



**DIGITAL TERRESTRIAL
TELEVISION (DTT)
BROADCASTING POLICY 2016**

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ABBREVIATIONS

ASO	Analogue Switch Off
BBC	British Broadcasting Corporation
CEO	Chief Executive Officer
COM	Committee
DBMC	Digital Broadcasting Migration Committee
DTT	Digital Terrestrial Television
DVB	Digital Video Broadcasting
DVB-T	Digital Video Broadcasting Terrestrial
DVB-T2	Second generation digital terrestrial television broadcasting system
EPG	Electronic Programme Guide
FTA	Free to Air
FTV	Free to View
GDC	Ghana Digital Company
GE	Geneva
GIBA	Ghana Independent Broadcasters Association
GLSS 6	Ghana Living Standards Survey Round 6
GSA	Ghana Standards Authority
GSS	Ghana Statistical Service
GTV	Ghana Television
HD	High Definition
IDTV	Integrated Digital Television
ITU	International Telecommunication Union
LCN	Logical Channel Numbering
MOC	Ministry of Communications
MPEG-4	Motion Picture Experts Group technology 4
NCA	National Communications Authority
NMC	National Media Commission
NTP	National Telecom Policy
SD	Standard Definition
STB	Set Top Box (Unit that converts digital signals for analogue TV sets to receive)
TV	Television
WRC	World Radiocommunications Conference

1.1 BACKGROUND

- 1.1.1 Broadcasting in Ghana started in 1935 when the British colonial rulers introduced a BBC relay station in Accra code named radio ZOY.
- 1.1.2 Broadcasting in Ghana was mainly radio until 1965 when Black and white television service was introduced.
- 1.1.3 Broadcasting in Ghana has conventionally been transmitted and received in analogue format and for a long period of time was the monopoly of the Ghana Broadcasting Corporation until 1994 when the first private radio station was authorised. In 1995 the first private television network, Crystal Radiovision Network Limited, was authorised and commenced operations.
- 1.1.4 Since the liberalisation of broadcasting in Ghana in the mid nineteen nineties, radio and television broadcasting has grown significantly from a monopoly owned and controlled by the state into a highly competitive market which includes private players.
- 1.1.5 Terrestrial Television broadcasting has been in analogue since the launch of TV services in 1965 until 2008 when a pilot terrestrial digital video broadcasting system (DVB-T) was installed by GBC in Accra. In 2009, commercial terrestrial digital video broadcast was authorised and launched by Skyy Digital (now First Digital) in Accra and Takoradi.
- 1.1.6 In 2010 GBC launched a DVB-T transmission network in Accra and Kumasi. Ghana began the process of migrating from analogue broadcasting to Digital Terrestrial Television (DTT) with the inauguration of the Digital Broadcasting Migration Committee (DBMC). GOtv commenced DVB-T2 transmissions in 2013.
- 1.1.7 Television broadcasting may be delivered over cable (wired connection), over satellite (i.e. through space) or over terrestrial wireless (wireless over land and received via a common aerial). In Ghana, TV over cable is almost non-existent whereas satellite television has been growing in recent times as it covers the entire country at low cost. The most pervasive means of television reception is the terrestrial platform approximately covering 90% of the population.
- 1.1.8 The terrestrial platform however remains the only platform that continues to use analogue technology for its transmission even though digital techniques in broadcasting have been in existence for over a decade.
- 1.1.9 Digital equipment and platforms perform better and offer better economic value than analogue. Maintaining networks in analogue for broadcasting cannot be economically justified. Analogue equipment and networks are close to end of life and with manufacturers no longer manufacturing analogue equipment, remaining in the analogue space is no longer an option for governments, broadcasters and viewers.
- 1.1.10 The application of digital techniques to television broadcasting results in several advantages over analogue including the following:
- a. A higher number of television programme channels and choice for the viewer
 - b. Better picture quality, clearer sound, introduction of new services and more interactivity including electronic programme guide (EPG) for television viewers
 - c. Reduced operational cost for broadcasters

