

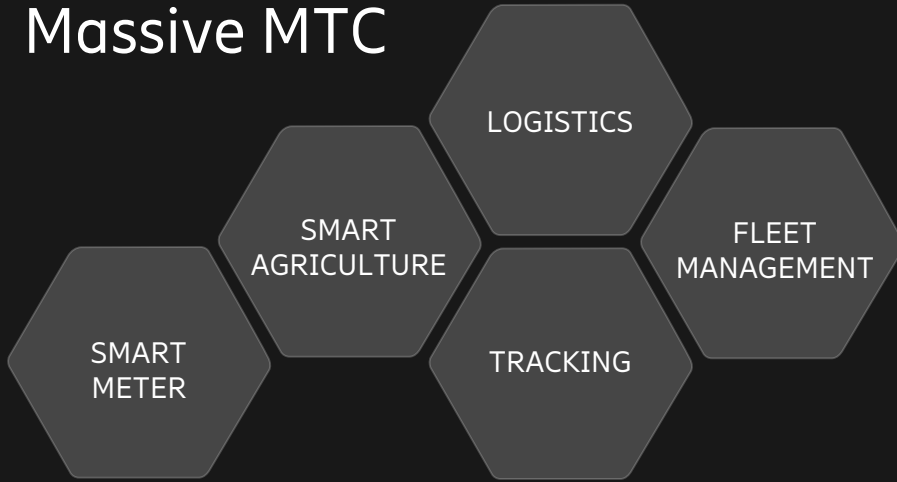
Cloud Native – Essential For 5G



5G is use case driven



Massive MTC

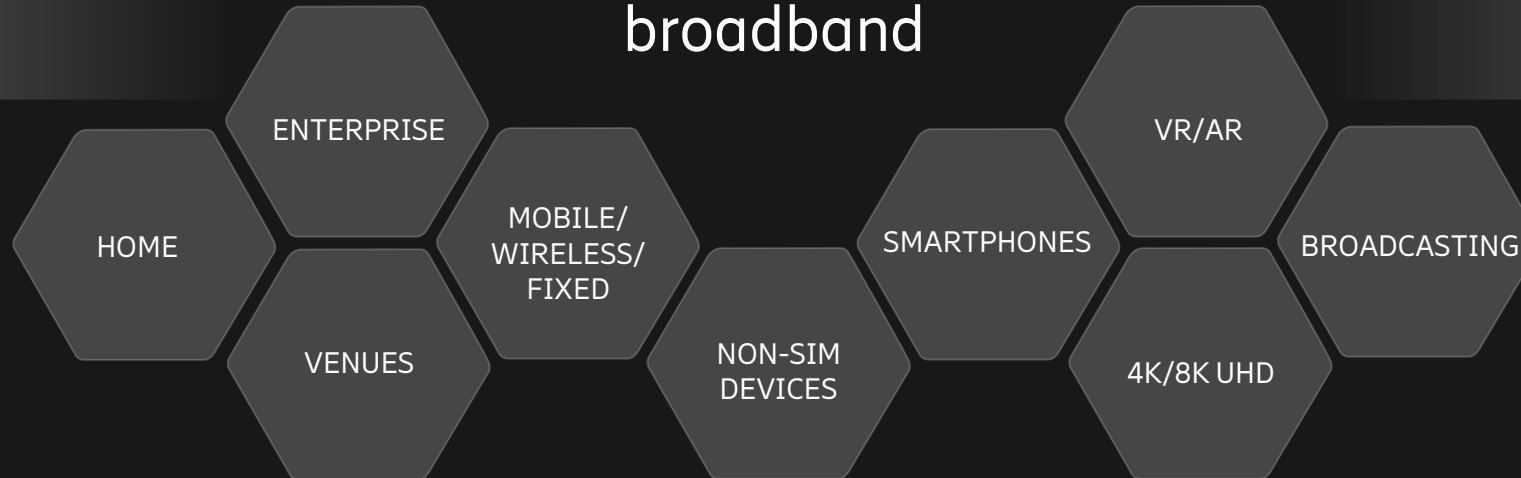


Critical MTC



LOW COST, LOW ENERGY
SMALL DATA VOLUMES
MASSIVE NUMBERS

Enhanced mobile broadband



ULTRA RELIABLE
VERY LOW LATENCY
VERY HIGH AVAILABILITY

Why 5G requires cloud native network applications



Speed

- Fast, low-cost introduction of new services in small scale

Scale

- Scale fast at low cost from hundreds of users to millions

Efficient operations

- Automation, no-touch operations
- Legacy and new services
- Life-cycle independence (services/infrastructure)

