



European  
Commission

# Economic and Social Impact of Repurposing the 700 MHz band for Wireless Broadband Services in the European Union



## EXECUTIVE SUMMARY - English

A study prepared for the European Commission  
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## **Abstract**

This study assesses the economic and social impact of repurposing the 700 MHz band for wireless broadband. It also considers the consequences of repurposing the entire UHF spectrum, as well as additional flexibility to implement wireless broadband in the sub-700 MHz UHF band. The study investigates transition costs, broader socio-economic impacts on the affected sectors, and socio-cultural impacts. The analysis found that repurposing the 700 MHz band would require more efficient transmission standards and cross-border cooperation to ensure that current level of service can be maintained without the 700 MHz band. While the flexibility option could yield additional benefits, it is also important to establish specific technical rules to underpin future levels of investment and innovation. Finally, all considered options would reduce the amount of spectrum available for PMSE use, meaning that steps need to be taken to identify alternative spectrum bands.

## **Executive Summary**

Following the publication in 2014 of the ‘Lamy Report<sup>1</sup>’ the Commission undertook an impact assessment exercise to consider the future of the UHF band (470 – 790 MHz) including the 700 MHz band (694 – 790 MHz) for use by licensed television broadcasting and wireless broadband services. A number of policy options were considered to assess their impacts on market players, users and Member States.

The purpose of this study is to contribute to the impact assessment through the analysis of the costs and benefits of the various policy options. Our examination has focussed on three specific areas:

- The costs of the repurposing of the band, particularly relating to:
  - the re-engineering of the broadcasting networks to deliver the same coverage and content, in the same quality as at present, without the use of the 700 MHz band;
  - the replacement of any receivers by consumers that may be required to support new broadcasting standards;
  - the PMSE industry to replace any radiomicrophones and other wireless audio devices;
- The socio-economic impact to the wireless broadband, broadcasting and PMSE sectors; and
- The socio-cultural impact of any changes resulting from the repurposing of the band.

Our analysis of the current frequency assignments for television services in the UHF band has shown that, without extensive negotiations between neighbouring countries (which are beginning to take place), it is not possible to replicate the existing services, coverage and quality without the use of the 700 MHz band. The only way to continue to provide the services is to migrate to newer, more efficient broadcast technologies or video compression standards (such as DVB-T2 and MPEG-4 or HEVC). We have calculated the cost of such a transition for all 28 EU Member States. Our analysis has shown that:

- network costs (e.g. for the re-engineering of the networks) range from €456 million to €888 million for all 28 EU MS;
- user equipment replacement costs range from €492 million to €1564 million for DVB-T2/MPEG4 services, and from €1206 million to €4169 million for DVT-T2/HEVC services.
- If all television broadcasting in the UHF band is turned off, user equipment costs for an alternative TV service (e.g. satellite) range from €9.2 billion to €11.3 billion;
- PMSE equipment replacement costs to operate outside the 700 MHz band range from €138 million to €313 million. If PMSE equipment were to operate outside the whole UHF band, the PMSE equipment replacement costs range from €458 million to €1042 million.

The study also investigated broader socio-economic and socio-cultural impacts on the three main affected sectors: the wireless broadband sector, the digital terrestrial television (DTT) sector, and the PMSE sector. Based on existing sources and consultation with key stakeholders, we identified the following impacts of repurposing of the 700 MHz band for wireless broadband use:

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<sup>1</sup> Results of the work of the High-level group on the future use of the UHF band

- additional investment and innovation within the wireless broadband sector as a result of enhancing indoor and rural coverage;
- reduction of the amount of spectrum available for digital terrestrial television, but no negative effect on investment and innovation and the quality and diversity of audio-visual content available on DTT as long as there is a clear long-term commitment to the platform;
- improvement in capacity for wireless broadband consumers, along with improvements in overall coverage.

Introducing downlink-only wireless broadband in the sub-700 MHz UHF band on a flexible basis is likely to have a more complex impact:

- potential to provide additional wireless broadband capacity and coverage and contribute to new means of distributing audio-visual content using LTE-based broadcasting solutions;
- given the potential for further reallocation of spectrum in the sub-700 MHz band, clear commitment to DTT platform on behalf of the Member States would be important to ensure continued investment and innovation in DTT, including the funding of DTT content;
- the option also carries a risk of increased fragmentation in the wireless broadband market based on use on a downlink basis.

A well thought-out regulatory approach is therefore necessary in order to avoid the potential negative impacts of a flexibility option.

While repurposing the entire UHF band for wireless broadband use would secure considerable additional spectrum resources for mobile operators, lack of a viable alternative to DTT at this time means that such an option is not feasible in the short- to medium-term without severely impacting the existing European audio-visual model and hence the values of media pluralism and cultural diversity of the sector and the viewers/citizens.

All three options represent a reduction in spectrum availability for PMSE, meaning that PMSE manufacturers and users will experience a considerable negative economic impact and would negatively affect the quality of live productions and other audio-visual content relying on PMSE equipment. Additional efforts will be needed to maintain the current quantity and quality of audio PMSE operations.

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