

5G AND PUBLIC SERVICE MEDIA (PSM): OPPORTUNITIES IN DISTRIBUTION OF AUDIOVISUAL CONTENT AND SERVICES

Publications in the EBU BPN series are for the consumption of EBU Members only; they are not generally made available to a wider audience. It has exceptionally been decided that the following summary of EBU BPN 109 be made available publicly.

EXECUTIVE SUMMARY

5G refers to a next generation of telecommunications technology that should enable integration of fixed, mobile, and satellite networks, computing and storage resources into a unified, programmable, and universally available infrastructure. According to its proponents, 5G is required in order to enable technological, economic, and societal development in the future. Extensive ongoing R&D, standardisation, regulatory and policy efforts aim at ensuring that 5G standards are ready by 2020, to be followed by commercial deployment of 5G networks.

Assuming that the full 5G specification that meet the distribution requirements for audiovisual media services will be published in 2020, it can be expected that the first infrastructure equipment and devices may be on the market around 2022. After that commercial networks deployment for the delivery of audiovisual content and services on a local or regional scale may be anticipated around 2025 and onwards.

5G networks are expected to be vastly superior to any existing networks and be able to support a wide range of use cases, including those with stringent requirements in terms of throughput, latency, quality of service, resilience, cost, energy-efficiency and coverage. The benefits for the vertical sectors would come from the economies of scale, better utilization of energy and radio spectrum, new business opportunities, and cross-sector innovation.

The EBU and its Members are supportive of 5G developments, which are seen as an opportunity to enable new services and facilitate new business models. This might lead to sustainable solutions for the distribution of PSM content and services. For this to be possible, 5G will need to meet PSM requirements, both technical and non-technical. The main challenge will be to translate the 5G technical capabilities into enhanced user experience and value for PSM providers and the audience.

In the foreseeable future, 5G will not be a replacement for other distribution systems. Therefore, in addition to the objective to ensure that the PSM requirements are accommodated in the 5G specifications, it is important to seek as much harmonisation as possible between 5G and the existing media delivery systems (e.g. DTT and satellite) in particular on the higher layers of the protocol stack (e.g. service and application layer).

The most important standardisation work is taking place in 3GPP and the ITU. As 5G is still at a stage of technical development and standardization, there is an opportunity to take PSM requirements into account from the start. If 5G features are deployed, mobile networks may become an important PSM distribution infrastructure in its own right. Leading mobile technology vendors and some telecom operators are currently supportive to broadcasters' requirements, in particular in 3GPP, as they may see future business opportunities. This presents an opportunity to direct the

EBU's and Members' efforts to those actions where they can make the biggest impact.

Whilst cooperation with the telecom industry and academia is essential, it cannot substitute direct participation at and contributions to 3GPP and ITU. Therefore, the EBU in cooperation with the Members is committed to stay involved in the standardisation process both in 3GPP and ITU until the relevant specifications are completed. Furthermore, this calls for broadcasting community to seek detailed understanding of the 3GPP system, perform video quality and spectral efficiency measurements and carry out experimental trials.

5G is expected to be more than just a new wireless communications system. It is anticipated to fundamentally affect all areas in telecommunications, i.e. technology, regulation, business arrangements. 5G may become a major game changer where existing players may need to adopt new roles while completely new stakeholders may enter the scene, potentially facilitating new business models.

With regard to business aspects, it will be necessary to develop appropriate business models for PSM to derive full benefits from 5G. When PSM providers have to rely on telecom operators for the carriage of their content and services it will be in particular important to ensure that the key PSM requirements are fulfilled.

Furthermore, as one of the 5G characteristics will be support for heterogeneous network infrastructure and open programmable interfaces, it should be possible for PSM providers to interconnect their own 5G-compatible infrastructure, possibly using the PSM awarded or appointed spectrum.

Appropriate costs structures will be required to ensure that costs are transparent, predictable and affordable for both PSM providers and the users.

In addition to technical and business aspects it is important that the policy and regulatory environment in which 5G will operate is favourable to PSM content and services. A leading supporter of 5G at the policy level is the European Commission that seeks to create regulatory and market conditions for a deployment of 5G networks from 2020 onwards. The Commission's policy objectives are supported by substantial R&D funding through 5G-PPP Infrastructure Association and the Horizon 2020 programme, as well as through the 5G Action Plan. The ongoing review of the regulation at the EU level is aiming at adapting the regulatory conditions to the future needs of the European industry and the consumers. The EBU and its Members seek to ensure that PSM requirements are recognised and appropriately taken into account.

Darko Ratkaj (ratkaj@ebu.ch)