Performance and capacity

- Optimized capacity throughput and resource utilization

Software development in fast-moving, independent and empowered teams

Cloud native design principles



Agnosticity

Decomposed
SW

Application
resiliency

State
optimized
design

Orchestration
and
automation

Running in containers
Building on microservices architecture

Open Source Enables 5G cloud native applications and infrastructure



 **LF NETWORKING**

 **ONAP**
OPEN NETWORK AUTOMATION PLATFORM

 **OPEN DAYLIGHT**

 **OPNFV**

 **LF EDGE**

 **AKRAINO**
EDGE STACK

 **CLOUD NATIVE**
COMPUTING FOUNDATION


kubernetes

 **LF DEEP LEARNING**

 **Acumos AI**

 **airship**

Holistic view is needed to deliver Cloud Native characteristics



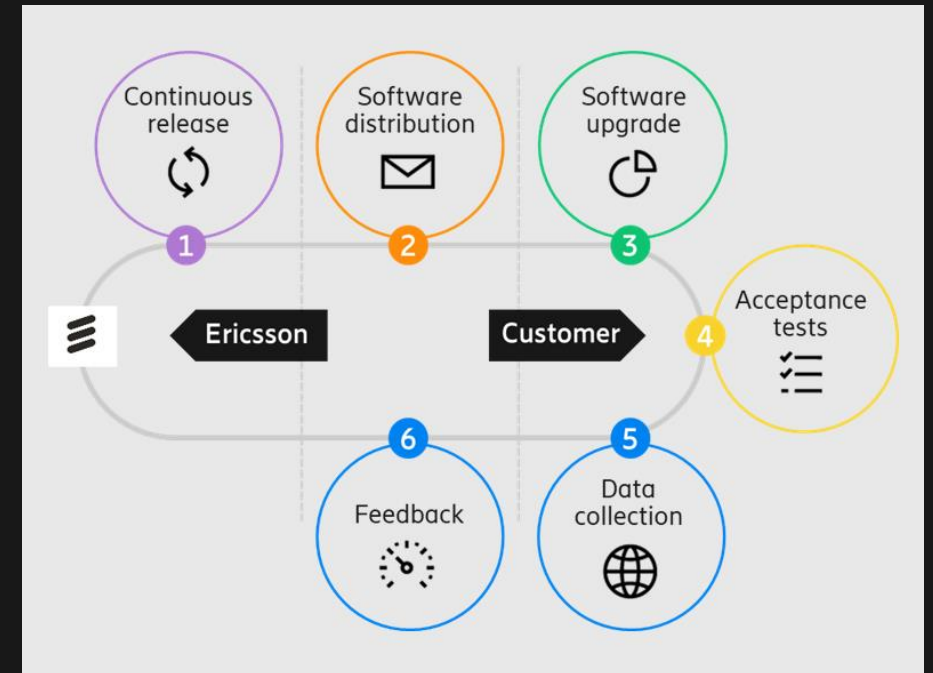
Cloud Native WoW and operations

Orchestration & Automation
for CaaS and Cloud Native NF's

Cloud Native NF's

CNCF based platform

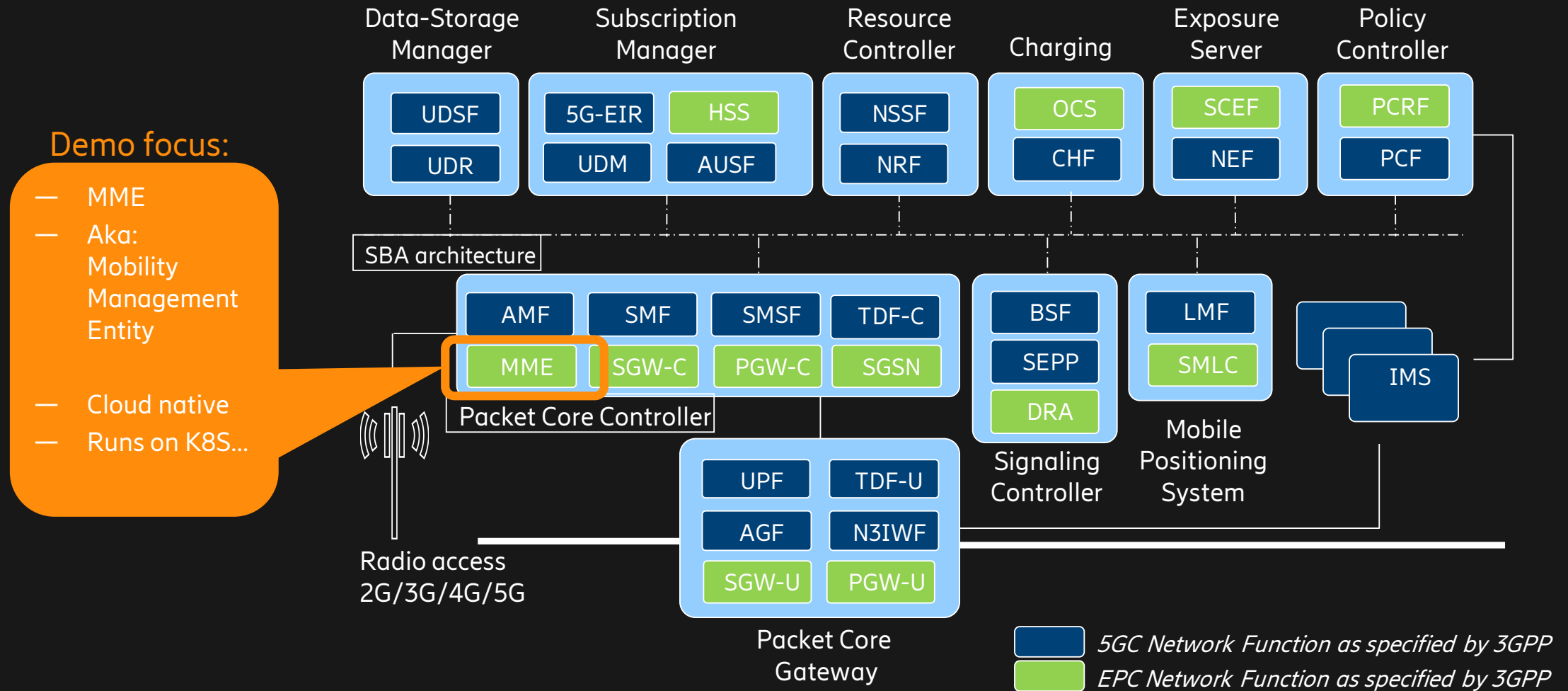
Any Infrastructure



CI/CD all the way to customer

Ericsson dual-mode 5G Cloud Core – Overview

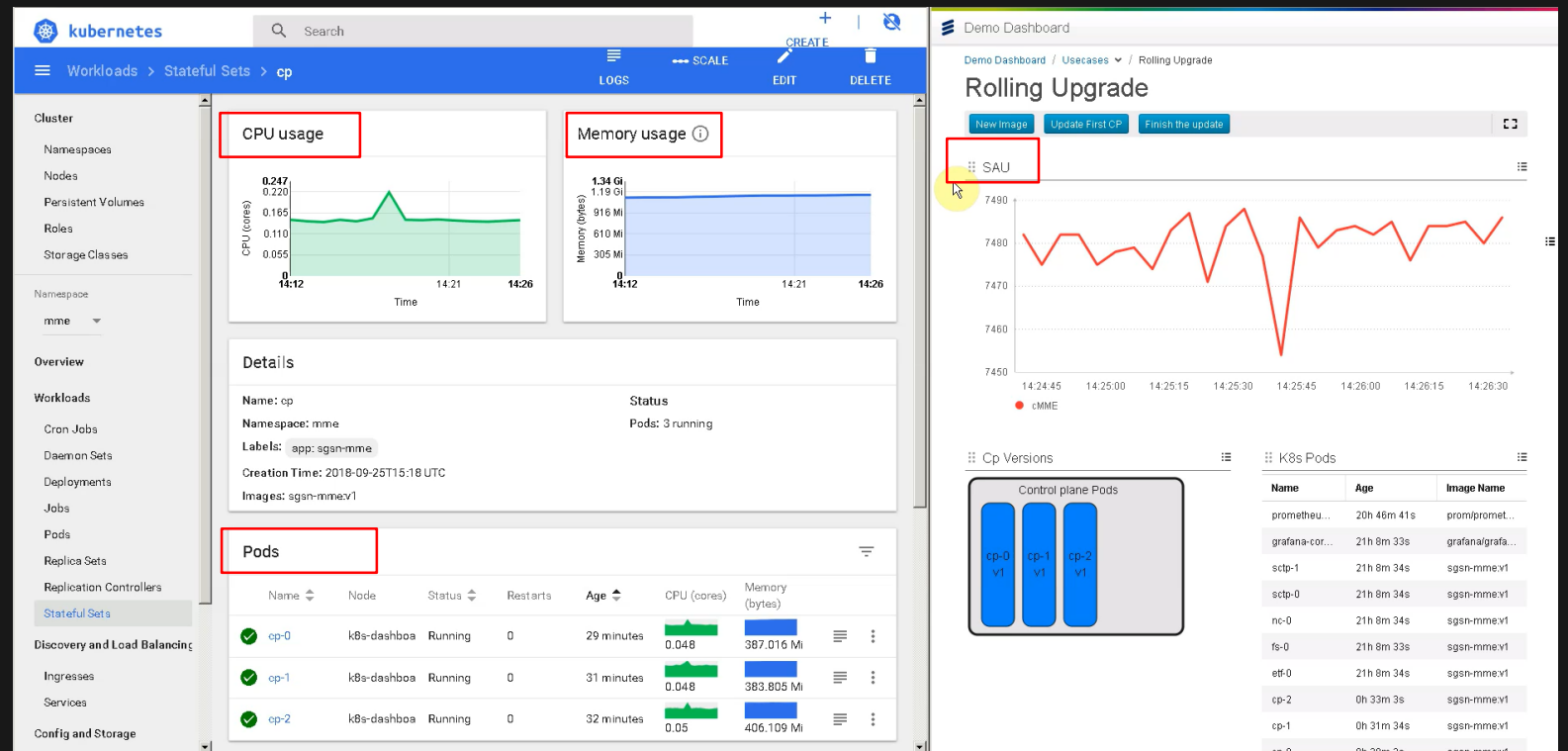
Fully cloud native



Demo: cloud native MME: in-service upgrade



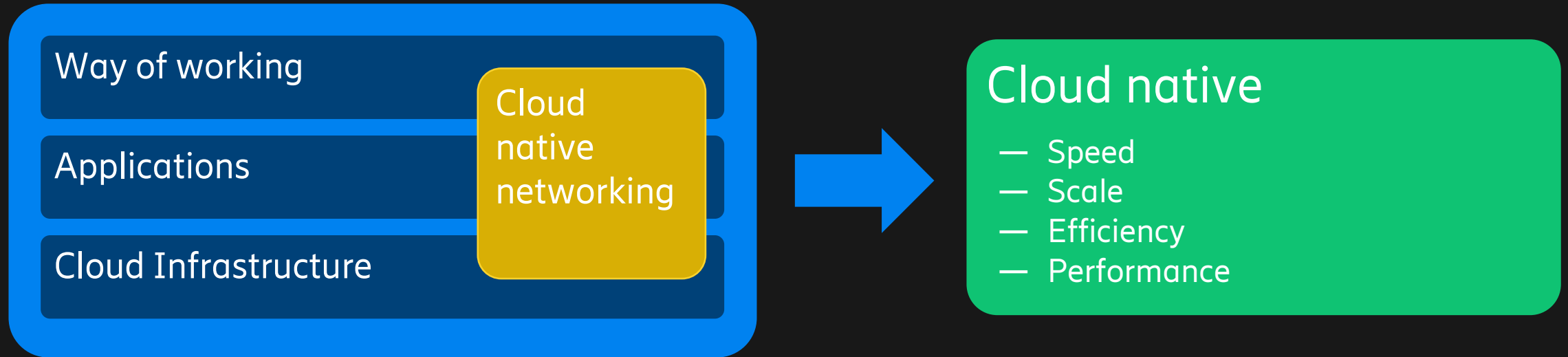
- Dual mode 5G cloud core
 - MME function
 - 3 microservices / PODs
 - ~0.15 vCPU
- Test system: ~7500 simultaneously attached users
- In-service blue-green upgrade
 - Orchestrated by K8S
 - No end-user impact



K8s Dashboard

Demo UI

A call for action



- TODAY: Networking (protocols, solutions and mechanisms) is created for monolithic applications on specialized HW
- The whole industry (HW, cloud, application vendors and operators) need to work together to simplify this space
 - Pushing network orchestration down the stack & enabling acceleration (SmartNICs)
 - Maximizing networking use cases fitting the cloud native paradigm (e.g. all SBI traffic on L3+)
 - Extending K8S ecosystem to support legacy protocols in a CNCF compliant way

Summary



5G is happening now

Cloud Native is essential to deliver 5G

Open Source is an important tool to enable Cloud Native implementation – let's work together

