). Successful coordination will lead to the international recognition of the use of the assignments of the networks and the recording of their assignments in the MIFR. The following are procedures: -

5.1 In case of satellite systems not subject to coordination under procedure set out in Section IIA of Article 9 of ITU RR: -

- a) The submission of the API to the TCRA as specified in *Appendix 4* of ITU RR in a format compatible with the ITU BR (Bureau) Space software tools. API Satellite Application form is attached as *Annex* to this document.

- b) Provide completed coordination information to facilitate coordination with the International Amateur Radio Union (IARU) for satellites operating in the amateur bands.
- c) TCRA reserves the right to request data modifications from the applicant to ensure compliance with ITU RR requirements before submitting to the ITU BR.
- d) TCRA will file the API with ITU as provided by the satellite operator or applicant.
- e) ITU publishes the API in the Space Radiocommunication Bureau (BR) International Frequency Information Circular (IFIC) in the Special Section API/A.
- f) Following the ITU's publication of the API in the Space BR IFIC, other administrations may within four (4) months from publication of API/A advise the notifying administration of existing services that could be potentially impacted by the published satellite network.
- g) These kinds of satellite networks are required to be notified and brought into use (BIU) before the end of the 7-year regulatory period.
- h) The date of receipt by the ITU of the API from notifying administration marks the start of the 7-year regulatory period.

5.2 In case of satellite systems subject to coordination under procedure set out in Section IIA of Article 9 of ITU RR

- a) The submission of necessary Appendix 4 of ITU RR data in required ITU format.
- b) Provide completed coordination information to facilitate coordination with the International Amateur Radio Union (IARU) for satellites operating in the amateur band.
- c) TCRA reserves the right to request data modifications from the applicant to ensure compliance with ITU RR requirements before submitting it to the ITU BR.
- d) TCRA will file a Coordination Request (CR) filing with ITU, as provided by the operator.
- e) ITU will publish the CR filing in the Special Section CR/C of the Space BR IFIC.
- f) Following the ITU's publication of the CR filing in the Special Section CR/C of the Space BR IFIC, other administrations may advise the notifying administration of existing services that could be potentially impacted by the published satellite network.
- g) These kind of satellite networks are required to be notified and brought into use, before the end of the 7-year regulatory period.

- h) The date of receipt by the ITU of the CR from notifying administration marks the start of the 7-year regulatory period.

5.3 In the event that coordination is required, the TCRA will assist the satellite operator to coordinate the published satellite network with existing networks of other administrations that may be impacted by its operation.

6. Procedure for operator making filing request for Planned bands

There are many frequency bands allocated to space services. However, there are only a few frequency bands that are used to develop Space Plans. These are called Planned Band. These bands are only for GSO BSS and GSO FSS. In those planned bands, a certain amount of spectrum is priori assigned equally to all countries for future use in order to guarantee equitable access to the GSO orbit and spectrum among countries and are registered in the *Plan*. Plan BSS assignments (*Priori Assigned*) for each administration in Regions1 (which includes Tanzania) and Region 3 are included in Article 11 of Appendix 30 and Article 9A of Appendix 30A while FSS Plan allotment for each administration is included in Article10 of Appendix 30B.

The remaining portion of the Planned band is allocated for additional use if administration require more capacity. This allocation is achieved through coordination procedures and such spectrum is registered in the *List*. These represent additional satellite uses beyond the Plan.

Application under part 4.2 of these guidelines can be either for modification or additional use. Each Appendix contains procedure for modifying the Plan (i.e. either by changing the characteristics of an assignment or allotment), or by making an additional use. *Article 4* of Appendix 30 and 30A of ITU RR contains provisions for additional uses in Regional 1 and 3 while *Article 6* of Appendix 30B of ITU RR contains provisions for conversation of allotment into assignment, introduction of additional system or modification of assignment in the List.

