

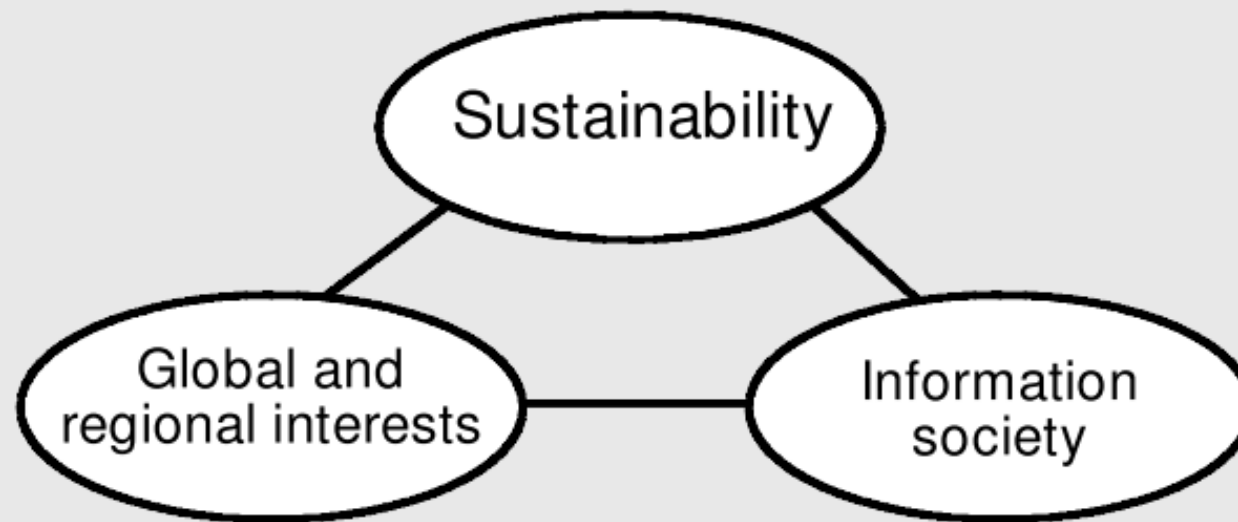
# **STRATEGIC VISION OF ICT POLICY: EXAMPLES FROM EU BROADBAND POLICY AND SPECTRUM MANAGEMENT**

**ITS European Brussels Regional Conference  
24 June, 2014**

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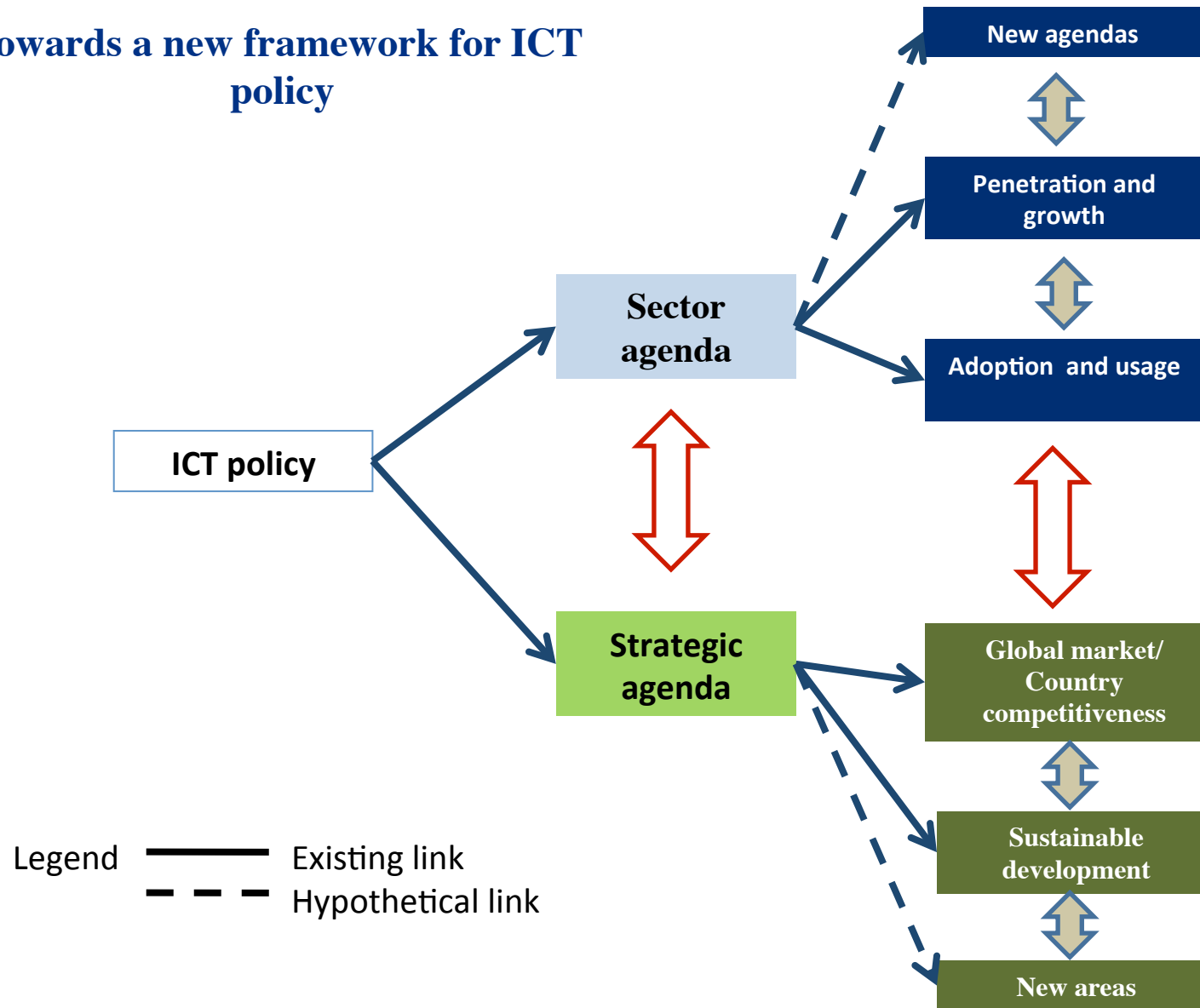


