

# DIGITALEUROPE Response

## to the consultation on the Lamy Report: the future use of the UHF TV broadcasting band

Brussels, 1 April 2014

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DIGITALEUROPE welcomes the opportunity to provide its views on the Lamy Report as well as on the questions contained in this consultation. DIGITALEUROPE's response is given in the present document. Some questions are answered individually while some others are addressed in answers to several questions at once. Sections 1 and 2 (respondent's profile and confidentiality) are addressed in the annex.

### 1. Respondents' profile

Please see in annex.

### 2. Confidentiality

Please see in annex.

### 3. The citizens' dimension

As an industry association, DIGITALEUROPE is not in the position to address these questions seeking to gather insights into individual citizens' preferences.

While DIGITALEUROPE highly welcomes the European Commission's aspiration to pursue evidence-based policy making, it would like to express its concerns regarding the representativeness of the results of this section of the consultation. In a fully-fledged consumer survey, respondents form a sample of society the profile of which is carefully designed so as to represent society as a whole. The set of respondents to this questionnaire will hardly achieve this and there is a high risk that the results of the survey will reflect the preferences of an already biased set of stakeholders.

Furthermore, while the first 6 questions are rather accessible to the general public, it is highly unlikely that the average consumer will be willing to dive into and grasp the complexity of the last 3. This in turn maximizes the chance of picking either randomly or favouring the most conservative answer.

DIGITALEUROPE would invite the Commission to consult already existing statistics such as those gathered in the framework of the High-Level Group on the UHF Band or in the European Audiovisual observatory's Yearbook 2014.

## 4. Potential repurposing of the 694-790 ('700') MHz band

### What long-term advantages and disadvantages do you see in using the 700 MHz band for wireless broadband services in the Union?

DIGITALEUROPE sees two key arguments how Europe can benefit from assigning the 700 MHz band to mobile broadband.

#### Firstly, Europe can join and further foster a close-to-global eco-system in 700 MHz

Europe can participate in the 3GPP Band 28 ecosystem that has the potential of a close-to-global footprint ranging from Asia-Pacific, all Latin America, Africa and Middle East. This huge footprint is expected to lead to very affordable devices with excellent roaming capabilities. In emerging markets, large shares of the population will get first time internet access through affordable smart phones and tablets. Networks can be rolled out quickly and cost-efficiently due to the excellent coverage properties of the 700 MHz band. Likewise, Europe can benefit from the band properties and its economies of scale and expect attractive end-user devices based on that eco system.

#### Secondly, Europe can meet its ambitious Digital Agenda targets with 700 MHz

Europe can make available the amount of coverage spectrum required to meet the Digital Agenda target of 30 Mbps to every household in those areas where wire-line solutions are not cost efficient.

In rural areas legacy copper lines often are too long to support such data rates and replacing those with fibre or cable would come at prohibitively high cost.

Consequently, wireless solutions need to be looked into. Whilst today's LTE networks are capable of delivering peak data rates to an end user of up to 75 Mbps in a pair of 2x 10 MHz, average experienced user throughputs are in the range of 5 to 20 Mbps depending on network design and load. Towards the cell edge, users typically experience a range of 3 to 5 Mbps, sometimes requiring external antennas. LTE at 800 MHz over a single 2x 10 MHz licence with a limited number of base stations cannot provide for the targets set by the EU.

With LTE-Advanced, improvements in technology lead to certain enhancements of the spectral efficiency, i.e. the amount of data that can be transmitted within a given spectrum, and the possibility to bond large amounts of spectrum in so called carrier aggregation. Improved spectrum efficiency e.g. by more sophisticated antenna technology may lead to an increase in data rates at the cell edge in the order of 25% whereas addressing additional spectrum translates to approximately linear increase in data rate.

With a band plan compatible to 3GPP Band 28 in 700 MHz, Europe can double up the amount of spectrum provided today in 800 MHz and joint use of the total spectrum in 800 MHz could yield 60 MHz for downlink capable of delivering to remote household the targeted 30 and 50 Mbps, respectively.

