Draft Framework for Digital Terrestrial Television Broadcasting in Lebanon

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Outline

General Overview

- TRA Major Policy Objectives

Digital Terrestrial Television Policy Development

- Establishment of National Committee
- Switchover Timeframe
- Technology & Standard Regulations
- Technical Plans (Coverage, Frequency and implementation Plans)
- Licensing Framework

Analogue Switch-off Planning

- Migration Timeframe
- Transitional Phase

TRA Major Policy Objectives

Allow the development of new services to meet governmental and commercial demand

- **Fulfill the spectrum requirements of the different government sectors**
- **Secure sufficient spectrum for public safety & emergency relief**
- **Introduce future generations of public and private mobile technologies**
- **Support the introduction of more spectrally efficient technologies**

Ensure the timely introduction of digitized broadcasting networks and the implementation of GE06 Agreement

- **Facilitate the introduction of Digital Terrestrial Broadcasting (including fixed and Mobile TV reception) in VHF Band III and UHF Bands IV and V**
- **Develop the regulatory framework for the digital broadcasting services**

Key TRA Spectrum Initiatives

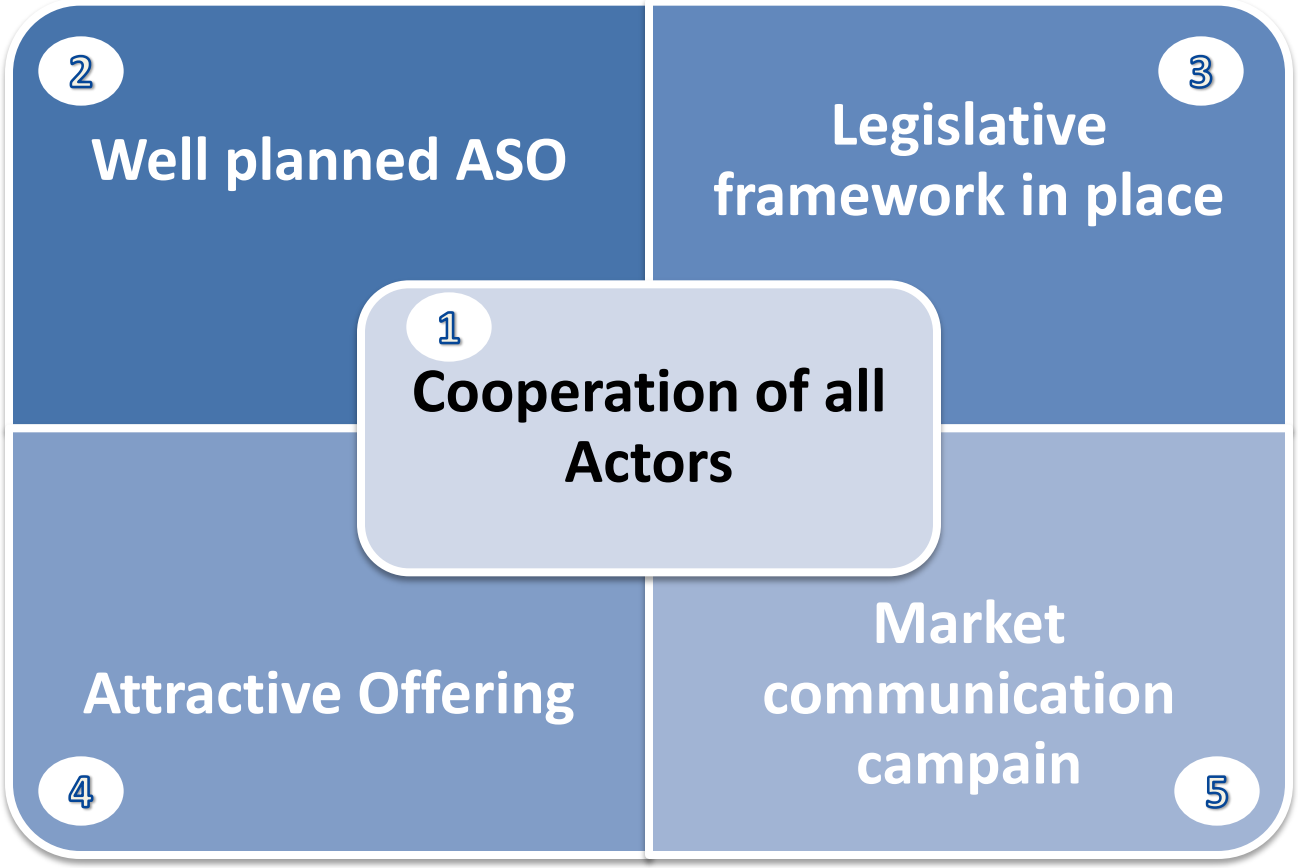
November 2008: TRA prepared and issued the "**Digital Migration Strategy for TV Broadcasting**" plan for consultation to seek opinions on the TRA plan to migrate from analog to digital TV

