



Discussion on computing - network convergence in 3GPP system

NTT DOCOMO, SK Telecom, Intel



A GLOBAL INITIATIVE

Background

ITU-R has published “*Framework and overall objectives of the future development of IMT for 2030 and beyond*”.

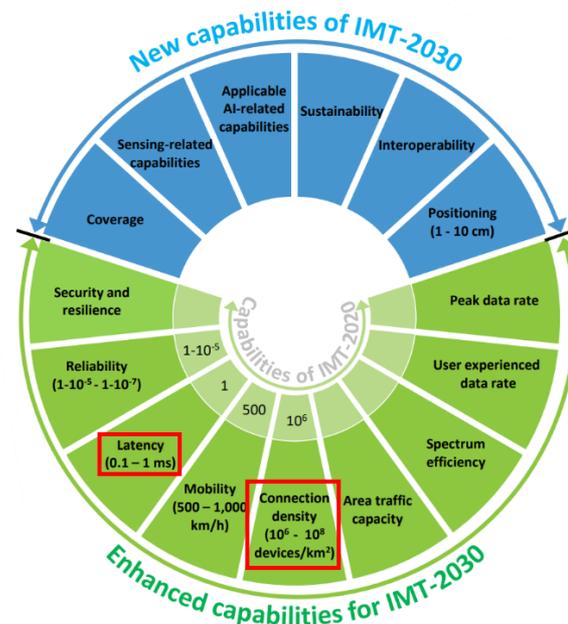
Emerging wearable devices

- A number of devices around us is expected to be connected to network for IMT-2030. With the trend of diverse devices, wearable devices are expected to emerge.
- [Consideration] Even with such devices, users would like to experience immersive application. However, due to the limited computing capability, user experience could be affected.

Extremely low latency

- 0.1-1ms latency for air interface is expected for IMT-2030.
- [Consideration] Application data processing is commonly done on the device to achieve low latency for immersive applications. However, with the extremely low latency, the data processing could be done on network side.

Based on above considerations, it is proposed to reconsider computing - network convergence such as the compute workload coordination and offloading between devices and networks.



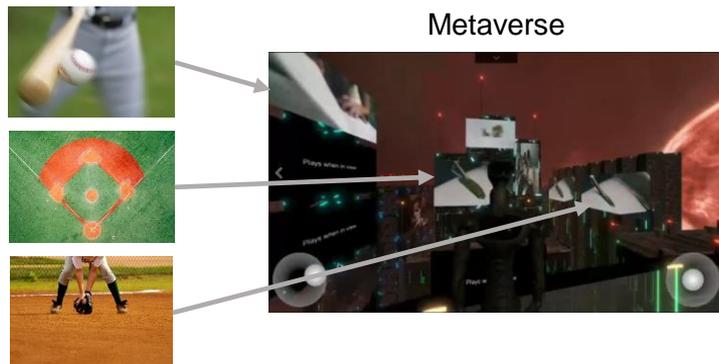
Use case example – Device compute offloading



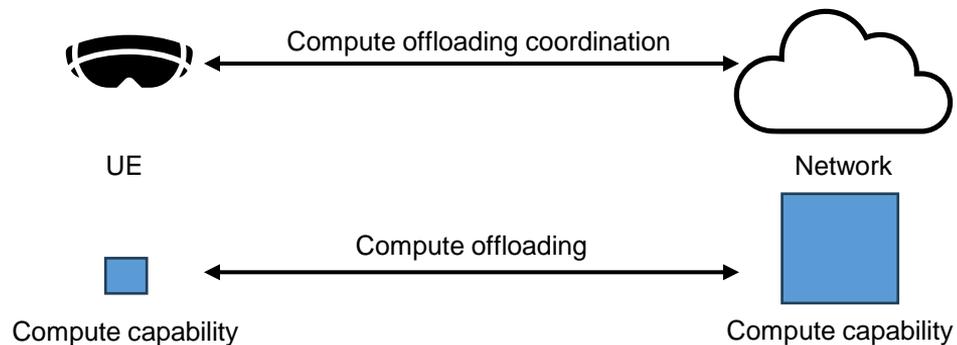
Multi video rendering in metaverse with wearable devices

- When a user enjoys multi-angle watching of sports in metaverse world, multi video processing would be needed.
- Network-side resources can assist UE-side compute workload such as multi video processing.

Multi-angle videos



Enjoying multi-angle watching of baseball in Metaverse





(Potential) Objectives

📶 Study use cases and potential service requirements for future mobile network system to support computing - network convergence including compute coordination and offloading in 3GPP system.

📶 The objectives include:

- Identifying possible use cases and service requirements related to computing - network convergence such as coordinating computing resources between mobile devices and network in future 3GPP systems and enable computing workload offloading.
- Other aspects including security, privacy, and charging.



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