



Information & Communication Technologies Authority

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**DECISION FOR ALLOCATION OF ADDITIONAL SPECTRUM IN THE
FREQUENCY RANGE 5945-6425 MHz FOR BROADBAND WIRELESS
ACCESS SERVICES IN MAURITIUS**

04 August 2022

1.0 BACKGROUND

Wireless Access Systems (WAS) are broadband radio systems which can be deployed either inside or outside buildings, usually in geographically limited areas. Broadband RLAN (Radio Local Access Network), a subset of WAS, are the major type of equipment deployed today and are predominantly used inside buildings. Typical WAS/RLAN include public and private applications offered in homes, hotels, shopping centres, etc. These types of applications are typically intended for connections between traditional business products such as PC, laptops, servers, printers and other networking equipment as well as digital consumer electronic equipment in the wireless home network environment and may be considered to fall into the ITU-R categories nomadic wireless access (NWA) or mobile wireless access (MWA). RLAN utilise low power levels because of the short distance nature of inside building operation.

1.1 DEMAND FOR ADDITIONAL SPECTRUM

Most of the existing RLAN and similar broadband data transmission systems are currently operating in the ISM frequency bands. The 5925 MHz to 7125 MHz (“6 GHz”) frequency band is generating a lot of interest worldwide, with many countries opening up access to the frequency band, or parts of it, for use by RLANs, among the most prevalent are Wi-Fi networks and devices. Several factors are driving demand in the lower 6 GHz frequency band, namely:

1. The large amount of spectrum available in the 6 GHz band would allow for wide, non-overlapping channels.
2. The 6 GHz band is adjacent to the 5 GHz band, which is already widely used for Wi-Fi.
3. The 6 GHz band would be used by more efficient Wi-Fi technologies from the outset.

1.2 USE OF 6 GHz BAND IN MAURITIUS

In Mauritius, the 6 GHz band is currently used by fixed links and satellites. These are licensed users with a primary allocation, meaning that it is important to ensure that compatibility can be achieved in the band between Wi-Fi and current uses.

1.3 INTERNATIONAL DEVELOPMENTS

Many countries around the world have taken a gradual approach towards opening up the 5925 – 7125 MHz band, or parts of it, to unlicensed and licensed exempt applications, namely Wi-Fi. For instance, the European Union has applied rules and procedures to use the 5925-6425 MHz band for such applications.

2.0 DECISION

The ICT Authority,

considering

- a) that there is a need to make available additional spectrum for the implementation of Wireless Access Systems including Radio Local Area Networks (WAS/RLAN);

- b) that the frequency band 5945-6425 MHz has been allocated to the mobile service, the fixed service (FS), and the fixed-satellite service (FSS) on a primary basis in ITU Region 1 and in the Mauritius Frequency Allocation Table (MFAT);
- c) that the frequency band 6650.0-6675.2 MHz is covered by RR footnote 5.149, which urges administrations “to take all practicable steps to protect the radio astronomy service (RAS) from harmful interference”;
- d) that compatibility studies in ECC Report 302 and ECC Report 316¹ have shown that sharing between WAS/RLAN and FSS earth stations and terrestrial FS deployments in the band 5945-6425 MHz is feasible under certain conditions;
- e) there is no out-of-band emissions (OOBE) limit included in this Decision, to protect adjacent incumbents operating above 6425 MHz, as the same incumbents will be operating co-channel with WAS/RLAN below 6425 MHz;
- f) that the conditions provided in Table A1.1 of Annex 1 of this Decision also apply to WAS/RLANs used inside trains and aircrafts;
- g) WAS equipment used in Mauritius are required to comply with European Standards.

decides that

1. the frequency band 5945-6425 MHz be made available for WAS/RLAN use **as follows**:
 - a. **INDOOR LOW POWER (ILP) devices** restricted to indoor use only. Outdoor use of those Indoor Low Power devices (including in road vehicles) is not permitted;
 - b. **Very Low Power (VLP) devices** for both indoor and outdoor use, except for fixed outdoor use. Use of Very Low Power devices on radio-controlled models is prohibited;
2. the frequency band 5945-6425 MHz shall be used by WAS/RLAN equipment on a non-exclusive, non-interference and non-protected basis;
3. that WAS/RLAN devices shall comply with the technical conditions and standardisation requirements specified in Annex 1;

¹ <https://docdb.cept.org/download/1396> & <https://docdb.cept.org/download/1430>

ANNEX 1: TECHNICAL CONDITIONS

A1.1 LOW POWER INDOOR (LPI) DEVICES

Parameter	Technical conditions
Permissible operation	Restricted to indoor use only (including trains where metal coated windows (note 1) are fitted and aircrafts) Outdoor use (including in road vehicles) is not permitted.
Category of device	An LPI access point or bridge that is supplied power from a wired connection, has an integrated antenna and is not battery powered. An LPI client device is a device that is connected to an LPI access point or another LPI client device and may or may not be battery powered.
Frequency band	5945-6425 MHz
Channel access and occupation rules	An adequate spectrum sharing mechanism shall be implemented.
Maximum mean e.i.r.p. for in-band emissions (note 2)	23 dBm
Maximum mean e.i.r.p. density for in-band emissions (note 2)	10 dBm/MHz
Maximum mean e.i.r.p. density for out-of-band emissions below 5935 MHz (note 2)	-22 dBm/MHz
Standards to be complied with	Radio: ETSI EN 303687 EMC: ETSI EN 301 489 -1, ETSI EN 301 489-17 SAFETY: EN 62311, EN 62368-1
<p>Note 1: Or similar structures made of material with comparable attenuation characteristics.</p> <p>Note 2: The "mean e.i.r.p." refers to the e.i.r.p. during the transmission burst, which corresponds to the highest power, if power control is implemented.</p>	

Table A1.1: Technical condition for operation of 6 GHz Low Power Indoor Devices

A1.2 VERY LOW POWER (VLP) WAS/RLAN DEVICES

Table 2: Very Low Power (VLP) WAS/RLAN devices Parameter	Technical conditions
Permissible operation	Indoors and outdoors Use on radio-controlled models is prohibited
Category of device	The VLP device is a portable device
Frequency band	5945-6425 MHz
Channel access and occupation rules	An adequate spectrum sharing mechanism shall be implemented.
Maximum mean e.i.r.p. for in-band emissions (note 1)	14 dBm

Maximum mean e.i.r.p. density for in-band emissions (note 1)	1 dBm/MHz
Narrowband usage maximum mean e.i.r.p. density for in-band emissions (note 1) (note 2)	10 dBm/MHz
Maximum mean e.i.r.p. density for out-of-band emissions below 5935 MHz (note 1)	-45 dBm/MHz
Standards to be complied with	Radio: ETSI EN 303687 EMC: ETSI EN 301 489 -1, ETSI EN 301 489-17 SAFETY: EN 62311, EN 62368-1
<p>Note 1: The "mean e.i.r.p." refers to the e.i.r.p. during the transmission burst, which corresponds to the highest power, if power control is implemented.</p> <p>Note 2: Narrowband (NB) devices are devices that operate in channels bandwidths below 20 MHz. Narrowband devices also require a frequency hopping mechanism based on at least 15 hop channels to operate at a PSD value above 1 dBm/MHz.</p>	

Table A1.2: Technical condition for operation of 6 GHz Very Low Power Devices