



The future of spectrum management : *policy tools for meeting future spectrum demands*

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Content



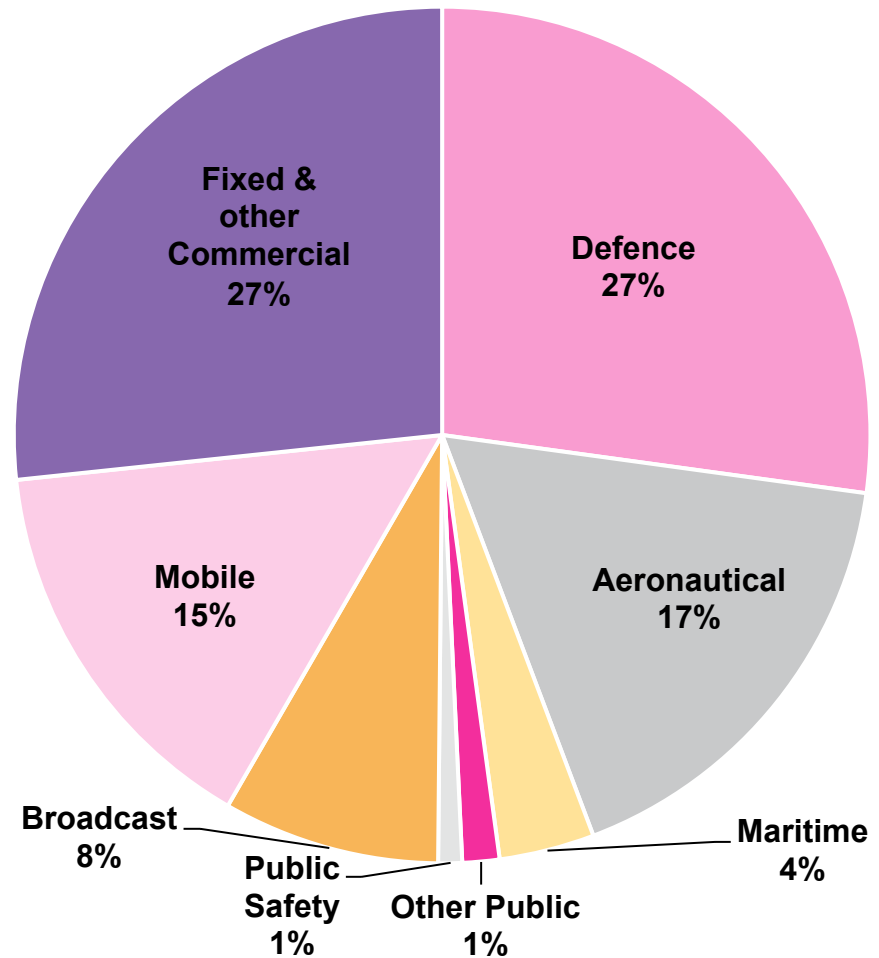
- **Spectrum scarcity: information requirements and measurement**
- **EU policy approaches for meeting future demand**
- **Are the days of over-the-air TV broadcasting in Europe numbered?**

Spectrum below 6GHz is usually said to be “scarce”



But is it?

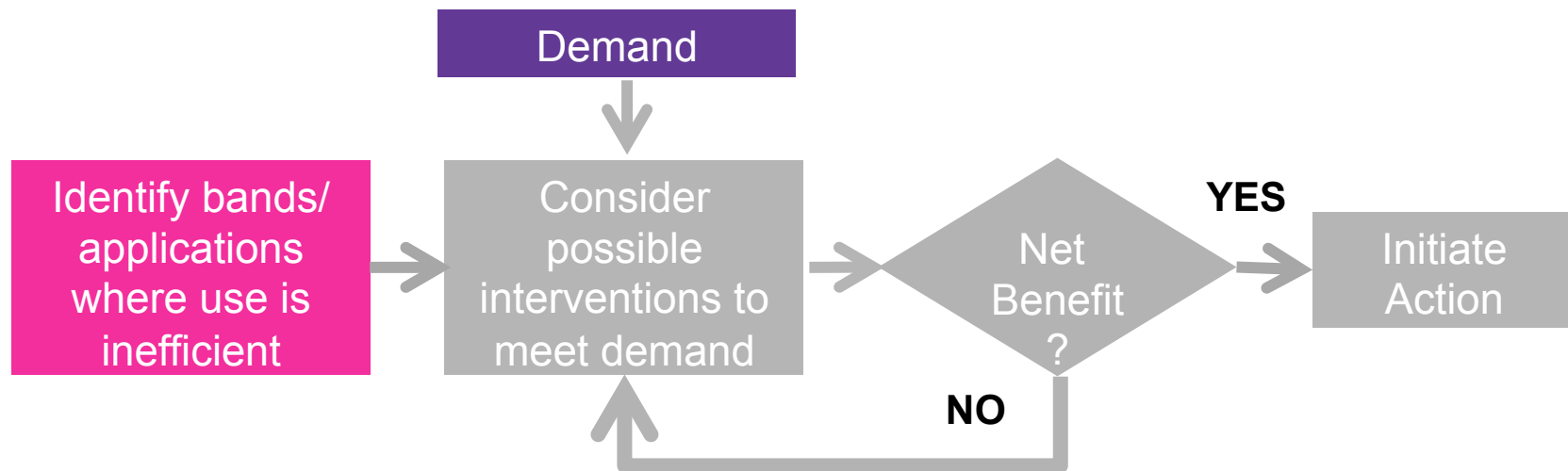
- Is it all “used”?
- Is it all “used efficiently”?
- Can economic and social benefits be increased by regulatory change?