# Global Policy Challenge:





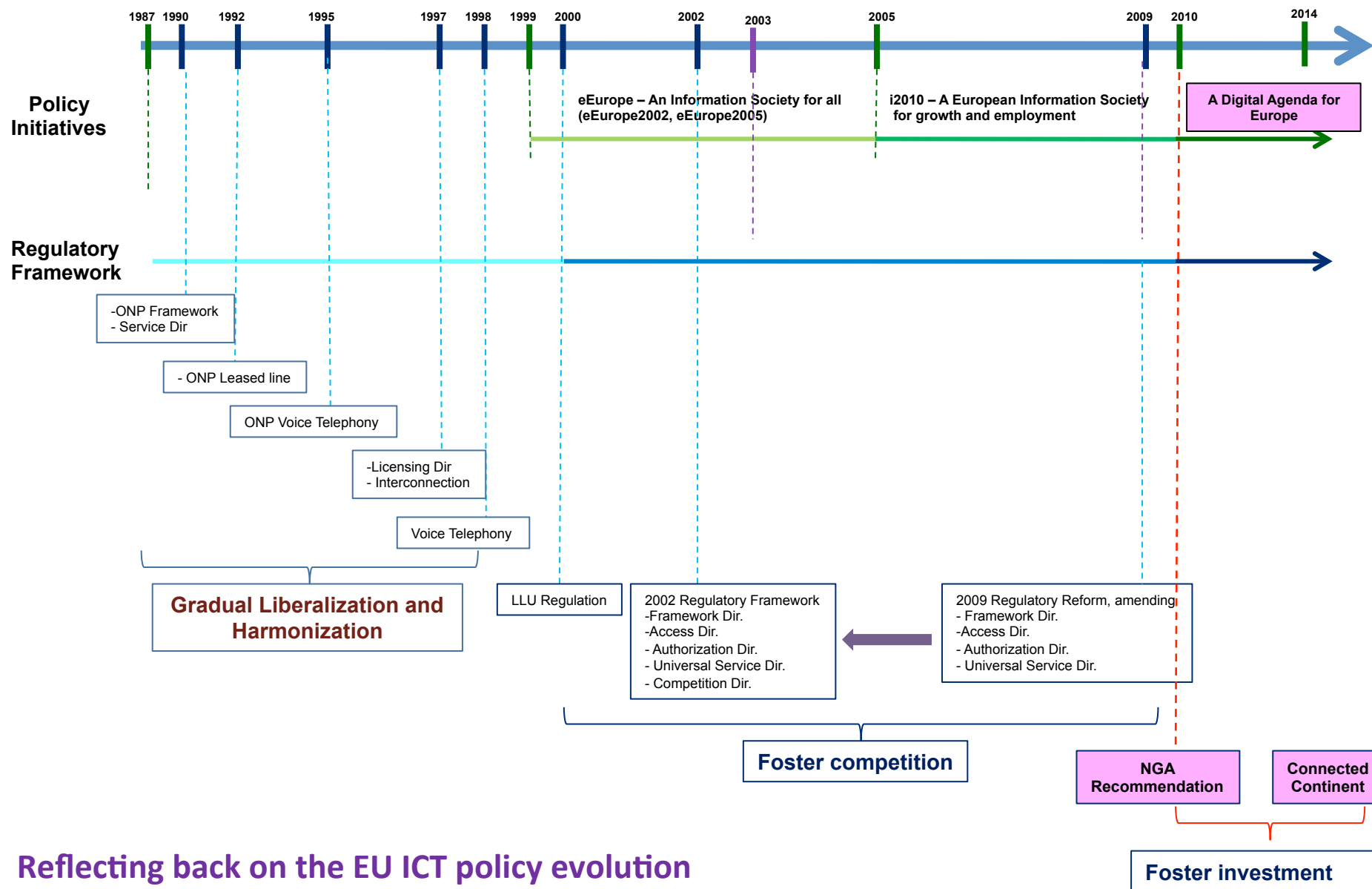
## Towards a new framework for ICT policy





