China Mobile OpenSigma and Edge Computing Practice

March. 2021
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China Mobile Edge Computing "100+" nodes
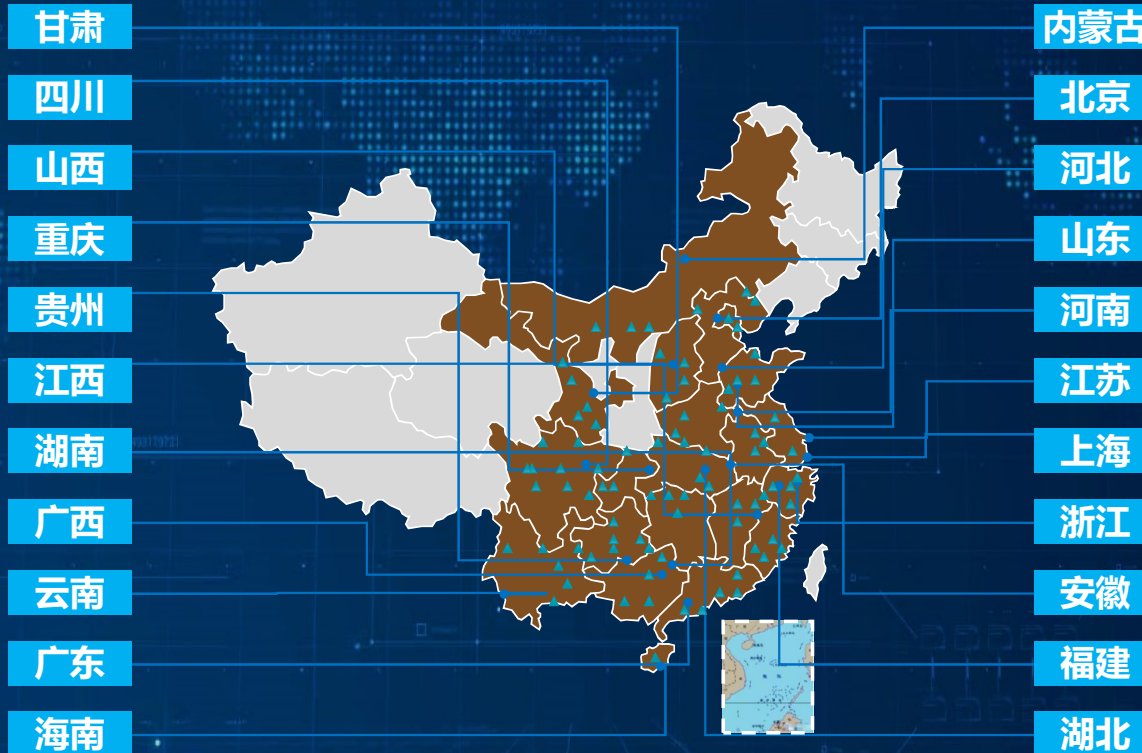
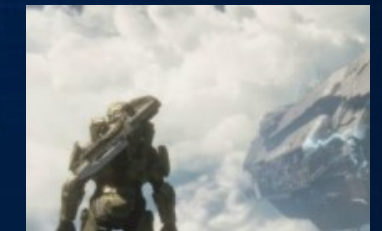## Over 150 edge computing service trials locating in 22 provinces

smart traffic

Smart city
Education
smart energy
... ...

甘肃
四川
山西
重庆
贵州
江西
湖南
广西
云南
广东
海南

内蒙古
北京
河北
山东
河南
江苏
上海
浙江
安徽
福建
湖北

Smart manufacture

cloud gaming
healthcare
... ...

Over 200 industrial applications in 15 areas are trailed in over 100 edge computing nodes.

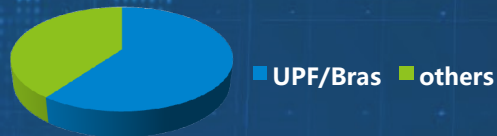# "100+" Edge Computing Nodes: full-stack edge computing services

"100+" nodes are widely distributed in productivity-intensive areas, providing 5G full coverage, diverse computing resources and rich industry capabilities.

