

UTILISING THE DIGITAL DIVIDEND IN EUROPE

Creating a sustainable future for mobile broadband

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GSMA BY THE NUMBERS



MEMBERSHIP


800
mobile operators in
over **220** countries


230 associate
members

PRESENCE


Offices in
9 countries
serving every region


Staff based in
26 countries
representing
36 nationalities

MOBILE REACH


6.6
billion
mobile
connections


3.2 billion
individual subscribers

THE DIGITAL DIVIDEND



AS TV BROADCASTING GOES DIGITAL, MORE CAN BE DONE WITH LESS SPECTRUM



470MHz



Digital Broadcasting



790MHz



Mobile



862MHz

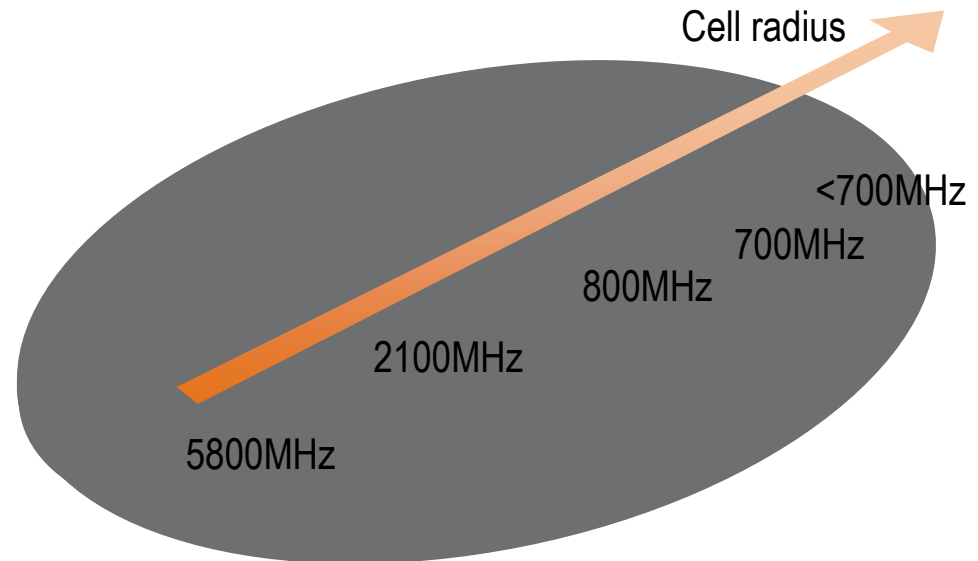
THE FREED SPECTRUM CAN BE USED TO TRANSFORM MOBILE BROADBAND

Connect more people in more places:

Extend good value, and faster, mobile services more widely - including covering remote areas at a reasonable cost

Better service quality, fewer blackspots

Propagation benefits mean better quality coverage including deep inside buildings



The 2.1GHz band needs 4x more base stations and 3x the network CAPEX to deliver the same coverage as the 700MHz band