As an industry association, DIGITALEUROPE is not in the position to address these questions seeking to gather insights into individual citizens' preferences.

## What merits do you see in a coordinated EU approach for changing the use of the 700 MHz band in the Union from broadcasting to wireless broadband services?

DIGITALEUROPE recommends making available the 700 MHz band in addition to the 800 MHz band for Mobile Broadband in a timely manner as a corner stone in delivering on European Digital Agenda targets, particularly to sparsely populated and remote areas in Europe.

DIGITALEUROPE considers essential that the harmonization and transition process should be managed by administrations in a timely manner and be properly resourced, while applying accurate frequency planning and good spectrum engineering practices, in particular ensuring that:

- There should be no disruption of the existing DTT services to consumers
- Consumers should be appropriately informed
- Interference problems should be minimized and solved in the least disturbing way for the consumer in applying the guidelines recently published<sup>18</sup>
- Time plans for the transition are developed with the Consumer Electronics Industry

DIGITALEUROPE considers a transition to DVB-T2 as an adequate measure to facilitate the release of the band 694 – 790 MHz.

DIGITALEUROPE maintains that harmonised designation of spectrum and usage conditions are essential ingredients to support cost effective devices for both the consumer electronics industry and the mobile industry.

Regarding the channelling arrangement for mobile broadband, DIGITALEUROPE supports a frequency arrangement in ITU Region 1 that facilitates a global solution, leverages on standardization activity and is compatible with EU Band 20 (800MHz). This allows economies of scale and roaming capabilities across all ITU regions. Consequently, DIGITALEUROPE welcomes the finalised deliverables in CEPT that are harmonising the CEPT band arrangement with 3GPP Band 28 lower duplexer.

## In your opinion what should a potential EU coordination cover?

DIGITALEUROPE wants to emphasize the need that device manufacturers (in both the Digital Terrestrial Television and the Mobile Broadband sectors) have for harmonized conditions to create a non-fragmented internal market. Harmonized conditions allow the benefits of economies of scales to be fully be realised both by the consumer as well as by industry.

Therefore, DIGITALEUROPE sees fundamental value for EU coordination to avoid market fragmentation derived from Member States' transposition of the Radio Equipment Directive into their national regulatory systems. This is all the more fundamental as long as harmonized norms are not available.

DIGITALEUROPE considers also that EU Coordination should ensure the appropriate spectrum and transition management as described in the response to the previous question.

Concerning standardization, DIGITALEUROPE would like to recall that the natural replacement cycle of Integrated Digital TV sets is about 7 years and that consumers will not be motivated to upgrade their home equipment solely for the purpose of addressing LTE-700 immunity. On top of this, compliance with any new standard might require R&D efforts which can take up to 2 years (depending on how much the standard disrupts current solutions). As a consequence, even if a standard was adopted today, fully reaping its benefits

might be achieved only by 2024 (2015+2+7=2024), which might be when the future use of UHF will be reassessed according to time-lines outlined in the Lamy report.

As a consequence, DIGITALEUROPE sees external filters to match individual reception as the most appropriate measures until all regulatory aspects are stabilized and harmonized in Europe.

**Should there be a common EU deadline for making the 700MHz band available for use for wireless broadband services across the EU?**

Yes

No

**Please provide justification of your answer on a common EU deadline including cost assessment.**

DIGITALEUROPE supports a frequency arrangement in ITU Region 1 that facilitates a global solution, leverages on standardization activity and is compatible with EU Band 20 (800MHz) and Band 28 (700 MHz). This allows economies of scale and roaming capabilities across all ITU regions.

Concerning costs, any re-planning of DTT frequency usage implies several costs:

- Re-planning costs
- International coordination costs
- Upgrade of the transmitters and additional transmitters sites (on broadcast side, the compression of spectrum usage from 470 - 790MHz to 470 – 694 MHz implies new investments and or additional transmitter sites)
- If the reduction of available spectrum leads to a more intense usage of Single Frequency Networks, this may require careful planning to avoid difficult to resolve self-interference cases.
- Additional transmitters for transition time: In some European countries by law, any existing free-to-air channels, public or commercial, must be simulcast in case of introduction of a new format during a minimum overlap period.
- Communication to and assistance of the general public (upgrades of antenna reception and amplifiers, etc.)
- On the consumer side, it implies frequency changes leading possibly to equipment changes (upgrade of set top boxes) , antenna reorientation and filter changes
- Assuming a change in broadcast transmission technology, the user will have to invest in new equipment through subsidies or sufficient motivation through better user experience.