Strong network capabilities

- **100% 5G converge**
- **60% UPF**
- VPN, Network slicing with SLA enabled

traffic offload

- UPF/Bras
- others

Diverse computing resources

- **Approximately 40,000 servers**
- **Integrated edge equipment deployed**
- **Provide CPU, GPU, multiple forms of computing resources**
- **Cloud-edge synergy**

hardware types

- universal
- integrated

wide distribution

- **Distributed in productive areas such as industrial parks and economic development zones**
- **Covering provincial centers, cities, districts and counties**
- **Provide a variety scales of data centers, modular computer rooms, etc.**
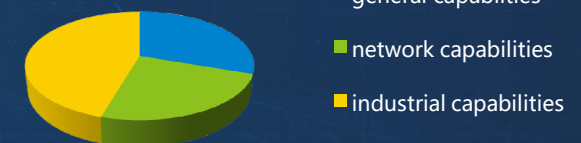
Distribution

- cities
- districts/countries

Rich industrial capabilities

- **Including general capabilities, 5G network capabilities, AR/VR cloud rendering, blockchain and other industry capabilities**
- **whole process of certification, testing, and online services**

Capabilities

- general capabilties
- network capabilities
- industrial capabilities

《China Mobile Edge Computing Industrial Solutions(2020)》

- **11 key industries and 30+ typical edge computing solutions for application scenarios.**
- **Reference for industry application innovation and development of industrial ecology**

Service Scenarios

Smart Factory
Computer vision

Smart Port
Remote control

Autonomous drive
Remote driving

Video Acceleration
Video on demand

Solutions

Edge Network Solutions

Edge Cloud Solutions

Industrial Security Solutions

Business Value Analysis

2020 Album

中国移动边缘计算
优秀解决方案
2020专辑

扫码下载

Partners:

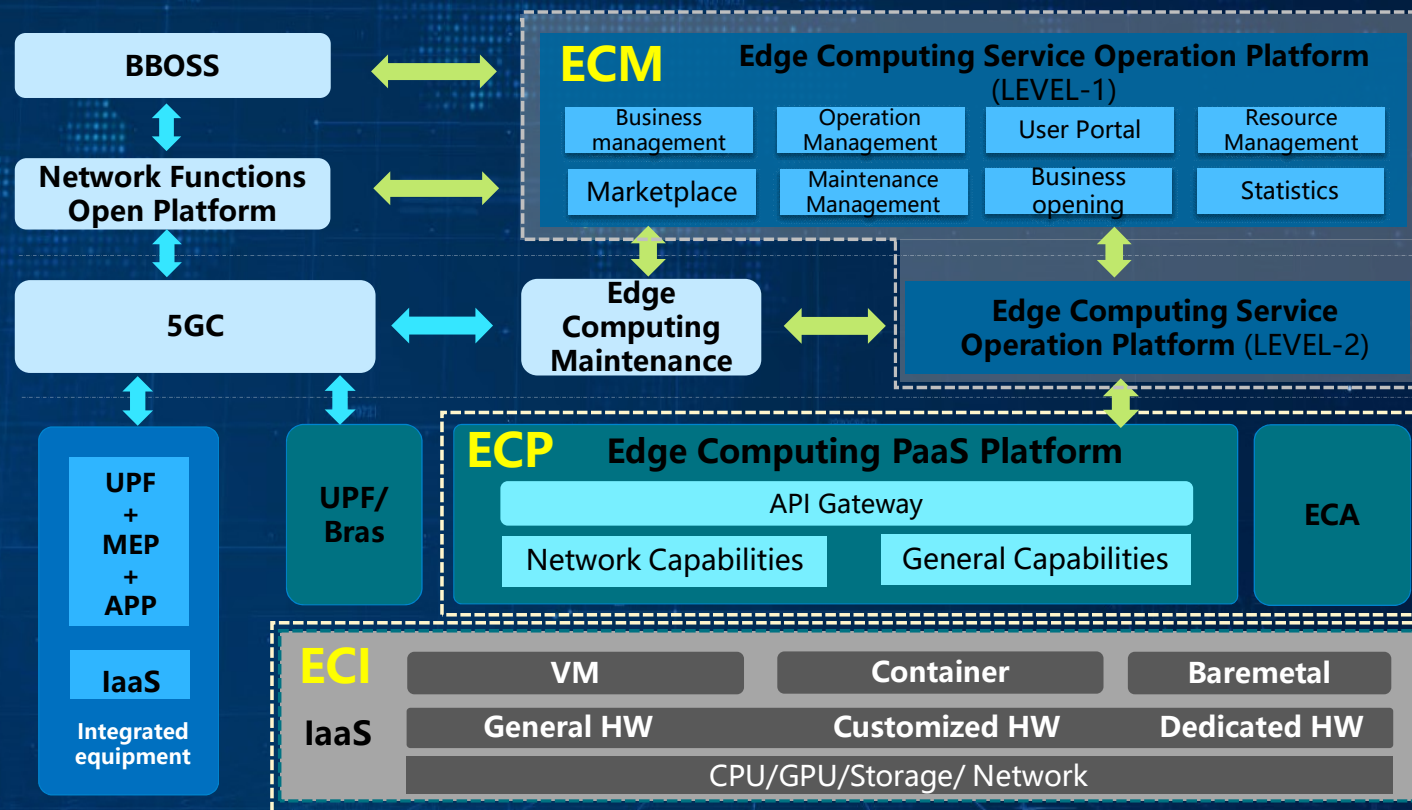HUAWEI ZTE中兴 ERICSSON NOK INSPUR 浪潮 Tencent 腾讯 网宿科技 RAISECOM 白山云科技 BAISHANCLOUD