# Broadband policy

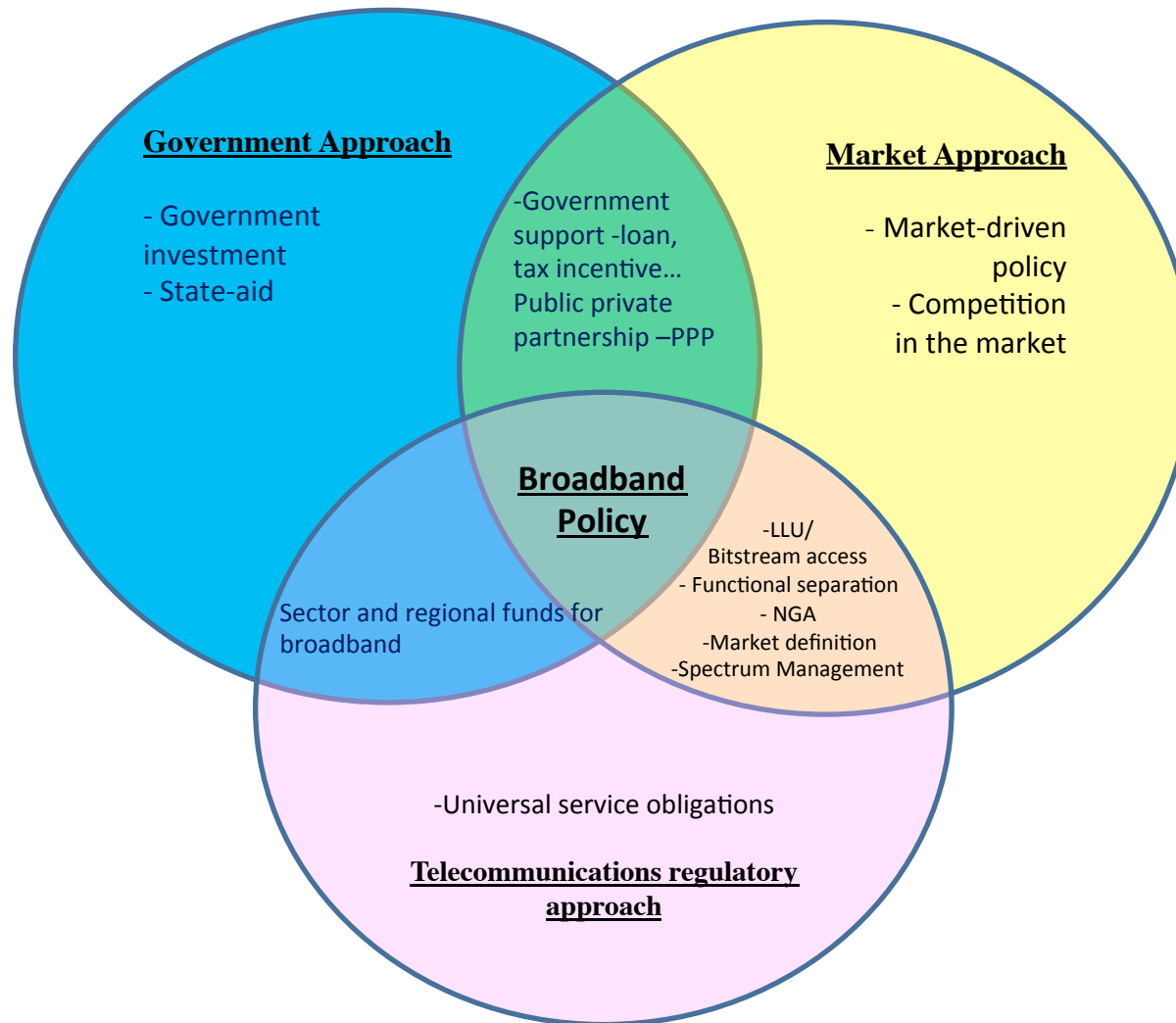




Reflecting back on the EU ICT policy evolution

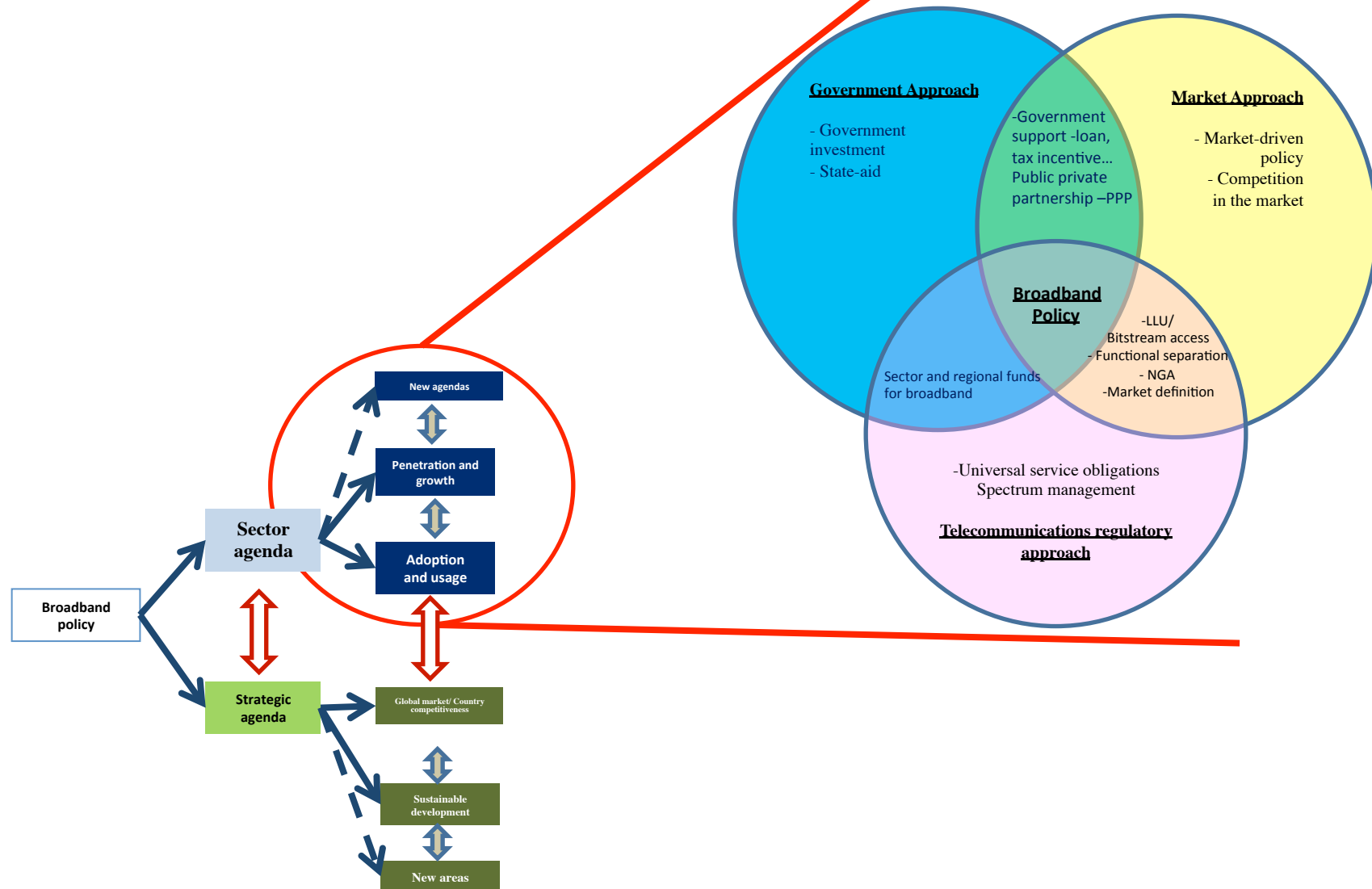


## Many dimensions of broadband policy: Sector agenda



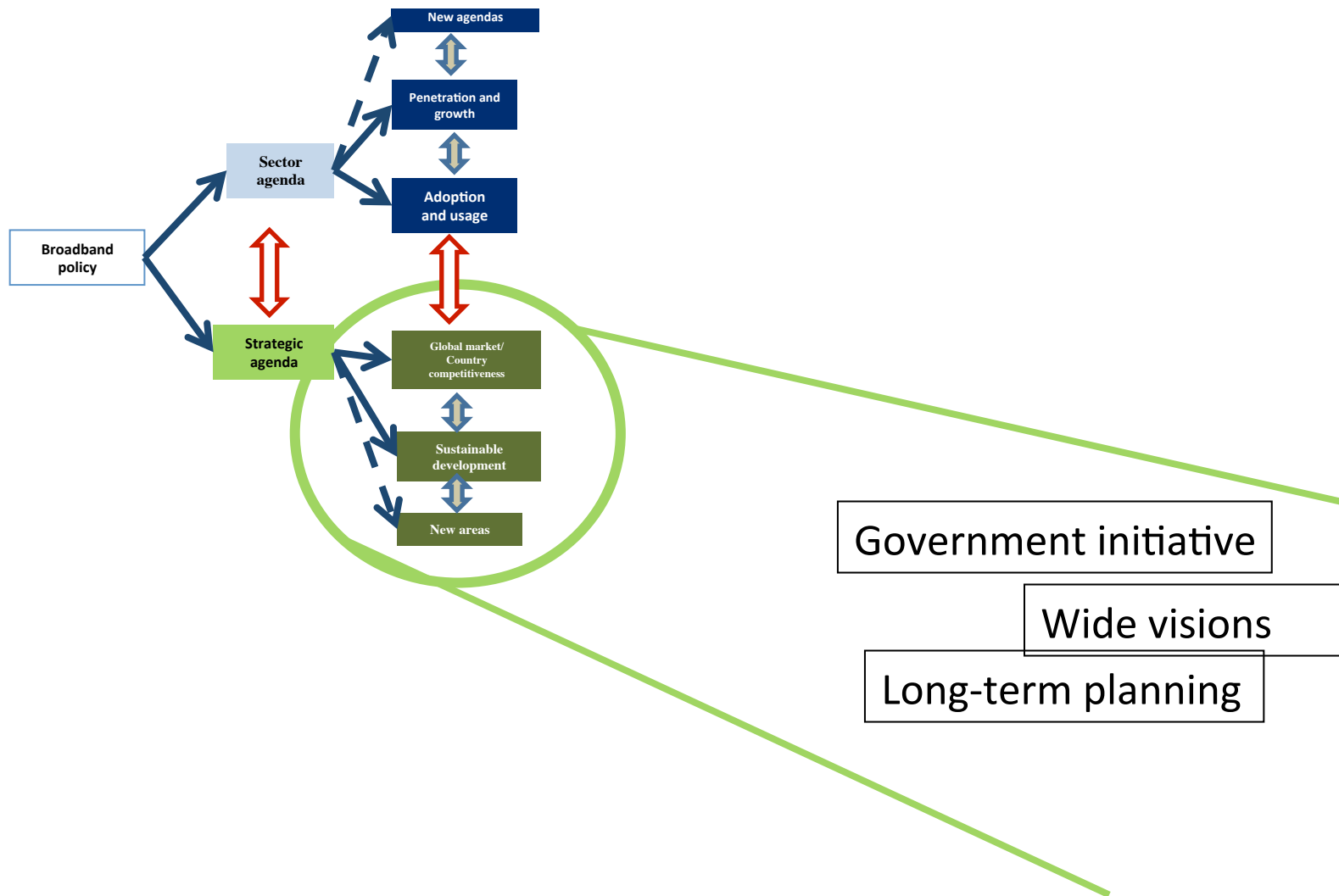


# Implementation of sector agenda





## But how to implement a strategic agenda?

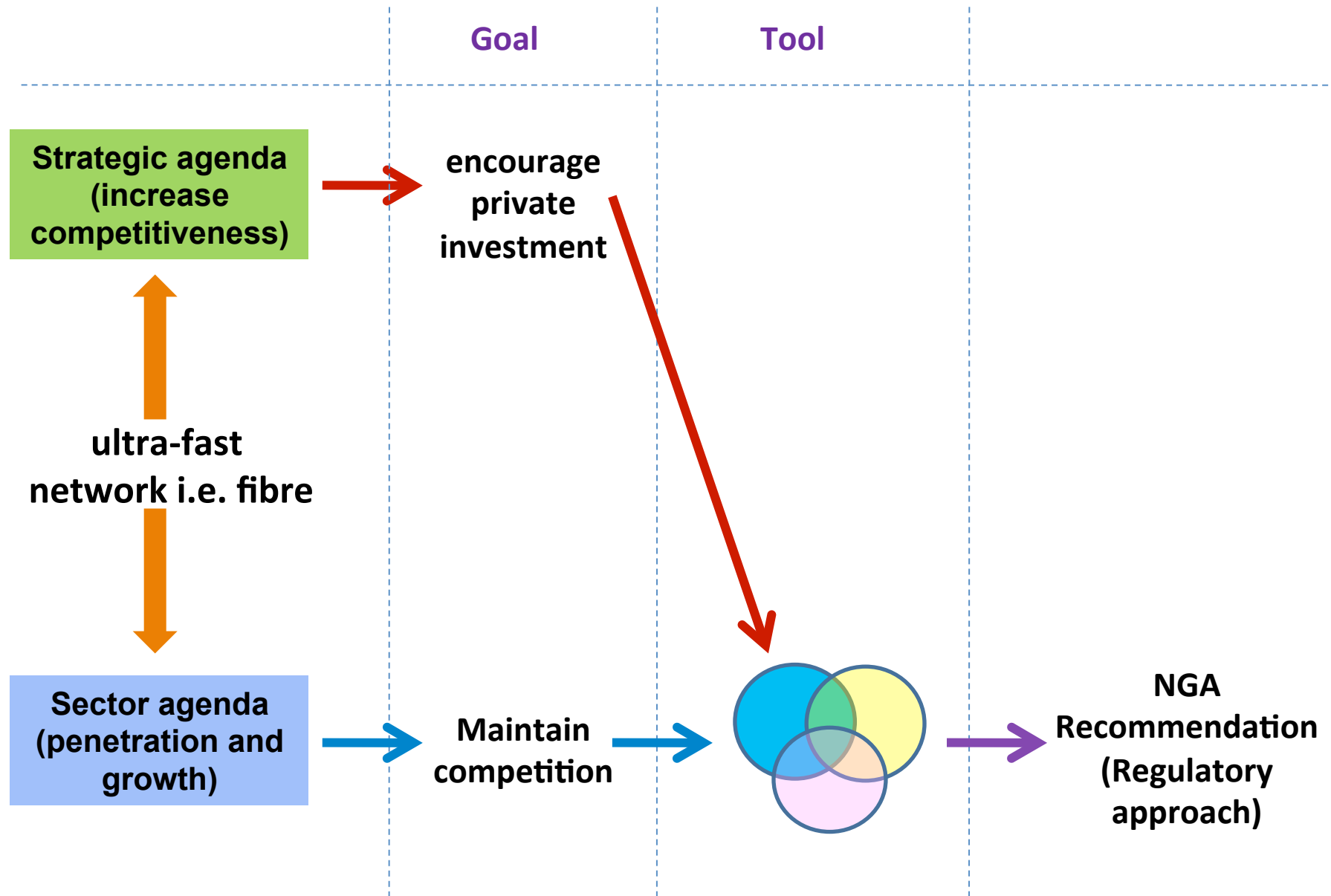




'A Digital Agenda for Europe' also includes ICT for environment

- ICT should lead the way by **reporting its own environmental performance** by adopting a common measurement framework as a basis for setting targets to reduce energy use and greenhouse gas emissions of all processes involved in production, distribution, use and disposal of ICT products and delivery of ICT services
- Action: to **adopt common measurement methodologies** for the sector's own energy performance and green house gas emission and propose legal measurement if appropriate