**Which date would you propose for such a deadline [The Lamy report proposes a deadline of 2020 +/- 2 years]?**

2020 seems fit as the general rule while, in some Member States, a documented derogation up to 2022 could be awarded in a similar way as it was done for the 800 MHz band.

As a strong advocate for flexible solutions allowing for win-win scenarios for all industries and all Member States, DIGITALEUROPE supports the 2020 +/- 2 years’ time-frame proposed by the Lamy Report.

**Should there be measures at EU level mandating use of the latest, most spectrum-efficient technologies for DTT equipment (such as DVB-T2, HEVC etc.)?**

- Yes  
 no

DIGITALEUROPE wants to emphasize the necessary conditions to introduce any new technology in the market as stated in Annex 2 - Agreed transition roadmap - of the report by Pascal Lamy - Results of the Work of the High Level Group on the Future use of the UHF Band (470-790 MHz):

“Review and put in place any necessary legislation and regulation, including legal framework:

- Such potential legal framework must be synchronized with service launches and be adaptable to technology choices of a given country on a country by country basis.
- Such potential legal framework would ensure that consumer equipment available on the market is future proof from a given point in time and that legacy equipment cannot be sold
- Such measures are best decided on a consensus basis within a platform gathering relevant stakeholders including the consumer electronics industry.“

DIGITALEUROPE highly values the expressed ambition of the European Commission to modernize the DTT platform and its CE industry members are pleased to endorse this objective with newer technologies. In this context we would like to clarify the following:

- The natural replacement cycle of TV sets is between 7 and 10 years. During the period between the start of the introduction of a newer technology and completion of replacement:
  - The loss of audience discourages DTT broadcasters to switch over before a sufficient penetration is reached.
  - Long simulcast periods result in a costly undertaking which is an option excluded by broadcasters.
  - If broadcasters wait until the equipment reaches a high penetration, the technologies may be superseded by then. There is a risk that receiver manufacturers are in the situation to integrate technologies which have no value to the user, have a cost impact and may be never used and cannot promote their future-proofness with respect to future services.
- From several experiences in various Member States, the sole mandate of technologies alone is rather counterproductive. A technology mandate needs to be synchronized with new added value services, information campaigns and clear timelines. These may be complemented by subsidies for vulnerable persons.

DIGITALEUROPE concludes that the natural replacement cycle needs to be leveraged – but is not sufficient – for a successful migration. DIGITALEUROPE sees the need for synchronizing any obligation to integrate newer technologies in receivers with:

- obligations or/and funds to produce new associated content formats like UHD
- a start of services with a minimum percentage corresponding native formats
- Associated information or marketing campaigns.

Obviously, for those countries which have, or are about to generalize HD services, additional HD services alone may not be sufficient to motivate the consumer. A proactive approach for UHD seems to be more appropriate to provide to right incentive to the market.

### **Which date would you propose to mandate such spectrum-efficient technologies?**

DIGITALEUROPE would like to again emphasize the need to synchronize any obligation to integrate newer technologies in receivers with the start of attractive new services. The focus of attention should not be on the technology but on the added value proposition to the consumer. Furthermore, any mandate should respect the technology neutrality principle.

## **5. Ensuring regulatory certainty for current users of spectrum**

DIGITALEUROPE provides a merged answer to the below three questions.

### **Should there be a common EU deadline for safeguarding primary use of the 470-694 MHz band for DTT and further use for wireless microphones and other wireless audio equipment?**

**Please provide justification of your answer on a common EU deadline to safeguard existing uses.**

### **Which date would you propose for such a deadline [The Lamy report proposes a deadline of 2030]?**

It is not entirely clear to DIGITALEUROPE what is meant by ‘safeguarding primary use of the 470-694 MHz band for DTT and further use for wireless microphones and other wireless audio equipment’.

