

Developing a spectrum strategy to ensure Europe maximizes the potential of 5G

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11th Annual European Spectrum Management Conference

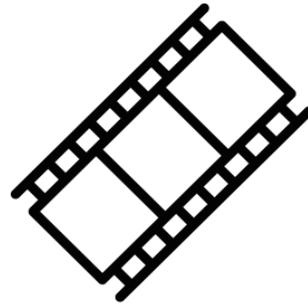
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Agenda

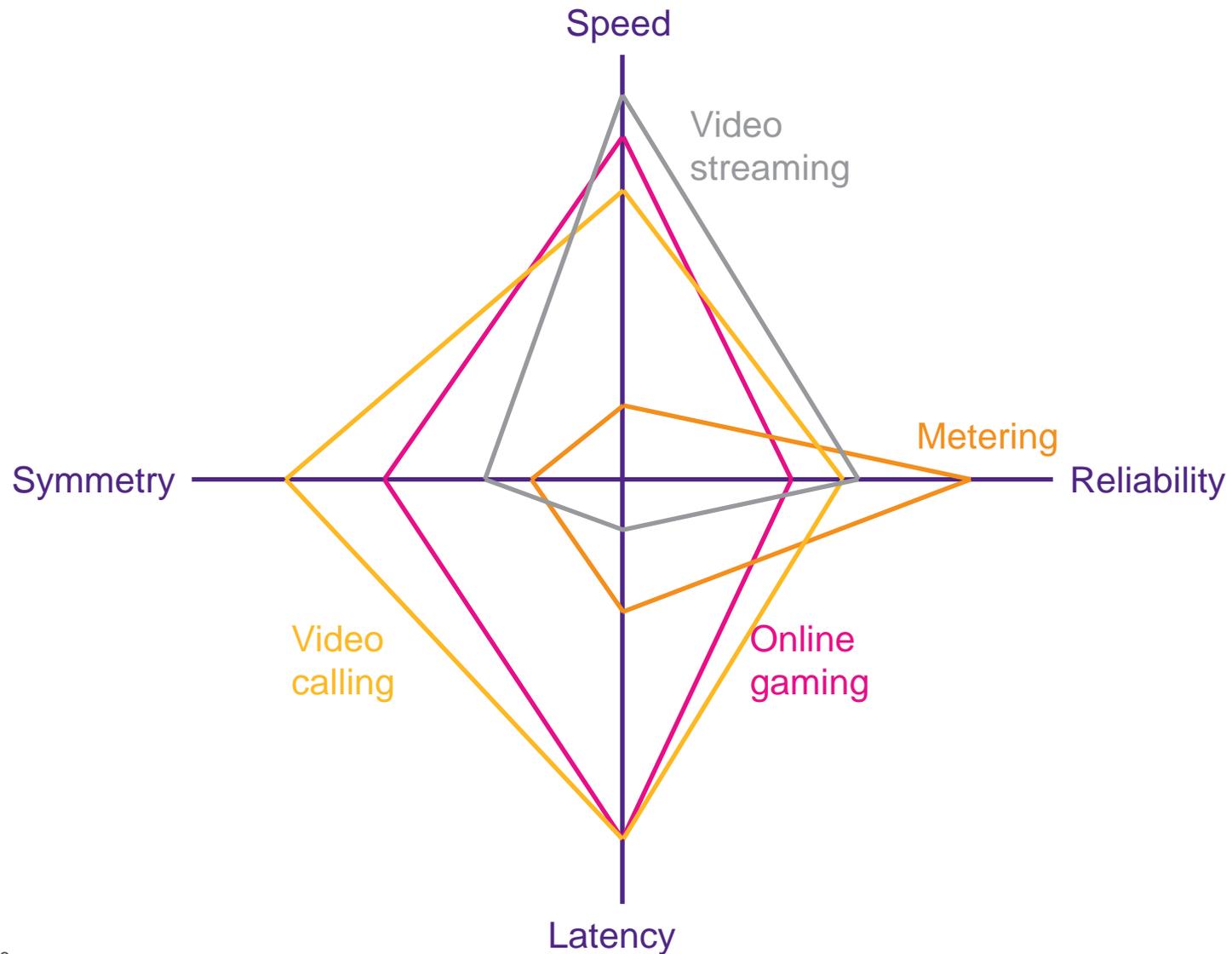
- What is 5G?
- The technical solution
- How much spectrum do we need?

