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WHITE PAPER

5G-BASED CONTENT PRODUCTION & CONTRIBUTION

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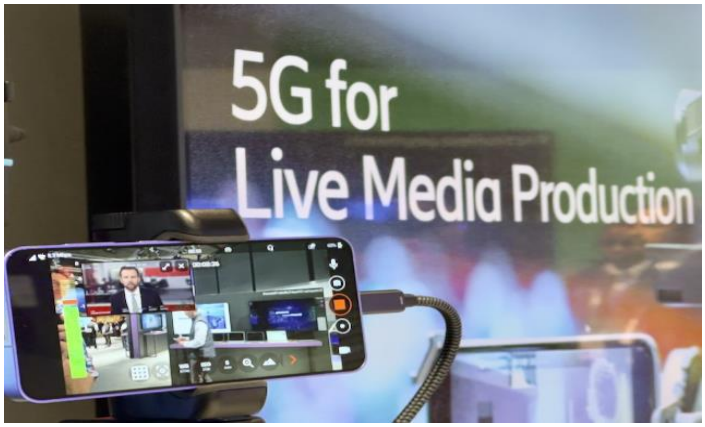
5G-based Content Production & Contribution

Audiovisual productions underpin all media services including broadcasting. Thereby a range of use cases is covered: news gathering, live productions such as music festivals with recording or sports events, but also documentaries, drama, etc. Especially for live productions, very high quality (Quality of Service, QoS) is extremely important, since live events cannot be repeated, and quality cannot be increased at a later stage.

These productions increasingly rely on wireless technologies. In IP-based production, different signals are treated as individual IP streams. This principle is also needed in wireless productions.



This was the motivation to study the latest generation of mobile communications technology, 5G, which, under the right conditions, offers high-performance connectivity with high data rates and low latency.

5G technology has been extensively tested to verify the usability for content production and contribution.[1] Tests and trials confirmed that the 5G technology can meet the technical and operational requirements in several production use cases, such as remote production, live events, breaking news, and studio production.

Furthermore, 5G enables efficient use of network resources for example with dynamic prioritisation.

As a technology, 5G has reached the point where devices and services are becoming available, marking the start of a potential transition from the experimental usage to every-day operations.

The demands of different use cases require different network characteristics. For some use cases, a professional service in a public telecom network with guaranteed QoS may be appropriate; if the 5G network provides a wide coverage area and network capabilities that are adequate to meet the production requirements. Another possibility is a purpose-built ('non-public', or 'private') 5G network, tailored to the specific production requirements. Private networks can be deployed either by the production team itself or provided by a third party, e.g. venue owners or specialised companies.

However, suitable regulatory conditions are required to make this transition a success:

- Spectrum access is crucial for the deployment of non-public 5G networks, including:
  - Affordable pricing and flexible licensing similar to the current regime for PMSE applications (e.g., fixed location/long-term, temporary location/short term, nomadic).
  - Flexible technical conditions that allow 5G network implementation tailored to content production use cases (e.g. higher uplink than downlink capacity).
- Additionally, conditions of use must be harmonised across Europe. This is essential to facilitate cross-border use of the 5G equipment.
- Telecom operators need to be allowed to provide professional services with guaranteed QoS to permit public 5G networks to be successfully used in content production.
- A handover between private and public networks should be possible.

These harmonised regulatory conditions could even have a broader impact since they will benefit not only media content production but also other sectors with similar requirements.

This information is provided on behalf of EBU PMSE-group and its members.

[1] *Some of the EBU Members' trials of 5G in content production are described in EBU Tech Report TR080.*