Any future framework, i.e. regulatory and spectrum licensing regime for the range 470 - 694 MHz, should preserve current and future deployments of DTT, and avoid any disruption to current and future DTT installations. This implies for instance that potential licensees must not interfere with legacy DTT receiver installation and that re-planning additional DTT deployments or redeployment of the latter must be possible without additional constraints for DTT on a national or international level.

The necessity to provide protection guarantees to current and future deployments of DTT is due to the complexity of migration process.

Compared to the other platforms, terrestrial television migrations and enhancement are associated with complex migration processes subject to consensus between politics and broadcasters. This is due to:

- lack of sufficient capacity or spectrum for longer simulcast
- a mostly horizontal market (where equipment is not subsidized and/or provided by the operators in conjunction with a service) with average replacement cycles of 7 years for TVs and with an end consumer expectation to be supported for a very long time
- Political obligations of continuity of services and commitments towards vulnerable persons.

Broadcast technology evolution is mainly driven around a consensus between industry and broadcast services to develop a next generation of delivery systems, notably within the DVB project. This consensus is built on a confidence of consumers’ commercial acceptance. Any evolution has to be done generally by reusing existing spectrum, whereas mobile systems often can be deployed in additional spectrum. Therefore, a technology evolution of DTT is only feasible if acceptable by the user and by authorities (politics and regulators). This is in particular crucial, as the concept of DTT has been historically to minimize disruptions to the user and reuse widely the outdoor antenna and in-house distribution installations (see section 3).

The acceptance of such evolution has to be obtained through a better service, new offers, increasing number of services, which is subject to the return on investment to integrate these new technologies for the industry on one end and to launch these new services on the other end.

Such an investment by broadcasters becomes more challenging, because over the years, broadcasters have been under pressure to reduce their transmission costs whilst the cost of spectrum usage has increased.

The current discussion on DVB-T2 introduction with HEVC or AVC is a typical example: Several broadcasters and industries are preparing for the next evolution with HEVC including UHD TV. The emergence of UHD TV or HD HEVC is linked with the availability of spectrum on temporary time for simulcast and in any case, long term perspective on their investment.

As a conclusion, DIGITALEUROPE stresses the need for certainty for DTT in the use of the 470-694 MHz band but advocates that the introduction of more flexible solutions allow not to have a common date across Europe while both protecting DTT where needed and allowing introduction of additional capacity for Mobile Broadband on a case-by-case basis.

## 6. Flexibility of use of sub-700 MHz (470-694 MHz) spectrum

**Do you support flexible downlink-only use of the 470-694 MHz band also for wireless broadband services, which safeguards primary use of this band for DTT according to national circumstances?**

Yes, taking into account our response to question 5 and under the condition described below.

No

**What scenarios and conditions should be studied to allow flexible downlink-only use in the 470-694 MHz band? In particular, should these include primacy for the provision of audiovisual services to mass audiences?**

The concept of Supplemental Downlink concept consists of allowing MBB to use available spectrum resources where not used by DTT for additional downlink capacity provided that such use does not constrain existing and future DTT deployments and DTT installations.

### Scenarios

Supplemental Downlink usage could be envisaged as early as around 2020, if it does not impose disruption to DTT:

- Should the trend of progressive reduction of DTT spectrum usage be confirmed, new frequency resources could be made available gradually to mobile on the basis of SDL.
- Should the trend be opposite with constant or more intense usage of DTT, SDL could remain attractive in areas with little DTT frequency usage and/or in countries where DTT has a low frequency usage.

As the evolution of DTT is difficult to predict and heterogeneous, DIGITALEUROPE believes that SDL is the possible option to allow for innovation in DTT and MBB with the following scenarios:

- In countries or areas where DTT uses the totality of spectrum, DTT can continue to use the whole band and evolve in an unconstrained way. Unused resources by DTT could become usable at later stage.
- In countries and areas where a (partial) IP/hybrid migration takes place, some spectrum resources can be made progressively available to mobile.