- d. Better efficient use of spectrum as digital broadcasting technology enables transmission of up to twenty (20) TV stations on one frequency that in analogue format currently carries only one TV station. The radio frequency (RF) spectrum used for terrestrial television is considered a scarce and finite natural resource that has to be managed efficiently and effectively both technically and economically in the national interest and digital television offers these technical and economic benefits.
 - e. Economic value from the spectrum efficiency gain to be realised due to the switch over from analogue to digital terrestrial television services known as the digital dividends
- 1.1.11 The benefits in 1.1.10 offer a strong reason for the prioritization of Ghana's DTT migration. The DTT migration will have social and economic benefits including the creation of jobs.
- 1.1.12 Ghana signed the Geneva 2006 (GE06) Agreement establishing the digital terrestrial broadcasting plan in the bands 174 – 230 MHz and 470 – 862 MHz at the Regional Radiocommunications Conference (RRC-06). The agreement requires signatory countries including Ghana to migrate from analogue television broadcasting to a digital TV platform by 17 June 2015.
- 1.1.13 To comply with the tenets of the GE-06 Agreement, the Ministry of Communications in January 2010 inaugurated a National Digital Broadcasting Migration Committee and developed a road map for Ghana's migration from analogue to digital broadcasting by December 2013.
- 1.1.14 As a result of implementation challenges, the road map was revised. The supply and installation of the DTT platform is expected to be completed by 31st October 2016.
- 1.1.15 Digital broadcasting is the application of digital techniques and encoding of audio and video signals to transmit digital data rather than analogue waveforms on networks to consumers.
- 1.1.16 Digital Broadcasting migration refers to the process of moving all terrestrial television broadcasters operating on analogue transmission systems to digital broadcasting transmission platform.
- 1.1.17 The migration of analogue terrestrial broadcasters onto the digital broadcasting platform will result in the freeing of frequencies granted to existing analogue broadcasters. These freed-up frequencies are referred to as the digital dividend and potentially offer opportunities for new and enhanced services within the broadcasting and telecommunication space.
- 1.1.18 A single national FTA digital signal multiplex platform will be created for the use of all broadcasters utilising same frequencies for transmitting digital TV signals to homes across the country. Current frequency allocation to a single broadcaster should be capable of delivering signals for a minimum of twenty (20) standard definition (SD) programme channels to be created per multiplex and in accordance with the national transmission and compression standard (DVB-T2/MPEG-4).
- 1.1.19 The National Communications Authority (NCA), as specified by law, shall issue frequencies to the national digital signal multiplex platform and shall not authorise or issue frequencies to any other platform provider for purposes of terrestrial FTA services

in Ghana.

- 1.1.20 The migration from analogue to digital broadcasting shall be carried out in phases. The “switch on” of digital transmission shall be in phases and the “switch off” of analogue transmission shall be on 21st September 2017 to allow dual illumination or simulcasting of broadcasting signals in both analogue and digital for the period.
- 1.1.21 Digital broadcasting signals may be received through an Integrated Digital TV (IDTV) or for existing analogue TV sets through a Set Top Box (STB). The DBMC together with the NCA have already developed specifications and standards for STB. The NCA has authorised a number of distributors of TV sets and STBs and these are currently on the Ghanaian market.
- 1.1.22 A successful migration and transition from analogue broadcasting to digital terrestrial television broadcasting requires government policy to guide the migration process and to set the framework for a progressive DTT environment. This policy document has the input of all stakeholders including the National Communications Authority (NCA), the National Media Commission (NMC), Ghana Broadcasting Corporation (GBC), Ghana Independent Broadcasters Association (GIBA) and the general public.

1.2 DTT MIGRATION ROAD MAP

- 1.2.1 The transition from analogue to digital broadcasting involves:
 - a. The development of digital TV set and STB standards and specifications
 - b. The deployment of DTT network platform and digital switch on
 - c. A simultaneous transmission of TV services in both analogue and digital (simulcast) for a period not exceeding twelve (12) months and
 - d. The switch-off of the analogue television service (ASO)
- 1.2.2 To facilitate the digital switch on, Government has opted for a single national platform provider (signal distributor) for FTA services. At an additional cost to the applicant, the platform may also be used for pay service subject to authorisation of the NCA.
- 1.2.3 To further facilitate the roll out of the national DTT network solution, the following aspects, required for a digital broadcasting environment have been put in place:
 - a. **The establishment of technical standards** – The National Communications Authority (NCA) working with the Digital Broadcasting Migration Committee (DBMC) and the Ghana Standards Authority has published transmission standards and minimum specifications for Free-to-Air (FTA) DTT receivers; gazetted as GS1099.
 - b. **Conformance Regime for DTT Receivers** – The NCA has published the conformance regime for DTT receivers and have since awarded conformance certification to over one hundred (100) models of DTT receivers (i.e. integrated digital TV sets and set-top boxes/ decoders).

