China Mobile Edge Computing sharing for LF Vertical Solution Focus Group

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China Mobile Research Institute
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中国移动 China Mobile

China Mobile Edge Computing Services Overview

5G+AICDE
Integrating
Innovation

5G Network Service

Province Level — 5GC

City Level — UPF — UPF

Edge Level — UPF — UPF — ……

Edge Cloud Service

IoV — AR/VR — industrial — Smart city — …

Edge Computing PaaS

Edge Computing IaaS

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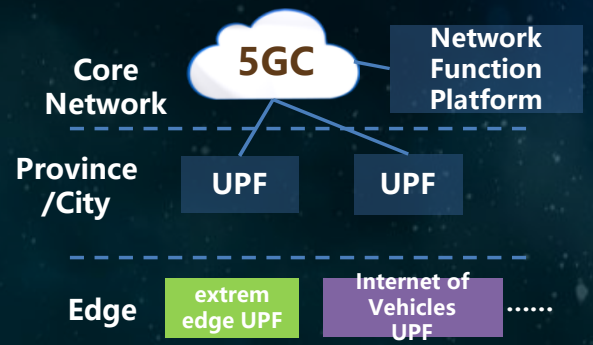
China Mobile Edge Computing Services Overview

5G Network Services



- **Edge traffic offload** services enabled by network slicing, DNN and uplink classifier
- **Open APIs of network capabilities** for vertical applications
- 5G standalone (SA) **private networking solutions** for enterprise customers

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Edge Computing Cloud Services

IoV | AR/VR | Cloud gaming | HD video | Security | healthcare | Smart city | industrial

Edge Cloud PaaS

API Gateway

Registry | Load Balance | Authentication | Traffic flow
monitoring | User group | Access control | Network functions

