# Seminar on
# Model TV White Space Regulations

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# Seminar on Model TV White Space Regulations

- What are television white spaces?
- Why adopt rules?
- Potential use cases
- Key principles for rulemaking
- Elements for model rules

DSA members are ready to work with policymakers and regulators on developing and implementing enabling regulation

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# What are television white spaces?

- The term ‘white space’ in the context of radio frequency spectrum management refers to portions of radio spectrum that are allocated for licensed use but are not assigned to a particular licensee, or are allocated and assigned for licensed use but are not utilised by the licensees at all times or across all geographical locations. The vacant channels in the television broadcast bands are called TV white spaces.
- TVWS were originally established because vacant channels were historically necessary to provide broadcasters protection from harmful interference from other stations. However, not all vacant channels are needed for broadcast-to-broadcast interference protection. In many markets, white spaces also exist because there are few broadcasters and there are more dormant channels in areas of lower demand.
- White spaces exist in most markets today and are likely to exist before, during, and after the digital switchover. Although the number and precise frequencies of vacant channels vary from location to location, only a fraction of the available UHF channels are being used at any given time in any given location in many countries.
- Wireless devices can operate in these vacant TVWS channels without causing interference to licensed operations.

# Why adopt rules?

- Secondary access to the broadcast bands has the potential to deliver broadband over long distances and comparatively low costs.
- In most countries across the African continent, there is a significant amount of vacant broadcast spectrum. Adoption of white spaces rules will put this fallow spectrum to use to enable delivery of broadband and will do so quickly.
- Regulatory change may not be required in all cases, but in many countries, enabling secondary uses of the broadcast bands requires a rule change.

# Potential use cases

- Fixed broadband access
  - Enables last-mile connectivity
  - Allows delivery of broadband to fixed locations such as schools, homes, or community centers
  - Typically higher-power (e.g., 4 or more watts)
- Personal portable devices
  - Increase the range of Wi-Fi
  - Lower power than fixed transmissions (typically 100mW)
- Internet-of-Things
  - Machine-to-machine communications
  - Often used in industrial settings
  - Low-to-medium power (typically 250 mW or less); limited data transmissions
- Different use cases may call for different rules regarding power levels or other technical parameters
- Overarching goal of rules should be to enable diverse new uses of vacant spectrum while protecting incumbents

# Key principles for rulemaking

- Rules must ensure that broadcasters and other protected entities do not experience harmful interference.
- Rules should permit use of enough spectrum to enable meaningful uses. Overly conservative rules will fail to take full advantage of the spectrum sharing opportunity.
- Rules should be flexible enough to take advantage of improvements in technology and as such should be technology agnostic. They should also enable flexibility to accommodate the digital switchover.
- Rules should be crafted in a way that allows global harmonization and scale.

# Step 4: Crafting rules

- Overall goal of rules: Enable meaningful and useful secondary operation while protecting incumbent users
- Key elements of most TV white spaces rules in development
  - Licensing model (To date, all jurisdictions have allowed television band devices to operate on a license-exempt basis.)
  - Incumbent protection
    - Methods of protection (e.g., databases or sensing)
    - Rules for database provision and operation or sensing thresholds
    - Entities entitled to protection
    - Propagation model
  - Rules for devices
    - Device classes (e.g., fixed or mobile, master and client)
    - Power limits
    - Type approval