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# ***Broadband Wireless Access: Radio Spectrum Policy aspects***

**Ruprecht Niepold, European Commission**



## *Overview of presentation*



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- ◆ **Spectrum regulation in the EU**
- ◆ **Radio spectrum policy in context**
- ◆ **Radio spectrum policy reform**
- ◆ **Drivers for broadband wireless**
- ◆ **Spectrum for broadband wireless**



# ***Spectrum regulation in the EU***



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## **25 Member States**

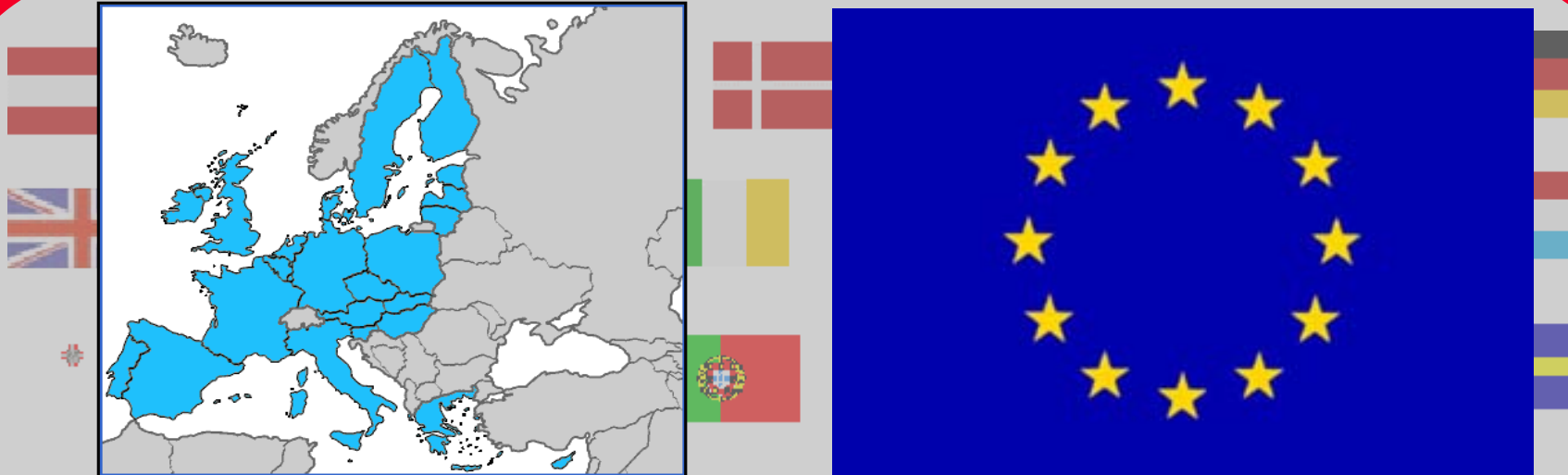
- own and regulate spectrum individually, based on different spectrum legacies
- issue spectrum usage rights (different definitions of rights)
- are confronted with individual national conditions (economic development; cultural background; geography / demography; wireless service needs and priorities; etc.)



# Spectrum regulation in the EU



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## 1 European Union

- economic, social, political integration
- internal market
- competition rules
- common policy objectives
- common basis for regulatory environment (e.g. communications regulatory framework)

Spectrum ?