## **Broadband Conclusion 1: Sector agenda**

- Telecommunication infrastructures, in particular **broadband networks**, are a **major factors for** a country in moving towards **network/information society**
- No one-size fits all:
  - **Different approaches** can be taken in order **to increasing penetration**
  - **Different initiatives** may be **needed** for different phases of network development

## **Broadband Conclusion 2: Strategic agenda**

- Broadband policy from **strategic agenda** aspect is growing more and more **important** but **no specific instrument** for strategic are being developed
- **Sector agenda instruments** can **be used as combination** but careful implementation and collaboration from related stakeholders are needed.

## **Broadband Conclusion 3: The EU evolution**

- Broadband has been considering as a strategic agenda in many policy documents, **no concrete policy instruments has been developed** .
- **Mechanisms** implemented over time **are based on more narrow industry interests** which may be less relevant for the new social structure emerging from broadband networks.



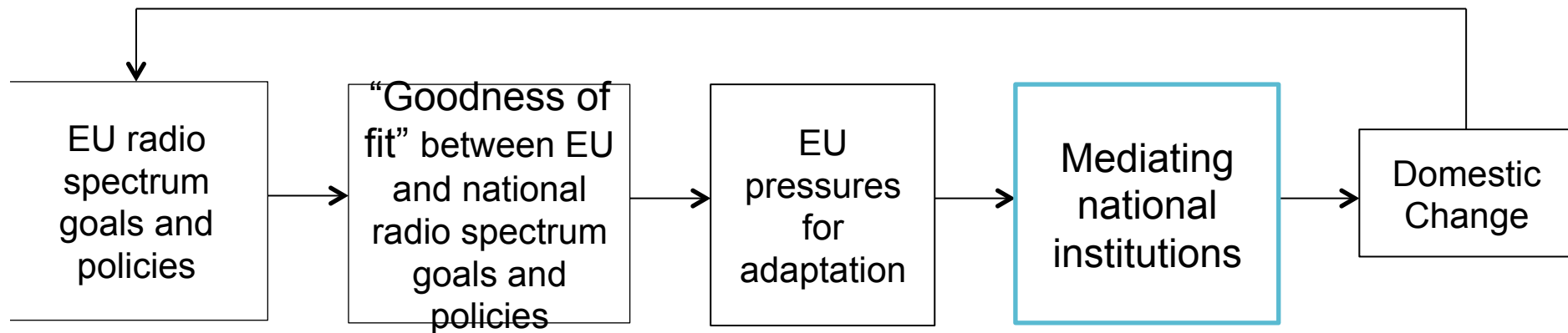
# **The evolution of EU spectrum policy**



## PROBLEM STATEMENT

### EUROPEANISATION AND NATIONAL CHANGE IN RADIO SPECTRUM POLICY:

#### GOODNESS OF FIT



Source: adapted from Cowles et al. (2001) p. 6.



# The First Ad-hoc Phase

- - **Directive 87/372/EEC** on the frequency bands to be reserved for the coordinated introduction of public pan-European cellular digital land-based mobile communications in the Community (GSM Directive).
- - **Directive 90/544/EEC** on the frequency bands designated for the coordinated introduction of pan-European land-based public radio paging in the Community (ERMES Directive)
- - **Directive 91/287/EEC** on the frequency band to be designated for the coordinated introduction of digital European cordless telecommunications into the Community (DECT Directive).
- - **Directive 96/2/EC** amending Directive 90/388/EEC with regard to mobile and personal communications
- - **Directive 97/13/EC** on a common framework for general authorizations and individual licences in the field of telecommunications services.
- - **Directive 97/51/EC** amending Council Directives 90/387/EEC and 92/44/EEC for the purpose of adaptation to a competitive environment in telecommunications.



# The Beginning of Spectrum Policy

- Green Paper on Radio Spectrum Policy [COM (98) 596final],
- Set out to identify the best manner to approach and implement a spectrum policy at the European level
- Identified the inconsistency of the regulatory framework, that EU had no authority over spectrum
- Moving on: Results of the Public Consultation on the Green Paper [COM (1999)538final], with main objective to contribute to the establishment of a European regulatory framework for spectrum



# Institutionalizing Spectrum Policy (1)

- With the 2002 Telecom Regulatory Package, the Radio Spectrum Decision was joined and established a legal and policy framework to support the coordination of national policy approaches to the radio spectrum
- This decision essentially institutionalised European spectrum policy, putting a stop to the ad-hoc approach that had been applied to date
- The decision established a Radio Spectrum Committee and the Radio Spectrum Policy Group. Under a comitology governance system, the Commission consults the Radio Spectrum Committee (RSC) and the Radio Spectrum Policy Group (RSPG) regularly
- RSC for standards, and RSPG of policy issues (simplified)



# Institutionalizing Spectrum Policy (2)

- The Commission has increasing institutional interests in the ITU, and more specifically in the defence of EU interests at the World Radiocommunication Conference (WRC) and the Regional Radiocommunication Conference (RRC), but no formal seat and vote.
- The importance of European coordination in international forums was manifest in Communications Commission “EU spectrum policy priorities for the digital switchover in the context of the upcoming ITU Regional Radiocommunication Conference” [COM (2005)461final]; “The ITU World Radiocommunication Conference 2007” [COM (2007)371final] or the next World Radio Communication Conference taking place in 2012 [COM(2011)180final]



# Institutionalizing Spectrum Policy (3)

- In addition, the Commission has promoted reform in spectrum management, in an effort to favour the development of the internal market.
- Central ideas are in “A market-based approach to spectrum management in the European Union” [COM (2005) 400 Final].
- Similarly, with the implementation of the WAPECS policy, Communication on “Rapid Access to Spectrum for Wireless Electronic Communications Services (WAPECS) through more flexibility” [COM (2007)50final], the Commission aspired to “pave the way towards a more flexible spectrum management”