7. Procedures for notification of frequency assignment to ITU BR

The notification of a frequency assignment to the ITU-BR in accordance with Article 11 of the RR for the non-planned bands and Appendices 30, 30A and 30B for planned bands is the final regulatory step leading to the recording of the frequency assignments in the MIFR. It is the responsibility of TCRA to file notification of frequency assignment on behalf of the applicant or satellite operator. However, TCRA shall not submit notification data to the ITU BR unless coordination of the subject application has been completed. For submission of notification to the ITU BR, the Applicant or Operator:

- 7.1** In case of Satellite Networks not subject to the coordination procedure set out in Section IIA of Article 9 of ITU RR, the operator shall provide a list of concerns received from Administrations and how such concerns were addressed.
- 7.2** In case of Satellite Networks subject to the coordination procedure set out Section IIA of Article 9 of ITU RR or subject to Appendices 30, 30A and 30B, the operator shall provide:
- a) Type of service to be provided;
 - b) Report summarizing the status of coordination;
 - c) A copy of the completed coordination agreements to TCRA for reference;
 - d) Contracts for satellite procurement and launch services;
 - e) Impact assessment in relation to existing national Satellite Networks and proposals to avoid causing harmful interference, including confirmation of any mitigation measures to avoid harmful interference to such existing national Satellite Networks;
- 7.3** For those Satellite Networks subject to the coordination procedure set out in the ITU RR where coordination could not be successfully completed, and the Applicant proposes to submit Notification data to the ITU BR under the ITU RR, the Applicant should provide a summary indicating efforts made to effect coordination and its plan to eliminate any harmful interference caused to any recorded assignment that is the basis for the proposed recording, in accordance with the ITU RR.
- 7.4** Upon completion of the coordination process, TCRA shall file a notification request with the ITU and shall seek inclusion of the new Satellite Network in the MIFR.

- 7.5** If the Satellite Network is Brought into Use (BIU) without completing the coordination with affected Satellite Networks and causes harmful interference to these satellites, the subject network will be obligated to eliminate the interference in accordance with Article 15 of the ITU RR.

8. Administrative Due Diligence

TCRA shall conduct due diligence as stated in Annex-2 Resolution 49 (Rev.WRC-19) to avoid the reservation of orbital resources without actual use. Administrative due diligence is applicable to:

- 8.1** Any Satellite Network or Satellite System of the FSS, MSS or BSS with frequency assignments that are subject to coordination under Nos. 9.7, 9.11, 9.12, 9.12A and 9.13 of ITU RR.
- 8.2** Any request for additional uses in Regions 1 and 3 under the relevant provisions of Article 4 of Appendices 30 and 30A.
- 8.3** Any submission of information under Article 6 of Appendix 30B (Rev.WRC-19), with the exception of submissions of new Member States seeking the acquisition of their respective national allotments for inclusion in the Appendix 30B Plan.
- 8.4** The proposed satellite network shall provide the required due diligence information to the TCRA including contractual undertakings related to spacecraft manufacturer and launch service provider, contractual delivery window among others of the proposed satellite network.

9. Compliance with international treaties

Satellite networks for which TCRA is the notifying administration shall be operated in accordance with the relevant international UN treaties. These include:

- 9.1 The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies;
- 9.2 The Convention on International Liability for Damage Caused by Space Objects;
- 9.3 The Convention on Registration of Objects Launched into Outer Space;
- 9.4 United Nations Space debris mitigation guidelines.

10. Fees

10.1 ITU Fees

The applicant will be solely responsible for paying all the associated ITU fees (cost recovery fees) regardless of whether their application is approved or declined. In accordance with the provisions of ITU Council Decision 482, as amended, the ITU charges fees for processing satellite network filings on a cost recovery basis. To know the amount of cost recovery you are required to pay: -

- (i) Download the SPACECAP (ITU Space Application) from <https://www.itu.int/ITU-R/go/space-software/en> and install in your computer.
- (ii) First, open SNS database (mdb format) of a satellite network filing using SPACECAP.
- (iii) Click on *Notice Explorer*.
- (iv) Select the desired notice from the list.
- (v) From the Tools menu, select *Cost Recovery Fee Estimation (D482)*.
- (vi) When the computation is computed, the results of the cost recovery analysis can be viewed either in a summary or detail format.

