




**TRANSITION  
FROM ANALOGUE TO  
DIGITAL  
BROADCASTING**

**Policy and regulatory  
aspects**

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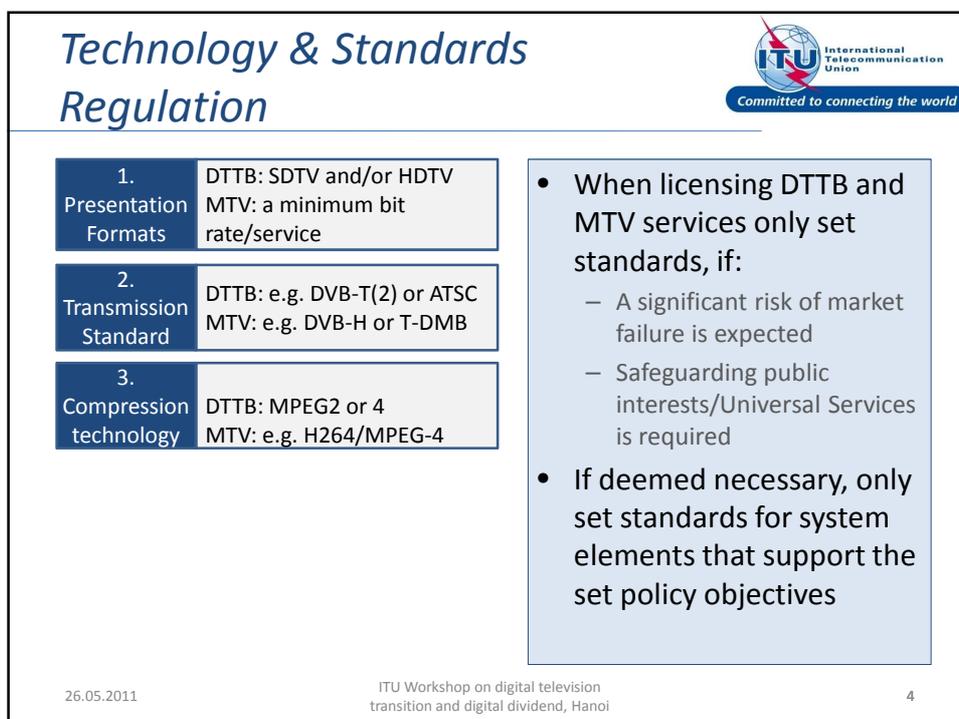
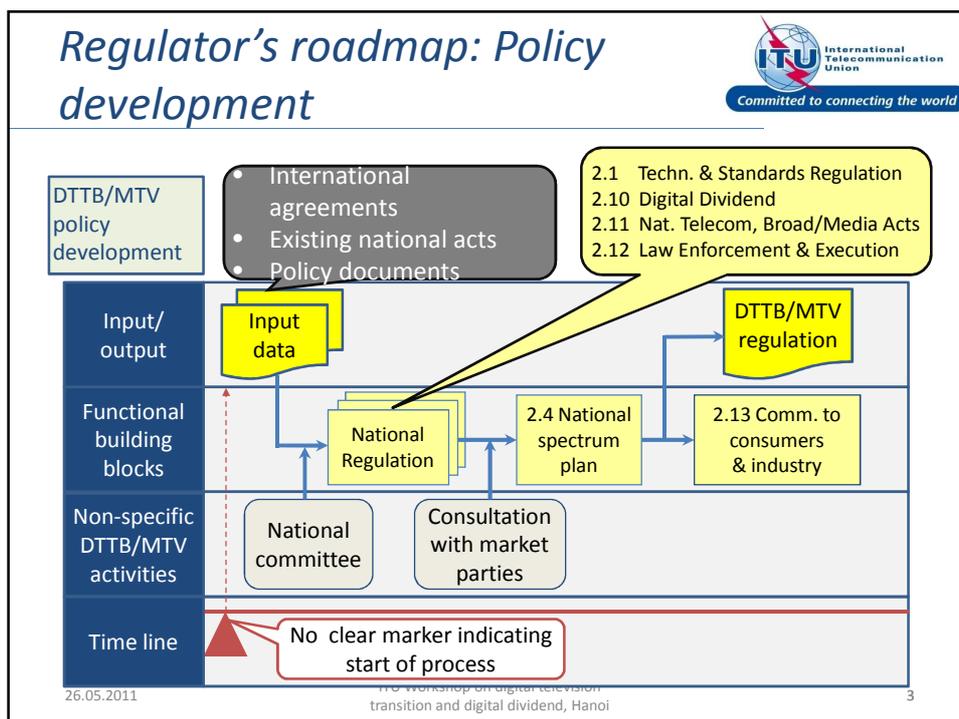
## Content

