AIBD Regional Workshop on

Future-Proofing 4K Broadcasting with 5G Trends

2 September 2024 (Tuesday)

Kuala Lumpur, Malaysia

PROJECT OUTLINE

Background

The higher the resolution of stock footage is, the better the choice in broadcasting for its flexibility in editing, resolution and format. The technology has been advanced from SD (Standard Definition), and HD (High Definition) to Ultra HD (UHD) a.k.a 4K and 4K+.

Ultra HD became standardised a few years ago, and it's starting to reach the masses. Many TV broadcasters and cinema projecting companies have adopted this definition already, but 4K-capable viewing devices are not yet massively used. However, it's expected that within the next 10 years, Ultra HD in all its variants will be the new standard, just as HD is the most popular format now[1].

Moreover, there are cameras capable of producing 6K and up to 8K footage. 8K has an average of 7680 x 4320 display resolution. However, the more pixels it has, the larger and heavier the file will be, and it needs to consider how much space the footage files will occupy. Another consideration is how much bandwidth they consume to reproduce (or) to load and play live. HD videos need an average of 2.1 Mbps whereas 4K need 100 Mbps for the end users/viewers.

If the video takes too long to load or buffers all the time, there is a risk of losing viewers even if the image resolution is excellent. In particular, mobile data is valuable and efficiency is key in content streaming over mobile networks.

5G become crucial in modern broadcasting technology as it will enable broadcasters to deliver high-quality video content along with greater bandwidth

[1] https://www.footagesecrets.com/technical-faq/sd-hd-4k-explained/

and lower latency. 5G networks can also help broadcasters deliver live events in high quality.

France Télévisions, the Paris 2024 Olympic and Paralympic Games host broadcaster, plans to use 100% cloud-based 5G coverage for the relay of the Olympic flame which is a First in Broadcast History. The future of broadcasting through 5G networks is worth to be closely followed.

On the other hand, deploying and maintaining 5G services is still a challenging task for developing countries as it requires significant testing, troubleshooting, and debugging to identify playback issues and qualify devices and streams. To benchmark 5G quality and monitor the networks, the telecom providers, regulators, and enterprises should work together.

During the workshop on Future-Proofing 4K Broadcasting with 5G Trends, the speakers will discuss how we can produce and deliver the content, what are 5G trends relevant for broadcasting, how likely the 4K with 5G tends to impact the current way of broadcasting, the feasibility to replace 4K-capable viewing devices in the masses, etc. There will also be a brief update on the 5G NR (New Radio) standard of 3GPP Release 17 and Release 18 features.

Objective

The workshop aims for the participants to better understand the complexities involved in delivering high-quality video content and services and the current trends in broadcasting. The workshop will facilitate a venue for sharing experiences between member countries in testing or installing 5G networks, such as Singapore, Indonesia, Vietnam, the Philippines, Thailand and Malaysia.

Content

- Future-proofing 4K broadcasting and high-quality content delivery
- 5G networks and services relevant to broadcasting
- The impact on the current way of broadcasting (TV, radio, OTT?)
- Question & Answer session

Expected Outcomes

At the end of 1-day workshop, the participants will:

- understand the complexities involved in delivering high-quality video content and services,
- identify the current trends in broadcasting,

- identify royalty-free, open-source alternatives of high-quality footage,
- learn from experiences in testing or installing 5G networks and its challenges, and
- get an update on 5G for radio technology.

Profile of Participants

- Officers and/or engineers responsible for broadcast engineering,
- At least 2 years of experience in broadcast engineering,
- Ability to communicate fluently in the English language

Consultant(s)

- Dr. Amal Punchihewa, Broadcast Engineering Consultant (AIBD), Advisor (ADP Consultancy Palmerston North, New Zealand)