

Introduction to KDDI's 5G network service



- Introduction of KDDI

- Three plus one demonstrations

1. Instant video download
2. Free navigation with 8K
3. Location synchronized VR

- 8K video transmission (Up-link and Down-link)

- KDDI's Roadmap towards 5G launch

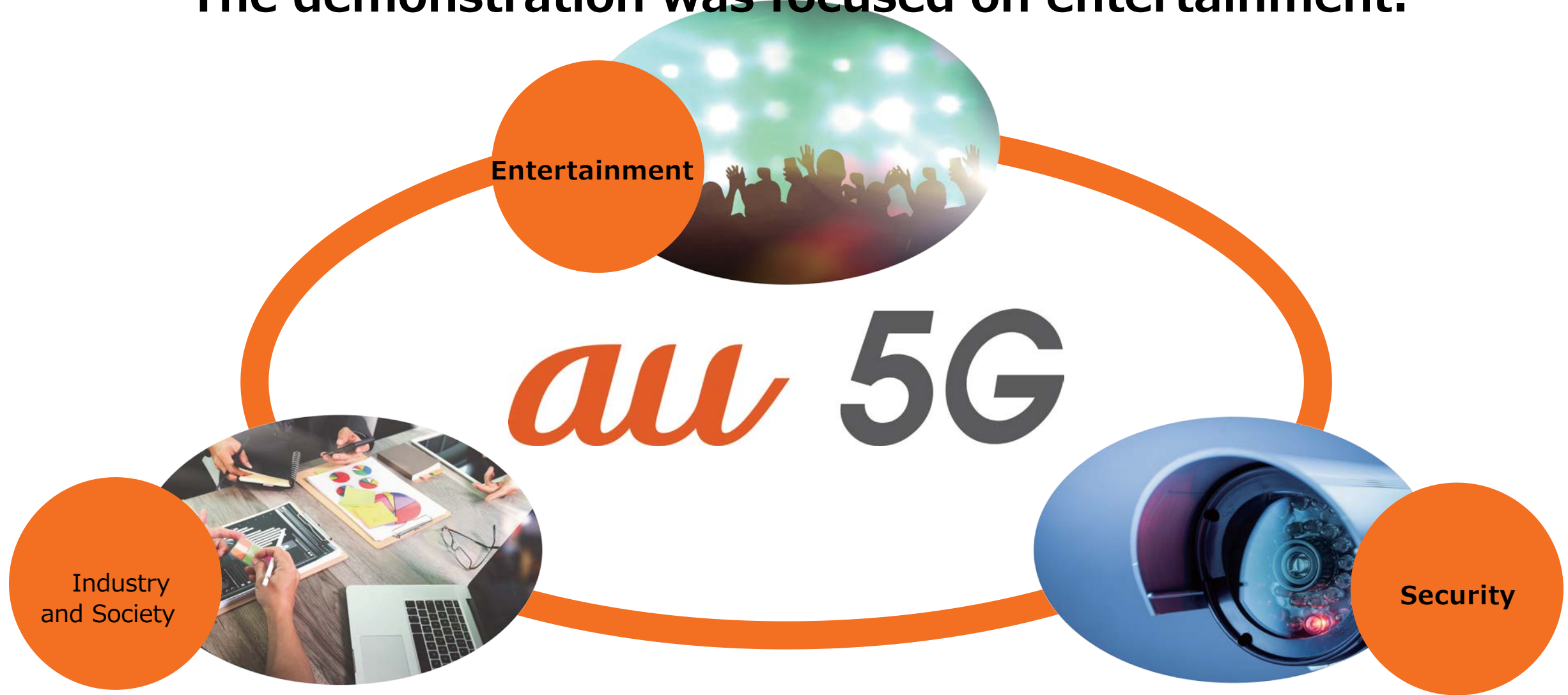
- MPEG standards



au 5G

**In May 2017, KDDI demonstrated
three applications for 5G
in the center of Tokyo**

The demonstration was focused on entertainment.



