

ITU REGIONAL RADIOCOMMUNICATION
SEMINAR FOR AFRICAN REGION

ITU RRS

JOHANNESBURG 2019

13 - 17 May
Johannesburg, South Africa

www.itu.int/go/ITU-R/seminars



Co-Organizers:



Terrestrial Workshop RRS-19-Africa Notification for Fixed and Mobile : Exercises

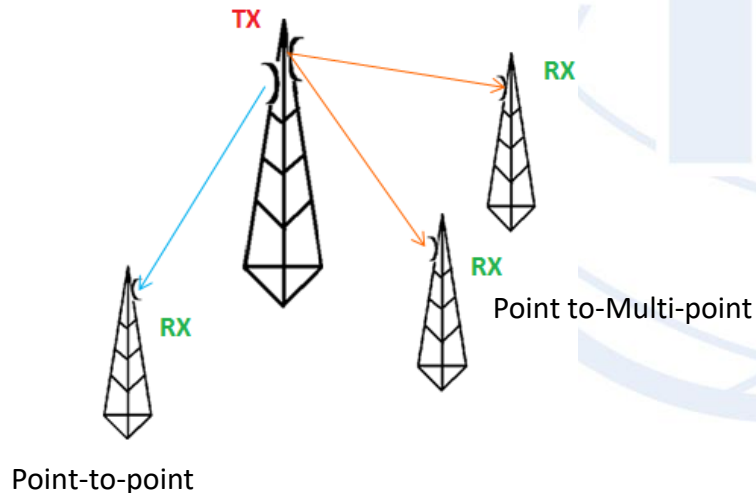
RRS-19-Africa Workshop, South Africa – Johannesburg, 13 - 17 May 2019



Services (1/2)

Fixed service:

a radiocommunication service between specified fixed points RR1.20



Examples of notification received:

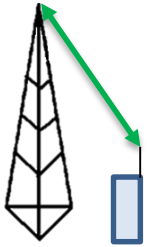
- Radio relay
- Fixed wireless

Services (2/2)

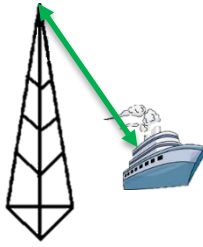
Mobile service:

a radiocommunication service between mobile and land stations, or between mobile stations RR1.24

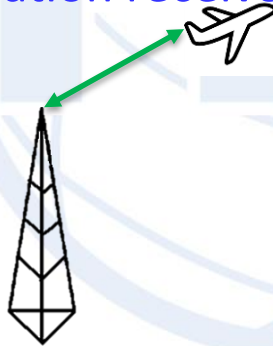
Examples of types of notification received:



Land
mobile

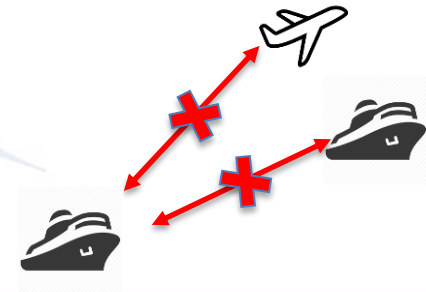


Maritime
mobile



Aeronautical
mobile

Shall not be notified in
accordance with RR 11.13
and RR 11.14



General guidelines on the notification process (1/2)

Notice type depends on the Class of Station

Notice type		Class of station
T11	Terrestrial Transmitting Station (TX) in Fixed Service	FX
T12	Terrestrial Transmitting Station (TX)	<i>Mobile:</i> FA, FB, FC, FD, FG, FL, FP and OE <i>Radiodetermination:</i> LR, RN, NL and AL <i>Meteorological aids:</i> SM
T13	Terrestrial Receiving Land Station (RX)	<i>Mobile:</i> MA, ML, MO, MS and OD <i>Radiodetermination:</i> MR, NR, RM and AM <i>Meteorological aids:</i> SA
T14	Terrestrial Typical Transmitting Station (TX)	As for T11 and T12 notice type

Note: Description of Class of station can be found in the Preface to the BR IFIC, Chapter IV, Section 6

General guidelines on the notification process (2/2)