Policy & Regulation	<ul style="list-style-type: none"> <li>• Key issues and choices faced by the Regulator when formulating DTTB, MTV or ASO policy objectives</li> <li>• Implementation of policies               <ul style="list-style-type: none"> <li>– By issuing information, funds, rights, licenses and permits to (qualified) market parties</li> <li>– In compliance with the relevant legislation</li> </ul> </li> </ul>
Main items	<ul style="list-style-type: none"> <li>• Functional building blocks related to Policy &amp; Regulation</li> <li>• Conclusions</li> </ul>

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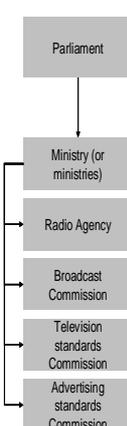


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## Law Enforcement & Execution

- Check task assignment of
  - Nat. Spectrum Plan, Standards, Terms
  - Assign & monitor spectrum
  - Assign & monitor Broadcast licenses & advertising
- Restructuring towards converged model
  - DTTB/MTV might drive introduction

Segmented Model



Centralized Model



Key tasks & duties

Ministry (or ministries)	▶	Policy development
Radio Agency	▶	Assigning spectrum licenses & monitoring
Broadcast Commission	▶	Assigning broadcast licenses
Television standards Commission	▶	Monitoring broadcast content compliancy (code of conducts)
Advertising standards Commission	▶	Monitoring Advertising compliancy (code of conducts)

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## National Spectrum Plan (NSP)

- NSP covers all spectrum use:
  - Govern.: Military, Emergency, PSB
  - Comm.: Mobile, DTTB/MTV
  - Other (Radio Astronomy)
- NSP is a key management tool:
  - Objectives, instruments & regimes
  - Current & planned use
- NSP planning = strategic planning
  - Market consultation & analysis
  - Ref. ITU-R report SM2015 for factors

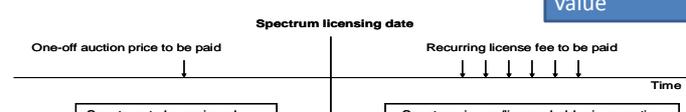
**In Spectrum Register per range:**

- Radio Service
- Prescribed System (e.g. DVB-T)
- License regime (e.g. Free)
- License holder & duration
- Radio interfaces
- User rights (exclusive/shared)

**NSP may include pricing (per range)**

- One-off/Recurring
- Management costs/Market value

**Spectrum licensing date**



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## Communication to Consumers & Industry



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- Communication if:
  - Intervention restricts/changes free market
  - Defined Universal Services & Access
  - Health & safety hazards
- ASO communication is different

DTTB/MTV specific Communication

- Spectrum – NSP
- PSB – FTA / Coverage / Must Carry
- Field Strength/EMC

When	Category	Topic
Recurring	Spectrum Planning	• Market consultations & Decisions and Appeal procedures
		• National Spectrum Plan (NSP) & Re-farming & revoking spectrum
		• International planning conferences
Case by Case	DTTB/MTV	• Market consultations & Decisions • Framework, Standards, Procedures, Terms & Cond., local permits
	Digital Dividend	• Market consultations & Decisions • International decisions
	ASO	• Models, Services, Procedures, Roll-out, Aid, etc

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## Regulator's roadmap: Licensing Policy



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Licensing policy & regulation

Input/output

Functional building blocks

Non-specific DTTB/MTV activities

Time line

• DTTB/MTV regulation  
• ASO plan

2.6 License Terms & Cond.  
2.7 Local Permits  
2.8 Media Permits & Author.

2.5 Assignment Procedures  
2.9 Bus. Models & Publ.Fin.

Input data

Frequency plan

License procedure & planning

2.3 ITU-R

Licensing

License application

2.2 Licensing framework

Consultation with market parties

International frequency coordination

Duration depends on neighbouring countries

Issue of licenses

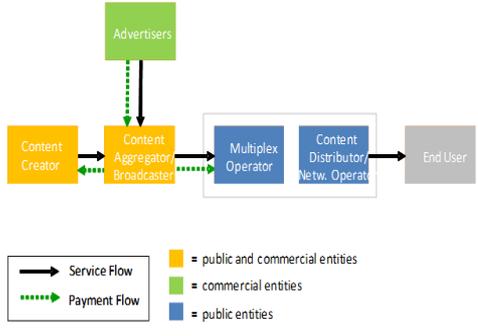
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## Licensing framework



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- Assigning 3 types of rights
  - Spectrum
  - Broadcast
  - Operating
- Extra = MUX function
- 2 models for spectrum rights
  - Assigned to MUX operator (integrated with Service Provider/Network Operator) = functional bandwidth manager
  - Assigned to Network Operator + Regulator = functional bandwidth manager



