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**GUIDELINES N°...../GL/UAS-ICS /RURA/017 OF ...../...../2017 ON  
MINIMUM BANDWIDTH AND OTHER REQUIREMENTS FOR BROADBAND  
INTERNET CONNECTIVITY IN HOSPITALITY INDUSTRY IN RWANDA**

**Version 2.0.**

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## INTRODUCTION

The main missions of Rwanda Utilities Regulatory Authority (RURA) includes among others to promote efficient development of regulated sectors in accordance with Government economic and financial policy and to protect and promote consumers' interests;

These guidelines are a complement to efforts being undertaken by the Government of Rwanda to improve the quality of internet access in hospitality industry in Rwanda.

Hospitality service providers are urged to strengthen broadband internet connectivity in order to improve service delivery in the hospitality industry due to high demand of better Internet experience by guests.

Rwanda Utilities Regulatory Authority by adopting these guidelines seeks how to improve broadband Internet connectivity in hospitality industry by setting minimum requirements for bandwidth in hospitality industry in Rwanda in order to improve service delivery in a bid to attain high-speed internet access in hospitality premises.

Based on the Law N°24/2016 of 18/06/2016 governing Information and Communication Technologies especially in its article 72;

In exercise of the mission conferred upon to Rwanda Utilities Regulatory Authority under Article 4 of the law N° 09/2013 of 01/03/2013 establishing Rwanda Utilities Regulatory Authority (RURA) and determining its mission, powers, organization and functioning;

The Regulatory Board after consideration and deliberation in its meeting of ...../...../2017 hereby issue the following Guidelines:

## **1.0. GENERAL PROVISIONS**

### **1.1. Purpose**

The purpose of these guidelines is to provide a framework that governs the provision, operations, maintenance and quality of broadband internet connectivity in hospitality industry in Rwanda.

### **1.2. Definitions**

For the purpose of these guidelines the terms hereunder shall have the following meaning:

- a) **"Bandwidth"**: the amount of data transmitted over a network connection during a given time.
- b) **"Broadband"**: A network connection that is always on, available at home, at work and on the move, which delivers progressively higher bandwidths that are capable of supporting innovative and interactive content and services, as to enhance the user-experience.
- c) **"Contention ratio"**: A measure of the number of users simultaneously sharing the available bandwidth.
- d) **"Business center"**: means the object of the business of which is to make available to the targeted group, either for a fee or gratis, access to and use of the Internet for any purpose, including but not limited to, recreation and amusement, and does include any place used purely as a Hospitality establishment or a place where access to the Internet is restricted to employees, staff or similarly authorized personnel.
- e) **"Hospitality industry"**: means any Industry including but not limited to Town Hospitality establishment, Vacation Hospitality establishment, Lodge, Tented Camp, Villas and Cottages, Serviced Apartments, Motel, Restaurant, Camping /Caravan Site, Guest House, Home Stay, Hostel, Eco-lodge, Farm Stay and Bars.

### **1.3. Scope of the guidelines**

These guidelines shall provide guidance for the quality of broadband internet services and minimum requirements of bandwidth that should be followed by hospitality industry and Internet Services Providers.

## **2.0. GUIDELINES FOR BROADBAND INTERNET CONNECTIVITY IN HOSPITALITY INDUSTRY**

### **2.1. Wireless internet and business center**

Every hospitality facility should have a business center and also wireless internet in public areas, guest rooms, conference room and public space.

### **2.2. Physical Layout**

Business center and communication network in the hospitality industry shall have standardised structure.

### **2.3. Time of Operation**

The hospitality industry's broadband services should operate 24/24h, 7/7.

### **2.4. Minimum computers for Business center in hospitality industry**

Each hospitality facility shall have computers, printer, scanner and a public phone.

### **2.5. Network safety and security**

**2.5.1.** Business center are prohibited from engaging in activities that are detrimental to information network safety, for such as intentional production and dissemination of a computer virus or other destructive programs, and unlawful invasion into a computer information system and destruction of a computer information system's functionality, data, and application program;

**2.5.2.** Internet facilitates users are advised not to produce, download, duplicate, review, disseminate or otherwise use prohibited information;

**2.5.3.** Cyber Crimes (Hacking, Virus Distribution, Port scanning and etc.) and acts against Rwanda culture are prohibited in the Hospitality Internet facilities;

**2.5.4.** Internet Facilities must obtain an Internet connection from licensed Internet connection service providers (ISPs). The computers provided for customer use must be connected to the Internet via a local network;

**2.5.5.** Internet facilities shall be equipped with licensed anti-virus package for the protection of their machines and equipment.

## **2.6. Bandwidth management software requirements**

For the purpose of optimizing the use of available bandwidth, it is advisable for Hospitality establishments to have a unique bandwidth management solution that can help in re-distributing the direct bandwidth from internet service providers into different hourly plans for guests.

## **2.7. Operation principle**

The hospitality establishments should embed the Broadband Internet cost into other services therefore the Internet should not be billed separately.

## **2.8. Network stability and performance**

**2.8.1.** The Hospitality establishments hosting events and/or conferences have to acquire extra bandwidth during the conference meetings and events in order to cater for applications that require high bandwidth or/and accommodate a large number of broadband users. Access to the internet should be user friendly. The alternative of bandwidth on-demand enables a hospitality business to request a boost in the available bandwidth for a short period to meet peaks in usage, without having to contract for any increased capacity they will only need occasionally.