What is 5G?

5G will be defined by its uses, not its technology

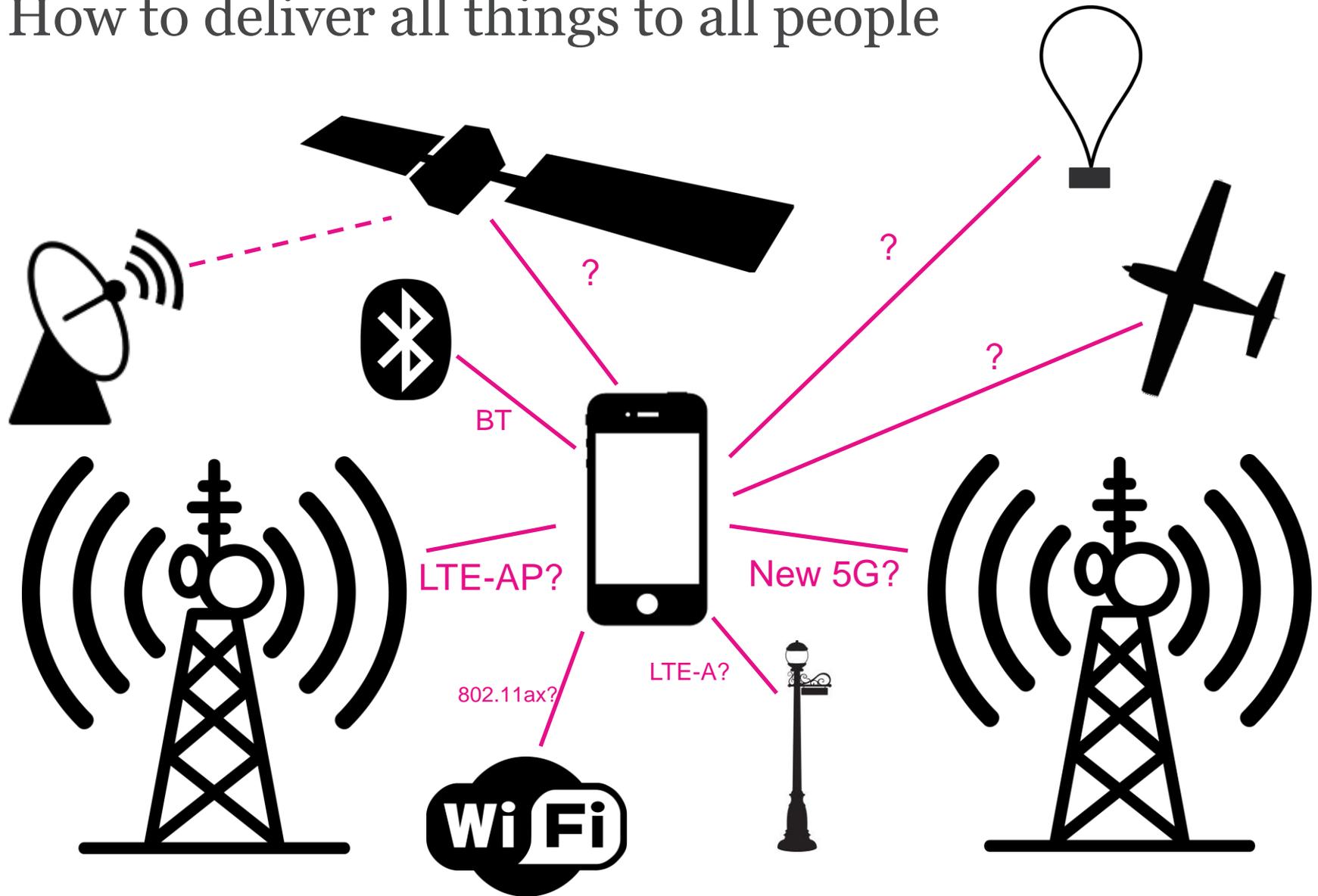


Different services have different needs



The technical solution

How to deliver all things to all people



Forecasts need to change

- Relative usage of different services will define mix of technologies
- Defining spectrum needs will need disaggregated demand forecasts
- How will people use their connection in 2030?

