

European Radio Spectrum Policy and its Reform

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Background

- ❑ **Important value of spectrum for EU economy**
- ❑ **Spectrum policy as an enabling factor in the context of Lisbon strategy;**
- ❑ **Drivers for spectrum management reform:**
 - **Spectrum usage patterns**
 - **Technology impact**
 - **Economics**
 - **Markets**



Value of spectrum for EU economy

- ❑ **Impact on all sectors of society:**
 - From traditional 'public' usage (broadcasting and defence) to more commercial usage;
 - importance for competitiveness, growth, jobs;
 - Technology evolution: impact on available radio resources.

- ❑ **Essential factor for**
 - the ICT sector, which is a pillar of EC economy,
 - for broadcasting, also essential for cultural & societal aspects.

- ❑ **Spectrum value assessment not easy (difficult to separate the contribution of spectrum to an industry from other factors)**
 - *spectrum dependent communications services contribute to some 2-2.5% of GDP or over 200 billion € every year.*



Spectrum policy in the Lisbon objectives context (1)

- ❑ **Satisfying continuous increase in demand for spectrum for applications at the core of Lisbon objectives** (*"making the European Union the most dynamic and competitive knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion"*)
 - Maximise social welfare, set priorities and ensure that important parts of the spectrum are not underutilised, and avoid congestion in other parts of spectrum
- ❑ **Convergence between services using spectrum**
 - Ensure that different conditions of access to spectrum do not create difficulties to introduce new technologies/services or result in unfair competition.



Spectrum policy in the Lisbon objectives context (2)

Reaping the benefits of technology advances

- Administrations should not try to pick winners as this is generally best done by investors in services to the users/citizen.
- the most attractive service should prosper and Europe should avoid costs and delays resulting from wrong choices.
- ensure that conditions of access to radio resources support innovation and public interest objectives and valorise R&D efforts.



Technology evolution

- ❑ *Impact on available radio resources*: wider range of spectrum accessible (but bottleneck <5 GHz), technically efficient use
- ❑ *New usage modes* (satellite, cellular, short range, UWB,...): specific usage characteristics, stimulation of demand
- ❑ *Cheap radio products* (silicon integration, programmable radio, smart antennas, power modulators,...): increasing spectrum demand.
- ❑ *Frequency agile techniques*: opening up spectrum resources.
- ❑ *Tackling interference*: new mitigation techniques for sharing spectrum, receiver noise resistance,...



Convergence Dimension

- ❑ **One technology serves many services – one service can be served by many technologies.**
- ❑ **Seamless environment: complementarity of access networks / overlap of functions; no single platform can “cover it all”.**
- ❑ **Changing nature of “broadcasting” service: access platform diversity, media convergence yielding new services.**
- ❑ **Overlapping services → overlapping markets: impact on competition.**