- In countries and areas where DTT is reduced or low, the band can be used completely for Supplemental Downlink.
- In a possible converged scenario, a cooperation ranging from the simple infrastructure sharing to cooperative spectrum sharing or service cooperation could be envisaged.

In this way, a seamless transition between DTT and IP (where and if it occurs) can take place without disruption of DTT services, whilst serving the increased need for spectrum resource of mobile/wireless broadband and without prejudging any future scenario.

Countries with low dependency on terrestrial TV distribution or changing use patterns of terrestrial TV may look into ways to open spectrum not in use for 470 - 694 MHz for MBB early, possibly even limited to parts of the country. Supplemental Downlink (SDL) complements LTE networks and provides an option to enhance MBB networks in the direction where additional capacity is most needed.

At the same time, Supplemental Downlink allows to manage co-existence with remaining TV services within that country and along its borders as both services provide downlink from a limited amount of known transmitters. This helps significantly to avoid close-proximity scenarios and to mitigate potential adjacency issues in frequency domains and along service border areas.

### Conditions

Given the importance of DTT, this framework should preserve current and future deployments of DTT, and avoid any disruption to current and future DTT installations. This implies for instance that potential licensees must not interfere with legacy DTT receiver installation and that re-planning additional DTT deployments or redeployment of the latter must be possible without additional constraints for DTT on a national or international level.

Equally, it appears that DTT will continue to evolve and will remain an important delivery system in many Member States. An evolution of DTT delivery is beneficial for the availability of spectrum. As a consequence, introducing policies for DTT evolution in countries is recommended. For example, a voluntary policy towards DTT next generation systems (driven by better DTT service and or subsidies for users) together with concerned stakeholders in the member states may help to release spectrum whilst helping the DTT ecosystem to evolve.

A major source of mutual interference between DTT and MBB is eliminated by not using mobile uplink in the band, but limit the use to DL only via SDL. There remain, however, potential interference scenarios to be investigated. In the same manner as DTT transmitters could cause interference to mobile terminals, base stations operating in vicinity to DTT reception antennas may cause interference.

Interference of DTT high power high tower transmit into terminal receivers can occur in line-of-sight (LOS) scenarios in particular where the mobile terminal receives high signal levels of DTT somewhere in its receive band which may impair the mobile terminal reception sensitivity. As line-of-sight conditions between DTT towers and mobile terminals (e.g. on a street or even indoors) may be limited, one can expect these effects to be restricted to a limited geography. Furthermore, the assignment of SDL resources to a mobile terminal within the base station scheduler can account for the terminals' receive conditions in the SDL band based on the terminals' measurement reports and thus opportunistically assign resources in the SDL bands to those terminals capable of using them, i.e. those not in LOS conditions. Consequently, substantial DL capacity gains by using SDL in 470 - 694 MHz seem to be feasible without creating too much technological challenges in terms of immunity.



For the opposite way, i.e. interference of base station transmitters into DTT receivers, the deployment of base stations, their transmit powers and their antennas need to be subject to careful planning in order to avoid those interference cases. Some typical measures would be:

- Base stations have to be operated in a way that they are sufficiently far away from DTT aerials in order to avoid any amplifier saturation. Several studies show that distances of kilometres are sufficient to achieve such conditions. Such studies have to be refined to consider typical legacy wideband amplifiers and negligible impact on DTT reception
- Channels directly adjacent to DTT channels in use in areas shall be avoided
- Maximum allowed power radiation on other channels shall be determined in a way that there should be no impact on coverage probability for legacy DTT receivers with the chosen waveform and emission mask.

Under these conditions, DIGITALEUROPE assesses that band usage by Supplemental Downlink is possible without impact on existing and future DTT installations and DTT deployments.

## 7. Harmonisation of use of sub-700 MHz (470-694 MHz) spectrum in the long-term, the European approach and the International Telecommunication Union (ITU) context.

DIGITALEUROPE does not wish to address this section of the consultation.