→ Service Flow  
⋯→ Payment Flow  
 = public and commercial entities  
 = commercial entities  
 = public entities

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## ITU-R Regulations



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- GE06 plan entry types
  - Assignments
  - Allotments (layers)
- 3 Steps to determine DTTB/MTV spectrum
  1. Assess usability of rights
  2. Determine applications:
    - Number & service type
    - Combinations
    - Timing
  3. Assessing service coverage

**Assignments:**

- For each TX site station characteristics (XY, ERP, Height)

**Allotments:**

- Specified area
- Reference Network – 4 types
- Ref. Planning Configuration – 3 types

- Step 3 is optional for the Regulator to carry out
- Requires planning software, databases and accurate current use (abroad)

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## License Terms & Conditions

- **T&C dependent on local situation:**
  - Existing (int.) legal framework
  - Assignment procedure
  - Market structure
- **Assign transparent**
  - Publishing ‘essential’ & other criteria upfront
  - Grounds for exclusion
- **Open Network Provisioning (ONP) when 1 MUX operator**
  - Grounds for refusing
  - Max capacity/broadcaster
  - (Fair) Pricing & Reservations

1. Granting	Legal basis & definitions
2. Rights	Frequencies, Interference, Health, equipment
3. Obligations	TV package, roll-out, service levels, site sharing
4. Exercise	Transferring spectrum rights to subsidiaries or third parties
5. Trading	Trading & sharing (parts of) spectrum rights
6. Standards	Interoperability & standards
7. Fees	Fees for spectrum management or market value
8. Duration	Duration, renewal & extensions
9. Changes	Modifications, revocation & termination
10. Complaints	Public complaints & resolving (programming & interference)

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## Local Permits

- **Local authorizations required to assure:**
  - Market access: site sharing & fair pricing
  - ‘Horizon pollution’ control
  - Health hazards control
- **Instruments:**
  - Building permits
  - Site sharing & pricing rules
- **Regulatory level vary:**
  - National or local level
  - Spectrum licence or building permit

**Compliance check for:**

- Field strength
- EMC
- Mechanical strength
- Noise limits
- Dangerous goods
- Horizon pollution

**Default = access + grounds for refusal:**

- Request not reasonable
- Requested capacity not available
- Owner reserved capacity

**For Fair pricing to regimes (applies to reservation too)**

- Price cap
- Cost Plus

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## Media Permits & Authorizations



- **Keep separate broadcast rights for:**
  - PSB: separate section or Act (Universal Service)
  - Commercial Broadcasters: Media/Broadcast Act
- **Broadcast rights organized at:**
  - Program level/linear broadcast stream
  - Platform level/multiplex level
- **Different requirements for granting:**
  - Applicant (legal status, ownership)
  - Program Services (editorial & ads)
  - Additional Services (EPG, subtitling)

**Content Service criteria:**

- Local news coverage
- Arts, religious programs
- Number of repeats
- % local production
- Max hours of advertising

**Service obligations:**

- Portfolio/bouquet
- Must carry & Pricing
- PSB carry
- Population coverage
- Bandwidth per service
- Network availability

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## Assignment Procedures



- **Three key instruments:**
  - First Come First Service (FCFS)
  - Public Tender (PT)
  - Auction (don't mix with PT or market priced license fees)
- **Combine MTV & DTTB assignments:**
  - One bidding round
  - One license type
- **Existing license holders:**
  - PSB: by priority
  - Others: renewal

Instrument	Pro	Con
FCFS	<ul style="list-style-type: none"> <li>• Fast</li> <li>• Simple</li> </ul>	<ul style="list-style-type: none"> <li>• No spectrum efficiency</li> </ul>
Public Tender	<ul style="list-style-type: none"> <li>• Focus on quality</li> <li>• Thorough procedure</li> <li>• Regulatory control</li> </ul>	<ul style="list-style-type: none"> <li>• Time consuming</li> <li>• Not transparent</li> </ul>
Auction	<ul style="list-style-type: none"> <li>• Allocation efficiency</li> <li>• Simple</li> <li>• Transparent</li> <li>• Returns economic value</li> </ul>	<ul style="list-style-type: none"> <li>• Less control over end result</li> <li>• Investment slow down</li> <li>• Winners Curse</li> </ul>

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## Conclusions Policy & Regulation



- Policy & Regulation for ASO and DTTB/MTV assignment can differ and coexist
  - ASO: services (& levels) are Government led
  - DTTB/MTV assignments: services (& levels) are market led
- Roadmap of the functional building blocks can vary from country to country
  - Local situation
  - Institutional/legal framework
- Functional building blocks are closely related
  - Roadmap execution is an iterative process

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Thank you !

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