Creation and Validation of notices

➤ TerRaNotices

BR provides it with BRIFIC DVD



➤ Online Validation

<http://www.itu.int/ITU-R/terrestrial/OnlineValidation/Login.aspx>

Reference documents for notification

- Guidelines and examples of different notice types;

<http://www.itu.int/en/ITU-R/terrestrial/tpr/Pages/Notification.aspx>

- Preface to the BR IFIC;

<http://www.itu.int/en/ITU-R/terrestrial/brific/Pages/default.aspx>



- Radio Regulations

<https://www.itu.int/pub/R-REG-RR/en>



- Rules of Procedures

<https://www.itu.int/pub/R-REG-ROP/en>



➤ **Transmitting Stations (T11, T12, T14)**

TeReNotices 12 (PROO) - [Untitled] - T11

File Tools View Language Options Window Help

Notice browser

Notice type Description

- <Untitled>*
 - Head section T12JADD* SUI - 24/10/2018
 - <Untitled>*
 - Head section T12JADD* SUI - 24/10/2018
 - <Untitled>*
 - Head section T12JADD* SUI - 24/10/2018

Date of notification 24/10/2018 ID/L Assignment's unique identifier

Provision Type of notification Notification intended for

RR11.2 E/ Resubmission Addition
Modification
Suppression
Withdrawal

RR8.21

Assignment characteristics Operations

Operation 1

Power

8/ Type of power

8AA/ Power to the antenna

8B/ Radiated power

8AB/ Maximum power density

8G/ Maximum length of the circuit

Antenna characteristics

9/ Min. gain

9B/ Elevation angle

9D/ Polarization code

9E/ Height above ground level

9J/ Reference antenna

9G/ Directivity of the antenna

9C/ Beamwidth

Is rotational

9A/ Azimuth of maximum radiation

Coordinates

9 fields are invalid!

Assigned frequency

Designation of emission (Bandwidth)

Designation of emission (Class of emission)

Nature of service

Date of bringing into use

Antenna(s) characteristics of the transmitting station

Location of the receiving station(s)

Notice structure (2/2)

➤ Receiving Station (T13)

The image displays two screenshots of the TerRANotices 1.2 (PRO) software interface, specifically the configuration for a Receiving Station (T13).

Left Screenshot: Administrative and technical information of the receiving station

This section contains the following fields:

- Notice browser:** A list of notices with columns for Notice type, Description, and Date of notification. The selected notice is T13/ADP.
- Date of notification:** 24/10/2018.
- Assignment's unique identifier:** T13.
- Provision:** RR11.9.
- Type of notification:** E/Resubmission.
- Notification intended for:** Addition, Modification, Suppression, Withdrawal.
- Assignment characteristics:** A section for defining the assignment characteristics, including:
 - Emission characteristics:** 1A/Assigned frequency, 1B/Reference carrier frequency, 7A/Bandwidth, 7A/Class of emission, 10/Hours of operation (UTC), 6A/Class of station, 6B/Nature of service, 12C/Date of bringing into use.
 - Station information:** 1A/Location of the receiving station, 1B/Geographic area, 1C/Latitude, 1D/Longitude.
 - Coordination:** 1A/Operating agency, 1B/Address code, 1C/Notified remarks.

Right Screenshot: Antenna(s) characteristics of the receiving station

This section contains the following fields:

- Notice browser:** A list of notices with columns for Notice type, Description, and Date of notification. The selected notice is T13/ADP.
- Date of notification:** 24/10/2018.
- Assignment's unique identifier:** T13.
- Provision:** RR11.9.
- Type of notification:** E/Resubmission.
- Notification intended for:** Addition, Modification, Suppression, Withdrawal.
- Assignment characteristics:** A section for defining the assignment characteristics, including:
 - Antenna(s) characteristics:** 1A/Type of power, 1B/Power to the antenna, 1C/Radiated power.
 - Location of the transmitting station:** 1A/Geographic area, 1B/Geographic area of the transmitting stations.

