



Digital Connectivity Standards for Villages in Botswana

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1 INTRODUCTION

- 1.1 Digital Connectivity Standards (DCS) for villages guide government ministries, agencies, and parastatals to implement their connectivity projects in line with the Smart Botswana Strategy (Towards Digital Transformation for Botswana) principles of leaving no one behind by building universal infrastructure and affordable access. All digital connectivity projects rolled out in villages should meet the DCS.
- 1.2 These standards apply to all digital connectivity projects implemented across all government.
- 1.3 All village digital connectivity projects should adhere to the following principles:
 - Whole of government approach
 - Connect a Village – Connect all Facilities approach
 - Provision of high-speed, open, and secure public internet access
 - Provision of secure internet
- 1.4 Digital connectivity projects entail:
 - Rollout of backhaul infrastructure
 - Rollout of last mile connectivity to facilities such as Kgotla, Health facilities, schools, youth centres, government ministries and departments and key public internet access centres



2 WHOLE OF GOVERNMENT APPROACH

- 2.1 All digital connectivity projects planned for rollout in villages across all ministries and departments should be conceived and budgeted jointly for a consolidated rollout.
- 2.2 A Universal Access and Service Team comprising of representatives from the following government ministries and parastatals shall be constituted to assess and identify villages that qualify for connectivity on an annual basis:
- Ministry of Transport and Communications (Lead)
 - Botswana Communications Regulatory Authority
 - Universal Access and Service Fund
 - Ministry of Employment, Labour Productivity, and Skills Development
 - Ministry of Youth Empowerment, Sport and Culture Development
 - Ministry of Local Government and Rural Development
 - Ministry of Defense, Justice and Security
 - Ministry of Health and Wellness
 - Ministry of Agricultural Development and Food Security
 - Ministry of Basic Education
 - Ministry of Mineral Resources, Green Technology and Energy Security
 - Botswana Power Cooperation



3 CONNECT A VILLAGE – CONNECT ALL FACILITIES

- 3.1 The Connect a Village – Connect all Facilities approach entails provision of one consolidated connectivity with all key facilities connected.
- 3.2 The model entails provision of:
 - 3.2.1 Backhaul infrastructure per village.
 - 3.2.2 Minimum mobile network infrastructure of 4G and/ or above covering the village population. Provision of mobile broadband infrastructure will be as follows:
 - 3.2.2.1 Villages with a population of less than 5,000 inhabitants shall be connected through the UASF by providing a subsidy to mobile operators.
 - 3.2.2.2 Villages with a population of 5,000 or more inhabitants shall be upgraded to 4G and above through BOCRA regulatory interventions.
 - 3.2.2.3 BOCRA shall identify high population and high impact locations for the initial 5G pilot rollout. This should be accompanied by 5G use cases covering initially health, education, agriculture, and transportation amongst others.
 - 3.2.3 High-speed bandwidth shall be made available to all facilities in a village including Kgotla, Health facilities, schools offering basic education, tertiary institutions, youth centres, and any other government offices.



4 VILLAGE CONNECTIVITY DESIGN CONSIDERATION

4.1 The Connect a Village – Connect all Facilities shall be based on the connectivity design considerations below.

4.1.1 ***Kgotla connection*** will comprise a minimum 100Mbps public Wi-Fi and minimum 30Mbps for accessing GDN services

4.1.2 ***School connection*** will comprise GDN access, universal Wi-Fi coverage and a minimal fixed LAN as follows:

4.1.2.1 ***Senior Secondary Schools:*** Minimum 100Mbps for GDN, 100Mbps Wi-Fi connectivity and a fixed LAN with a maximum of 10 network points

4.1.2.2 ***Junior Secondary Schools:*** Minimum 60Mbps for GDN, 100Mbps Wi-Fi connectivity and a fixed LAN with a maximum of 10 network points

4.1.2.3 ***Primary Schools:*** Minimum 50Mbps for GDN, 100 Mbps Wi-Fi connectivity and a fixed LAN with a maximum of 10 network points

4.1.3 ***Tertiary institutions connection*** will comprise:

4.1.3.1 ***Colleges, Brigades, Institute of Health Sciences:*** Minimum 100Mbps for GDN, 100Mbps Universal Wi-Fi connectivity

4.1.4 ***Health Facility connection*** will comprise 100Mbps public Wi-Fi and GDN connectivity as follows:

4.1.4.1 ***Clinic/Health Posts:*** 20Mbps

4.1.4.2 ***Hospitals:*** 40Mbps

4.1.4.3 ***District Hospitals:*** 50Mbps

4.1.4.4 ***Referral Hospitals:*** 100Mbps

4.1.5 ***Public and Youth Offices connection*** will compromise a minimum 50Mbps GDN and 100Mbps Public Wi-Fi

- *Youth Centres*
- *Libraries*

4.1.6 ***Public Facing Offices connection*** will comprise a minimum 50Mbps GDN, 100Mbps Enterprise Wi-Fi and 100 Mbps Public Wi-Fi

- *E.g., Department of Roads Transport and Safety*



- *Revenue Offices*
- *Immigration and Civil Registration (including borders)*
- *Department of Veterinary Services*
- *Ministry of Local Government and Rural Administration (Social Services)*

4.1.7 **Multi-Government offices (services offering) connection** will comprise a Baseline Standard connection of a minimum 50Mbps for GDN and 100 Mbps Public Wi-Fi as follows:

- *Rural Administration Centres*
- *Customer Service Centres*: Example 1Gov service centres

4.1.8 **Ministry Headquarters and Satellite Offices (Non-Service) connection** will comprise Baseline Standard connection of 1Gbps for GDN, 100Mbps Enterprise Wi-Fi and have Wi-Fi capability.

4.1.9 **Other Government Facilities** not stated above will be connected with minimum GDN and Public Wi-Fi on a case-by-case basis.

4.2 Remote and Hard to Reach Villages

4.2.1 In locations where there is minimal to no backhaul infrastructure and population is below 500, the minimum connectivity design considerations will be as follows:

4.2.2 Minimum bandwidth of 10Mbps on the GDN and 50Mbps for Wi-Fi per facility.

4.2.3 The deployed network should be scalable to cater for higher capacities as defined under 4.1 above.



5 PROVISION OF HIGH-SPEED, OPEN AND SECURE PUBLIC INTERNET ACCESS

- 5.1 All of the networks provided should provide internet security on the channel and at the internet connectivity level.