

# KDDI Edge Cloud ~ topics and service update ~

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Toru Maruta is responsible for product management of enterprise products, including network, cloud, IoT, and data center services. He leads telco edge cloud projects including AWS Wavelength service.



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# 5G deployment and Telco Edge Computing







### **5G Network Deployment**

We will introduce the latest global standard technologies and accelerate realization of 5G based society







### **3. Ultra Low Latency**

Unprecedented user experience by ultra low latency



### **Transition of computing environment**





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### **Transition of computing environment**



#### **Distributed Data**

Data management of public / private cloud is necessary Real time data will be processed at edge compute

#### **Distributed Data Platform/Data Lake**

Efficient data management scheme and data governance is necessary to manage increase of distributed data

#### **Automated/Self-driving operation**

Automation of operation is necessary to reduce cost of distributed cloud operation

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### The value of edge computing



Ultra low latency is available with the combination of 5G and MEC. Unprecedented user experience available to end users.



## The new horizon of 5G×MEC

Cloud locations were concentrated in Tokyo and Osaka. 5G will stimulate the needs of distributed cloud, and MEC will be a solution for this.

#### **Present: Centralized Cloud**

Application in the cloud is used via the network

#### **Future: Distributed Cloud**

Application in distributed cloud environment provides real-time proximity access to end users



Cloud-based digital platform is key to DX for enterprises. Distributed Cloud provides real-time access to cloud suitable for DX.

# Features available by evolution of the network

5G network enables proximity access to nearby server locations.





# **AWS Wavelength**











### Nation-wide 5G Network and Edge locations

World's largest public cloud service

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## Value of AWS Wavelength





## **Global Coverage of AWS Wavelength**

Canada, Japan, Korea, UK, and US are now service area of AWS Wavelength. The benefit of using AWS Wavelength is that low latency application can be deployed globally in the service area.





# Edge Computing use cases







## **Realizing DX using Edge Computing**

### **New Business**

Develop new business with partners using edge computing

#### New value creation

Value creation for existing customers using new value of edge computing

#### **Business transformation**

Transforming the structure of existing business to achieve better business performance











## **Major Use Cases**

Healthcare	
(ML assisted diagnosis)	

Edge computing can provide a desirable environment for ML assisted image analysis / video analysis for healthcare.



#### **Connected Vehicles**

Edge computing is suitable for gathering sensor data from vehicles, monitor in real time, and assist the vehicle.



#### **Smart Factory**

Al inference application can run on edge computing for smart factories to provide anomaly detection etc.



#### **Real-time gaming**

Gaming run on edge clouds can provide real-time game experience to end users with low performance devices.



#### AR / VR

Low latency of edge computing can realize rendering of AR/VR applications.



#### Interactive live video streaming

Interactive live video streaming with high quality video and audio can be realized by edge computing.





## MEC Trial with DT, MeX, Sturfee, Mawari



#### **Concept:**

Easy and consistent way of developing XR applications and deploying to global Multiple Operator MECs

#### **Teaming up:**

- Operator MECs DT in Germany and KDDI in Japan
- Platform MobiledgeX
- Application Sturfee and Mawari

# Launched in June 2021, as part of GSMA TEC Trials initiative

• Press-released on 29 June 2021



## MEC Trial with DT, MeX, Sturfee, Mawari



Virtual Humans will guide you to destinations both in Japan and Germany. \*All images shown are for illustration purpose only

#### Trial Use Case:

- User content: KDDI's Virtual Human
  Guide XR streaming Users will use VH
  Guide anywhere in Germany and Japan
- Application(technology): Sturfee's VPS and Mawari's XR streaming used by the content
- Multiple Operator MECs: Applications are integrated on MeX's Edge-Cloud platform – content & applications can be developed and deployed in a consistent way to DT Germany MEC and KDDI Japan MEC
- PaaS service: Also applications are provided as PaaS (API/SDK) for easy app/content development

#### Trial results will be shared in Autumn



### Wavelength use case: Virtual Human





### Wavelength use case: Virtual Human



#### **Deployed on Wavelength**



## Wavelength use case: free-angle viewing video

### Free-angle viewing enabled by 5G

Video image combined by multiple cameras Specify the angle with a 5G smartphone and watch smoothly. (KDDI CORPORATION, KDDI R & D Laboratories, Inc.)









# AWS Wavelength use case for automated driving

Denso and KDDI research conducted a 5G/edge cloud trial for automated driving in order to achieve safe and secure mobility in driving.





It is planned to deliver road conditions in real-time to auto-driving vehicles, and also support unmanned vehicles from remote using AWS Wavelength.

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## **5G × Edge Computing**

### Ultra-low latency and low jitter accelerates new value creation

 $\sim~$  5G x Edge Computing enables new value creation on site  $\sim~$ 







**Testbed Environment** 

### 5G×AWS Wavelength is available in "KDDI Digital Gate", a DX co-creation space



Design thinking and co-creation with partners are key components of new value creation.





### Summary

**5G x Edge Computing enables creation of unprecedented user experience** 

The value of edge computing is bringing the cloud at your fingertips – by low latency

It is essential that edge computing can be used right away – extension of cloud service is one way to make this happen.



#### Tomorrow, Together

