AWS re:Invent

NOV. 29 – DEC. 3, 2021 | LAS VEGAS, NV

TLC304

At the cutting edge: Multi-access edge computing with CSPs

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Telecom Industry Business Unit
Amazon Web Services

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Director, Professional Services – Telecom,
Telecom Industry Business Unit
Amazon Web Services

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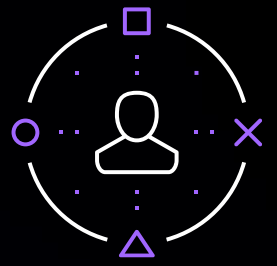
Focus for telecom operators



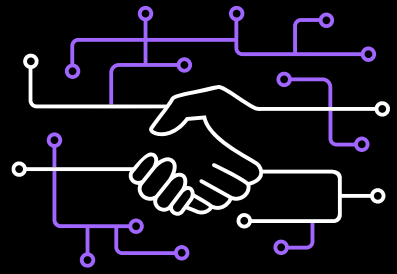
Accelerate new revenue streams



Shed capital and operating expenses



Differentiate through customer service and new experiences



Technology partners to the enterprise

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Telecom strategic focus



Orchestrate a secure, scalable, software-driven network

Transform and automate for the future of business

Accelerate innovation to monetize 5G, edge, and enterprise transformation

Ignite your data to predict and personalize every interaction with AI/ML

aws

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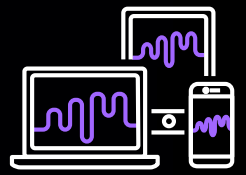
Transformation of industries with 5G & edge



Deliver streaming content, gaming, and VR experiences



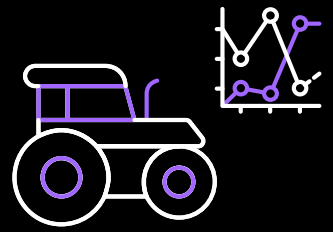
Build smarter products and user experiences in homes, buildings, and cities



Remotely monitor patient health and wellness applications



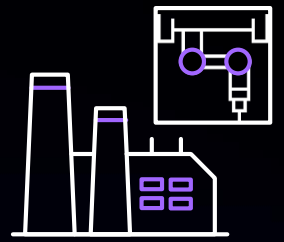
Transform transportation with connected and autonomous vehicles



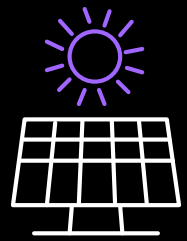
Grow healthier crops with greater efficiencies



Track inventory levels and manage warehouse operations



Improve the performance and productivity of industrial processes

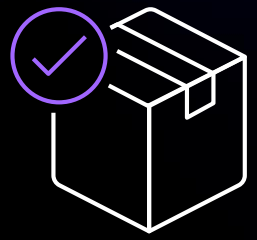


Manage energy resources more efficiently

aws

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Improving customer experiences



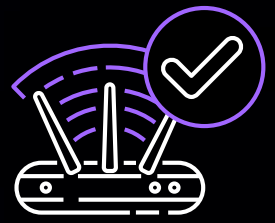
Equipment arrives



Provisioning with backend



Manual configuration



Installation & connection



Onboarded



Local management

ZERO-TOUCH NETWORKS/
DEVICE ONBOARDING

AUTOMATED
EXPERIENCE

Cost-effective, secure, and scalable edge networks, supporting thousands of radios, millions of devices, with fully trusted endpoints and bootstrapped applications

