

Broadcast Radio and 5G

European Radio Show
Paris, 25 January 2019



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Technology agnosticism

- Public Media Services are agnostic with respect to standards or technology
- We adopt everything that...
 1. allows us to comply with our public service obligations
 2. allows us to reach devices used by citizens
 3. is technically possible
 4. is economically viable

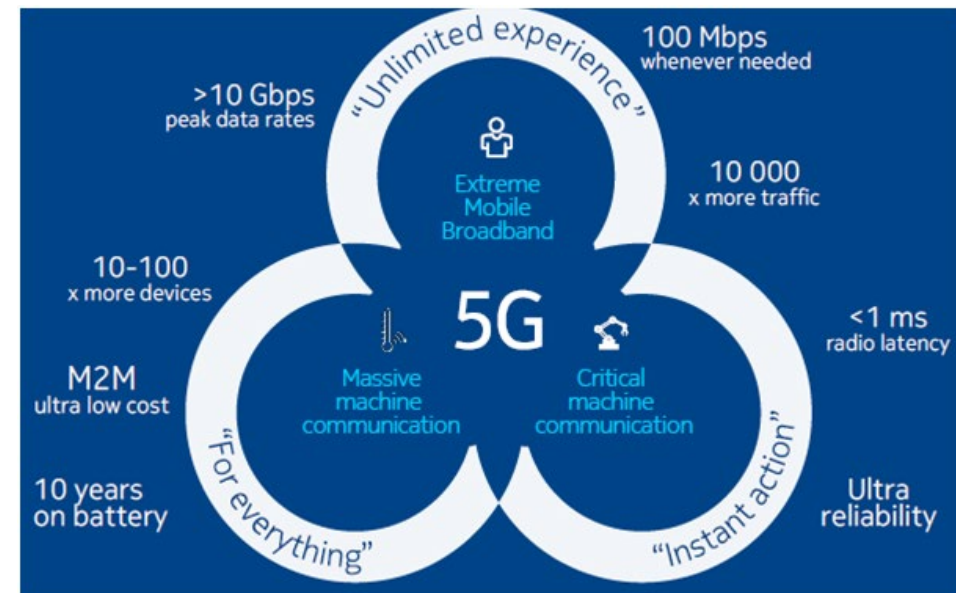


What is 5G?

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What is 5G?

- 5G is about future, not now
- There is a global momentum for 5G



What is 5G?

- For the European Commission, 5G is not about Radio, TV or Media. 5G is about “*Entertainment*” with “*apps beyond imagination*” (sic)



What is 5G?

- For vendors, 5G are services provided by a **single network**



What is 5G?

- For mobile operators...
 - ✓ 5G is about money, economic growth, profitable new services, etc.
 - ✓ They will deploy genuine 5G only for all those services that cannot be provided with the current networks