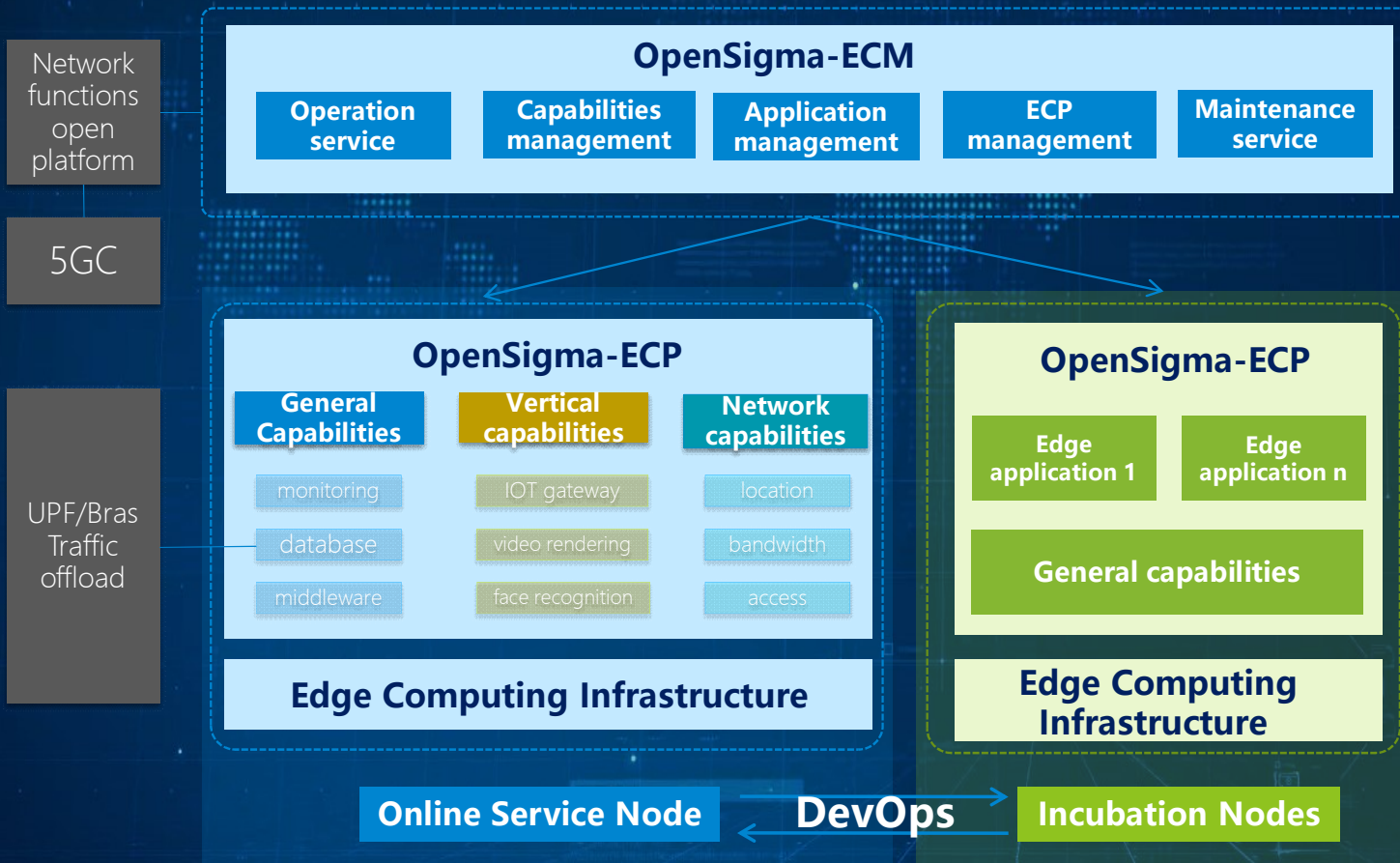# "Network-Edge-Cloud" Integrated architecture for Edge Computing