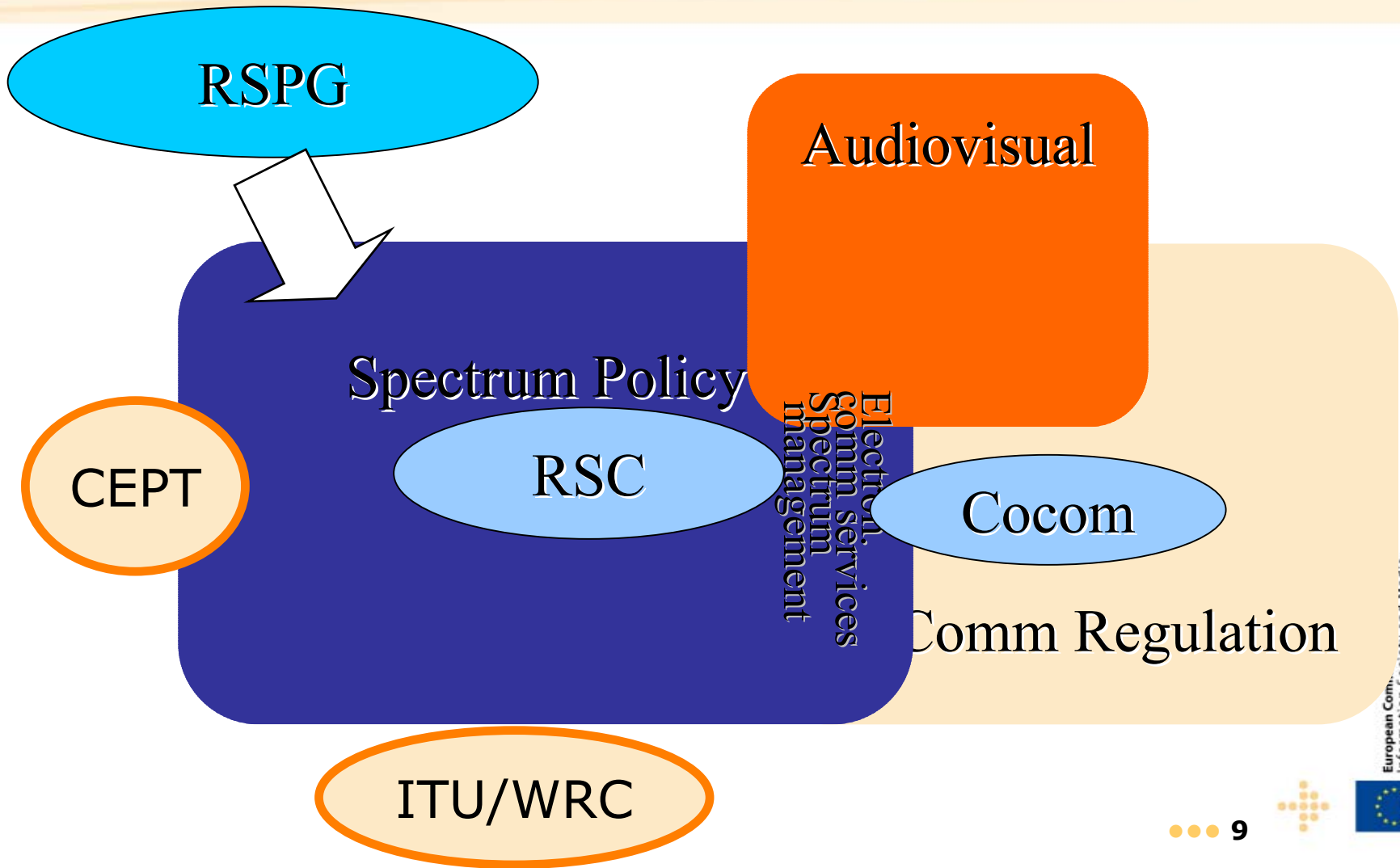
The European Dimension

- ❑ **EU internal market**
 - **Equipment: economies of scale**
 - **Services: interoperability**
 - **Innovation tends to follow market size**
 - **Segmentation by national borders create obstacles to the free flow of goods and services.**