EUROPEAN DIGITAL DIVIDEND 1: 800MHz



THE 800MHz BAND WAS MADE AVAILABLE FOR MOBILE IN EUROPE AT WRC-07



ALMOST ALL OF EUROPE HAS SINCE LICENSED THE BAND TO MOBILE



DIGITAL DIVIDEND 2: 700MHz

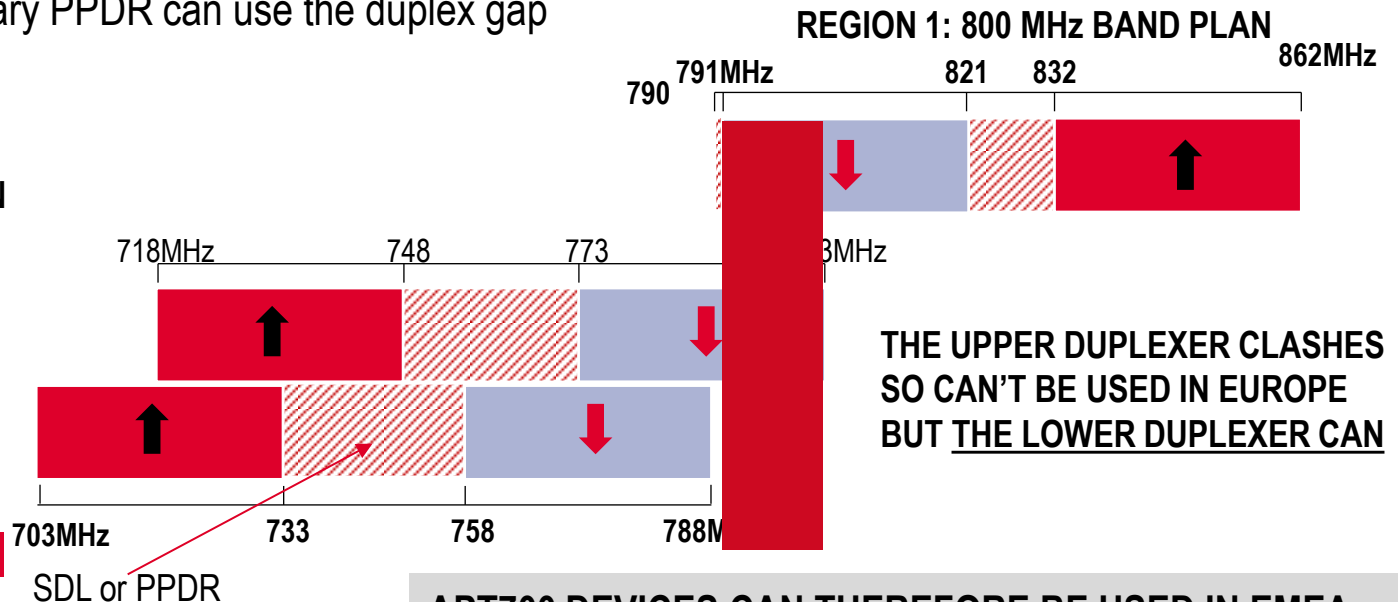


- **WRC-15 will finalise the conditions for IMT in 694-790MHz in Region 1 (EMEA)**
 - Involves agreeing a common band plan and out of band emissions – Europe has agreed both
 - Germany to become the first European country to auction the 700MHz band on May 27th
- **Why does harmonisation with the Asia Pacific 700MHz band plan matter?**
 - Creates a nearly-global band plan, enabling economies of scale for lower cost devices and roaming
 - The APT700 band plan is dominant globally **BUT** its upper duplexer clashes with the 800MHz plan
 - Europe's 700MHz plan uses the lower APT700 duplexer and can support SDL in the duplex gap
 - Where necessary PPDR can use the duplex gap

APT700MHz BAND PLAN

Upper APT duplexer

Lower APT duplexer &
EMEA 700MHz plan



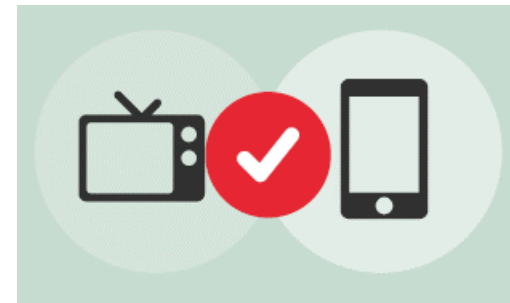
POTENTIAL DIGITAL DIVIDEND 3? SUB-700MHz



3RD DIGITAL DIVIDEND WOULD EXTEND FASTER MOBILE BROADBAND MORE WIDELY

CURRENT UHF USAGE (470-694MHz):

- Mostly supports digital terrestrial TV services (together with VHF)
 - TV services are vital now and in the future and must be safeguarded
- DTT viewership and number of channels varies significantly by country



HOW TO ACCOMMODATE MOBILE *IN A PORTION*:

- Broadcast evolution means more can squeeze into less spectrum
- Potential for more DTT use in VHF (e.g. 174-230MHz) creating space in UHF for mobile
 - Terrestrial TV services in Finland, Sweden and Russia use *some* VHF so it is feasible
 - Option is dependent on how much DTT spectrum is required and DAB use (which has limited uptake)
- US incentive auction shows licensing mobile in the 600MHz band can be popular with broadcasters
- WRC-15 is an opportunity to support greater flexibility in the long-term for how the band is used

VARIATION IN BROADCAST USE MEANS REGULATORS SHOULD HAVE FLEXIBILITY TO USE THE BAND ACCORDING TO NATIONAL PRIORITIES

SECURING THE FUTURE OF MOBILE & TV



MOBILE AND TV IS CHANGING – THE DIGITAL DIVIDEND CAN HELP BOTH

- **Demand for mobile broadband is growing faster than anyone's expectations**
 - Urgent need to secure more spectrum to support growing traffic – especially video
 - Must include coverage bands so everyone benefits regardless of wealth or location
- **TV services are radically changing due to the on-demand revolution, HD & mobile**
 - Terrestrial TV is vital today, and in future, but on-demand, HD and mobile are changing the market
 - In the US, revenues from the 600 MHz mobile auction will be used to fund TV service upgrades
 - Reduced broadcast spectrum does not mean reduced services – expansion is still possible
 - Mobile offers an amazing TV content opportunity – more eyes on more screens in more places
- **The digital dividend can continue to be a win-win for TV and mobile**
 - WRC-15 is an opportunity to benefit everyone by enabling mobile in 700MHz and sub-700MHz