# Radio spectrum policy in context



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## i2010

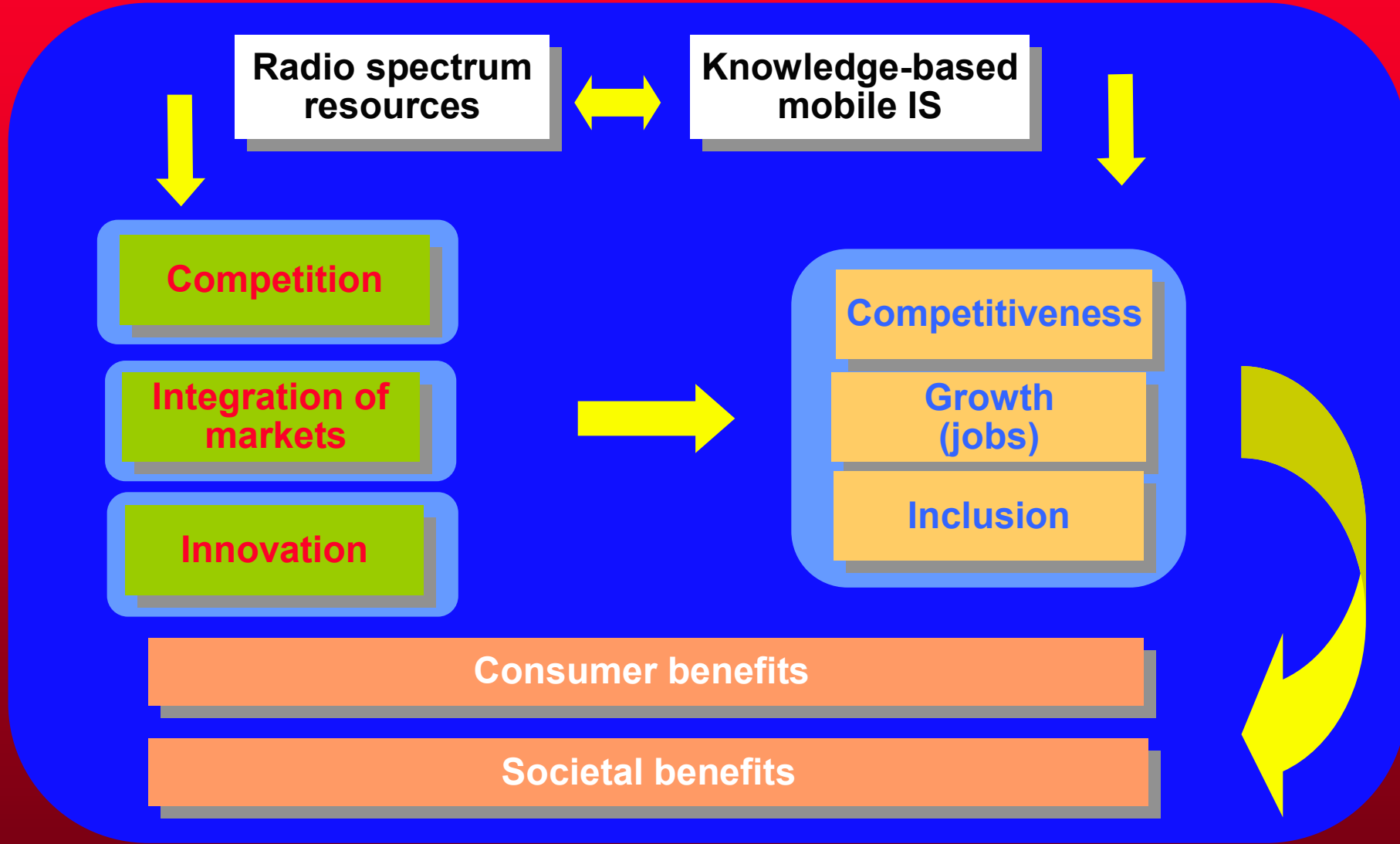
- ◆ **“Single European information space”**
  - ◆ wireless applications requires radio resources
  - ◆ single market of equipment and services – a challenge to radio spectrum policy
  
- ◆ **“Innovation and investment in ICT”**
  - ◆ new wireless technologies through R&D
  - ◆ innovative friendly environment – access to radio spectrum
  
- ◆ **“Achieving an inclusive European Information Society”**
  - ◆ Wireless technologies for people with special needs
  - ◆ Overcoming digital divide: accessibility through wireless



# Radio spectrum policy in context



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## ***Radio spectrum policy in context***



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### **Objectives of EU Spectrum Policy:**

- ◆ **support specific policy objectives by ensuring the timely availability of sufficient harmonised spectrum in the EU**
- ◆ **contribute to a reform of spectrum management in Europe enabling growth, competitiveness, employment and inclusion**
- ◆ **EU-level coordination: coordinated policy and regulatory approaches to radio spectrum access to yield synergy effect**



# Radio spectrum reform



## Underlying principles of radio spectrum reform

- ◆ overcoming narrow allocation approach which ties spectrum usage to specific technologies and services
- ◆ increase flexible usage of spectrum
- ◆ empowering spectrum user (market player) to decide upon usage
- ◆ creating a level playing field for spectrum usage at EU level





# Radio spectrum reform



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## Spectrum policy approach:

- ◆ **spectrum management reform**
  - ◆ Introduction of tradability of spectrum
  - ◆ Service and technology neutrality
  - ◆ Exploiting potential of unlicensed / shared spectrum
- ◆ **harmonisation measures**
  - ◆ Legal basis for EU-wide common spectrum usage conditions
  - ◆ Single market
  - ◆ Supporting reform