A pilot inventory to assess “efficiency” for the European Commission



- Information for 27 EU member states sought in the 400MHz-6GHz range
- Identification of apparently inefficient use by incumbents triggers deeper analysis





Efficiency - 4 criteria ranked 0-3, added and converted to %

- **Utilisation:** How much of the available spectrum resource is *currently* being used and for how much of the time?
- **Demand Trend:** Growing, Stable or Declining?
- **Technology:** Relative spectrum efficiency of technology, compared to relevant state of the art benchmark
- **Geographic Extent:** Coverage or extent of national territory where the spectrum resource is being used

This was a qualitative assessment using quantitative information where available to identify “problem” bands

Policies to meet future demand in the EU – licensed access



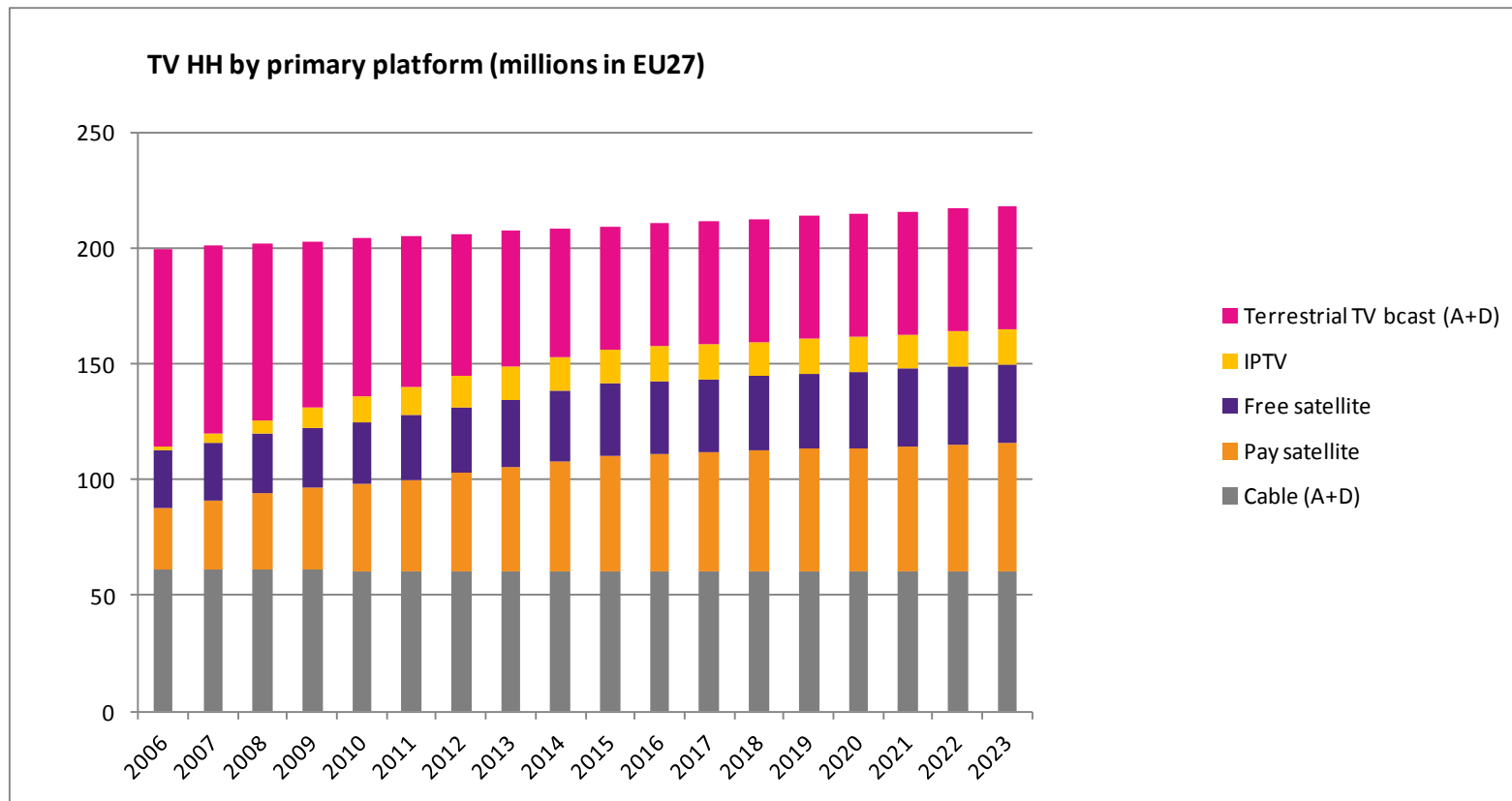
- **Exclusive: Harmonise & release tradable licences for public & private sector users - 700MHz, 1.5GHz, 3.4-3.8GHz**
- **Beneficial sharing opportunities (BSO) - widely opposed:**
 - Users identify BSO nationally (incumbent rights protected) according to a process and criteria defined at EU level.
 - If a net benefit incumbents may be obliged to share
- **Licensed /Authorised shared access (LSA/ASA) – focus is on harmonised IMT bands that cannot be released on an exclusive basis across Europe e.g. 2.3 GHz**
 - Incumbent and new licensees negotiate access voluntarily
 - Regulator defines licence conditions (e.g. technical conditions for co-ordinated use) and ensures fair and non-discriminatory sharing terms
 - Access could be static or dynamic using geo-location databases or sensing techniques

Policies to meet future demand in the EU – unlicensed access



- Unlicensed sharing: geo-location database access in TV white space perhaps based on a harmonised approach
- Increased allocations for RLANs e.g. at 5GHz
- Reduce de facto protection of receivers and/or seek to regulate receiver parameters – nothing concrete yet

OTA TV in Europe is in decline A European UHF strategy is required



Source: European Audiovisual Observatory, Plum Consulting

Thank you!



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References



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