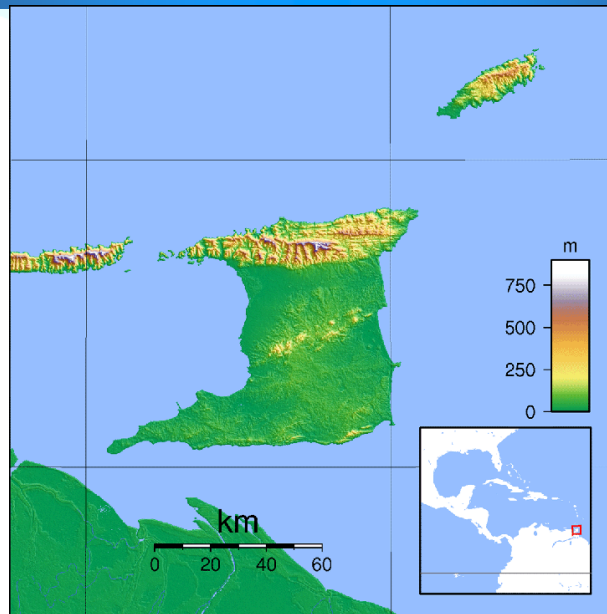


Regional Workshop and Frequency Coordination meeting on the Transition to Digital Terrestrial Television and the Digital Dividend

22nd May 2012

Ryan James
Broadcast Engineer
Telecommunications Authority of Trinidad and Tobago

Trinidad and Tobago



Country Status

- Trinidad and Tobago's population **1.32 Million**
- Number of Households **343,000**
- Percentage Population covered by 'Free To Air' Analog TV **95%**
- Percentage Population (Households) covered by Cable TV **48%**
- Percentage Population (Households) covered by Satellite TV **7%**

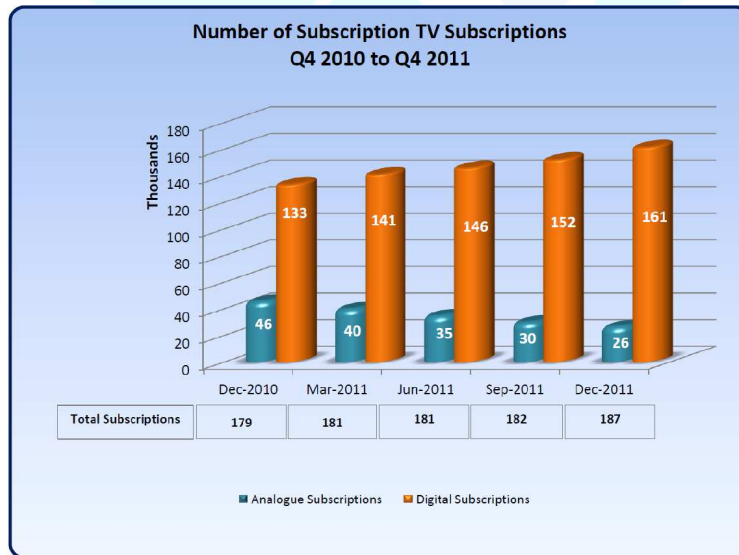
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Country Status

Network Category	Service Provided	Authorised Concessions ¹
International Telecommunications	Facilities only	1
	Facilities and/ or Services	10
Mobile Telecommunications	Mobile voice and Internet services	2
Fixed Telecommunications²	Fixed Telephony	7
	Fixed Internet	
Subscription TV (Pay TV)		9
Free to Air Radio Broadcasting		37
Free to Air Television Broadcasting		9
TV Broadcasting via Cable		1
Total		76