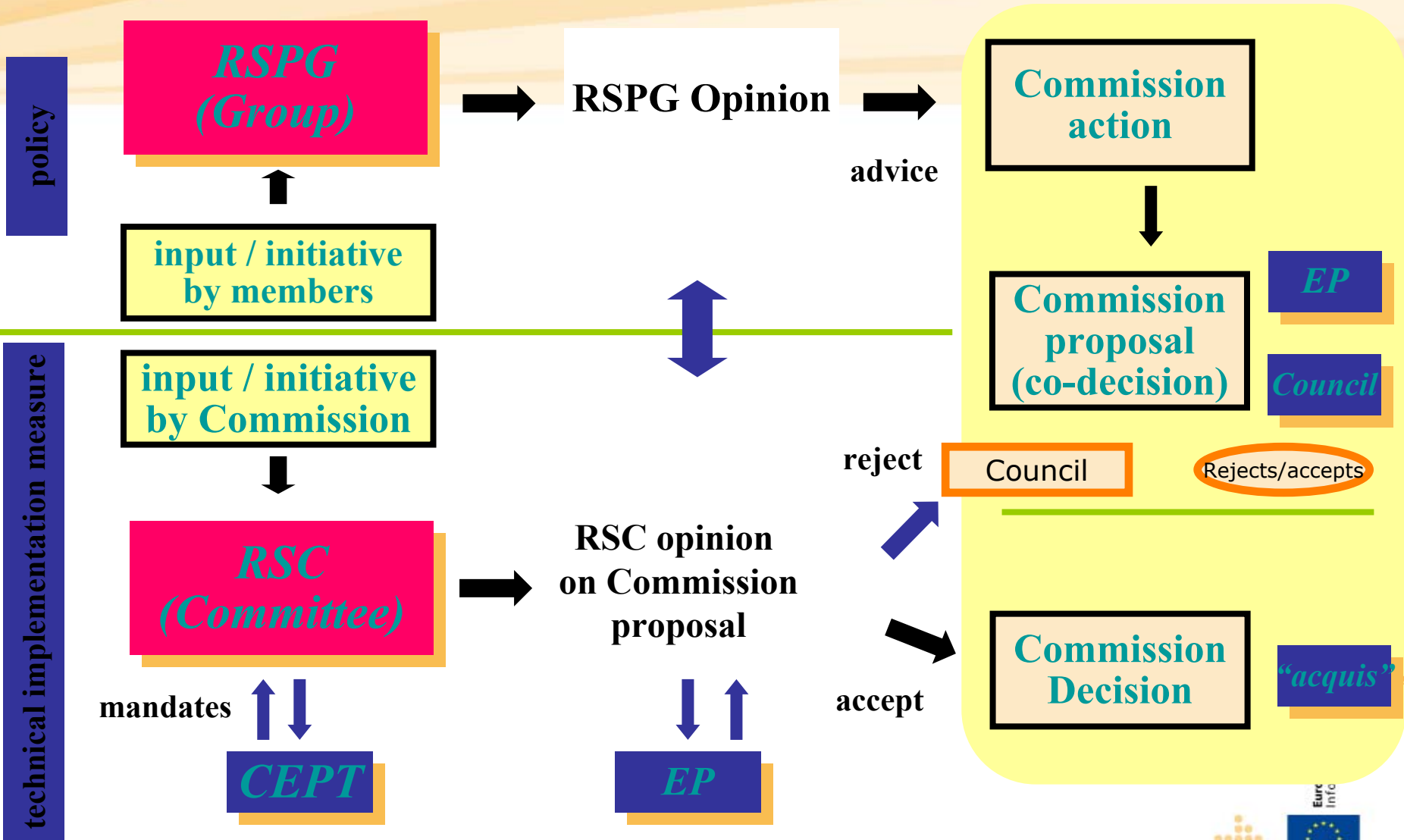
- ❑ **Direct impact on activities linked to EU policies, including ICT, using spectrum**
 - **Service and equipment markets are European or even global, while spectrum management remains largely national and often rooted in technical considerations.**
 - **may prevent the emergence of seamless services covering all or several Member States.**



Spectrum Policy General Institutional Context



EU policy set up



Spectrum management reform

□ The distribution problem

- Who decides on access?
- Comparable access conditions for all radio usages ?
- Who decides on usage ?
- Ensuring fair competition when assigning / allocating radio spectrum

□ Management of interference

- How much interference emission allowed (out of band, in band) ?
- How much interference to tolerate ? (interference resistant receivers)
- Objective definitions of interference;
- New approaches: statistical evaluation of interference impact; risk analysis
- Interference temperature.