aws

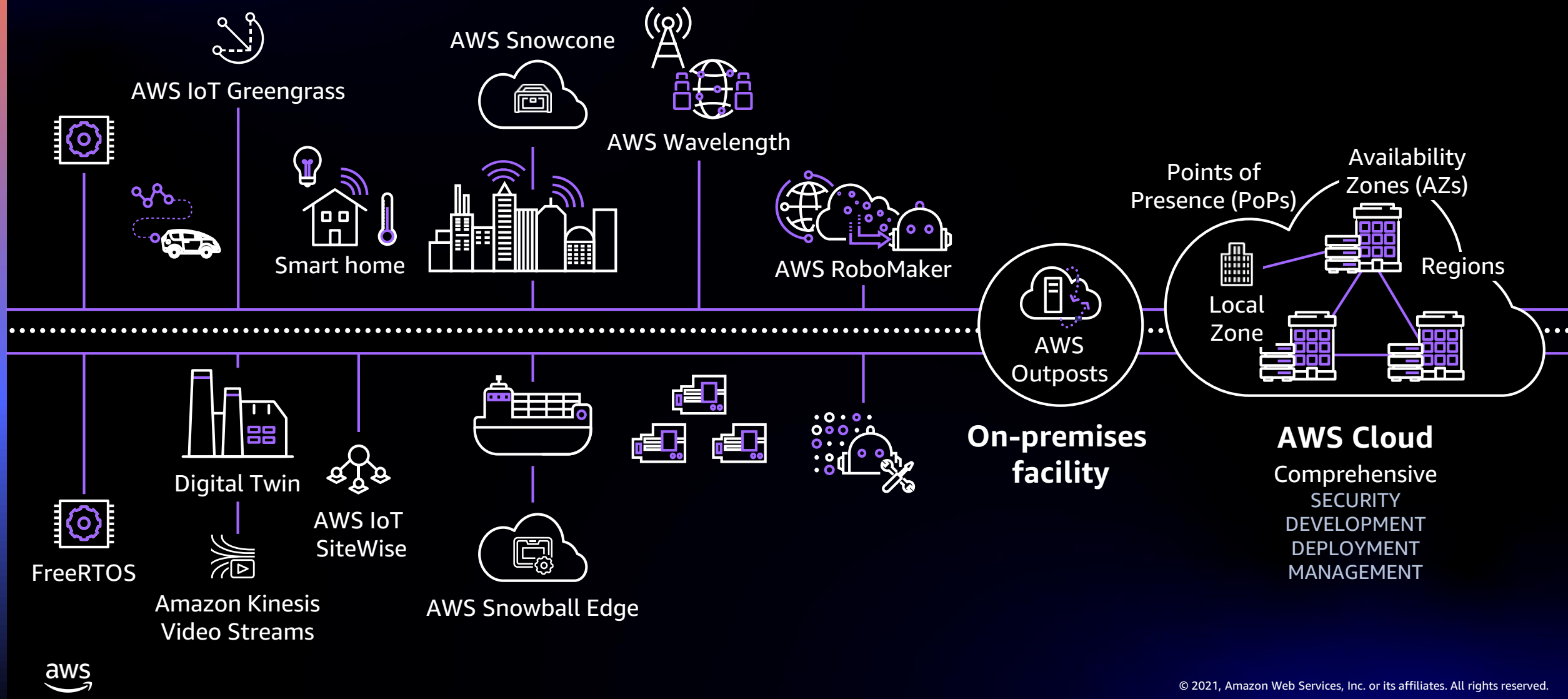
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AWS edge solutions and architectures