*Strategy outlined in 2<sup>nd</sup> annual Report (Communication COM(2005)411)*



## ***Drivers for broadband wireless***



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### **Policy objectives / trends for broadband wireless :**

- ◆ **rich and diversified services and applications to citizens**
  - ◆ **demand: experience from broadband (fixed) access + “mobility of society”**
  - ◆ **performance: gap between broadband wireless and fixed wireless persists, but perception narrows**
- ◆ **broadband wireless enables coverage**
  - ◆ **ubiquitous use**
  - ◆ **overcoming digital divide**
- ◆ **diversity of access modes : competition and new quality**
  - ◆ **fixed / wireless**
  - ◆ **wireless / wireless**
  - ◆ **complementarity fixed / wireless**



## Drivers for broadband wireless



### Policy approach to broadband wireless:

- ◆ creating an *enabling* rather than a *planned* spectrum environment
- ◆ foster competition
- ◆ market and market players to decide



## Spectrum resources:

- ◆ **IMT2000 constitutes a driver for broadband access**
  - ◆ **core band 2 GHZ**
  - ◆ **extension bands 2.5 – 2.69 GHz by 2008:**
    - ◆ **IMT2000**
    - ◆ **IMT2000 evolution**
    - ◆ **technology evolution**
  - ◆ **“beyond IMT2000”:**
    - ◆ **WRC-07 preparation**
    - ◆ **Traffic estimate study (socio-economic trends):  
surging demand at ~ 2015**



# **Spectrum for broadband wireless**



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## **Spectrum resources:**

- ◆ **2GHz MSS: satellite component of IMT2000**
  - ◆ **MSS systems with ground component**
  
- ◆ **license-exempt spectrum at 5 GHz for R-LAN / WAS**
  - ◆ **Decision adopted Aug. 2005**
  
- ◆ **broadband wireless access at 3.4 GHz**
  - ◆ **selecting appropriate spectrum bands**
  - ◆ **harmonised usage conditions**



## Spectrum resources:

- ◆ **Ultra-wide band (UWB)**
  - ◆ **Harmonised conditions (results: possibly March 2006)**
  - ◆ **Distinguish 3-5 GHz, 6-9GHz**
  
- ◆ **transition to digital broadcasting (target 2012):**
  - ◆ **Target switch off of analogue TV broadcasting : 2012**
  - ◆ **digital dividend open for usage reassessment**
  - ◆ **examples: data casting, mobile systems, etc.**
  - ◆ **further license exempt spectrum ?**