Other pertinent legislation

- ❑ R&TTE Directive 1999/5/EC
- ❑ Health protection: Directive 2004/40/EC ; recommendation 1999/519/EC
- ❑ Electromagnetic emissions directive
- ❑ Directive 98/34/EC on technical standards



Spectrum management reform

- ❑ **Traditional spectrum segmentation put into question:**
 - **spectrum – usage (application/service) – technology**
 - **Changing role for standards and harmonisation, including a shift of responsibilities.**
- ❑ **Spectrum management to support the EU internal market:**
 - **Spectrum management needs to follow the market integration**
 - **Need to organise spectrum management in a coordinated manner in the EU.**



Spectrum management reform

- ❑ Until recently: **Distribution of available resources** based on technical consideration
- ❑ Now: **Methodology ensuring “optimal usage”** of radio spectrum as production factor

→ **Spectrum management becomes more complicated:**

- ❑ Link of radio resource usage to economic / societal value of applications and services, for which spectrum is indispensable
- ❑ Technical interference management remains key *and* becomes more complicated



Spectrum reform: objectives

- ❑ **Lower access hurdles to radio spectrum**
 - Lower (direct and indirect) costs of accessing radio resources
- ❑ **Empowering spectrum user** (market player) to decide upon usage as much as possible
 - Market players know better than administrations about business cases
- ❑ More **flexibility in spectrum usage** to overcome “scarcity” and to create an innovative friendly environment



	<u>exclusive usage</u>	<u>shared usage</u>
assignment	market decides	open access ("commons")
interference mitigation	embedded in exclusive usage right	technology based solutions
regulator role	definition of rights first assignment; refarming	common technical conditions refarming ?
economic efficient use	market as optimal decision mechanism	commons approach sub-optimal ?
technical efficient use	market based approach sub-optimal?	shared use fosters technical efficiency within the imposed limitations
innovation	low access hurdle facilitates innovation	pushes technology development within the imposed limitations



Second Annual Report on Radio Spectrum Decision (COM(2005)411)

- An EU-wide balanced approach should be sought between all spectrum models
- Forthcoming EP Report
- Key initiatives for the way forward
 - *Defining common, clear and flexible rules*
 - *Implementing flexibility of spectrum usage*
 - *Assisting the development of a common EU technological base*
 - *Optimising the impact of EU actions*
 - *Supporting EU interests in international negotiations*
 - *Developing the institutional set-up of spectrum policy at EU level.*



Communication on Spectrum Trading (COM(2005)400)

- ❑ Advocating spectrum trading across Europe in combination with flexibility of use by 2010.
- ❑ Identification of frequency bands with substantial economic relevance (i.e. mobile, broadcasting and fixed wireless access).
- ❑ Common European approach to spectrum rights.



RSPG Opinion on WAPECS

- ❑ Objective is to develop internal market and European competitiveness by ensuring innovation-friendly regulatory environment, which facilitates rapid access to spectrum for new technologies and leads to provision of wide variety of wireless services and applications.
- ❑ Understanding and defining technology neutrality and service neutrality.
- ❑ A medium to long term strategy and policy ensuring coherence and time for adjustment.



Digital Dividend 1

- ❑ Spectrum vacated after conversion of analogue into digital format, and legitimate improvements.
- ❑ Most MS by 2010, some already in 2007, hence urgency for a common strategy.
- ❑ EU final target date: end 2012.
- ❑ Implications of RRC-06.



Digital Dividend 2

- ❑ EU dimension : contribution to Lisbon goals; impact at EU level.
- ❑ Potential for new applications and innovations.
- ❑ Internal market impact.
- ❑ Avoid fragmentation – need for a common EU approach while respecting national prerogatives.
- ❑ Consultation on draft RSPG opinion.