Network Capabilities

Location awareness
Bandwidth management
Access control

Generic Capabilities

Database
Load balance
DNS

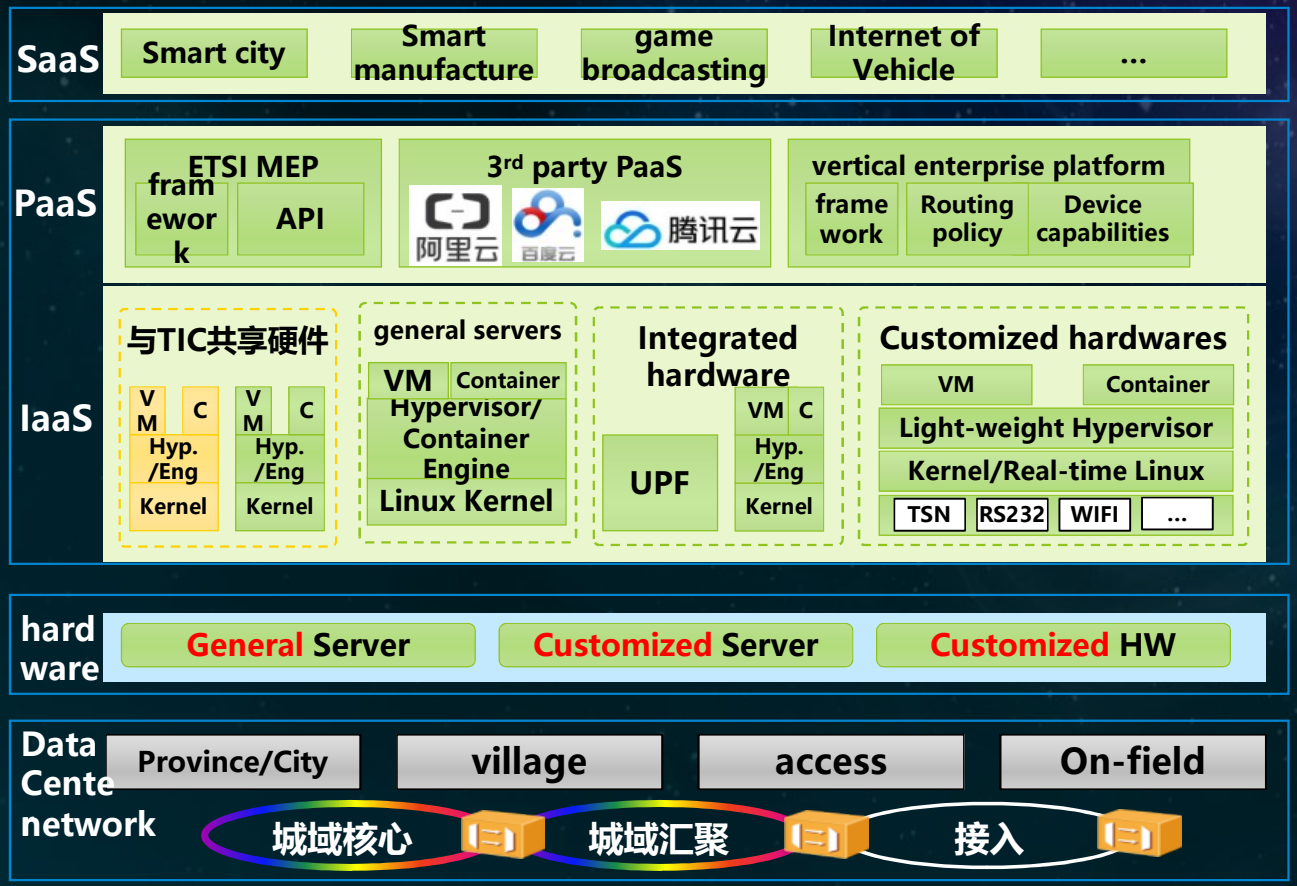
Vertical Capabilities

Video analytics
AI prediction
NLP

Edge Cloud IaaS

Virtual machine | container | Bare metal

Edge Computing key Technological Progress



① Open UPF promotion

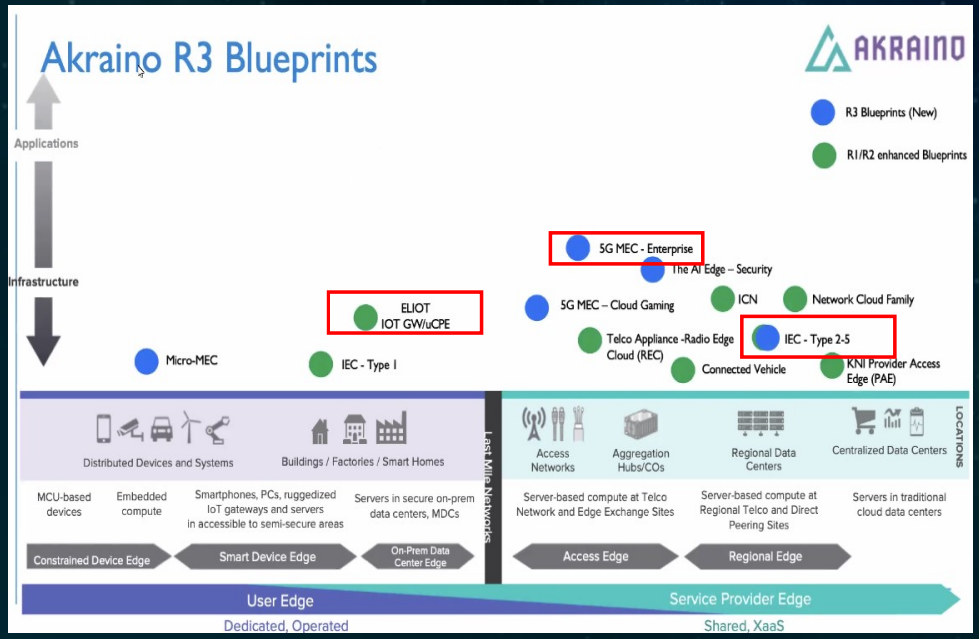
② Customizable edge computing hardware

③ Sigma: Edge Computing PaaS platform

④ Open source community participation

Participation in LF Edge Akraino Project

Akraino R3 Release Overview



Leading BP

1. IEC Type 3: Android cloud native applications on Arm servers
2. IEC Type 5: SmartNIC for Integrated Edge Cloud

Participating BP

1. Public Cloud Edge Interface (PCEI) Blueprint Family
2. 5G MEC/Slice System to Support Cloud Gaming, HD Video and Live Broadcasting Blueprint
3. Enterprise Applications on Lightweight 5G Telco Edge
4. KubeEdge Edge Service Blueprint