Detailed arrangements for the implementation of these cost recovery charges are available on the ITU website (<https://www.itu.int/en/ITU-R/space/costrecovery/Pages/default.aspx>)

10.2 TCRA Fees

The process of filing to ITU by TCRA will not be subject to any fees.

11. Filing dates

TCRA shall submit filings to the ITU BR in the sequence of their receipt by the Authority, considering the completeness of the applications from the Applicants. If multiple applications are submitted to the Authority on the same day, the one with the earlier time stamp will be prioritized for submission to the ITU BR ahead of others.

Annex1: API Satellite Application form

SECTION 1: NOTICE INFORMATION			
A1f1 Notifying adm.		Notice intended for	ADD, MOD, Sup
A1a Identity of the Satellite Network		A1g. Short Duration Mission	Y/N
A4b2. Reference body	T --> Earth D --> Deep space S --> Sun ...	If T, need A4b4 Orbital Information Orbital Plane id: 1 A.4.b.4.m: sun-synchronous orbit or not: no A4b4a Inclination angle: A4b4b Satellites in the plane: A4b4c Period: A4b4d Apogee A4b4e Perigee: A4b4f Minimum Altitude:	
A4b1a. Constellation	Y	S (Single)	
		M (Multiple)	A4b1c. No of sub-sets
			A4b1d. Attach_num
N			

SECTION2: BEAM (RECEIVING)	
B1a Beam designation	UPLINK
B2 Transmission/reception indicator	Receiving Beam
B3a1 Max Isotropic Gain +/- dBi	
B3c1 Co-polar	Pattern ID empty (diagram captured in GIMS mdb)
B4a Orbit link	
Beam has Sensors	
STEP 2-1 GROUP	

A3a Operating Agency		General Characteristics
A3b Responsible Administration		
A2b Period of Validity		
C4a Class of station		Characteristics Common to a Group of Frequencies
C4b Nature of service		
C11a Service area		
C6a Polarization type		
C5a Receiving System Noise temp.		
STEP 2-2 EMISSIONS		
C7a Design. of emission		
C7b Carrier Frequency:		
C8a1 Max Peak Power:		
C8a2 Max Power Density:		
C8c1 Min Peak Power:		
C8c3 Min Power Density:		
C8e1 C/N Objective:		
STEP 2-3 FREQUENCIES		
C1 Frequency Range		
STEP 2-4 Associate Earth Station		
C10b2 Type of Station		
C10b1 Associated Earth Station Name		
C10d1 Class of Station		
C10d2 Nature of service		
C10d3 Max Isotropic Gain		
C10d4 Beamwidth		
C10d5a1 Radiation Pattern Id		
C10c2 Country		

C10c1 Geographical Coordinates	
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STEP 3: BEAM (TRANSMITTING)		
B1a Beam designation	DOWNLINK	
B2 Transmission/reception indicator	Transmitting Beam	B2a1 Transmit Only when Visible
		B2a2 the minimum elevation angle
B3a1 Max Isotropic Gain +/- dBi	0	
B3c1 Co-polar		
B4a Orbit link	The current beam operates with all sat in all orbits: Y	
Beam has Sensors	If yes, no service area...	
B1b Steerable Beam	If yes, B3b1b Apply ROP 21.16 PFD limits to steerable beams	applying the method in Annex 1 of ROP No.21.16
		applying other method in attachment no. ()
STEP 3-1 GROUP		
Except no "C5a Receiving System Noise temp.", all the other parameters are same as receiving beam		
STEP 3-2 EMISSIONS		
C7a Design. of emission		
C7b Carrier Frequency:		
C8a1 Max Peak Power:		
C8a2 Max Power Density:		
C8c1 Min Peak Power:		
C8c3 Min Power Density:		
C8e1 C/N Objective:		
STEP 3-3 FREQUENCIES		

C1 Frequency Range	
STEP 3-4 Associate Earth Station	
C10b2 Type of Station	
C10b1 Associated Earth Station Name	
C10d1 Class of Station	
C10d2 Nature of service	
C10d3 Max Isotropic Gain	
C10d4 Beamwidth	
C10d5a1 Radiation Pattern Id	
C10d6 Rev. system Noise Temperature	

Contact Us

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