- **Full-stack service platforms：ECM, ECP, ECI**
- **Enable "network-edge-cloud" capabilities：collaborative operation、API collaborative opening**

OpenSigma Edge Computing Platform

OpenSigma is a self-developed platform providing cloud and network synergy, capability aggregation, and enabling edge services continuous integration delivery.

Network functions open platform

5GC

UPF/Bras Traffic offload

OpenSigma-ECM

Operation service	Capabilities management	Application management	ECP management	Maintenance service

OpenSigma-ECP

General Capabilities	Vertical capabilities	Network capabilities
monitoring	IOT gateway	location
database	video rendering	bandwidth
middleware	face recognition	access

Edge Computing Infrastructure

OpenSigma-ECP

Edge application 1	Edge application n

General capabilities

Edge Computing Infrastructure

Online Service Node ← **DevOps** → **Incubation Nodes**

Open + Sigma

$$\sum_{n,m=1}^{\infty} 边缘能力_n \times 边缘应用_m$$

01 **One-stop cloud-edge** resource and application hosting services with 5G network and computing capabilities enabled;

02 **Featured network capabilities** such as wireless positioning and access control; Restful standardized interfaces;
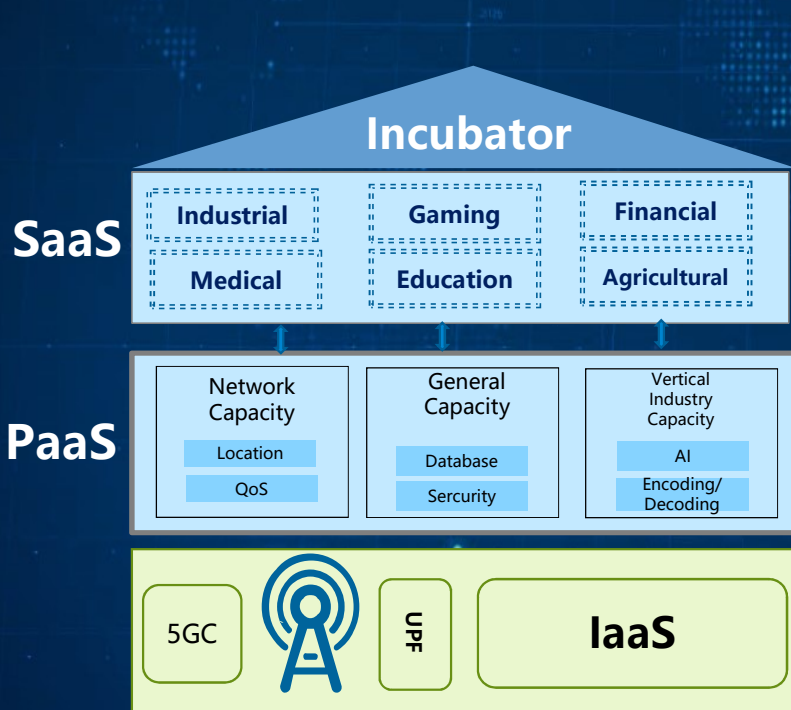
03 **Rich industrial capabilities,** such as IoT, AR/VR, blockchain etc, and open APIs for embracing industrial capabilities ecosystem

04 Support the **full-process management** of capability certification, testing, launch and commercialization, support continuous integration delivery of applications, and accelerate application incubation and deployment;

China Mobile Edge Computing Incubator

- **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**

Incubator

SaaS

Industrial	Gaming	Financial
Medical	Education	Agricultural

PaaS

Network Capacity	General Capacity	Vertical Industry Capacity
Location	Database	AI
QoS	Sercurity	Encoding/Decoding

5GC		UPF	IaaS

Locations

☐ **Beijing, Jiangsu, Zhejiang, Fujian, Guangdong**

Capabilities

☐ **5G network**: 5G coverage、slicing、QoS
☐ **Edge computing PaaS**
☐ **Application integration and deployment**
☐ **Scenario verification**

Incubation Service

Application → Development → Verification → Certification → Deployment