- 5G devices may adjust technology use based on service use
 - Models will need to do the same
 - The 5GIC is working on algorithms and rules to govern this



How much spectrum do we
need?

More importantly, which spectrum?

- Disaggregating demand leads to spectrum usage for different technologies
- Focus remains on traditional mobile networks

Coverage spectrum

- 700 MHz is key
- Refarming of LTE and 2G possible
- Potential for some offload from HAPS or satellite

Wide-area capacity

- L-band and C-band assignments need to be finalised
- Is SDL still relevant?

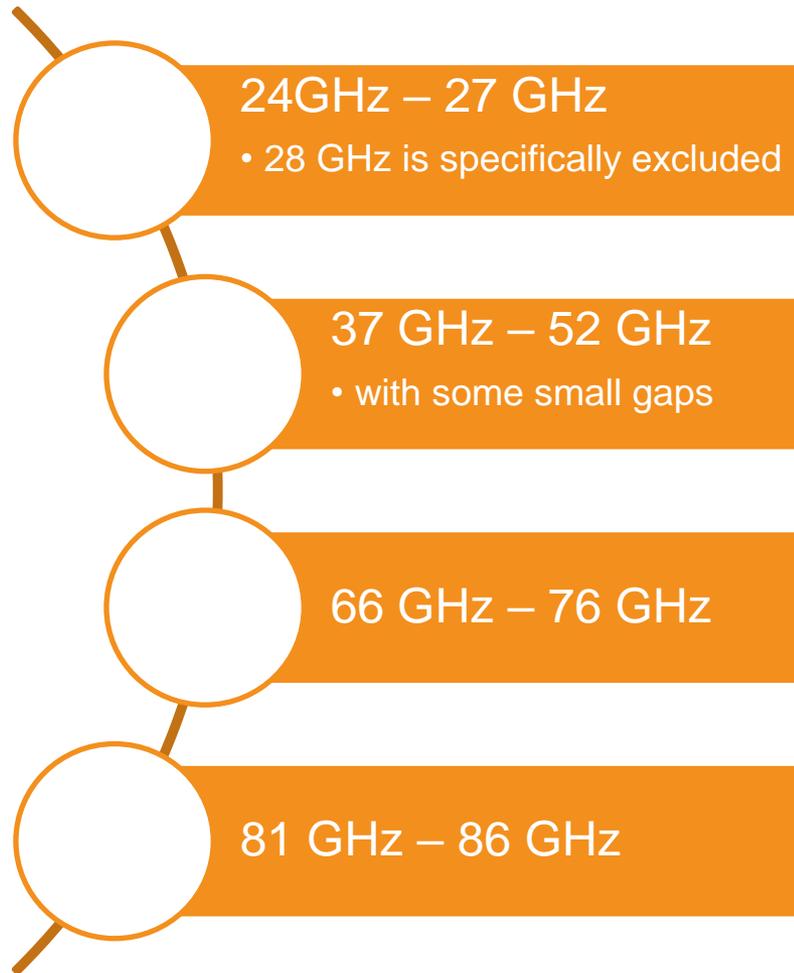
- RSPG says 3400-3800 MHz is a key band due to harmonisation

Small cell capacity

- Millimetre wave spectrum identified
- May be well served through WiFi offload

- RSPG wants to narrow choices down to one band above 24 GHz

Spectrum identified for 5G



- Other bands were allocated for IMT in general
 - LTE and SDL may use these before 5G is commissioned
- UHF below 700 MHz will not be reallocated before WRC-23 in R1
- Studies are looking at how high-frequency bands can be bounced around buildings
 - There is limited in-building penetration
 - Are we relying on picocells or ubiquitous WiFi?

Spectrum planning in uncertain climates

- WRC-19 is too late
 - Study groups need to identify spectrum soon, ready for ratification
 - Service demand modelling needs to identify how it will be used
- A wide portfolio of spectrum is needed
 - Long-range spectrum
 - Satellite capacity
 - Dedicated HAPs spectrum
 - Increased unlicensed spectrum for handoff – maybe with LSA-U or LSA-LAA
- New demand modelling – and valuation methods – are needed
 - Options-based analysis increasingly important

Panel presentations

Agenda