## 8. Market review of the state-of-play of broadcasting and wireless broadband services

DIGITALEUROPE does not wish to address this section of the consultation.

## 9. Other comments

**Do you have further comments related to the Lamy Report? Do you have further comments regarding relevant issues in the context of the future use of the UHF band (470-790 MHz)?**

**Conditions for a migration to newer DTT technologies**

DIGITALEUROPE would like to emphasize again that any migration to newer technologies for DTT needs to be associated with real added value services for the consumer. It is therefore a prerequisite to find a consensus between stakeholders on which added value services to propose.

DIGITALEUROPE sees the need for synchronizing any obligation to integrate newer technologies in receivers with:

- obligations or/and funds to produce new associated content formats like UHD
- a start of services with a minimum percentage corresponding native formats
- Associated information or marketing campaigns.

Obviously, for those countries which have, or are about to generalize HD services, additional HD services alone may not be sufficient to motivate the consumer. A proactive approach for UHD seems to be more appropriate to provide to right incentive to the market.

### **Future Co-primary allocation to Mobile Service**

The use of the on-demand part of Audiovisual Media Services (AVMS) is rapidly growing and requires up-link transmission. In view of the future usage evolution, it is prudent to leave the door open to up-link in this band (as with the SDL proposal). While the date of the political decisions will differ from country to country, we are of the view that no European-level decision should be taken permanently limiting the use of the 470-694 MHz band to downlink.

For this reason, we are of the view that a co-primary allocation of the band to the Mobile Service in Region 1 may be investigated. It should be noted that European allocation to the Mobile Service does not oblige an Administration to authorise or deploy mobile applications in the band. What it does do is to give administrations the flexibility to make these political decisions at a later stage.

## Annex – data related to sections 1 and 2 of the consultation.

### 1. Respondents' profile

I am responding as:

- An individual in my personal capacity  
 The representative of an organisation/company

Please enter your full name: Marc Soignet

Please enter your organisation/company name: DIGITALEUROPE

Please explain who the organisation represents and, where applicable, how the views of members were assembled: DIGITALEUROPE represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies.

DIGITALEUROPE is a consensus-based association and the drafting of its positions are governed by its by-laws.

Please enter your organisation/company address: rue de la science 14, 1040 Brussels.

My organisation/business operates in: EU

Please enter your email address: [marc.soignet@digitaleurope.org](mailto:marc.soignet@digitaleurope.org)

### 2. Confidentiality

DIGITALEUROPE does not consider its contribution neither confidential nor anonymous.

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For more information please contact:  
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## ABOUT DIGITALEUROPE

**DIGITALEUROPE** represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies.

**DIGITALEUROPE** ensures industry participation in the development and implementation of EU policies. DIGITALEUROPE's members include 58 corporate members and 37 national trade associations from across Europe. Our website provides further information on our recent news and activities: <http://www.digitaleurope.org>

## DIGITALEUROPE MEMBERSHIP

### Corporate Members

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### National Trade Associations

**Belarus:** INFOPARK

**Belgium:** AGORIA

**Bulgaria:** BAIT

**Cyprus:** CITEA

**Denmark:** DI ITEK, IT-BRANCHEN

**Estonia:** ITL

**Finland:** FTTI

**France:** AFDEL, Force Numérique, SIMAVELEC

**Germany:** BITKOM, ZVEI

**Greece:** SEPE

**Hungary:** IVSZ

**Ireland:** ICT IRELAND

**Italy:** ANITEC

**Lithuania:** INFOBALT

**Netherlands:** Nederland ICT, FIAR

**Norway:** IKT NORGE

**Poland:** KIGEIT, PIIT

**Portugal:** AGEFE

**Romania:** ANIS, APDETIC

**Slovakia:** ITAS

**Slovenia:** GZS

**Spain:** AMETIC

**Sweden:** Foreningen

Teknikföretagen,

IT&Telekomföretagen

**Switzerland:** SWICO

**Turkey:** ECID, TESID, TÜBISAD

**Ukraine:** IT UKRAINE

**United Kingdom:** techUK