Identifying items for *Fixed and Mobile Stations*

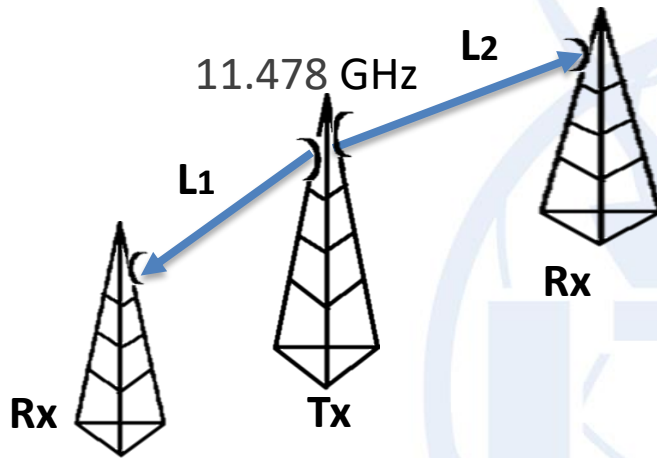
AP4	Description of a data item	Data item	Example
1A	Assigned frequency	t_freq_assgn	t_freq_assgn=4979.000000
4C	Geographical Coordinates	t_long t_lat	t_long=-0082524 t_lat=+425404
6A	Class of station	t_stn_cls	t_stn_cls=FX
7AB	Bandwidth code	t_bdwidth_cde	t_bdwidth_cde=28M0
7A	Emission class	t_emi_cls	t_emi_cls=D7W--
10B	Hours of operation	t_op_hh_fr t_op_hh_to	t_op_hh_fr=00:00 t_op_hh_to=24:00

and / or

AP4	Description of a data item	Data item	Example
ID1	Unique Identification Code given by the administration	t_adm_ref_id	t_adm_ref_id=FX-2019-01011

IMPORTANT: BR Assign ID and Site name are **NOT** identifying elements but they could be notified in the remarks field as additional information, in case of modification, suppression and/or withdrawal

Example of Fixed station : point-to-multipoint



- L1 and L2 are originating from the same transmitter with identical technical characteristics (identifying elements are the same).
- This network configuration must be notified in ONE notice
- The assigned frequency **falls within the bands shared on equal basis with space services**

Example of Fixed station : Transmitting station details

- **Notice type (t_notice_type)** – depends on class of station ➤ T11
- **Notifying Administration (B, t_adm)** – ITU symbol for adm ➤ GUI
- **Action (t_action)** – The action to be taken for this notice: ADD, MODIFY, WITHDRAW or SUPPRESSION ➤ ADD
- **Provision (D, t_prov)** determines the **Fragment (t_fragment)** – For recording in Master Register (RR11.2) and for seeking agreement (RR9.21) ➤ RR11.2
- **Assigned Frequency (1A, t_freq_assgn)** – The transmitting frequency - Must be allocated to Fixed Service ➤ 11.478 GHz
- **Necessary bandwidth (7AB, t_bdwidth_cde)** – Width of the frequency band necessary to transmit the information. (Appendix 1, Section I of RR) ➤ 28M0
- **Class of emission (7A, t_emi_cls)** – The set of characteristics of an emission (Appendix 1, Section II A of RR) ➤ D7W—
- **Class of Station (6A, t_stn_cls)** – identify the type of service (Chapter IV, Section 6 of the Preface) ➤ FX

Example of Fixed station : Transmitting station details

- **Nature of service (6B, t_nat_srv)** – indicate the type of service (Chapter IV, Section 7 of the Preface)
 - Public correspondence – CP
- **Date of bringing into use (2C, t_d_inuse)** – Exact date or foreseen date when the frequency assignment is brought into use. There are some limitation specified in RR11.24 – 11.26A
 - In this case, Max. 3 year before
- **Name of the site where the transmitter is located (4A, t_site_name)** – name of locality or name under which the station is known to responsible organization
 - Conakry
- **Geographical area (4B, t_ctype)** – Must be within the jurisdiction of the notifying administration (Res.1)
 - GUI
- **Geo. coordinates of the transmitter (4C, t_long, t_lat)**
 - 13°30'5"W - 9°42'57"N
- **Altitude of the site above sea level (9EA, t_site_alt)** – Mandatory if the assignment is notified in the bands **shared** between terrestrial and space services with equal rights.
 - 35 m
- **Address Code (12B, t_addr_code)** – Contact details of the responsible organ in case there are any issues with the assignment (Chapter IV, Section 3 of the preface).
 - A