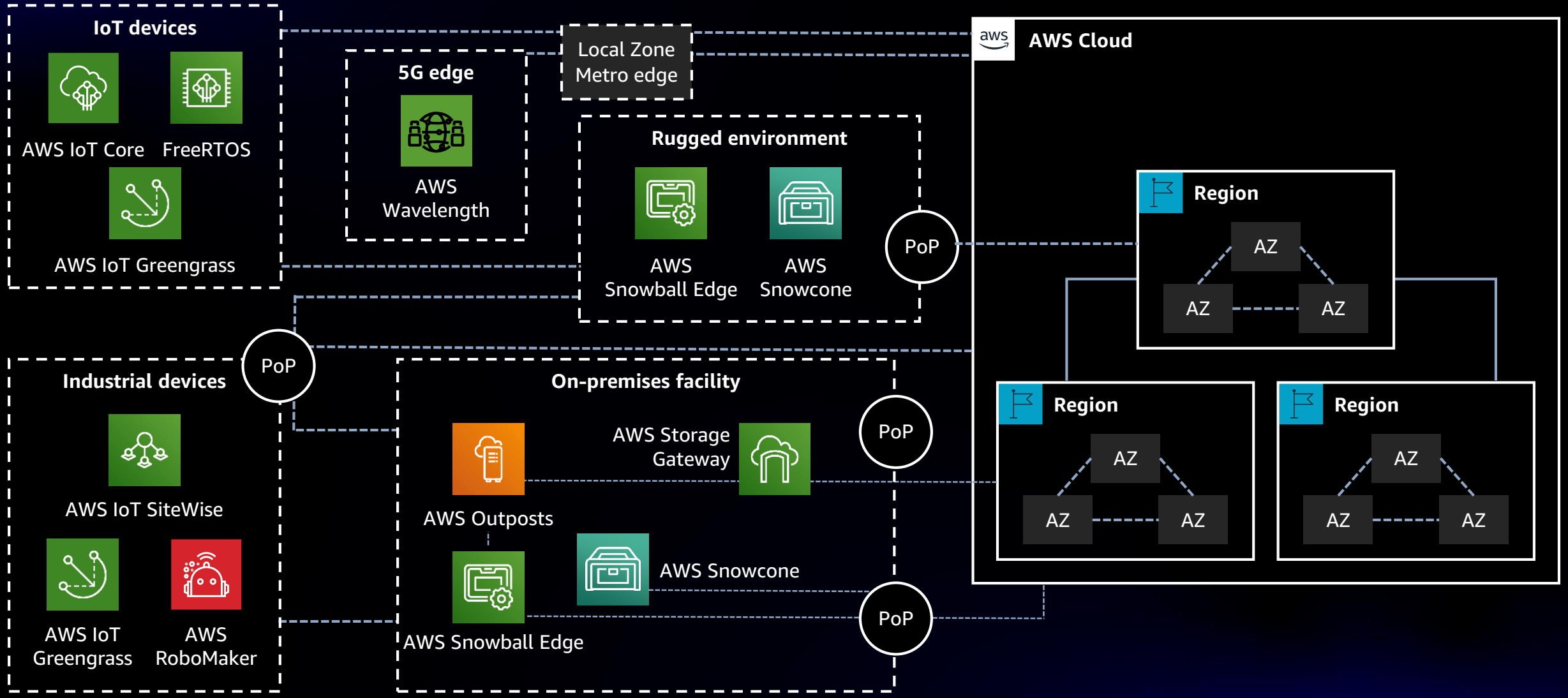
Understanding AWS edge services

END-TO-END PORTFOLIO OF EDGE SERVICES



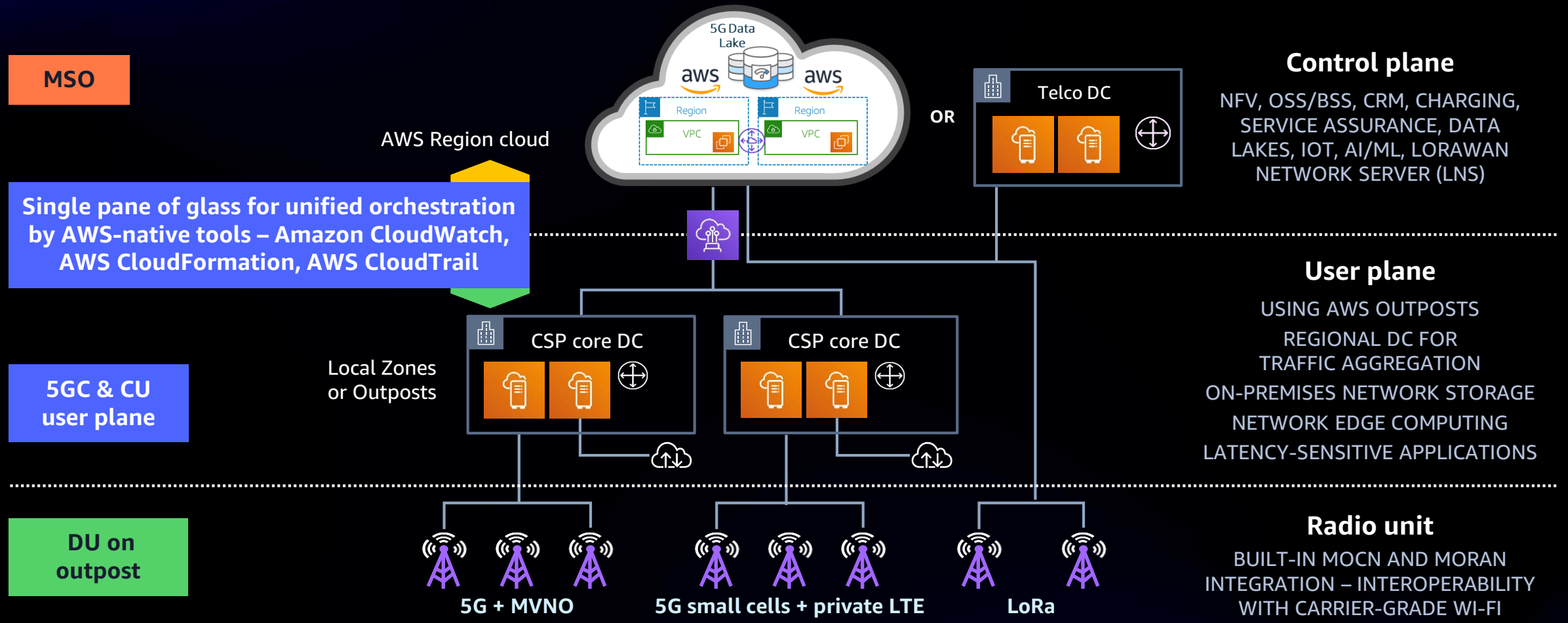
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AWS edge-to-cloud continuum