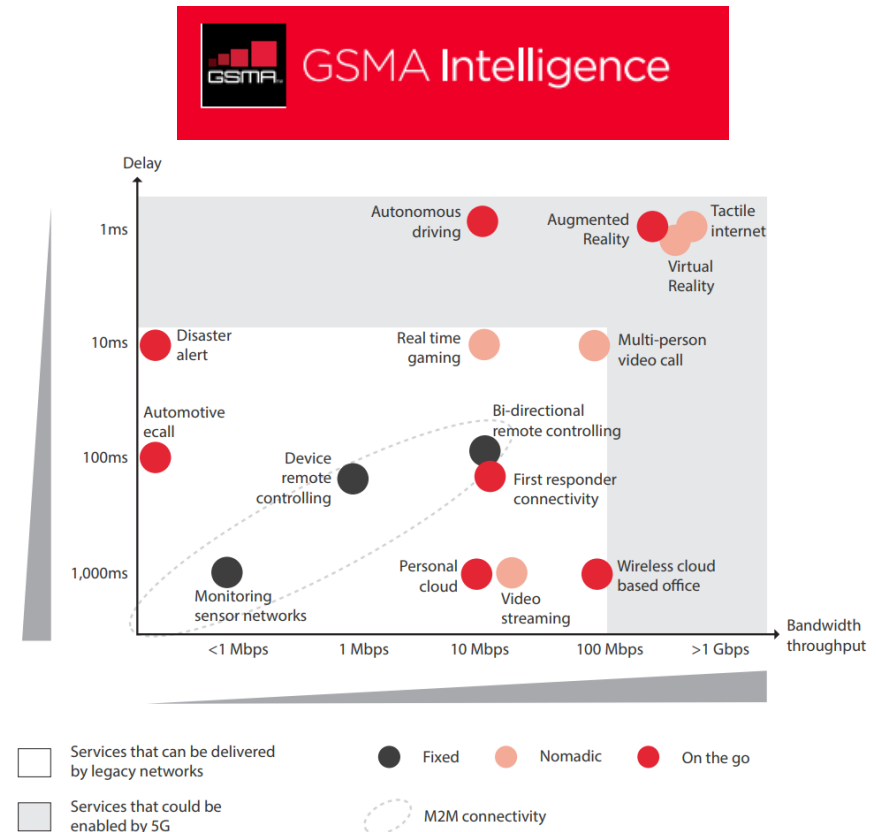
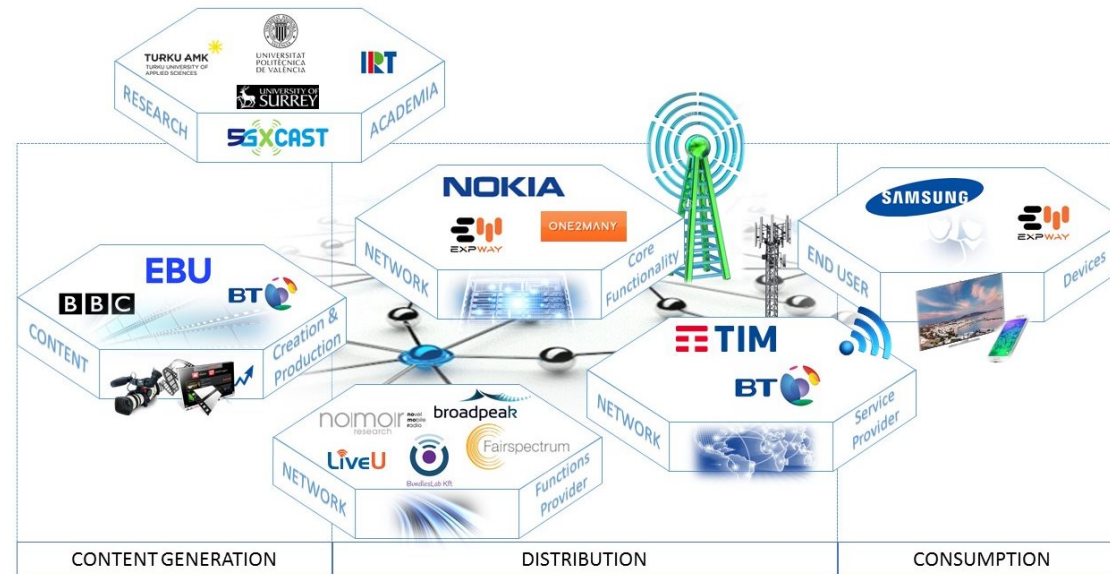


Figure 1: Bandwidth and latency requirements of potential 5G use cases

Source: GSMA Intelligence

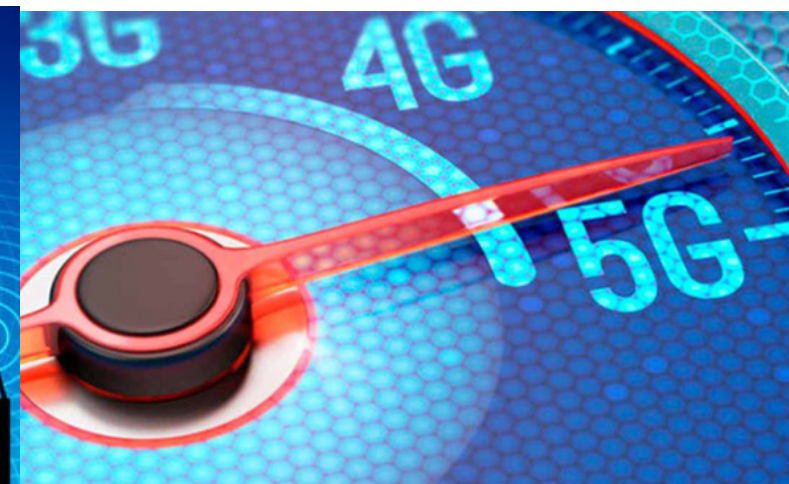
What is 5G?

