



FREQUENCY SPECTRUM MANAGEMENT REPORT 2ND QUARTER 2019/20 (OCTOBER- DECEMBER 2019)

OVERVIEW

Radio frequency spectrum is a national resource that should be managed and utilized effectively and efficiently. The Communications Authority of Kenya (CA) while exercising its mandate has to plan, allocate, assign, issue frequency licenses, monitor, carry out surveillance and coordinate the usage of the radio frequency spectrum resource to ensure its optimal & efficient utilization.

This report presents spectrum management activities with respect to various radio communication services in the 2nd Quarter of 2019/20 financial year.

The report also highlights the National Preparatory Committee (NPC) for World Radiocommunications Conference 19 (WRC-19), which held its eighth and final meeting to prepare Kenya's position on WRC-19 Agenda Items.

SECTION 1: FREQUENCY PLANNING

I. Dynamic Spectrum Access Framework for TVWS applications

The Authority is developing a framework for Dynamic Spectrum Access (DSA) in fulfilment of its strategic plan objectives. The first component of the DSA framework will focus on TV white space applications for 2019/20 and subsequently investigate potential application to other spectrum bands as international approach to DSA is harmonized.

The Authority and Strathmore University are jointly validating the draft proposal with support from a research grant by the UK Department for International Development (DFID).

Figure 1 below gives an overview of the components in the framework.

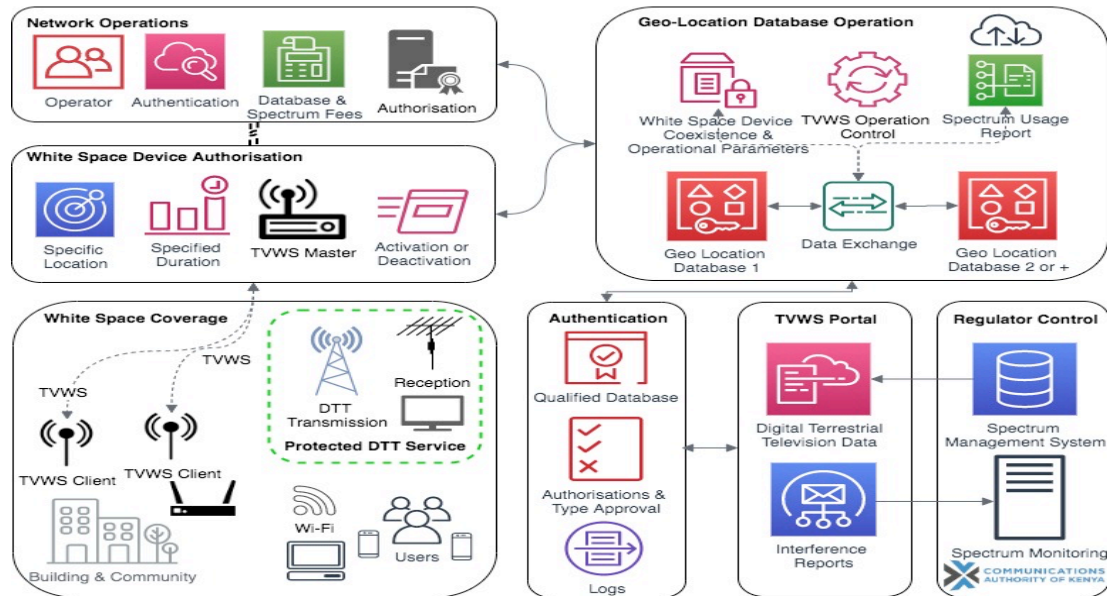


Figure 1 : TV White Space Framework

II. IMPLICATION OF WRC-19 DECISIONS ON KENYA

The Authority participated in the WRC-19 in Sharm El-Sheikh, Egypt from 28th October to 22nd November 2019 and the following decisions were made:

1. Additional Spectrum for IMT-2020 (5G mobile)

Additional spectrum allocation to mobile services in the frequency bands 24.25-27.5 GHz, 37- 43.5 GHz. 47.2 – 48.2 GHz and 66 - 71 GHz will facilitate implementation of IMT2020/5G mobile services in Kenya.

2. High-Altitude Platform Stations (HAPS)

Additional frequency bands and reviewed the regulatory provisions for High Altitude Platform Systems (HAPS) will facilitate provision of affordable and wide coverage broadband service coverage in Kenya especially in rural and remote areas, including in mountainous, coastal and semi-arid areas.

3. Enhancement of WiFi networks

The reviewed regulatory provisions will enable both indoor and outdoor usage of WiFi in order to meet the growth in demand for wireless access systems, including Radio Local Areas Networks (RLANs) for end-user radio connections, while limiting their interference into existing satellite services.

In the band 5 150 - 5 250 MHz, WiFi networks will be allowed indoor or outdoor usage with a maximum e.i.r.p. of 30 dBm (1W) while in the band 5 470 - 5 725 MHz WiFi devices will be restricted to a maximum transmitter power of 250 mW.

The decision will provide effective communication for portable computer-based equipment over Wireless access systems, including radio local area networks (WiFi).

4. Railway radiocommunication systems between train and trackside (RSTT)

The adopted framework on Railway radiocommunication systems will enable Kenya Railways deploy railway train and trackside systems to meet the needs of a high-speed railway environment such as SGR for train radio applications to improve railway traffic control, passenger safety and security for train operations.