## **Synergy of spectrum resources**

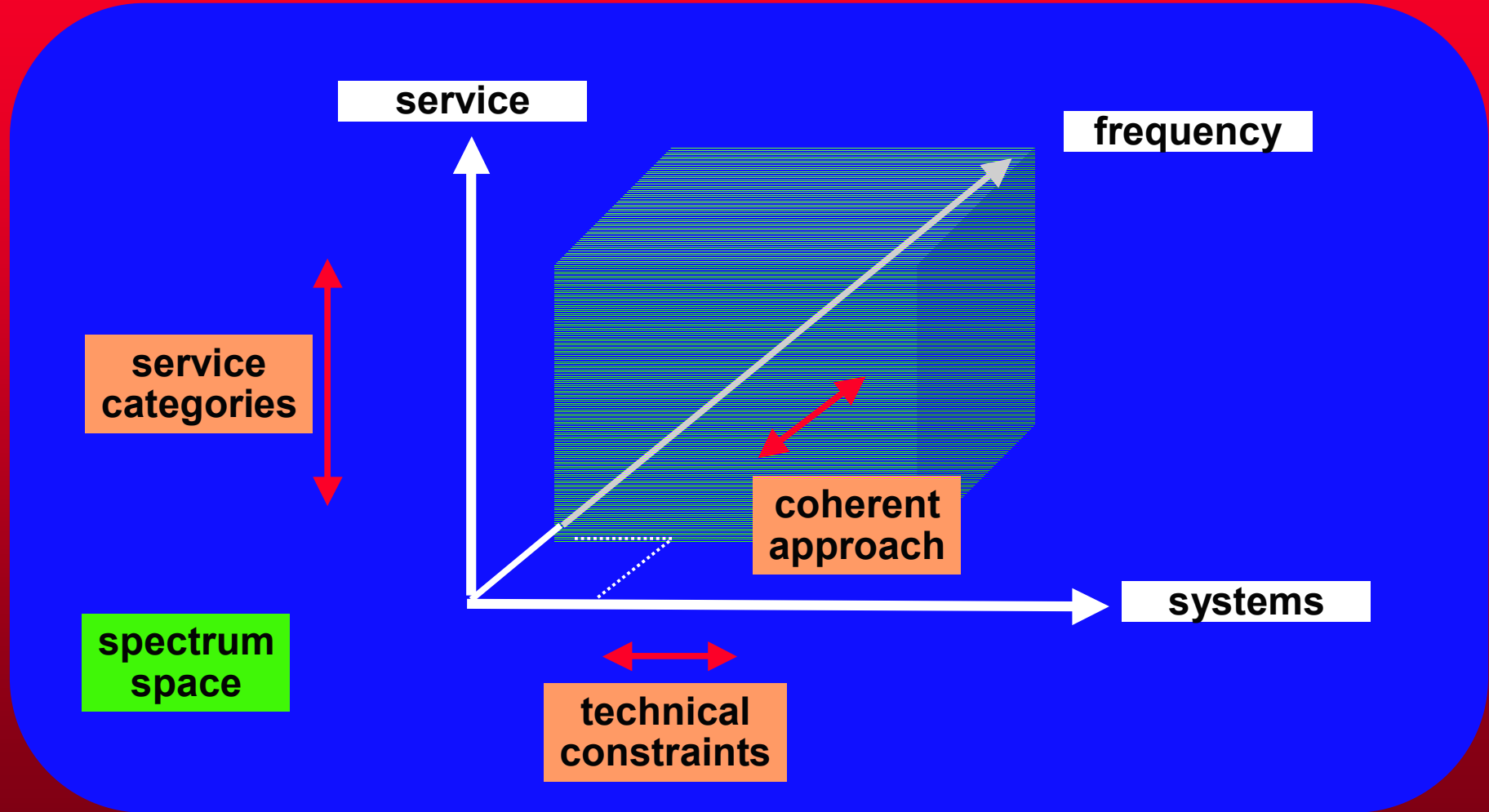
- ◆ **common framework for spectrum usage by “wireless access platforms for electronic communications services” → WAPECS**
- ◆ **service and technology neutrality for a range of frequency bands**
- ◆ **ensure interference free spectrum usage**
- ◆ **authorisation conditions should not distort competition**



# Spectrum for broadband wireless



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## **Flexibility**

- ◆ **“WAPECS” spectrum bands (tentative):  
frequencies allocated today to**
  - ◆ **Broadcasting**
  - ◆ **Fixed services**
  - ◆ **Mobile services**
  - ◆ **Short range communications (DECT, RLAN)**
  
- ◆ **Opinion of Radio Spectrum Policy Group  
expected by November 2005**
  
- ◆ **work on implementation as of 2006**



# Conclusions



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- ◆ wireless access is to ready for broadband applications and services to be offered to end customer
- ◆ role of spectrum policy for BWA is to create an enabling environment to allow for market and market players to develop and test new services according to technological development and demand
- ◆ flexibility of spectrum usage and technological neutrality are key
- ◆ harmonisation of spectrum for broadband wireless access is being addressed by EU mechanisms to take advantage of the synergy of the EU single market for broadband wireless equipment and services



# References



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- ◆ web site: **Radio Spectrum Policy**  
(reference docs, ongoing work etc.)

[http://europa.eu.int/information\\_society/policy/radio\\_spectrum/index\\_en.htm](http://europa.eu.int/information_society/policy/radio_spectrum/index_en.htm)

- ◆ web site: **Radio Spectrum Policy Group (RSPG)**  
(specific reference RSPG docs, ongoing RSPG work etc.;)

<http://rspg.groups.eu.int>

- ◆ web site: **Radio Spectrum Committee (RSC)**  
(RSC reference docs)

<http://forum.europa.eu.int/Public/irc/infos/radiospectrum/home>

- ◆ **2<sup>nd</sup> annual report on Radio Spectrum Policy**

[http://europa.eu.int/information\\_society/policy/radio\\_spectrum/ref\\_info/documents/non\\_legislative\\_documents/index\\_en.htm](http://europa.eu.int/information_society/policy/radio_spectrum/ref_info/documents/non_legislative_documents/index_en.htm)

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