- For Public Media Services, 5G will be what Public Media Services want to be



General perception about 5G

- EBU, in principle, is in favour of 5G
 - 5G networks will be far superior to any existing network
 - 5G networks will support a wide range of use cases, including those with strict performance requirements (latency, quality of service, cost...)



Scepticism/realism about 5G

1. 5G initial developments **did not consider**:
 - Requirements for a massive distribution of audiovisual services
 - Interoperability or integration with TV and Radio broadcast networks



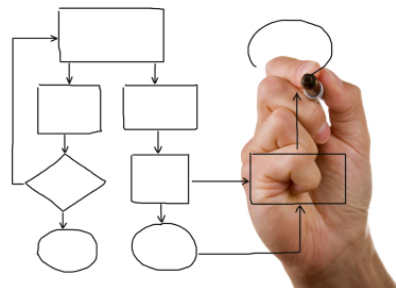
Scepticism/realism about 5G

2. 5G will not be a entirely new development. It will be built on the basis of the existing telecommunications infrastructure.
3. Mobile operators will try to recover their investments in 4G deployment before they start investing in new 5G infrastructures
4. New business models in 5G have not yet been developed



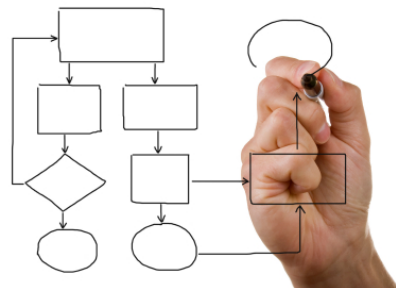
5G Standardisation process

- The process started some years ago
 - The objective is to achieve a single, coherent and globally accepted set of standards.
 - The main standardization bodies involved are 3GPP and ITU
 - ✓ The 3rd Generation Partnership Project (3GPP) unites seven telecommunications standard development organizations (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC)
 - ✓ Since 5G intends to integrate different telecommunications technologies (i.e. fiber and satellite), another bodies will be involved later (ETSI, IEEE, etc.)



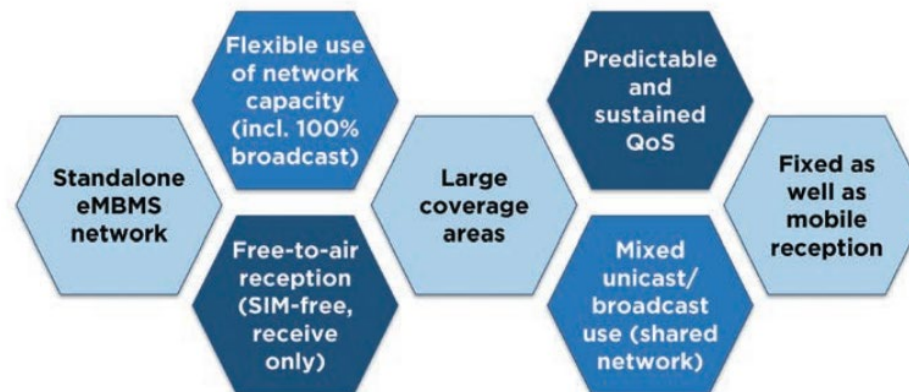
5G Standardisation process

- Work at 3GPP has been planned so that the standards on 5G are expected to be ready in 2020
- Original 5G features will be specified in two 3GPP “Releases” (3GPP standards): **Release 15** (published on June 2018) and **Release 16** (expected by 2020)
 - This is consistent with ITU’s calendar, because the identification of spectrum for 5G is an Agenda item at WRC-19