- c. **Authorisation of Digital Terrestrial Pay TV** to 6 operators (i.e. GoTV, Crystal Radio Vision Network Ltd, First Digital, Cable Gold, NGB and Nour Vision Limited) since 2013.
- d. **Logical Channel Numbers (LCNs)** have been developed for FTA stations. This will ensure that FTA stations when migrated to the DTT platform would be arranged according to the LCN on the GS1099 compliant receivers and in accordance with the Rules for the Assignment of Logical Channel Numbers (LCNs).

1.2.4 The Ministry of Communications has begun the implementation of the national DTT platform to be completed within twelve (12) months 31st October 2016.

1.3 LEGAL AND REGULATORY FRAMEWORK

1.3.1 The broadcasting sector is governed by policies, regulations and laws that will continue to guide the sector.

1.3.2 To have a successful migration from analogue to digital broadcasting, appropriate legal backing for the migration process must be in place. The broadcasting bill currently under deliberations and review is providing an opportunity for the inclusion of relevant clauses on digital broadcasting.

1.3.3 Existing laws, policies and regulations that will continue to guide the sector and may require some amendments to accommodate a digital terrestrial television environment includes:

- a. Ghana Broadcasting Corporation Decree, 1968, (NLCD 226)
- b. National Media Commission Act, 1993 (Act 449)
- c. NMC National Media Policy, 2000
- d. NMC Broadcasting Standards, 2000
- e. NMC Guidelines for local language broadcasting, 2009
- f. National Communications Authority Act, , 2008 (Act769)
- g. Electronic Communications Act, 2008 (Act 775)
- h. Electronic Transactions Act, 2008 (Act 772)
- i. Electronic Communications Regulations, 2011 (LI1991)
- j. National Telecommunications Policy, 2005

1.3.4 An amendment of the Electronic Communications Act, 2008 – Act 775 may be necessary to provide for the following:

1.3.4.1 Impose “shall carry” obligations on private DTT pay operators for one channel of the national broadcaster;

1.3.4.2 Replacement of authorisations/licenses of analogue broadcasters and freeing of frequencies in the band 694 – 862MHz for International Mobile Telecommunications (IMT) services;

1.3.4.3 Mandate the Minister for Communications to announce:

- a. The analogue switch off date of 21st September 2017; the date for decommissioning of analogue transmitters/ networks.
- b. Steps to protect the nation from dumping of Analogue Television Sets that are not compliant with Ghana’s DTT receiver specifications (GS1099) in order to prevent environmental hazards to the citizenry.

2. POLICY OBJECTIVES

- 2.1 The objectives of the Policy on the Transition from analogue to digital terrestrial television in Ghana include the following:
- a. To create policy environment for migration of analogue broadcasting to DTT and for smooth implementation of the DTT network solution.
 - b. To guarantee the availability of all existing terrestrial analogue television stations in digital formats in at least their current existing coverage areas.
 - c. To make available to all existing television households access to digital television services and ensure universal access to free-to-air television services.
 - d. To allow a simulcast period not exceeding 21st September 2017.
 - e. To ensure the availability of DTT Receivers (STB and IDTV) that conform to GS1099 in the market.
 - f. To as much as possible adopt and implement a framework to provide STBs (fully or partially subsidised) to the citizenry with emphasis on the aged, persons with disability etc.
 - g. To free up relevant spectrum of economic value from the broadcasting service for telecommunication and other services of value to the state.
 - h. To promote environmental sanity through co-location of broadcast transmission infrastructure.
 - i. To encourage the promotion of local content towards growth and job creation in the sector.
 - j. To set up a commercially oriented corporate body, Ghana Digital Company (GDC), to run the platform for long term viability and growth of same.

