Cape Town TVWS Trial

Remarks by Regulator

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Chair: JSAG

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TVWS Trials

- Work on TV White Spaces and Cognitive Radio concepts has been ongoing for more than a decade
- There have been a number of TV White Spaces trials around the world
- Most well known are those in the USA and UK
- Also trials in Finland, Germany, Ireland, Singapore and Canada
- Trials elsewhere in Africa, including Malawi and Kenya
- Trials in RSA include Cape Town and Limpopo

Why are Trials Important?

- Demonstrate that interference-free communication can work
- Test radio technology
  - Smart Radios
  - Cognitive Radios
  - Spectrum sensing
- Test database operation
  - Connectivity
  - Algorithms
  - Control
- Determine what can and can't be done with TVWS devices
- Test Regulatory Models
- Gain broadcaster, public, Policy and Regulatory acceptance of TVWS

Overview of Progress

- USA:
  - Most mature
  - Finalised Regulations
  - Very conservative
    - Power output very low
    - Modelling Algorithms simplistic
    - Channel separation required
    - Simplistic approach
- UK:
  - Draft Regulations
  - More flexible
  - More advanced approach
- Tygerberg
  - Just beginning in RSA
  - World firsts:
    - Adjacent channel usage without interference
    - Tested against both Analogue & Digital transmissions
    - Tightest spectrum mask achieved so far
  - Radio technology still developing
  - Used Longley-Rice modelling

Regulatory Approach so far

- The general approach so far has been:
- Geo-location database used
- GPS not fully used
- No spectrum sensing required – optional, but not used effectively
- Partial to full recording of WSD location and characteristics in database
- No protection of WSDs already registered in database
- Licence exempt model – like Wi-Fi

Where to now?

- In my view, RSA should continue to lead the field
- Some possibilities: -
  - Make full GPS reporting (Latitude, Longitude *and Altitude*) mandatory
  - Make Spectrum Sensing mandatory
  - Offer optional protection to registered WSDs – improved QoS
  - Dual “licensed” and “Licence Exempt” modes
  - Use powerful modelling algorithms in the database on a real-time basis
  - Flexible and dynamic power control of WSDs
  - Increase allowed power above 4 W EIRP when appropriate

Tygerberg Trial

- Congratulations to all parties concerned
- I congratulate all the official Trial Partners, as well as JSAG members who played an important role – and accepted the risk of interference
- Valuable lessons learnt
- This trial has demonstrated that we can make progress in South Africa in a highly complex field
- I look forward to further trials that advance the boundaries of human knowledge and technology
- I hope that we will, between us, build an appropriate Regulatory Framework for TVWS in South Africa over the next few years that will lead to efficient and powerful spectrum usage and delivery of high speed broadband to all our people.

Thank you

Dankie

Re a leboha

Re a leboga

Siyabonga

Inkomu

Ro livhuwa

Enkosi