January 2009: TRA organized a workshop "***A Broad Vision for a new Broadcast Evolution***" to present the Broadcasting sector in Lebanon, the TV Migration from Analogue to Digital and the TRA approach for the ASO

2010: TRA proposed

Preliminary Framework for the migration	Establishment of National Committee

DTT Policy Development



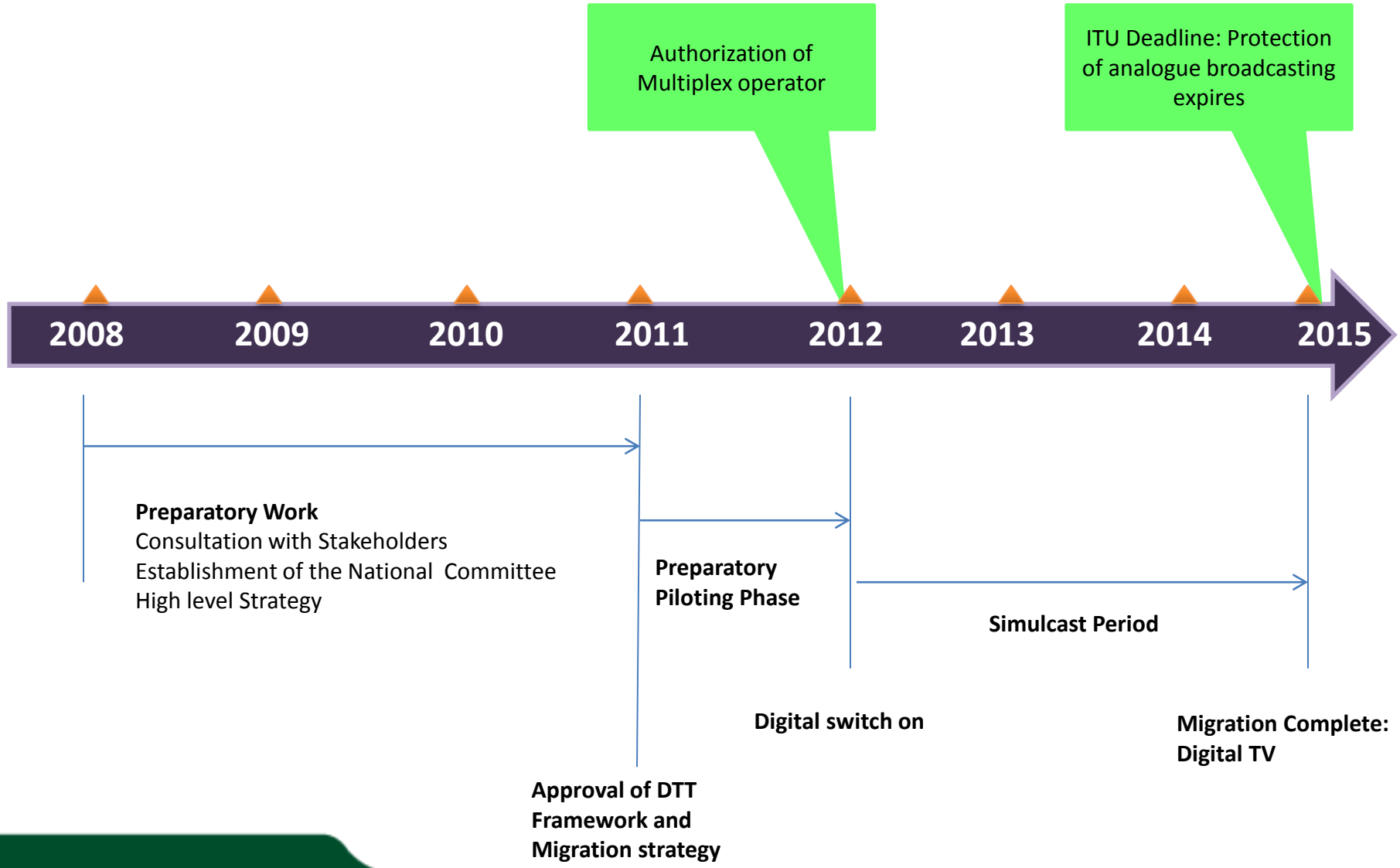
DTT Policy Development

TRA Recommendations

- Establishment of a National Committee (NDBC)

Switchover Timeframe

TRA Recommendations



Technology & Standards

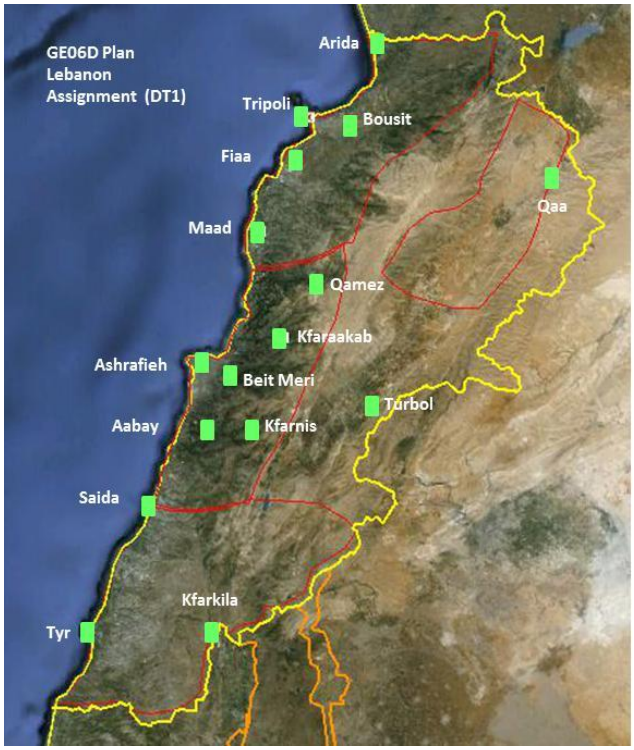
TRA Recommendations

- SFN / MFN strategy to be applied in the primary phase
- SFN to be adapted in the final phase
- DTTB Transmission Family Standard: DVB-T/DVB-T2
- Compression System: MPEG2/MPEG 4
- Television Presentation Format: SDTV/HDTV

Frequency Plans