au 5G + Mobile Infotainment

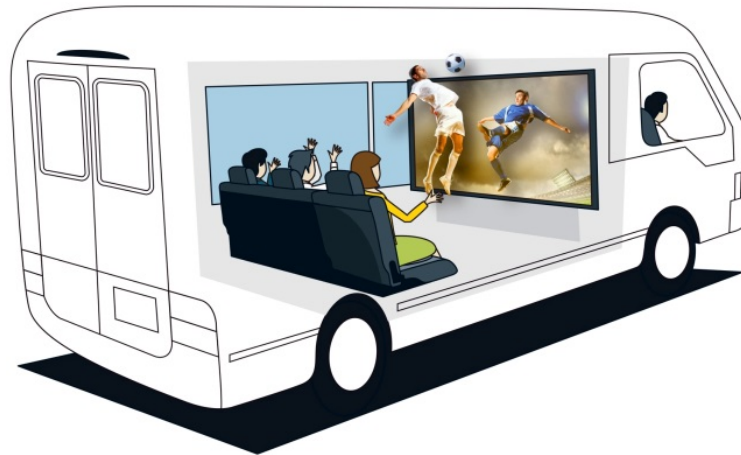
Instant Download

Download new information anywhere in mobile environment



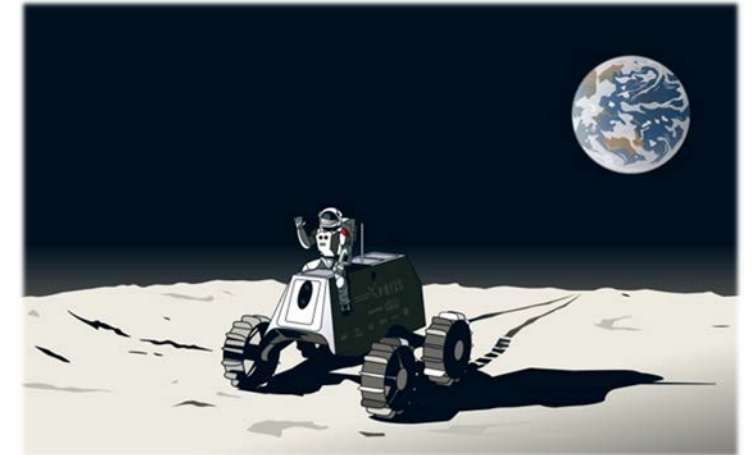
Free Navigation with 8K

Free navigation movies will be enjoyed in mobile environment in the future

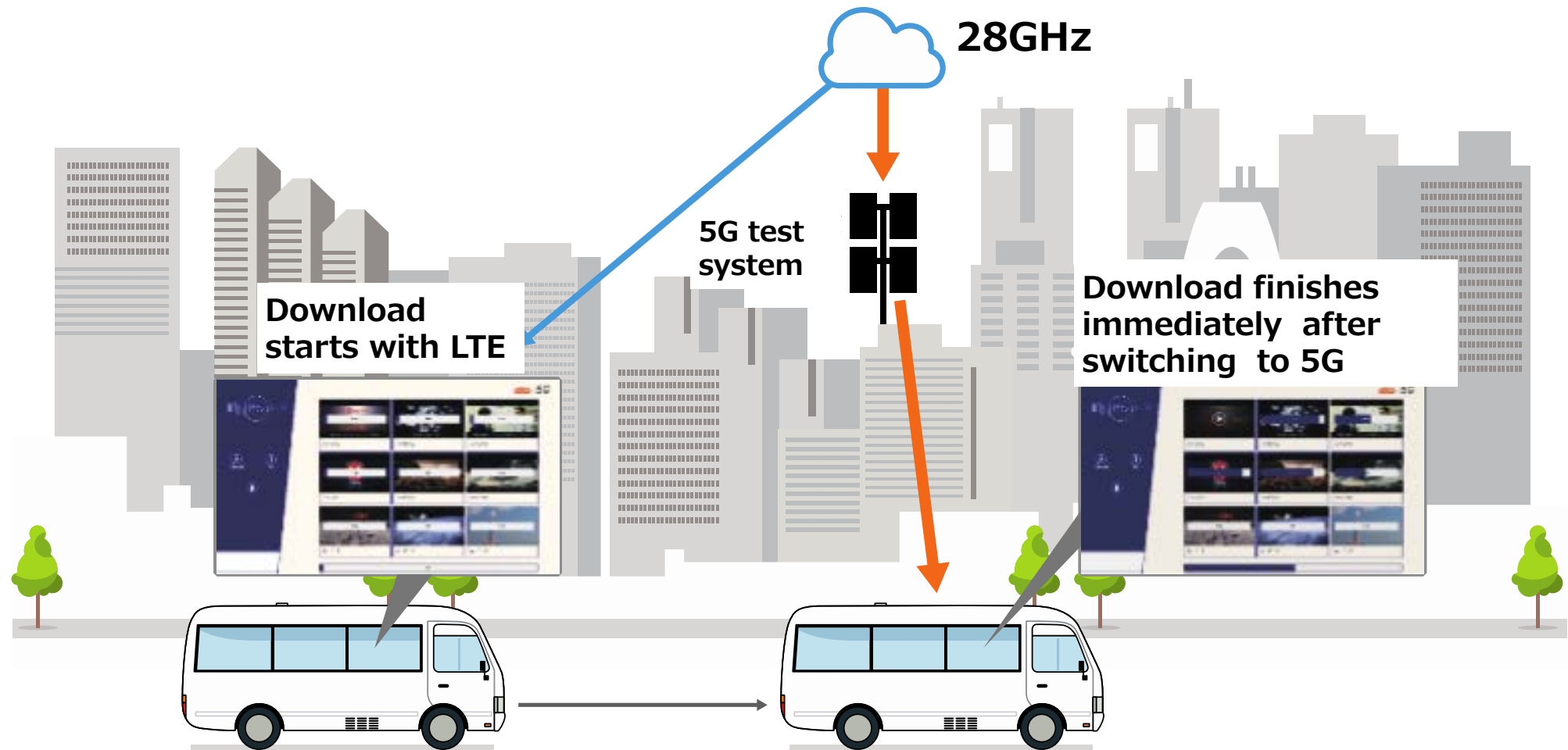


Location synchronized VR

VR synchronized with location will enable MR (Mixed Reality) in the future



Demo video
See YouTube



Available throughput in 28GHz in the demo.

□ Peak DL throughput: 13Gbps<

□ Aggregated DL throughput (2UE's): 24Gbps<



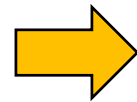
The picture is from KDDI 5G trial with Ericsson system.

Enjoy Sports Games with Free Navigation in mobile environment

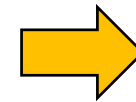
View live streaming from preferred angle, taking full advantages of high Speed and Capacity of 5G