Participation at 3GPP

- The effective collaboration between EBU and 3GPP did not start until 2015, when the first requirements were submitted. Today we can talk about a fruitful collaboration.
 - Many of these requirements, including the obligation of providing **FTA SIM-free** linear TV and radio programmes offered by public service broadcasters, were adopted in **Release 14**



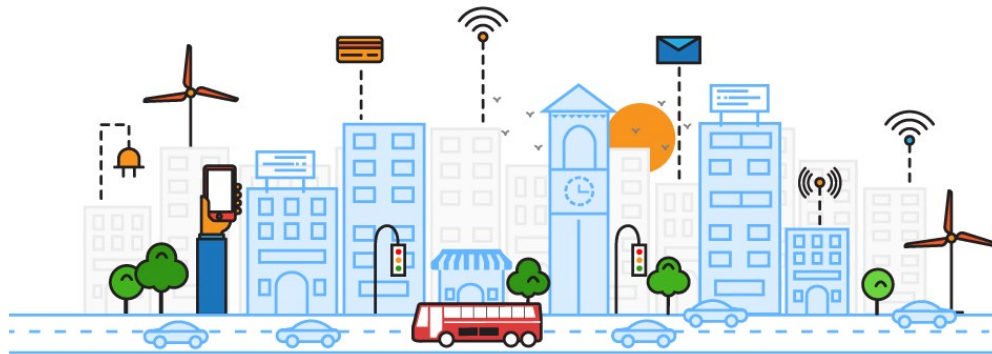
Participation at 3GPP

- **Release 15** is the first 3GPP Release which includes some 5G original features
 - One of this features is a new radio interface called '5G New Radio' (5G-NR), but this interface does not specifies **a broadcast/multicast mode**
 - A future specification including broadcast/multicast (FeMBMS, "Further evolved Multimedia Broadcast Multicast Services") could be included in **Release 16...** or even later



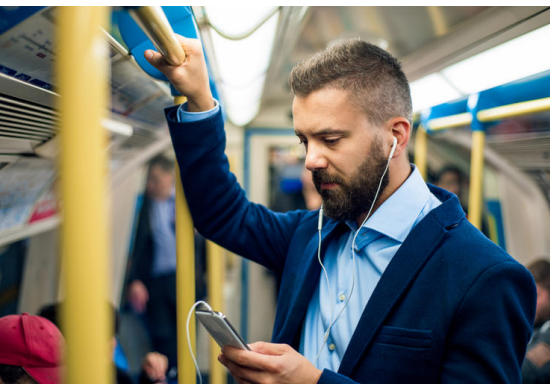
Participation at 3GPP

- Currently, use cases are being collated
 - ✓ New technical requirements are being identified for these use cases
 - Some of these use cases will entail very challenging technical requirements (i.e. in terms of very high data rates associated to very low latencies)
- EBU collaboration in 5G will be extended beyond Release 16



Is there case for Radio over 5G?

- At the system level, 5G will be able to meet the requirements of the radio industry
 - ✓ 4.5G networks probably too
- Operational, commercial, and regulatory requirements are similar for TV and radio
 - ✓ They are partly enabled by 3GPP Release 14



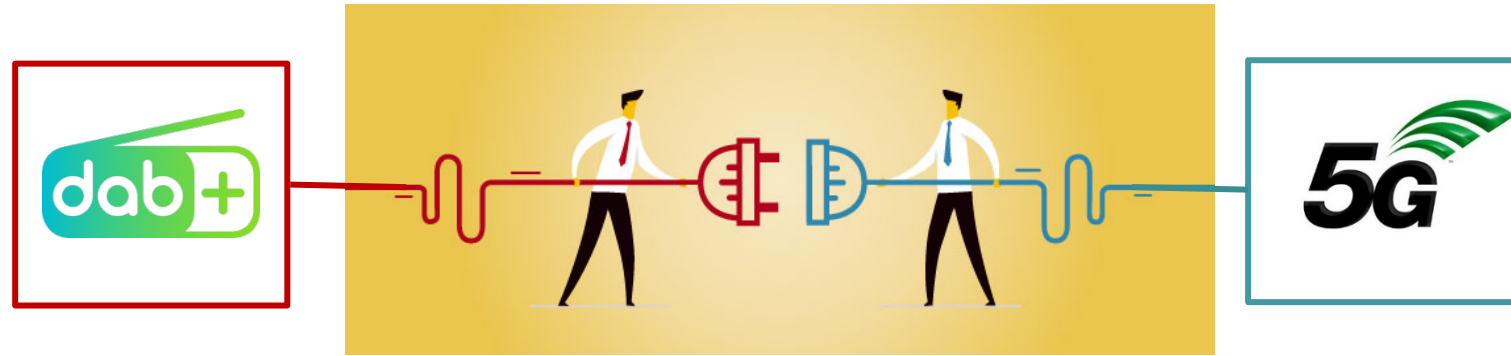
Is there case for Radio over 5G?