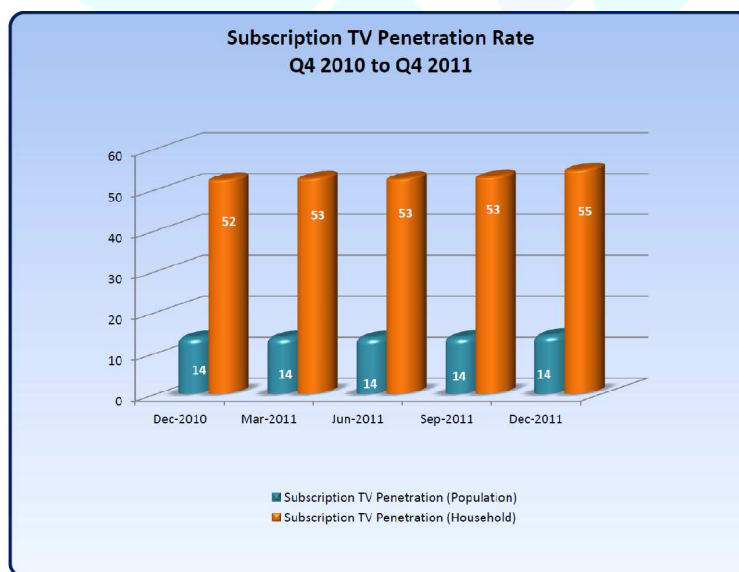
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Country Status

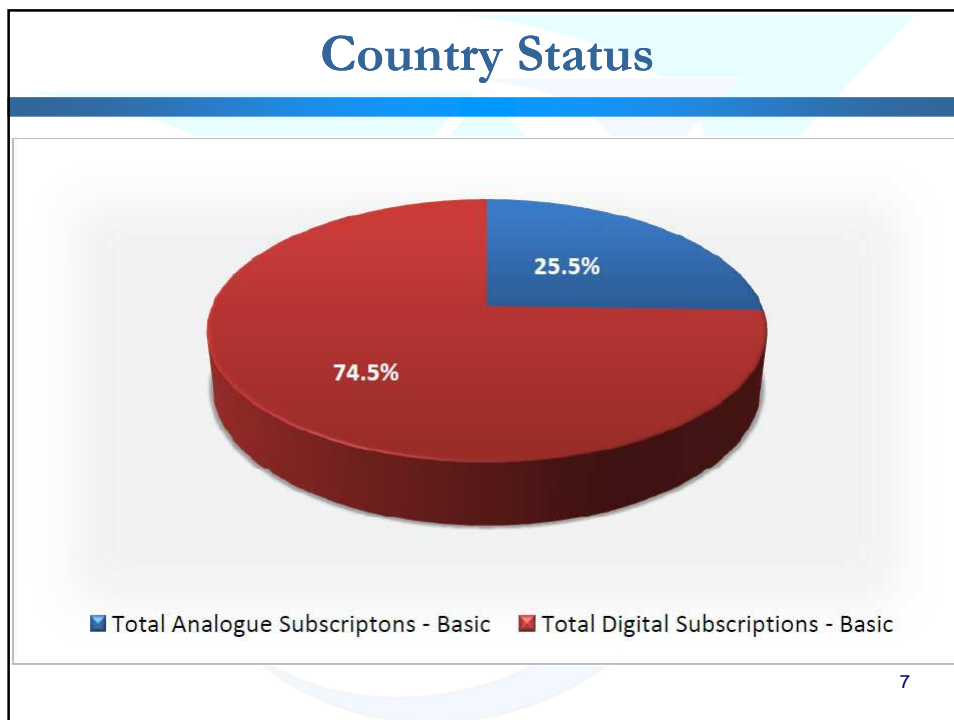


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Country Status



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- ### Country Status
- Number of state broadcasters **3**
 - Number of private broadcasters **6**
 - Have digital TV licences been offered? **NO**
- 8

Country Status

➤ Has your administration received any submission of interest for use of digital dividend bands in **700MHz (698 – 746 MHz)** or 800MHz for mobile services **YES**

- Two (2) Broadband Wireless Access (BWA) Auctions:
 - October, 2007
 - April, 2009
- BWA to promote wireless broadband Internet and wireless Cable TV services.

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Country Status

➤ Has your administration planned a channelization of the digital dividend bands (**YES**) for mobile services (**No**):

- US Lower 700 MHz Channel plan employed.
- Spectrum used for BWA services in order to increase penetration in broadband Internet access and Cable TV services.

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Country Status

- Current Plans to migrate to digital terrestrial TV?