# SUMMARY OF THE INSTITUTIONALIZING PHASE

- **Radio Spectrum Decision 676/2002/EC**
  - First milestone in the development of a European common approach to radio spectrum (centralisation of spectrum governance)
  - Establishment of a Community policy and legal framework for coordination and harmonisation among national radio spectrum policies within the EU
  - Political support to Community interests in international negotiations on spectrum use
  - Radio Spectrum Committee
  - Radio Spectrum Policy Group (Decision 2002/622/EC)
  - Comitology governance system
- **Deregulations, technology neutrality, flexibility**
  - COM(2003) 541 – Transition Digital Television
  - COM(2005) 400 – Market-based approach
  - COM(2007) 50 – WAPECS
- **EU commitment in International arena**
  - COM(2005) 461 RRC-06
  - COM(2007) 371 WRC-07
  - COM(2011) 180 WRC-12



# Yet Further Steps in 2009

- Directive 2009/140/EC amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection and 2002/20/EC on the authorisation of electronic communications networks and services (Better Regulation Directive) - a further step toward the consolidation of European radio spectrum policy.
- With the directive, the Commission is invited to submit legislative proposals for the establishment of multiannual radio spectrum policy programmes that will set out the policy orientations and objectives for the strategic planning and harmonisation of radio spectrum. These proposals will be submitted to the European Parliament and the Council (Directive 2009/140/EC, art. 8a).
- In September 2010 European Commission published a draft proposal for a Decision establishing the first radio spectrum policy programme (European Commission, 2010).



# From the Radio Spectrum Policy Program (RSPP) proposal, Art 2

Member States shall cooperate with each other and with the Commission in a transparent manner, in order to ensure the consistent application of the following general regulatory principles across the Union:

- (a) encouraging efficient use of spectrum to best meet the increasing demand for use of frequencies;
- (b) applying technology and service neutrality in the use of spectrum for electronic communications networks and services, in accordance with Article 9 of Directive 2002/21/EC (Framework Directive), and where possible for other sectors and applications, in such a way as to promote efficiency of spectrum use, in particular by fostering flexibility, and to promote innovation;
- (c) applying the least onerous authorisation system possible in such a way as to maximise flexibility and efficiency in spectrum usage;
- (d) guaranteeing the functioning of the internal market, in particular by ensuring effective competition.



# **SUMMARY - THE RADIO SPECTRUM POLICY PROGRAMME**

## **Decision 243/2012/EU (RSPP)**

On 14 March 2012, the European Parliament and the Council approved the first RSPP, a comprehensive roadmap to define key policy objectives and set up general principles for managing radio spectrum in the internal market, in line with the Europe 2020 initiative and the Digital Agenda for Europe.

- **policy priorities in spectrum (2012 to 2015)**
- **shared use of spectrum COM(2012) 478**
- **inventory of spectrum use DECISION 2013/195/EU**
- **wireless broadband (1200 MHz)**
- **other sectors (PMSE, PPDR, AUDIOVISUAL, ETC)**



# YET MORE : THE CONNECTED CONTINENT LEGISLATIVE PROPOSAL

On 11 September 2013 the European Commission adopted a new legislative package for a “Connected Continent: Building a Telecoms Single Market”.

The EC puts forward the need to establish a European single market, building a connected and competitive continent in order to make Europe a smart, sustainable, inclusive information-based and digital economy.

## COM(2013) 634 on the Telecommunications single market

The EC calls for “the gradual removal of national barriers to cross-border competition, including different national sector regulations, different national consumer laws relating to telecommunications contracts, and different national conditions for allocating and assigning spectrum” (p. 5).



# THE CONNECTED CONTINENT LEGISLATIVE PROPOSAL

## COM(2013) 627 Proposal for a regulation of EU single telecommunications market

- Common regulatory principles for spectrum authorisation procedures for wireless broadband to support economies of scale
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- Promote the use and the deployment of WI-FI and small/micro cells to increase capacity, by simplifying deployment of small area access points and sharing of wifi capacity.



# Conclusions

- An on-going transition towards a more strategic view of ICT policy in the EU, and now for spectrum management
- Still with important constraints
- Subsidiarity vs internal market remains an important tension for spectrum management



# Extra slides



# Spectrum Policy Reform Takes Off with New Programme

1 Aims to build a framework for spectrum management in Europe with a range of proposals for fairly simple extensions of current situation of shared powers at EU and Member State level for:-

- A *harmonised* approach across all the EU for spectrum use regulation
- Flexibility in allocation by service and technology type for faster spectrum access

2 Market-based forms of regulation with secondary trading for spectrum licences, usually first offered through some form of auction

Other issues:-

- Future digital services - meeting the next round of demands for spectrum
- The digital dividend – optimal refarming of released bands on switchover of analogue to digital TV (depends on future services)
- Collective use of spectrum – considering overlays and interleaving

The proposal has been debated by EP during 2010-2012, and was approved in early 2012 by both European Council and EP (15 March, 2012)



# From the Radio Spectrum Policy Program (RSPP) proposal

## **Article 4 Enhanced efficiency and flexibility**

- This sets policy orientations to be translated into actions by Member States and Commission, including better flexibility in spectrum authorisation to bridge the digital divide; creating technical conditions for broadband services; enhancing collective spectrum use; developing standards; and preserving and promoting effective competition and the internal market.

## **Article 5 Competition**

- This aims to promote competition by listing various remedies that Member States could adopt against possible distortions resulting from flexibility, trading and hoarding or other accumulation of spectrum rights.



# Yet Further Steps in 2009 (1)

- Directive 2009/140/EC amending Directives 2002/21/EC on a common regulatory framework for electronic communications networks and services, 2002/19/EC on access to, and interconnection and 2002/20/EC on the authorisation of electronic communications networks and services (Better Regulation Directive) - a further step toward the consolidation of European radio spectrum policy.
- With the directive, the Commission is invited to submit legislative proposals for the establishment of multiannual radio spectrum policy programmes that will set out the policy orientations and objectives for the strategic planning and harmonisation of radio spectrum. These proposals will be submitted to the European Parliament and the Council (Directive 2009/140/EC, art. 8a).
- In September 2010 European Commission published a draft proposal for a Decision establishing the first radio spectrum policy programme (European Commission, 2010).



## Yet Further Steps in 2009 (2)

- Another major point of the reform resides in the aim to increase flexibility in spectrum management, in which access ought to be provided based on the principles of technological and service neutrality (Directive 2009/140/EC arts. 9.3. and 9.4).