**2.8.2.** A hospitality establishment should start planning to upgrade its circuit when peak utilizations average reach out to around 80% which would allow them a few months of growth to arrange for the circuits to be ordered and installed;

**2.8.3.** Internet service provider may charge businesses a flat rate for unlimited use, with the monthly bill set by the maximum speed band chosen by the customer. With Bandwidth on Demand, it is possible to provision a fixed base-line service on top of which the hotel can take extra bandwidth capacity on-demand, to suit its fluctuating business needs, guest requirements, occupancy rates and the hosting of in-hotel special events.

**2.8.4.** Hospitality business should use technology that ensures they provide the highest quality of Internet services to guests. They should install dedicated Broadband Internet traffic management devices that combine multiple ISPs services to boost connectivity and increase overall bandwidth.

## **2.9. Maintenance of the hospitality Local Area Network (LAN)**

The hospitality facility shall have proper mechanisms for the maintenance of its computer system and Local area Network (LAN). It may opt for outsourcing the

maintenance company or hiring an IT engineer who will deal with the day to day maintenance of the LAN. The hoteliers may opt to contract with ISPs to carry out the maintenance work and this can be included in service level agreement.

### **3. MINIMUM BANDWIDTH AND COVERAGE REQUIREMENTS**

#### **3.1. Bandwidth for hospitality industry**

The minimum bandwidth for hospitality facilities is hereto attached in appendix A.

#### **3.2. Wireless network coverage**

**3.2.1.** Access points and hot spot shall be deployed and well positioned to guarantee acceptable signal strength.

**3.2.2.** The channels shall be well separated in order to avoid inter-channel interference.

**3.2.3.** The hoteliers shall request ISPs to provide the client software or web-based tool to monitor the broadband received compared to the broadband subscribed to. The recommended software tools are cacti and MRTG (Multi Router Traffic Grapher) whereas the recommended web-based speed tests are speedtest.net. As per regulations in force, the monthly average bandwidth should not go below 95% for dedicated bandwidth and 80% for non-dedicated bandwidth of the subscribed bandwidth;

### **4. FINAL PROVISIONS**

#### **4.1. Reference tool**

These guidelines may be used as reference for the purpose of inspection of the compliance by hospitality industry to the broadband internet connectivity and minimum bandwidth and other requirements set herein during the hospitality industry' ranking exercise or any other related activity with regard to their mandate.

#### **4.2. Compliance**

Rwanda Development Board shall establish a joint team in partnership with other stakeholders that will conduct compliance checks to these guidelines in terms of broadband service delivery in the hospitality sector.

#### **4.3. Entry into force**

These guidelines shall come into force on the date of its signature by the Chairperson of the Regulatory Board.

**Done at Kigali, -----/ -----/ 2017**

**Eng. Coletha RUHAMYA  
Chairperson of the Regulatory Board**

FIRST DRAFT



## **APPENDIX A: MINIMUM BANDWIDTH FOR HOSPITALITY INDUSTRY IN RWANDA**

ITU-T Recommendations I.113 & Y.1541 defines the Broadband as a service or system requiring transmission channels capable of supporting rates greater than the primary rates (1.5 Mbps or 2 Mbps). The following formula shall be used to calculate the minimum bandwidth:

**Min. Bandwidth (Mbps) = Primary rate (2 Mbps) x Numbers of rooms / Contention ratio**

Therefore, the primary rate of 2 Mbps and numbers of rooms gives the theoretical minimum bandwidth; however, there is a need to estimate practical minimum bandwidth with a proper contention ratio, consequently the following table gives the practical minimum Bandwidth and a contention ratio of 10:1 was considered:

<b>MINIMUM BANDWIDTH FOR HOSPITALITY INDUSTRY IN RWANDA</b>			
ROOMs	Minimum bandwidth (Mbps)	ROOMs	Minimum bandwidth (Mbps)
Between 1-10	2	Between 181-200	40
Between 11-20	4	Between 201-240	48
Between 21-30	6	Between 241-280	56
Between 31-40	8	Between 281-320	64
Between 41-50	10	Between 321-360	72
Between 51-60	12	Between 361-400	80
Between 61-70	14	Above 400	Individual Case Basis
Between 71-80	16		
Between 81-90	18		
Between 91-100	20		
Between 101-120	24		
Between 121-140	28		
Between 141-160	32		
Between 161-180	36		

## **APPENDIX B: ESTIMATION OF THE ON-DEMAND MINIMUM BANDWIDTH FOR HOTEL INDUSTRY IN RWANDA**

As per international practice, the average contention ratio for business package is 20:1.

**The required bandwidth** = the numbers of planned participants x Primary rate (2Mbps) / contention ratio for business package (20:1).

Example: there is a meeting planned to host 2,500 participants. What would be the required on-demand bandwidth?

**The required bandwidth** =  $2500 \times 2 \text{ Mbps} / 20 = 250 \text{ Mbps}$

**SEEN TO BE ATTACHED TO THE GUIDELINES N°...../GL/UAS-ICS /RURA/017 OF ...../...../2017 FOR BROADBAND INTERNET CONNECTIVITY FOR HOSPITALITY INDUSTRY IN RWANDA**

**Done at Kigali, -----/ -----/ 2017**

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**Eng. Coletha RUHAMYA**  
**Chairperson of the Regulatory Board**