5. ELIOT IoT Gateway Blueprint

China Mobile Edge Computing service trials

Over 100 edge computing service trials locating in 12 provinces

Education (5)

- Smart campus, Jiang Su
- Remote education, Beijing

...

Government(2)

- AR guidance, Horticultural Expo 2019
- public security service, Nanjing

...

Smart Energy (11)

- Underwater inspection, Sichuan
- Smart grid, Anhui
- Smart oil station

...

Smart manufacturing(45)

- smart port, Zhejiang
- Auto guide vehicle control, Wu Xi, Jabil Group

...

smart traffic(14)

- Autonomous drive, Shanghai
- Assistant drive, Zhejiang
- High quality map, Xiamen

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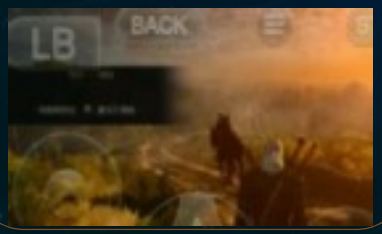
Healthcare(4)

- Smart healthcare, Sichuan
- Remote hospital consultation, Beijing

...

entertainment(20)



- Cloud gaming, Guangzhou
- AR guide, Hubei
- Video acceleration, Zhejiang

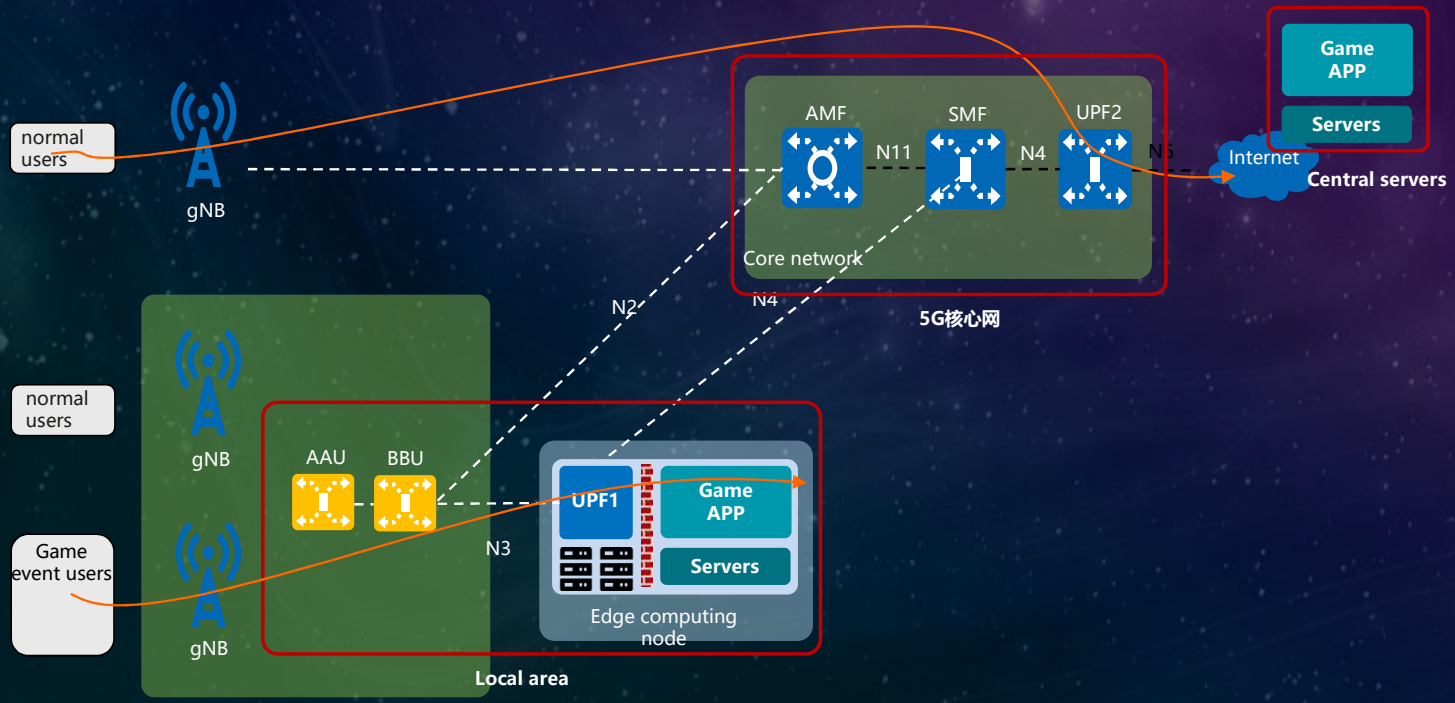
Edge Computing Real Use Case – Cloud Gaming