YES

- In the process of adopting a standard
- Technical Working Group performed an assessment of DTT standards and made a recommendation

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DTT Technical Working Group

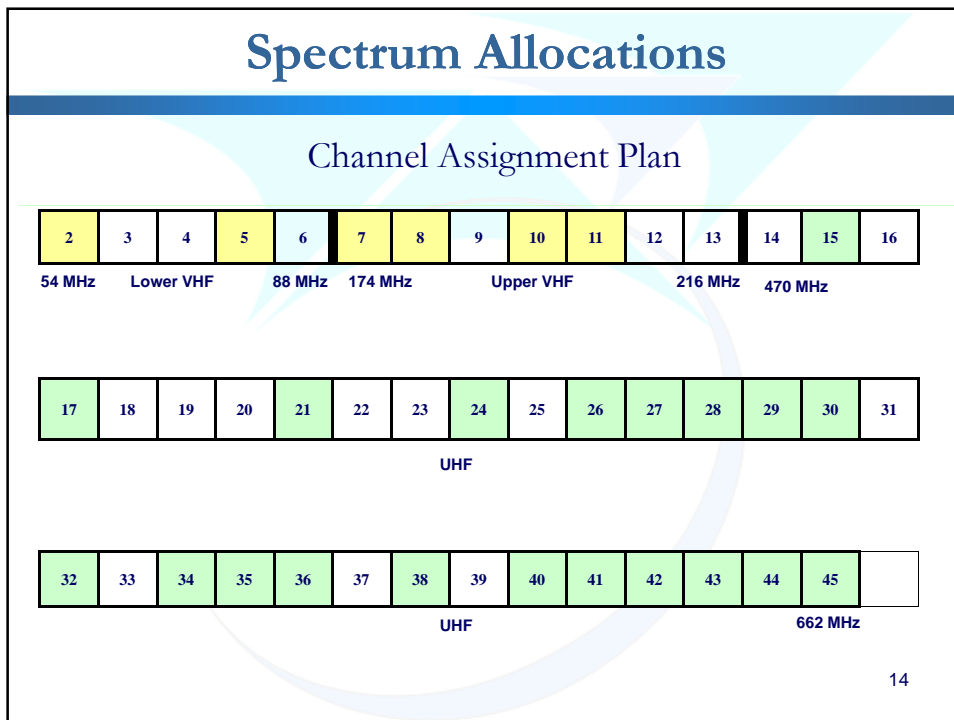
Working Group shall research, assess and make recommendations on standards taking into consideration parameters within the environment of DTT such as industry trends, regional adoption, cost analysis and evolution of technology

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Spectrum Allocations

Channel No.	Frequency Range	Licensing Status
2 – 6	54 – 88 MHz	Available for the accommodation of 'Free To Air' Television Services
7 – 13	174 – 216 MHz	Available for the accommodation of 'Free To Air' Television Services
14 – 51	470 – 698 MHz	Available for the accommodation of 'Free To Air' Television Services
52 – 59	698 – 746 MHz	Identified for the accommodation of BWA services (lower 700 MHz band)
60 – 69	746 – 806 MHz	Identified for the accommodation of BWA services (upper 700 MHz band)

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Spectrum Allocations

- Spectrum Assigned to Existing 'Free To Air' broadcasters
- Any spectrum reservations for analog broadcasting during Switch-on and Simulcast phases
- Spectrum considerations for signal distributors:
 - ✓ number of available VHF/UHF channels pre switch-on
 - ✓ number of available VHF/UHF channels post switch-off
 - ✓ base spectrum efficiency for SD and HD content channels per 6 MHz

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Switchover Status

Preparatory Work:

- ✓ Proper Framework (DTT Framework, Implementation Plan)
- ✓ Establishing Standards (DTT Technical Working Group)
- ✓ Licensing Process (Authorization Framework, RFP)

Digital Switch-on:

- ✓ Issuing Licences to Signal Distributors
- ✓ Rollout of Signal Distributors

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Switchover Status

Simulcast:

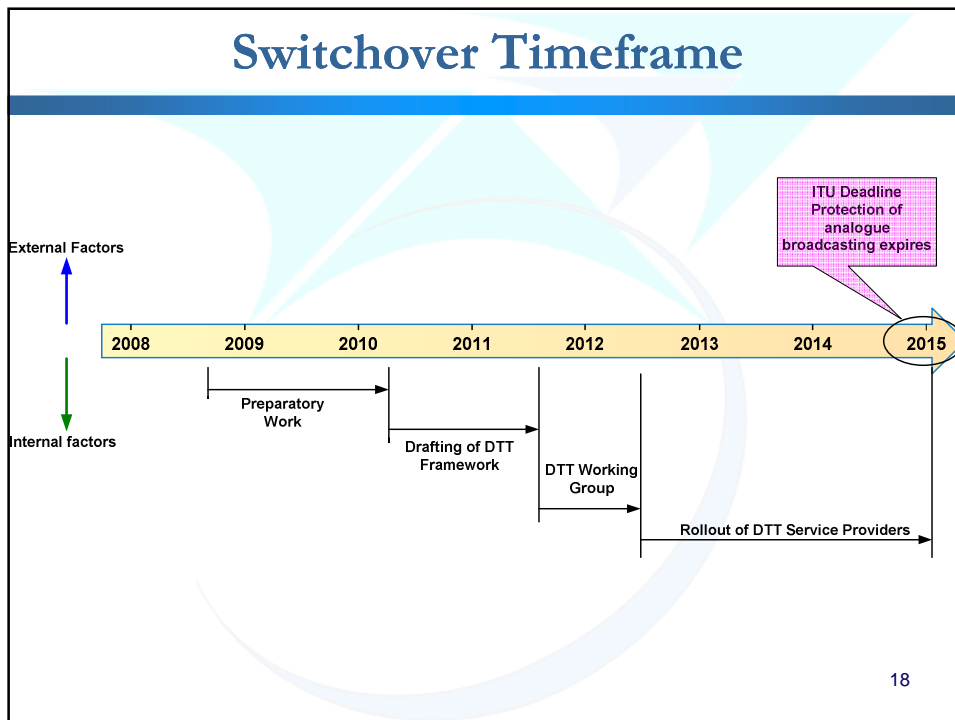
- ✓ Analog FTA broadcasters leasing capacity on Signal Distributors
- ✓ Consumer Education on new digital service

Analog Switch-off:

- ✓ Buffer period in which all broadcasters terminate analog service
- ✓ Consumer Education on last chance to acquire relevant equipment

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Switchover Timeframe



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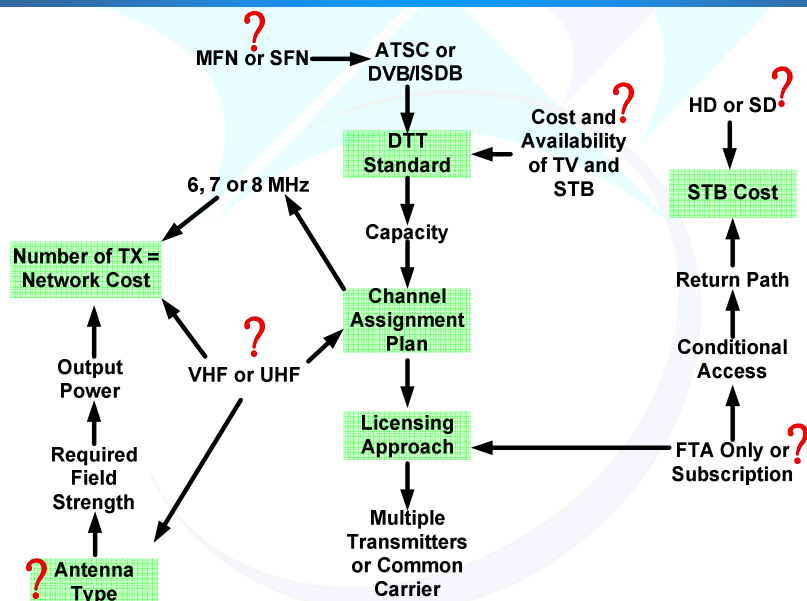
Key Switchover Components

The three main pillars in switchover:

- DTT Broadcasting Standard
- Switchover Timeframe
- DTT Model (approach to implementation)

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DTT Component Matrix



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The Way Forward

- Establish Framework (policies, standards, licensing process)
- Establish Committees or Working Groups to address the key aspects of switchover
- Consultations (internal and external)
- Ensure proper consumer awareness and education programme (Government, operators, retailers)
- **Management of the entire process!!!**

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Thank You
For Your Attention

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