3. DTT NETWORK/OPERATIONAL STRUCTURE

- 3.1 There shall be one National DTT platform operator owned by the Government of Ghana and solely established to provide exclusive signal and transmission carrier services for authorised FTA broadcasters.
- 3.2 The DTT platform shall be built to include capabilities for the provision of Pay and FTV services.
- 3.3 The MoC shall within 30 days after Cabinet approval of this policy establish a company limited by shares and wholly owned by Government of Ghana to manage the DTT platform.
- 3.4 The DTT infrastructure/platform shall be managed as a commercial entity incorporated as the Ghana Digital Company (GDC). The GDC shall be authorised and allocated frequencies by the NCA.
- 3.5 A nine-member governing board shall be appointed by the President to oversee the affairs of the GDC. Membership of the board shall comprise:

- i. The Chairperson
 - ii. 1 representative of the NMC
 - iii. 1 representative of the Ministry of Communications (GOG)
 - iv. 1 representative of the Ministry of Finance (GOG)
 - v. 1 representative of NCA
 - vi. 1 representative of GBC
 - vii. 1 representative of GIBA
 - viii. 1 representative of the public
 - ix. The Chief Executive Officer of the GDC
- 3.6 The GDC shall have a Chief Executive Officer (CEO) appointed by the President in accordance with laws governing the appointment of CEO's of a state institution.
- 3.7 Only authorised broadcasters will be allowed on the DTT platform.
- 3.8 The NCA shall assign broadcasters LCN's according to the date of their first authorisation. The GDC will work closely with the NCA and NMC to ensure all channels on the platform are in good standing.
- 3.9 The GDC shall develop a tariff model per channel payable by broadcasters on the DTT platform structured on a regional and national basis.

4. MIGRATION OF EXISTING ANALOGUE FTA BROADCASTERS

- 4.1 All existing authorised analogue terrestrial TV stations shall be mandatorily migrated to the DTT platform on completion of the project. The existing broadcasters shall transmit in both analogue and digital during the dual illumination period.
- 4.2 Broadcasters shall be assigned LCN according to their date of first authorisation.
- 4.3 It shall be mandatory for all analogue TV transmitters to be switched off on 21ST September 2017.
- 4.4 All broadcasters on the national DTT platform must allocate seventy percent (70%) of their prime time programme content to local productions and programmes. Prime time is the hours between 6am and 9am and 6:30pm and 9:30pm.
- 4.5 During the period of the dual illumination, existing broadcasters shall be on the DTT platform free of charge. In the second year, existing broadcasters shall pay 75% of the standard tariff. In the third year and beyond, existing broadcasters shall pay full tariff. New entrants (including those authorised but yet to commence service at the time the platform commences operation) shall be charged full tariff from date of activation.

5. UNIVERSAL ACCESS

- 5.1 It is the policy of the Government of Ghana to achieve universal access to digital television services for all citizens of Ghana. Successful migration from analogue to DTT means achievement of universal access objective of providing broadcasting services (95% terrestrial and 5% satellite) to all Ghanaians irrespective of location.
- 5.2 GTV is the national broadcaster and the TV station with the widest coverage in the country. But even GTV does not cover the entire population with thousands of households missing out on TV service. Analogue terrestrial television presently covers 59.39% of the land mass of Ghana and 79.50% of the population. To achieve universal access for digital broadcasting, a combination of satellite and terrestrial transmission systems would be implemented to ensure a 100% FTA television coverage in Ghana for GTV.
- 5.3 Private television stations with terrestrial TV authorisations will broadcast only on terrestrial and shall be encrypted on satellite unless requested in writing to have its distribution on satellite in the clear for purposes of being viewed in homes. There will be no additional cost for allowing signals in the clear on satellite.
- 5.4 For households to receive digital signals, an IDTV or STB is required. An STB connected to an analogue TV converts digital signals into a format for analogue TV sets to receive.
- 5.5 Ghana has an estimated 5.8Million households out of which 4.6Million are TV households. 99% of TV households rely exclusively on FTA broadcasting with a little below 1% subscribing to pay TV. Of the estimated 4.6Million TV households, 1.083M are poor and vulnerable households who are not in a position to afford an IDTV or STB [Source: GSS; GLSS 6, 2014].
- 5.6 In line with policy objectives, Government has decided as part of its universal access obligation for broadcasting services to as much as possible implement a framework to provide STBs (fully or partially subsidised) to the citizenry with emphasis on the aged and persons with disability, etc.

