Dynamic Spectrum Access
Developments in UK and Europe

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Advances in technology allow more intelligent approaches to sharing

- "Dumb" devices
  - Listen before talk
  - Dynamic frequency selection
  - Use geolocation to avoid interference with primary

- White Space Devices
  - Use geolocation to avoid interference with all users

- White Space Devices+
  - Device scanning
    - Check other users using geo-location database and cognitive sensing

Increasing access to spectrum

Improving spectrum sharing between users

Other bands?

TV White spaces

Wi-Fi
Tiered spectrum access in the UHF TV bands

- Spectrum licensed to DTT multiplex operators for use at particular transmitter sites
- Spectrum not used at all locations in order to manage interference
- In locations where frequencies are not used by DTT multiplex operators, they can be licensed to wireless microphone users
- In locations where there are no DTT transmissions on a particular frequency and no wireless microphones have been licensed, white space devices are allowed access on a licence exempt basis
Proposed UK framework for access to TV White Spaces

- List of qualifying WSDBs
- Internet
- Database discovery
- Master WSD
- Slave WSD
- White space spectrum
- Device Parameters
- Operating Parameters
- Commercial White Space Database
- Details of PMSE assignments
- TVWS availability maps for protection of DTT
UK TV white spaces pilot

Glasgow
Wi-Fi, ‘Smart City’ (sensor network) and AV distribution
Microsoft, Centre for White Space Communications

Isle of Wight, Hampshire & New Forest:
Rural Broadband
Sinecom, Click4Internet, Carlson Wireless

Other locations
Wi-Fi, broadband

Oxford
Community Sensor networks (flood detection)
Love Hz

Watford
CCTV
Sinecom

Scotland:
Rural Broadband
Cloudnet Solutions

Scotland:
Rural Broadband
Monatech Broadband

London
Research and development
King’s College / Joint Research Centre of the European Commission/EURECOM

London
Broadband and public sector applications
Neul, LFB, Cabinet Office
Developments in Europe

• Significant interest in promoting opportunities for spectrum sharing
  – Initiatives within the EU, including around Licensed Shared Access
  – Technical work in CEPT, including sharing opportunities in the 2.3 GHz band

• European Commission Communication on spectrum sharing published Sept 2012
  – Highlights cognitive technologies and geo-location databases
  – Supports technical standards to foster compliance with EU and national legislation
  – A range of different flavours of spectrum sharing

• UK inputting to technical work in CEPT studying White Space technologies

• Ongoing interest in white space in UHF band…..
  ….. but also interest in other potential other bands
For information about Ofcom’s TV White Spaces Pilot please visit our dedicated pilot webpages http://stakeholders.ofcom.org.uk/spectrum/tv-white-spaces/white-spaces-pilot/