Example of Fixed station : Antenna 1 details

- **Type of the power according RR 1.156 – 1.159 (8, t_pwr_xyz)** – depends on the *class of emission (Chapter IV, Section 8)*
 - Y (mean power)
- **Power delivered to the antenna (8AA, t_pwr_ant)** – *Mandatory in the bands below 28 MHz and those that are shared between terrestrial and space services with equal rights.*
 - -3.9 dBW
- **Equivalent isotopically radiated power and type (8B, t_pwr_dbw and t_pwr_eiv)** – *Mandatory in bands above 28 MHz. The type of radiated power in one of the forms described in Nos. 1.161 – 1.163 of the RR (e.i.r.p. - equivalent isotropically, e.r.p. - effective or e.m.r.p. - effective monopole).*
 - -1 dBW, I
- **Maximum Antenna Gain relative to isotropic antenna and type (9G, t_gain_max and t_gain_type)** – *Mandatory, if the antenna is directional. For non-directional antenna, this data item is mandatory in the bands above 28 MHz if the radiated power is not notified.*
 - 3.2 dBi, I
- **Polarization (9D, t_polar)** – *Mandatory if the assignment is notified in the bands **shared** between terrestrial and space services with equal rights*
 - Vertical

Example of Fixed station : Antenna 1 details

- **Elevation angle (9B, t_elev)** – Mandatory if the assignment is notified in the bands *shared* between terrestrial and space services with equal rights ➤ -0.8°
- **Height of transmitting antenna above ground level (9E- t_hgt_agl)** – Mandatory if the assignment is notified in the bands *shared* between terrestrial and space services with equal rights terrestrial and space services with equal rights. ➤ 30m
- **Antenna direction (9, t_ant_dir)** ➤ D
- **Beamwidth (9C, t_bmwidth)** – Mandatory for directional antennas ➤ 3°
- **Azimuth of maximum radiation (9A, t_azm_max_e)** – The value is in degrees from True North for directional antennas ➤ 180°

Example of Fixed station : Receiving site details of the Antenna 1

- **Site name of receiving station** (5A - *t_site_name*) – *The name of the receiving station(s).* ➤ Tombolon
- **Geographical Coordinates** (5C - *t_long* and *t_lat*) – *geographical area where the receiving site is situated* ➤ 13°30'5"W - 9°40'7"N
- **Geographical area where the receiving station is located** (5B - *t_ctry*) – *ITU symbol designating the geographical area where the receiving station is located.* ➤ GUI

Example of Fixed station : Antenna 2 and its Receiving site details

9E	Height of the Antenna above ground level	40 m
9	Antenna directivity	Directional
9A	Azimuth of maximum radiation	1°
9C	Beamwidth	3°
9D	Polarization	Vertical
9B	Elevation angle	0.8°
9G	Maximum antenna gain relative to isotropic antenna	3.2 dBi
8B	Equivalent isotropically radiated power	-1 dBW
8AA	Power delivered to the antenna	-3.9 dBW
5A	Name of the location of the receiving station	Wendima
5B	Coordinates of the receiving station	13°30'0"W - 9°47'20"N

Terrestrial Workshop RRS-19-Africa
Presentation FXM Exercises – Part 2



EXERCISES

FXM01: Validating the file with frequency assignment notices

Validate the electronic notice file

“FXM 01_OnlineVal.txt” using the web online validation tool.