- GE06 Agreement forms the backbone of the Lebanese digital switchover plan
  - 3 Allotments
  - 9 assignments/multiplex in different sites
- The use of these frequencies for digital services will continue to be constrained until protection of analogue transmissions has ceased (expected by 2015).
- Coordination with neighboring countries is very important

BAND	III	IV/V							
SITE	11	24	36	40	43	55	57	58	60
AABAY	X	X	X		X	X	X	X	X
ARIDA	X	X	X	X	X	X	X		X
ASHRAFIEH	X	X	X		X	X	X	X	X
BEIT MERY	X	X	X		X	X	X	X	X
BOUSIT	X	X	X	X	X	X	X		X
FIAA	X	X	X	X	X	X	X		X
KFARAAKAB	X	X	X		X	X	X	X	X
KFARKLA		X	X		X	X	X	X	X
KFARNIS	X	X	X		X	X	X	X	X
MAAD	X	X	X	X	X	X	X		X
QAA	X	X	X	X	X	X	X		X
QAMEZ	X	X	X		X	X	X	X	X
SAIDA	X	X	X		X	X	X	X	X
TRIPLOI	X	X	X	X	X	X	X		X
TURBOL	X	X	X	X	X	X	X		X
TYRE		X	X		X	X	X	X	X
Allotment									
MOUNT LEBANON	X	X	X						
NORTH	X		X		X	X	X		X
SOUTH		X	X		X				