# Spectrum Policy Reform Takes Off with New Programme

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- (d) guaranteeing the functioning of the internal market, in particular by ensuring effective competition.



# From the Radio Spectrum Policy Program (RSPP) proposal

## **Article 6 Spectrum for wireless broadband communications**

- Steps are to be taken: to attain specific targets for wireless broadband and to ensure availability of spectrum designated for this purpose; to mandate the freeing of the 800 MHz digital dividend band by 2013; to ensure coverage of rural areas and access for less favoured citizens; to make certain bands tradable and ensure spectrum for ubiquitous satellite access.

## **Article 7 Spectrum needs for specific Union policies**

- Commission and Member States are to cooperate to meet spectrum needs for the internal market in relation to several EU policies, including space policy, environmental protection, public safety and protection, civil protection and disaster relief, as well as research and scientific activity.



# From the Radio Spectrum Policy Program (RSPP) proposal

## **Article 8 Inventory - monitoring of existing uses of and emerging needs for spectrum**

- In cooperation with the Member States, the Commission is to organise an inventory of existing spectrum uses and possible future spectrum needs

## **Article 9 International negotiations**

- This sets out steps to raise the EU's profile in international negotiations and to protect EU interests. The EU is to offer support to Member States in their negotiations with third countries for the implementation of EU obligations. In the World Radio Communications Conference in 2012, the Union should promote results that, amongst other things, enable full use of the 800 MHz and the 3.4-3.8 GHz bands for broadband in the Union; ensure that sufficient amount of appropriately protected spectrum is available for Union sectoral policies, such as the European Space Policy and the Single European Sky; and ensure that changes in the ITU Radio Regulations support and complement the relevant principles of the Union regulatory framework.



## Decision No. 243/2012/EU

## First five-year Radio Spectrum Policy Program (2010-2015)

This Decision creates a comprehensive roadmap contributing to the **the internal market** for wireless technologies and services, particularly in line with the Europe 2020 initiative and the Digital Agenda for Europe. The Decision sets general principles and calls for concrete actions to meet the objectives of EU policies.

### Objectives

- to make sufficient spectrum available to satisfy growing needs
- to maximise flexibility in the use of the spectrum
- to enhance the efficient use of spectrum
- to promote competition between electronic communications services
- to harmonise the internal market and develop transnational services
- to avoid interference and disturbances
- to protect human health



Member States are asked to ensure an efficient management and use of spectrum having as ultimate aim the identification of at least **1200 MHz** (including spectrum already in use) of suitable spectrum for wireless broadband services such as high-speed **4G wireless broadband** systems by **2015**.

In order to find the 1200 MHz of suitable spectrum in support of EU objectives, the Decision establishing the RSPB sets up a spectrum **inventory** of existing uses in the frequency range **between 400 MHz and 6 GHz**, which involves an analysis of technology and spectrum demand trends and future needs, in order to identify bands that can be harmonised and allocated to wireless broadband.

### *Broadband coverage for all EU citizens*

establishment of ubiquitous broadband coverage at a speed of not less than 30 Mbps for all EU citizens by 2020 with at least 50% of EU households having access to broadband at a speed of at least 100 Mbps





[illegible]



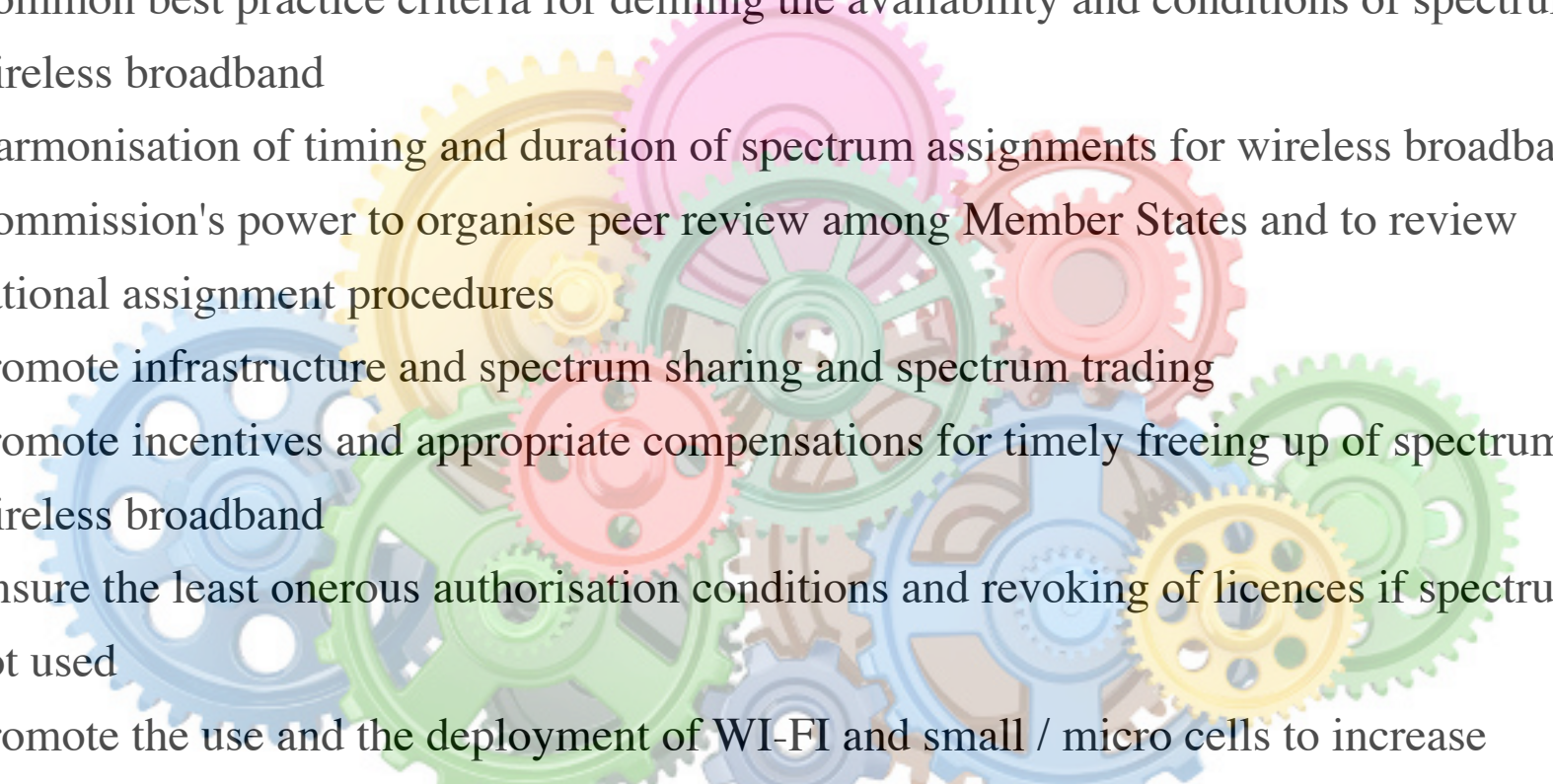
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[Watch this video!](#)