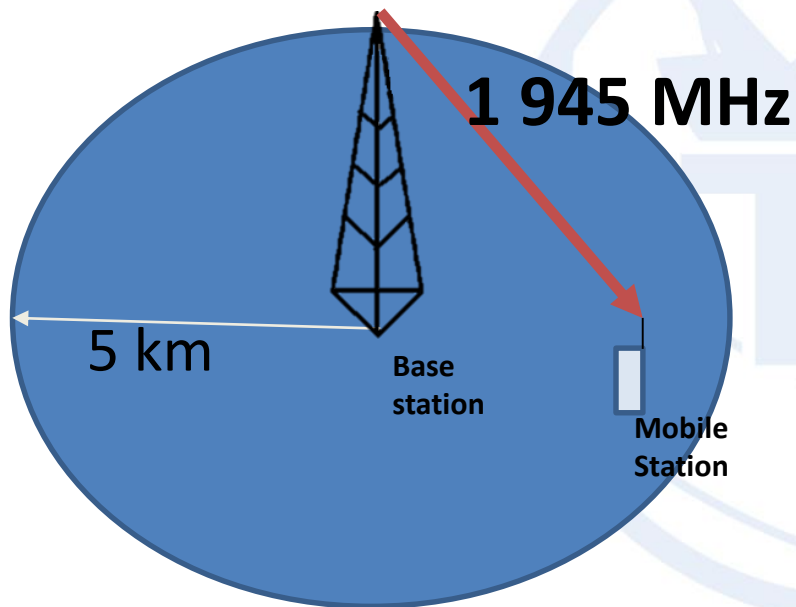
This file is available on terrestrial workshop.

*This validation tool is accessible with the **ITU login**

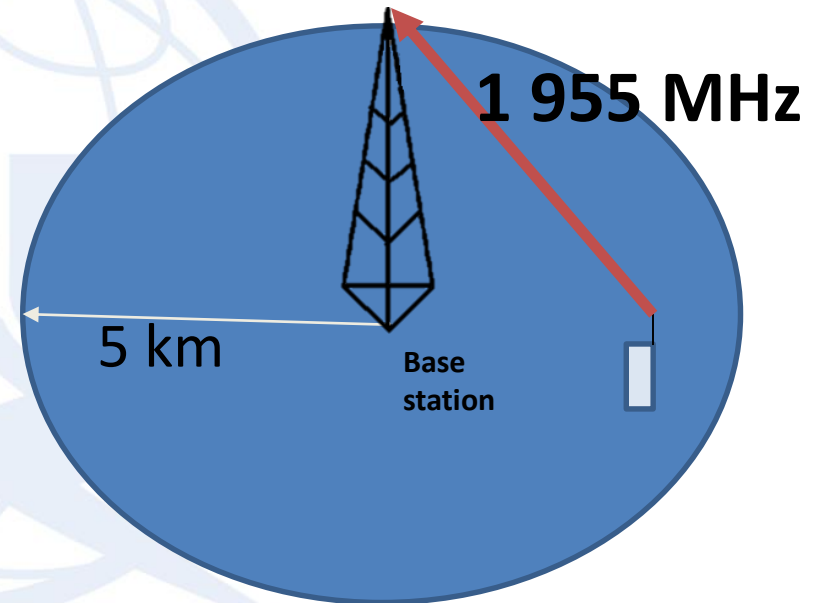
<http://www.itu.int/ITU-R/terrestrial/OnlineValidation/Login.aspx>

FXM 02: Land mobile service (point-to-area/area-to-point)

1. The link from **land** station to **mobile** station



2. The link from **mobile** station to **land** station



FXM 02: Land mobile service (point-to-area/area-to-point)

1. Prepare an electronic notice file of frequency **1 945 MHz** assigned to a **base station** having a circular receiving area of a **radius of 5 km** for the Administration of **Côte d'Ivoire, CTI**, for its recording in the **Master Register**.

7AB	Bandwidth	5 MHz
7A	Class of emission	G9W--
4A	Transmitting antenna site name	PLATEAU
4C	Coordinates of the transmitting station	4°1'12"W - 5°19'52"N
6B	Nature of service	"Exclusively to correspondence of a private agency"- Preface Chapter IV, Section 7
2C	Date of bringing into use	Max. 3 months in advance
12B	Address code	Preface Chapter IV, Section 3
8B	Effective radiated power	30 dBW
9G	Maximum Gain relative to a half wave dipole	15 dB
9	Antenna directivity	Omnidirectional