6. MANDATORY OBLIGATIONS FOR TERRESTRIAL PAY TV OPERATORS

- 6.1 All licensed Pay TV terrestrial networks shall carry at least one (1) channel of the National Broadcaster at no cost.
- 6.2 The National Broadcaster shall bear its own cost of sending its selected channel(s) or signal(s) to the central headend of the network provider in Accra.

7. DTT RECEIVER CONFORMANCE REGIME

- 7.1 All DTT receivers shall comply with Ghana Standard GS1099 (as approved by the Ghana Standards Authority) and obtain conformance certification from the NCA before being marketed in Ghana.

- 7.2 “DTT receiver” refers to an IDTV, STB and any other device such as USB dongles, computers, mobile phones which the consumer purchases in order to access DTT services in Ghana.

8. PUBLICITY

- 8.1 The Ministry of Communications shall ensure that the citizenry are well informed about the transition from analogue to digital terrestrial television starting 31st May 2016.
- 8.2 Publicity shall be on Television on all FTA terrestrial networks, on radio, on social media, in print, on billboards and any other publicity form as advised by the DBMC publicity sub-committee.
- 8.3 All FTA terrestrial TV networks shall carry the adverts on their TV stations in line with the schedule as agreed with the DBMC publicity sub-committee.
- 8.4 The NCA shall fund all publicity in respect of the entire transition from analogue to digital.

9. ANALOGUE SWITCH-OFF DATE

- 9.1 The analogue “switch-off” date is 21st September 2017.
- 9.2 On this date, all analogue transmitters in the country shall be switched off or decommissioned and frequencies used on the transmitters shall revert to the National Communications Authority.

10. IMPLEMENTATION ARRANGEMENTS

- 10.1 The implementation of the national DTT network is structured to be completed by October 31, 2016.
- 10.2 The project is to be implemented in phases as follows
- Phase 1 – Head end, Greater Accra and Ashanti Region
– By 31 March 2016
 - Phase 2 - Volta, Upper East, Upper West and Northern Region
– By 31 July 2016
 - Phase 3 - Brong Ahafo, Eastern, Central and Western Region
- By 31 October 2016
- 10.3 In accordance with Article 12 of the ITU Geneva 2006 Agreement, the MOC and the suppliers will employ best efforts to ensure early completion of the DTT network project.
- 10.4 A hybrid solution is to be deployed that involves satellite serving as both transmission feed to the various transmitters through an encrypted satellite routing network as well as distribution feed for the national broadcaster in reaching areas and households not likely to

be covered through the terrestrial platform. The use of satellite as gap fillers is to enable the national broadcaster achieve the universal access policy of broadcasting services.

11. DIGITAL DIVIDEND

- 11.1 The Government shall implement Resolution 749 (REV. WRC-15) regarding the use of the band 790-862 MHz for mobile applications and other services. This band is referred to as the **'first digital dividend'** from the DTT transition. Article 5.316B of the Radio Regulations set 17th June 2015 as the effective date for the primary allocation to the mobile service in the frequency band 790-862 MHz.
- 11.2 The Government of Ghana shall also implement Resolution 232 (WRC-12) of the ITU World Radiocommunications Conference of 2012 (WRC-12) and Resolution COM4/4 (WRC-15) regarding the use of the frequency band 694-790 MHz by mobile, except aeronautical mobile service. The band 694-790MHz is thus referred to as the **'second digital dividend'** from the DTT transition.
- 11.3 The National Communications Authority shall adopt the most appropriate internationally harmonised frequency arrangement and channelling plan for the digital dividend band.
- 11.4 One (1) out of three (3) blocks in the first digital dividend has been auctioned and the proceeds being used to finance the DTT network roll out as approved by Cabinet.

12. LICENSING OF NEW BROADCASTERS

- 12.1 The DTT platform will have two multiplexes. Each multiplex has a capacity of about 20 programme Channels. The DTT platform will be launched with capacity of about 40 programme channels
- 12.2 All existing analogue FTA Channels will be migrated with an LCN assigned according to date of first authorisation.
- 12.3 The NCA will develop guidelines for the issuance of new authorisations and proceed to issue new licenses for terrestrial FTA broadcasting services.