Key requirements

- Service delay tolerance for normal users: 70ms~80ms
- Small game event delay tolerance : 50ms
- Big game event delay tolerance:
- **<25ms**

Solutions

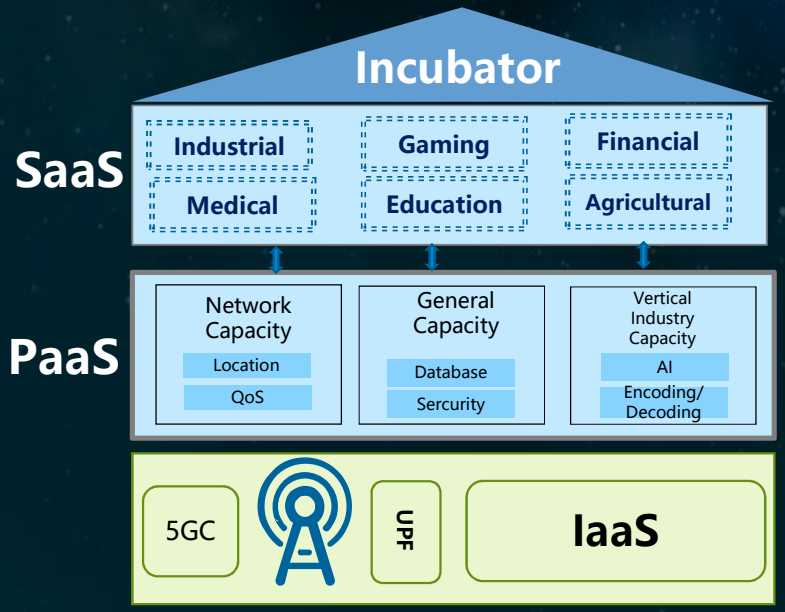
- Deploy 5G SA core network and edge computing service platform in Sichuan province. For game event, deploy UPF in Chengdu city, to make the traffic offload to the local area for meeting the delay requirements.



Through deployment on 5G UPF and edge computing node, local game event users requests will be re-directed to local area servers to meet the restrict delay requirements.

Edge Computing Incubator: New Practice of Business Incubation

- Make full use of China Mobile ‘s 5G network、cloud network integration and ecological convergence
- China Mobile aims to provide partners with “Network-Edge-Cloud" one-stop solution



Four Capacities

- Basic 5G Connectivity
- Edge Cloud service
- Application docking deployment capacity
- Scene verification

One-Stop Service

Apply → Clarify Requirements → Debugging → Trials → Deploy

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Thank You!