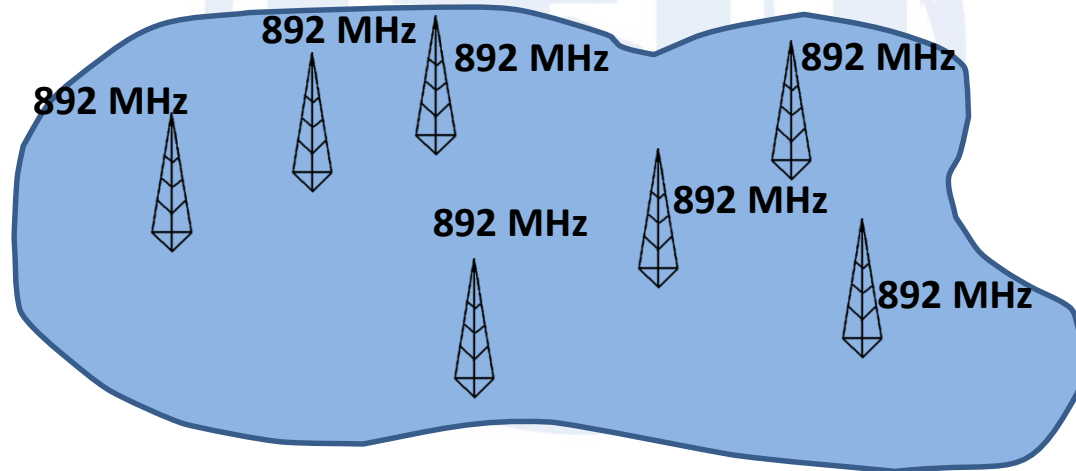
FXM 02: Land mobile service (point-to-area/area-to-point)

2. Prepare an electronic notice file of frequency **1 955 MHz** assigned to the associated receiving **land mobile station** (handset) of the above base station, for its recording in the **Master Register**. Use the functionality “Insert new notice”

7AB	Bandwidth	5 MHz
7A	Class of emission	G9W--
5A	Name of the location of the receiving station	PLATEAU
5C	Coordinates of the receiving station	4°1'12"W - 5°19'52"N
6B	Nature of service	“Exclusively to correspondence of a private agency” - Preface Chapter IV, Section 7
2C	Date of bringing into use	Max. 3 months in advance
12B	Address code	Preface Chapter IV, Section 3
4D	Radius	5 km
8B	Effective radiated power	12dBW

FXM 03: Typical transmitting station (RR11.17)

- Several **base stations** using the same frequency and the same technical parameters in your country



FXM 03: Typical transmitting station (RR11.17)

Prepare an electronic notice, for the recording in the Master Register of frequency **892 MHz** used by several base stations in your country using the information below.

**This provision does not apply to all service types (see RR 11.18-11.21B)*

7AB	Necessary Bandwidth	5 MHz
7A	Class of emission	G7W--
4E	Transmitting geographical area	Enter the country code to notify
6B	Nature of service	“Official correspondence exclusively” - Preface Chapter IV, Section 7
2C	Date of bringing into use	Max. 3 months in advance
12B	Address code	Preface Chapter IV, Section 3
8A	Power to the antenna	16 dBW
8B	Radiated Power	30 dBW
9G	Maximum Gain relative to a half wave dipole	14 dB

FXM 04: Modify a frequency assignment

Prepare an electronic notice to modify a frequency assignment which is already recorded in the **Master register**.

- Notifying Administration – **Mozambique (MOZ)**
- BR assigned ID No – **117109817**
- Modify the assigned frequency **5945 MHz to 6197 MHz**

*To prepare this notice we will use “Open a Notice from the database” functionality of TerRaNotices.

FXM 05: Maritime mobile Service (point-to-area)

Prepare an electronic notice, for the recording in the Master Register of frequency **6378.5 kHz** assigned to a **coast station** open exclusively to correspondence of a private agency situated in **South Africa (AFS)** having a circular receiving area of a radius of 2500 km.

7AB	Bandwidth	8.8 kHz
7A	Class of emission	F7B--
4A	Transmitting antenna site name	CAPETOWN
4C	Coordinates of the transmitting antenna site	18°43'0"E - 33°41'0"S
3A	Call sign	ZSC21
6B	Nature of service	"Official correspondence exclusively"- Preface Chapter IV, Section 7
2C	Date of bringing into use	Max. 3 months in advance
12B	Address code	Preface Chapter IV, Section 3
8A	Power delivered to the antenna	31 dBW
9	Antenna directivity	Omnidirectional

Thank you for your attention!

ITU – Radiocommunication Bureau

Questions to brmail@itu.int or brtpr@itu.int