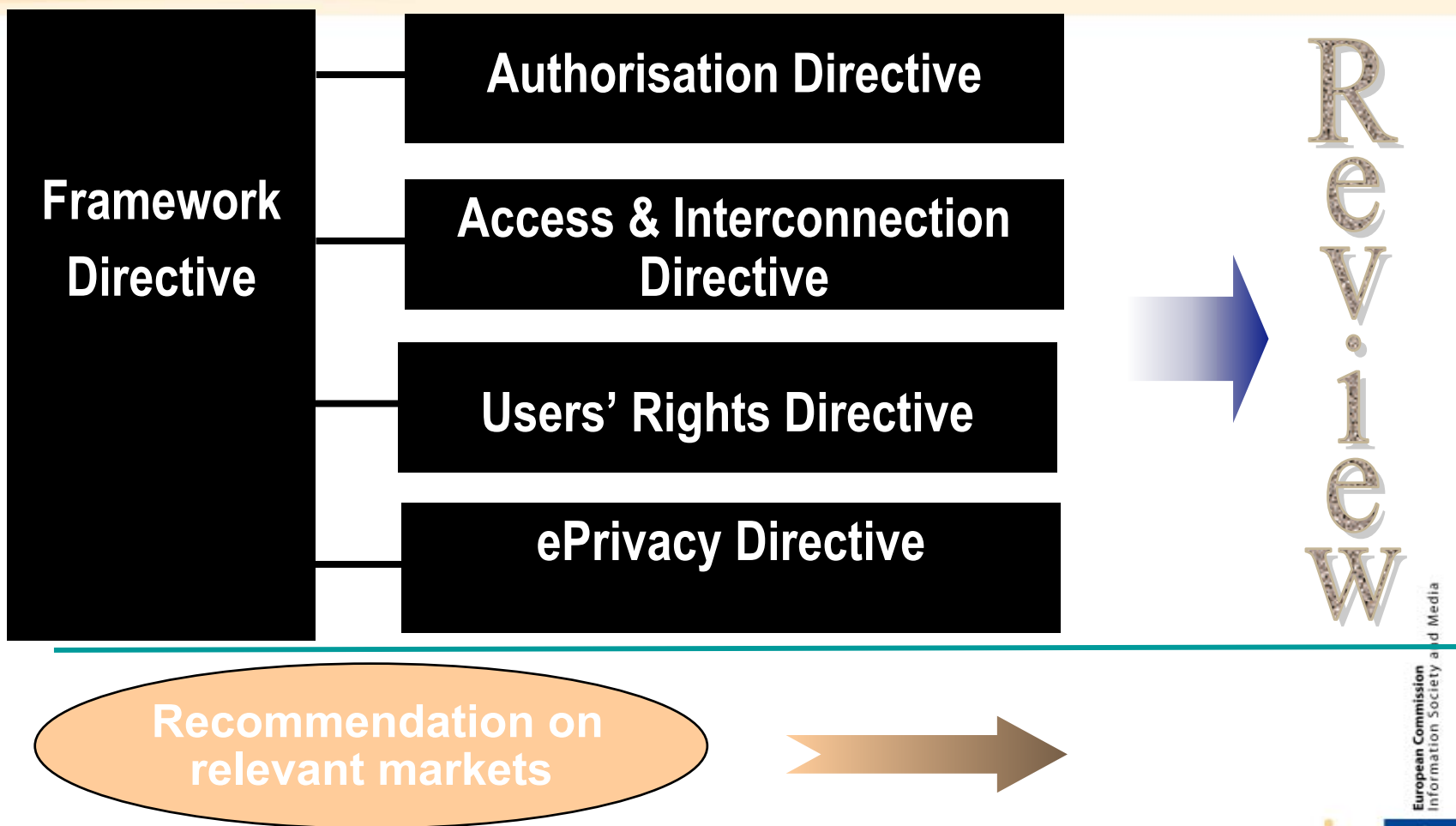


Spectrum Policy and the E-Comm Regulatory Framework

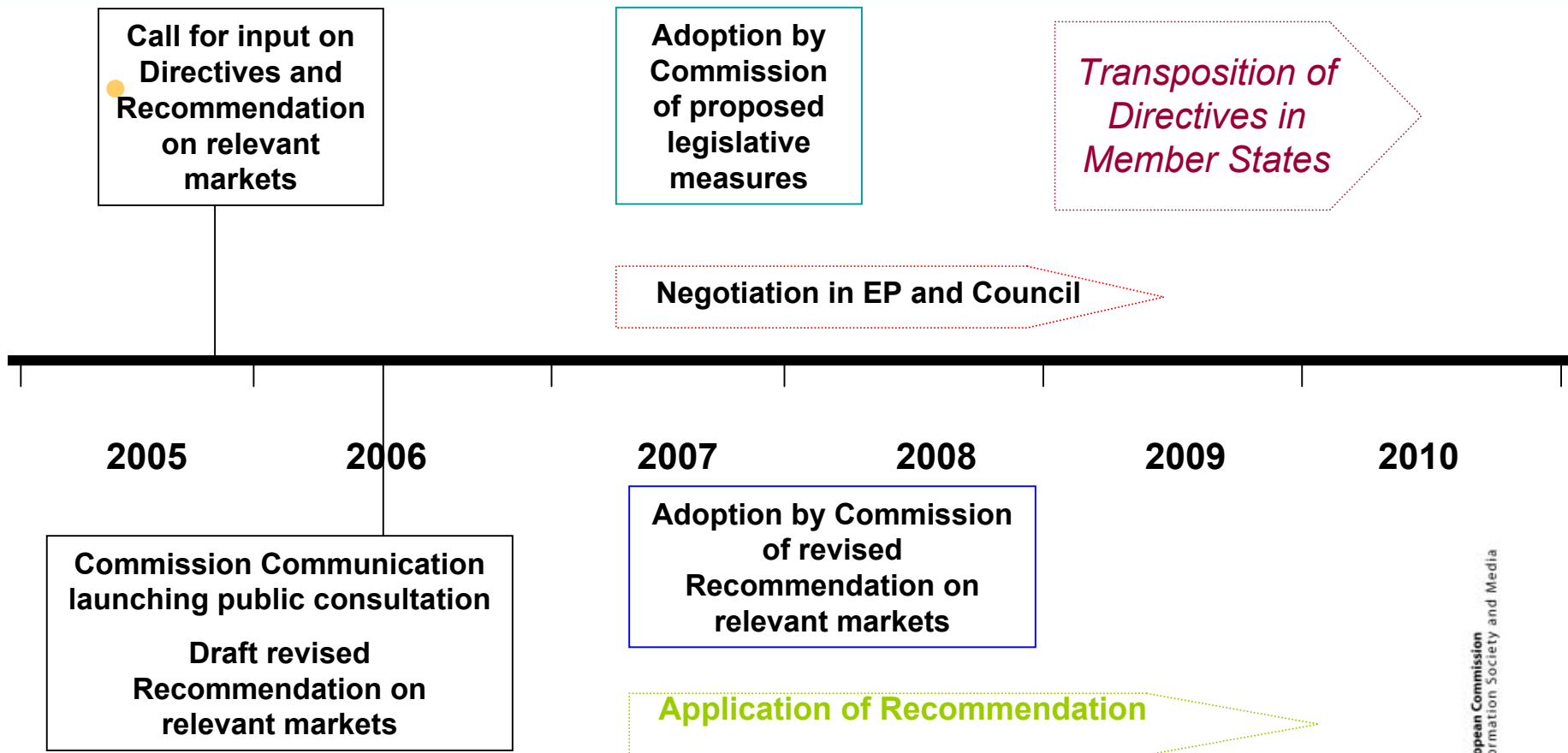
- ❑ Radio Spectrum Decision adopted at the same time as electronic communications Regulatory Framework.
- ❑ Different scopes: technical harmonisation for all EU policies/ e-comm regulation.
- ❑ Framework and Authorisation Directives.