The approved International standards and harmonized spectrum will improve interoperability of RSTT, reducing railway infrastructure investment and providing for economies of scale.

5. Harmonized frequency bands for Intelligent Transport Systems (ITS)

The adopted ITU Recommendation (standard) will facilitate integration of ICTs in evolving Intelligent Transport Systems (ITS) on our roads to connect vehicles, improve traffic management and assist in safer driving to support transportation system efficiency and environmental sustainability.

6. Regulatory framework for Broadcasting-satellite service (BSS)

The decision will provide a priority mechanism to enable developing countries, including Kenya, to regain access to new satellite orbital resources (orbital locations and frequencies) for broadcasting satellite services.

KBC/Signet can use the new BSS orbital resources to provide a cost-effective Direct broadcast services (DBS) to a large geographical area unlike terrestrial services.

In addition, Kenya had the opportunity to host a satellite coordination workshop for 31 eligible African Countries in February 2020 to prepare fillings to be submitted to ITU.

7. Global Maritime Distress and Safety System (GMDSS) and Global Aeronautical Distress and Safety System (GADSS)

The approved changes to GMDSS and GADSS regulations would result in enhancements of both safety and value-for-money through competition (by removal of monopoly). Given that both the civil aviation and maritime sectors have in the recent past, registered unprecedented growth, it becomes extremely crucial that safety arrangements are also enhanced.

The decision will enable Kenya Civil Aviation Authority (KCAA) and the Kenya Maritime Authority (KMA) update and modernize services to enhance safety and security in the air and at sea.

8. Earth stations in motion (ESIM)

The framework adopted by WRC-19 will enable operation in existing FSS allocations to provide reliable and high-bandwidth Internet services to what are literally moving targets.

ESIMs will provide broadband communications, including Internet connectivity, on platforms in motion such as planes, ships, and trains. Kenya Airways and Kenya Railways/SGR can install ESIMs to provide connectivity to passengers.

9. Harmonization of frequency bands for Amateur services

The decision will enable Amateur users in Kenya access the frequency band 50 -54 MHz on a Primary basis and benefit from full worldwide harmonization of the allocation to the amateur service to enhance radio amateurs' global efforts to fulfil the purposes of the amateur service.

10. Increased efficiency in the use of the spectrum/orbit resource

The WRC-19 approved new regulations in order to increase efficiency in the use of the satellite orbit and the associated frequencies.

These regulations will increase efficiency in the use of the satellite orbit and the associated frequencies. It will also facilitate developing countries like Kenya to launch small satellite and bring into use satellite network frequency assignments with ease. The small satellite can now use the frequency bands 137/149 MHz.

III. FIXED LINKS

To facilitate provision of communications services, the Authority processed frequency applications for 173 fixed links by various operators as summarized in the table below;

Table 1: Frequencies for Fixed links assigned and decommissioned during the 2nd quarter

Fixed Links Assignments		Decommissioned
Frequency Band	No. of New Links	No. of links
5 GHz	2	-
6 GHz	0	16
7/8 GHz	51	14
13 GHz	2	10
15 GHz	46	4
18 GHz	2	-
23 GHz	3	18
38 GHz	1	4
71/80 GHz	66	-
Total	173	66

IV. MOBILE CELLULAR SERVICES

There were no assignments of access frequencies for Mobile Cellular Services issued in the 2nd quarter.

V. FIXED WIRELESS ACCESS SERVICES

There were no assignments of frequencies for Fixed Wireless Access systems in the 2nd quarter.

VI. SATELLITE EARTH STATIONS

There were no assignments of frequencies for satellite earth stations in the 2nd quarter.

VII. DIGITAL TV BROADCASTING

There were no assignments of frequencies for Digital Terrestrial Television broadcasting in the 2nd quarter.

VIII. FM SOUND BROADCASTING

The Authority did not assign any FM broadcasting frequencies during the 2nd quarter.

SECTION 2: FREQUENCY LICENSING

I. PRIVATE RADIO NETWORK

The Authority processed 45 renewals with respect to land mobile services in the 2nd quarter, comprising 16 fixed stations, 17 mobile stations and 74 portable radios.

II. AIRCRAFT RADIO SERVICES

The Authority renewed 18 aircraft radio licenses in the 2nd quarter.

III. AMATEUR RADIO

The Authority renewed 2 amateur radio licenses in the 2nd quarter.

IV. RADIO ALARM SERVICES

In trend of decreasing number of alarm networks continues due to the growing popularity of GSM based alarm transmitters. There were no renewals of frequencies with respect to alarm networks in the quarter.

SECTION 3: FREQUENCY MONITORING & INSPECTION

I. INTERFERENCE RESOLUTION

Two (2) new cases of interference were reported in the quarter comprising, one in the FM broadcast band and one in the UHF 900 MHz Cellular frequency bands.

Cumulatively there were a total number of 30 cases in the 2nd quarter.

The Authority resolved 15 cases comprising of 2 in the FM broadcasting band, 1 in the V/U/SHF bands, and 12 in the UP900 Cellular bands as summarized in the table below

Table 3: Resolved Interference Cases

Frequency Band/Service	Number
VHF, UHF and SHF	1
UP900 Cellular bands	12
Broadcasting	2
Total	15

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