- 5G new deployments probably will not be cheap
 - ✓ It would make no sense to pay for something that Radio does not need or does not provide a clear advantage



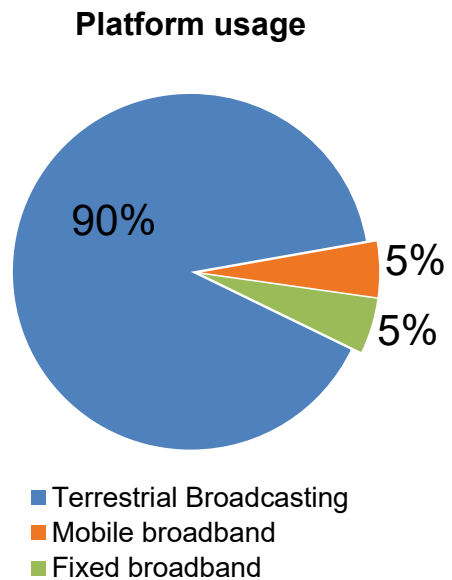
Is there case for Radio over 5G?

- To have deployed a DAB+ networks across Europe will be probably necessary in a 5G world because...
 - ✓ A massive distribution of linear radio directly over 5G is possible, but **costs probably could not be affordable for radio**
 - ✓ Interoperability between 5G and DAB+ could be possible, but **interoperability between 5G and FM is not possible**



Is there case for Radio over 5G?

- Current radio costs structure



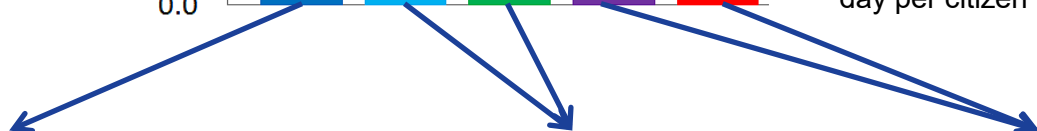
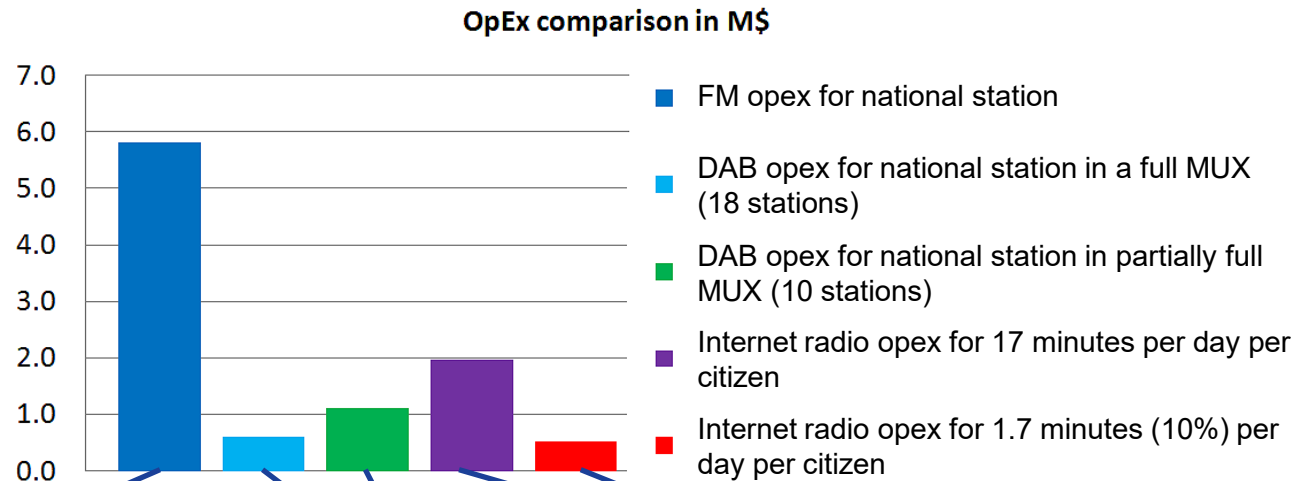
According to EBU statistics:
National radio daily listening time per citizen: ~17 minutes