Licensing Framework

TRA Direction is to have:

- Licensing approach based on the differentiation between Content, Transmission & Broadcasting
- Three key players to handle all the processes leading to the delivery of broadcasting services to the consumers
  - Content providers (Broadcasters)
  - Multiplex Operators
  - Network Distributors (Transmission Operators)

Combination of the different types is possible

Analogue Switch-off Planning

- TRA recommendations for Transitional Phase is to adopt an ASO with simulcast and phased approach on a region by region basis
- Initial investigations into the spectrum aspects have identified:
  - Two Multiplexes can provide sufficient capacity for at least the current 8 FTA broadcast programs licensed now
  - A mixed MFN/SFN scenario will be applied. There are several options to find two frequencies available:
    - Use one of the nation-wide available channels (Ex: Ch. 58).
    - Release one of the channels already registered to Lebanon in RRC06 and make available (EX: Ch. 43). This will require at least one of the Analogue TV stations to change one of its frequencies in the near future.
  - If spectrum usage does not allow 2 nation-wide SFN's then territories can be divided into regions, in such regions a SFN policy can be deployed while different frequencies can be used for the transition period.
- Int'l Coordination required to prevent harmful interference.

Key challenges of the digital switchover

- Technical Challenges – size of the conversion task
  - Analogue transmitters to be replaced with digital equipment
  - New frequency planning, new frequencies for many transmitters, coverage issues
  - Sharing spectrum with analogue television and protecting analog services during transition
  - Site sharing challenge for multiplex
- Consumer related challenges
  - Viewers have to buy new receivers, to adapt receive antennas
  - Difficulties for elder and less wealthy population to accept new technology

Big Investment !

The Way Forward

- Kick off the work of the National Committee (NDBC)
- Consult with Stakeholders on key policy decisions
- Develop Framework for DTT broadcasting
- Develop Migration Implementation Plan
  - Spectrum plan for the transitional phase
  - Technical requirements, equipment and standards
  - Regulatory requirements
- License Multiplex Operators

Issues to be answered…

- What is the economic value of spectrum beyond DSO?
- How long should the period of Analogue and Digital TV simulcast be?
- How should the broadcast infrastructure entity be structured?
- Should each broadcaster provides its own infrastructure or would it be preferred to work towards a joint infrastructure & transmission solution to reduce costs?
- What about relying on a 3rd party operator to provide service between studios and transmission sites?
- Is it the proper time to start with MPEG4/H.264 video coding to assure a more future proof implementation or would a start with MPEG2 coding be preferred?
- What type of STBs are more convenient to the market? A very basic FTA-STB or a STB equipped with specific middleware and CA capabilities to facilitate other future (paid & Interactive) services?
- How do you anticipate the introduction of DVB-T STB to the public and what specific actions are necessary to reach > 99% of the consumers.
- How to secure fair access to the digital multiplexes for new entrants?
- When should additional TV Programs be considered? Should this be an objective before Analogue Switch-Off or should this be considered after Analogue Switch-Off?

Role of National Committee in Shaping the market

- The Era when Terrestrial TV transmission was integrated with a TV license is over and separate TV Multiplex license means a bouquet of TV Programs, SAT like license:
  - Will Multiplex DTT regulations require a new player, the who, how & when?
- Business case for DTT / FTA in question: will digital help TV stations reduce OPEX?
- IF not enough demand for DTT spectrum, can we free more DD spectrum and revise RRC06?
- National Committee role in reshaping the sector beyond Analog Broadcasting
  - Policy decisions and plan to ensure timely manner DTT regulations and migration takes place
  - Mitigate disruption to market and consumers
  - Assess the Right to Access FTA terrestrial TV against the high proliferation of satellite and cable subscription in Lebanon
  - Evaluate alternatives to a viable Multiplex program FTA business
  - Assess needs & market potential if some spectrum is not assigned to DTT

Thanks for your attention