8K video streams
taken from several
angles

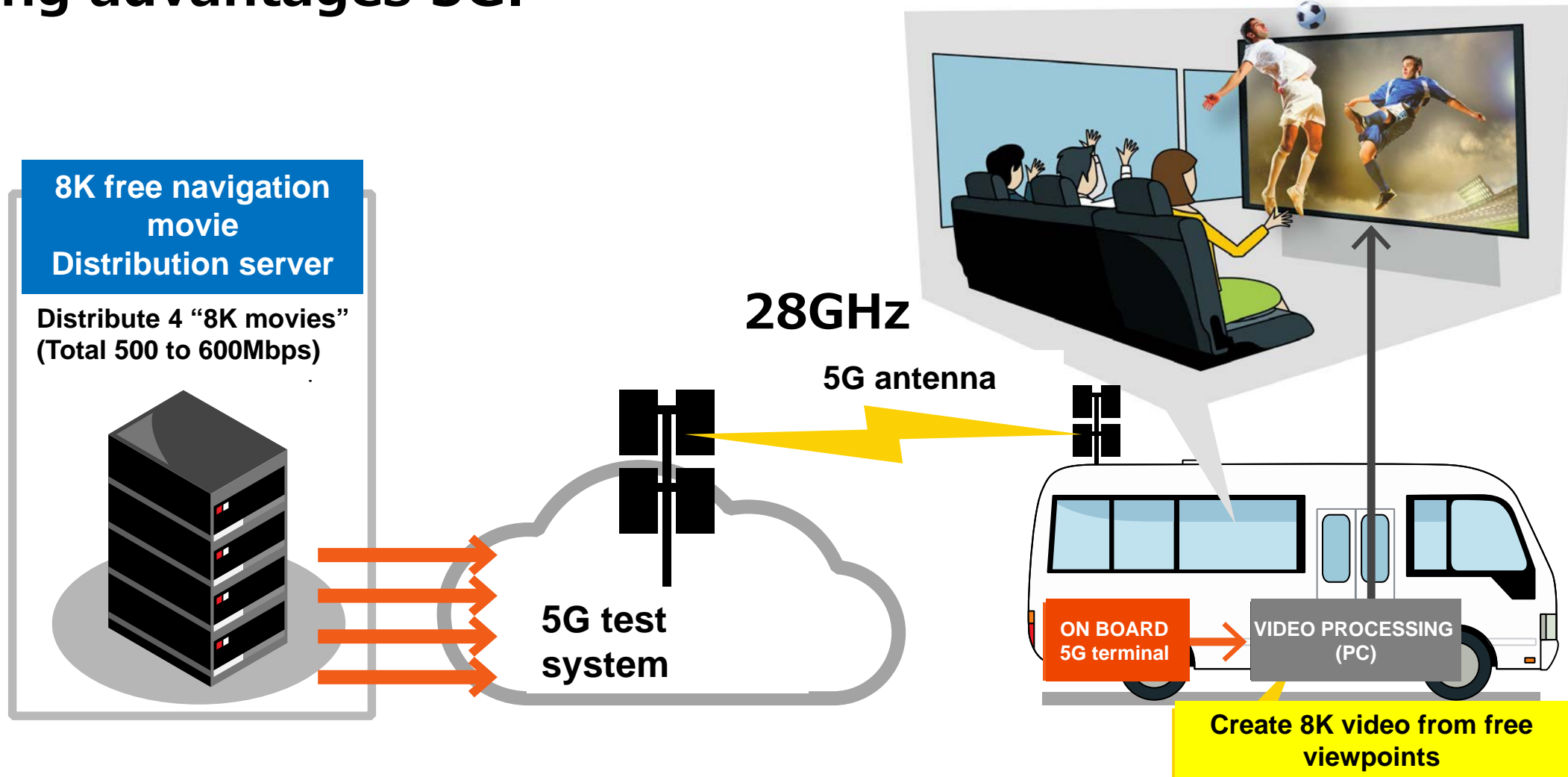


Not just switch angles



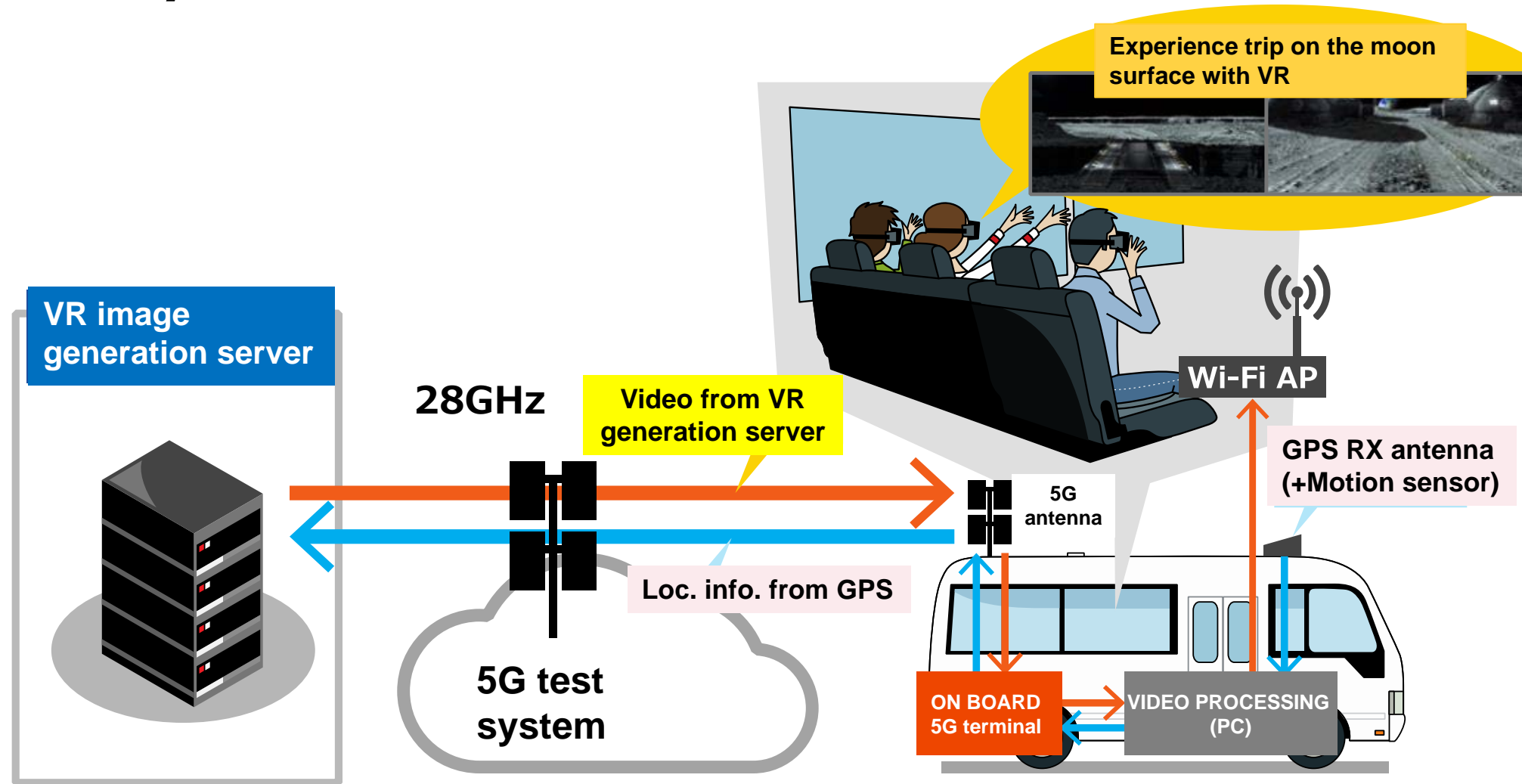
Create video from
any viewpoint

Watch sports games from Free Navigation aboard the bus, taking advantages 5G.



Virtual trip on the moon

Enjoy a trip on the moon while on the bus, taking advantages of low latency of 5G.





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**In May 2017, KDDI conducted
8K transmission as 5G trial with NHK
in the center of Tokyo**

