



Regulatory Implications

Chris Perera

Radio Spectrum Policy & Planning

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Current Allocation Options

- Exclusive Access
 - Property rights (contestable)
 - » Management Rights
 - » Spectrum Licences
 - Administrative licensing (first come first served)



Current Allocation Options

- Open Access
(GULs, public parks)
- Shared Access
(managed spectrum parks or private parks)



Future Wireless Technologies

- Innovation
- Intelligence
- Greater sharing of spectrum
- Higher BW services



Smart Technologies

- Improve spectrum efficiency
- Allow greater sharing
 - with existing users?
- How to provide access to spectrum?
 - existing commercial rights?



Software Defined Radio

- Change operating parameters under software direction
- Cellular Industry
- Intelligent Transport Systems
 - » intersection collision warnings
 - » intersection management
 - » traffic signal violation warnings
 - » warning of emergency vehicle approaching



Regulatory Implications - SDR

- Compliance
 - technical & regulatory standards
- Approaches to provide access to spectrum?
 - Licensed
 - General User Licensed (Public Park)



Cognitive Radio

- Fully configurable radio device?
- “cognitively” adapts itself
 - to users’ needs &
 - its local environment
- Full “Mitola” radio
- Today’s radio systems – some cognition



Long-term Vision of CR

- uses under-utilised spectrum
- interleaving spectrum technology
- “White space”
- holds much promise - spectral efficiency
- radical departure from existing spectrum regulation??



Technical Implications - CR

- Sophisticated & accurate sensing
- harmful interference
- alternative form – “geolocation” database
- IEEE DySPAN
- NZ research



Regulatory Implications - CR

- Most appropriate mechanism?
 - Licensed-exempt (GUL)?
- Opportunity for organised secondary market for spectrum trading
 - Privately held spectrum property rights
- What about spectrum under radio licensing?



Regulatory Implications - CR

- Demand for “squatting rights”?
- existing rights of private band managers?
- Commercially negotiated “easements”?
- Any changes required to the spectrum regulatory framework?



International Spectrum Regulatory Framework

- ITU – R
- NZ, UK & Canada proposal
- WRC Agenda item





Thank you!