## The proposal on spectrum management

- 
- Common regulatory principles for spectrum authorisation procedures for wireless broadband to support economies of scale
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## What are the main problems

- Europe faces **spectrum spaghetti** – a tangled mess of rules and prices and timetables – that makes pan-European mobile business strategies impossible to implement.
- The majority of spectrum allocation is fragmented and countries are not following their obligations to assign spectrum.
- Only 5 of 28 Member States have assigned all 100% of the 1025 MHz of EU-harmonised spectrum for mobile broadband due to be assigned by end 2012.
- Only 12 Member States have released the 800 MHz band to operators, the band most critical for 4G LTE and expanding broadband coverage into rural areas.

## Proposed goals

- Harmonise the timing of spectrum release and harmonise duration of rights
- Introduce possibility to use a comitology veto (COCOM not Commission alone) to deal with problems such as overpriced spectrum auctions
- Apply a set of principles and criteria aimed at ensuring development of an EU wireless space.
- Appropriate compensations for timely freeing up of spectrum, infrastructure and spectrum sharing, as well as spectrum trading – for example so unused spectrum is put to good use.



## What are the main problems

- **Europe is not a developing continent.** 4G/LTE reaches only 26% of the European population. In the US one company alone (Verizon) reaches 90%
- In 2012 Europe – world's biggest economy - had 6% of the world LTE connections, compared to USA 47%, South Korea 27%, Japan 13%
- Congestion still likely on 4G, even if the target of 1200 MHz of harmonised spectrum for mobile broadband in Europe is achieved. Back-up systems for off-loading demand needed.

## Proposed goals

- Increase capacity through less onerous authorisation conditions
- Increase capacity through removal of unnecessary deployment restriction overly complex procedures for granting permits for micro base stations, or wireless hotspot deployment.
- Increase capacity through right to share access to WI-FI access points.
- Operational improvements such as the common use of active and passive infrastructures, spectrum sharing and spectrum trading will make it easier and cheaper to deploy and/or renovate wireless networks with new technologies.
- Common regulatory principles for spectrum authorisations, common criteria for the availability and conditions of spectrum.



# Concrete proposals (1)

- Article 8: clarifies that the telecoms package refers to spectrum bands that have been harmonised across the EU.
- Article 9: establishes the principle that national competent authorities must apply the “least onerous authorisation system possible”. The clause goes on to say that the regulations must be based on transparent, non-discriminatory and proportionate criteria.

- Note: From proposed regulation **laying down measures concerning the European single market for electronic communications and to achieve a Connected Continent, and amending Directives 2002/20/EC, 2002/21/EC and 2002/22/EC and Regulations (EC) No 1211/2009 and (EU) No 531/2012**



## Concrete proposals (2)

Article 10: reaffirms the wide range of competences that national regulators retain but sets out the criteria that have to be applied in order to make the market more predictable. It sets out criteria for licence fees, spectrum caps, market concentration, network sharing in general and spectrum sharing in particular. The criteria lean in the direction of greater liberalisation. For example, when setting spectrum usage fees, regulators are told to consider the social benefits of spectrum being used. Additionally, when setting network sharing rules, regulators must consider the investments required by operators to meet coverage obligations.



## Concrete proposals (3)

- Article 11: mandates “use-it-or-lose-it” clauses and says regulators should consider refarming inefficiently used spectrum and minimum technology performance levels.
- Article 12: national regulators have to publish timetables for planned authorisations. The Commission will then be able to assemble a “common timetable” that it can use to determine minimum durations for licences so that spectrum licences will ultimately expire simultaneously.



## Concrete proposals (4)

- Article 13: sets out the procedures necessary for a national regulator to authorise spectrum use so that the Commission can plan for more synchronised authorisations. Member states have to submit detailed plans that are then scrutinised by other member states and the Commission for two months. Following comments from other regulators and decisions from the Commission, the regulator has two months to submit amended plans.



## Concrete proposals (5)

- Article 14: national regulators are forbidden from preventing the public accessing RLANs (WiFi networks). This ties in with the Commission's consistent support for the development of WiFi.
- Article 15: goes further and gives the Commission the power to define the technical characteristics of RLAN.



## Concrete proposals (6)

- Article 16: member states are not allowed to prevent their neighbours from implementing their own plans. It is proposed that conflicts are resolved at the Radio Spectrum Policy Group but the Commission can intervene if this goes wrong.



## PHASE 4 THE 2009 REVISED REGULATORY FRAMEWORK

### Directive 2009/140/EC

- Consolidation of EU framework
- More coordinated and efficient management of spectrum → Amendments to:
  - 2002 Framework Directive
  - 2002 Authorisation Directive
  - 2002 Access Directive
- Flexibility, technology & service neutrality, market-based approach

“[...] where appropriate, legislative multiannual radio spectrum policy programmes should be established to set out the policy orientations and objectives for the strategic planning and harmonisation of the use of radio spectrum in the Community” (art. 28)

In September 2010 European Commission published a draft proposal for a Decision establishing the first radio spectrum policy programme.



## THE RADIO SPECTRUM POLICY PROGRAMME

### Decision 243/2012/EU (RSPP)

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## PHASE 4 THE CONNECTED CONTINENT LEGISLATIVE PROPOSAL

### COM(2013) 627 Proposal for a regulation for a single telecommunications market

”Today, Europe is fragmented into 28 separate national communications markets, each with a limited number of players. [...] Overall more than 200 operators serve a market of 510 million of customers. EU rules on, for example, authorisations, regulatory conditions, spectrum assignment and consumer protection are implemented in diverging ways” (p. 4).

”Europe is losing out on a major potential source of growth. In a world where ICT is pervasive, a fragmented electronic communications market undermines efficiency and productivity across the economy. The untapped potential of an EU single market for electronic communications is estimated up to 0.9% GDP or EUR 110 billion per year” (p. 4).



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