Review of the Regulatory Framework for E-communications



Timeline for Review implementation



Review Documents

- **Commission Communication**
COM(2006) 334

**Working Document on
proposed changes** SEC(2006) 816

Impact assessment (SEC(2006) 817)

**Draft revision of the
Recommendation +
Explanatory memorandum**
Sec(2006) 837



Content of the Review - General

- ❑ A rebalancing of spectrum management approaches – Possible creation of Radio Spectrum Agency.
- ❑ Streamlining Article 7 procedures.
- ❑ Consolidating the internal market.
- ❑ Strengthening consumer protection and user rights.
- ❑ Improving Security.
- ❑ Recommendation on relevant markets.



Spectrum E-comm RF reform: objectives

- ✓ Better and more accessible services for the users
- ✓ Increase innovation and European competitiveness
- ✓ More flexibility and dynamism in spectrum usage to overcome “scarcity” and to boost service and equipment
- ✓ Lower direct and indirect costs of accessing radio resources
- ✓ Efficient coordination at Community level.



Spectrum and the Review

Two main aspects:

- More flexibility and neutrality
- Need for EU coordination
 - Beyond the RSD
 - EU wide selection and authorisation where needed.
 - Tools for EU coordination
 - Comitology
 - Legal certainty.



Rebalancing of spectrum management models

- ❑ **Purpose:** reduce access barriers, more flexibility, innovation, public interest.
- ❑ **Administrative decisions:** limited usage; for agreed public purposes.
- ❑ **Market based approach and flexibility:** tradability, individual spectrum usage rights, guaranteed interference protection; dispute settlement together with technology and service neutrality.
- ❑ **'Unlicensed' or general authorisations:** shared usage, no individual rights nor interference protection, easy access.



Phased approach

- ❑ Evolution, no revolution
- ❑ Need to take into account existing rights and obligations
- ❑ Need to protect public interest objectives
- ❑ Avoid distortion of competition.



Technology neutrality

- ❑ Spectrum users free to use any type of radio network or access technology in a given spectrum band to provide a service provided they do not cause interference
- ❑ Exceptions to be justified by public interest objectives and avoidance of interference.



Service Neutrality

- Spectrum users should be able to provide any service or mix of services in a given spectrum
- Exceptions to be justified by public interest objectives.



Secondary Trading

- Tradability of rights between users would apply throughout the EU
 - in commonly agreed spectrum bands
 - where spectrum use is subject to individual rights.



Spectrum management

- areas for coordination at EU level

- ❑ Common identification of bands for harmonised usage and tradability conditions (e.g. tradable bands, unlicensed bands)
- ❑ availability, accessibility and reliability of information needed for spectrum trading
- ❑ requirements to safeguard competition
- ❑ common criteria to solve legacy issues
- ❑ authorisation of services with pan-European or internal market dimension
- ❑ Common definitions of exceptions to technology or service neutrality.



Conclusion

- ❑ Strong drivers for reform of spectrum management in particular in the Review of ECS regulatory framework and WAPECS approach.
- ❑ Recognising the real dimension of the issue:
 - ❑ Main concern re. spectrum management is socio/economic efficiency, while technical considerations need to be taken into account.
 - ❑ Reaping the full benefits means common actions at European level.
- ❑ New approach involves
 - ❑ Lowering access hurdles to radio spectrum
 - ❑ Implementing possibility for flexible spectrum usage
 - ❑ More empowerment of spectrum users to decide about usage of spectrum.



More Information on...

- ❑ Spectrum Policy:
http://europa.eu.int/information_society/policy/radio_spectrum/index_en.htm
- ❑ RSPG: <http://rspg.groups.eu.int/>
- ❑ Review:
http://ec.europa.eu/information_society/policy/ecommtomorrow/index_en.htm
- ❑ Audiovisual policy:
http://ec.europa.eu/comm/avpolicy/index_en.htm