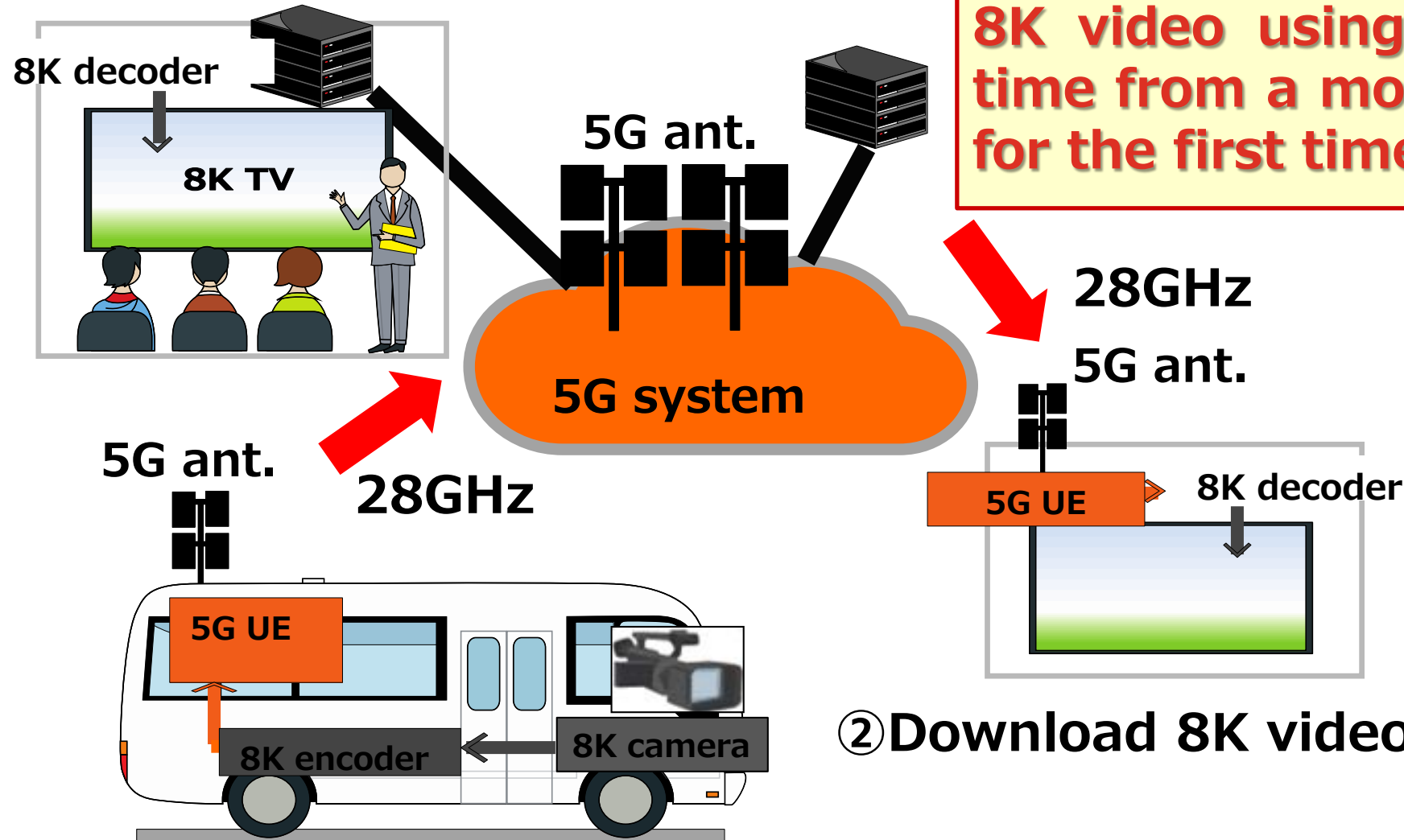




- Transmitted super hi-vision 8K video from a moving vehicle, taking advantage of high speed and large capacity of 5G uplink.
- Experiment using 5G downlink was also performed.

NHK: Japan Broadcasting Corporation

① Upload 8K video in mobile environment



Succeeded in transmitting 8K video using 5G in real time from a moving vehicle for the first time in Japan.

② Download 8K video by 5G





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Summary





■ Demonstration combines many MPEG standards

- Media Compression: AAC, HEVC
- Transmission: DASH, ISOBMFF, MPEG-2 TS
- *OMAF is required in the future commercial services.*

■ MPEG standards help us

- fast development
- contents distribution/transmission

■ Three plus one demonstrations

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Designing The Future

KDDI