Realistic listening time through the internet: 1.7 minutes

Is there case for Radio over 5G?

- Current radio costs structure



FM is by far the most expensive distribution technology

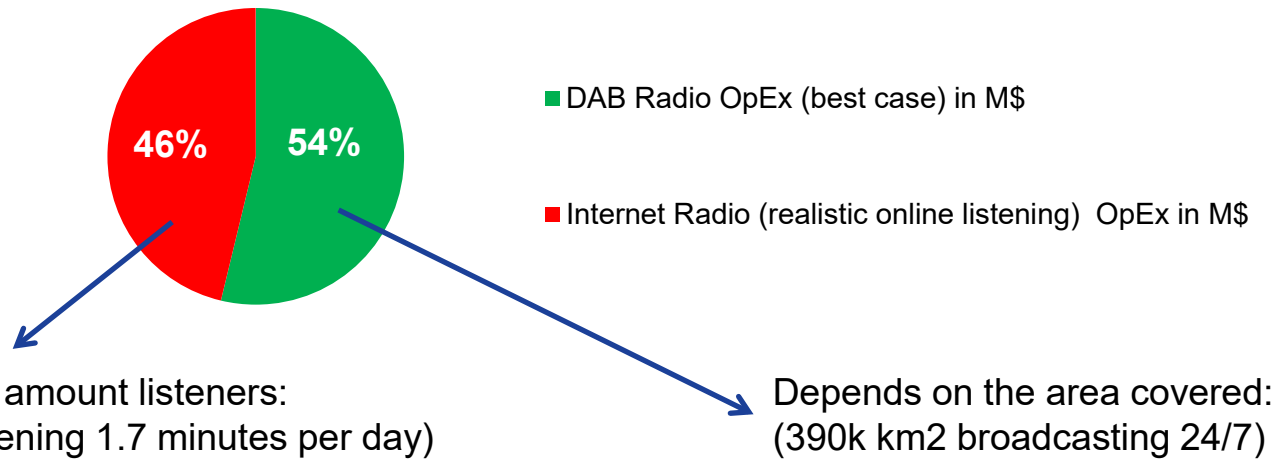
Due to multiplex technology, DAB is inexpensive. In the best case it could be 10 times cheaper than FM

The expense for internet distribution is highly variable and can easily grow larger than DAB and similar to FM

Is there case for Radio over 5G?

- Current radio costs structure

Distribution budget for technologies combined



Is there case for Radio over 5G?

- It's important to define **realistic 5G use cases** for Radio
 - ✓ **EBU Strategic Program on Radio** has just began to start a work in this field
 - ✓ The intention is **to be proactive now**, in order to feed the requirements into the ongoing standardization and the regulatory process

EBU Strategic Program on Radio

EBU Strategic Program on Radio

<https://tech.ebu.ch/groups/radio>

Conclusions

- The coming of 5G is a fact
- Radio will strongly need digital terrestrial broadcast in the future
- Costs of massive distribution of linear radio directly over 5G are unaffordable for radio
 - ✓ Massive delivery of radio contents over 5G is an issue to be solved
 - ✓ A possible interoperability between DAB+ and 5G could be an option
 - ✓ FM is not an option for the long-term
- Define 5G relevant use cases and requirements is strongly recommend
 - ✓ Radio must evolve while retaining its identity



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Thank you

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