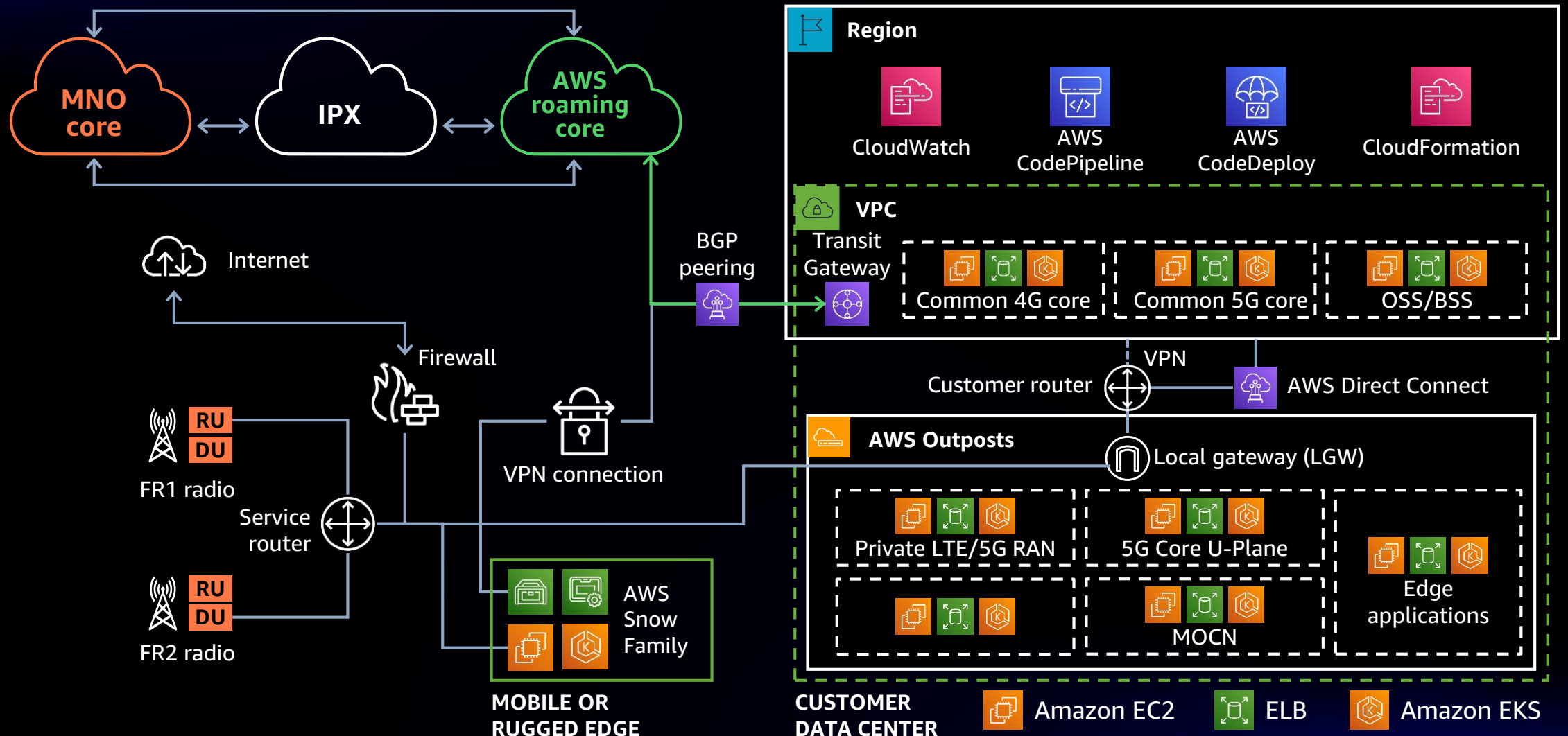
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AWS 5G CSP reference architecture



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AWS hybrid private networks architecture

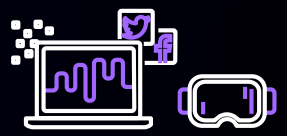


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5G edge networks powered by AWS



Smart airports



BOINGO

CHICAGO O'HARE AIRPORT

Boingo has constructed a private network built on AWS for Chicago O'Hare International Airport using Citizens Broadband Radio Service (CBRS) spectrum to connect IoT devices

VIDEO KIOSKS

A live video kiosk connects onsite passengers and remote support staff via a dedicated wireless network

AWS worked with Boingo to securely host video distribution data

AVOID CONGESTED PUBLIC NETWORKS

The Boingo private network gives Chicago O'Hare a connectivity platform that delivers crisp, clear video calls while avoiding congestion with our public wireless networks

aws

SERVICES USED



AWS Region



AWS Local Zone

boingo

4G/5G private LTE

JMA & CROWN CASTLE

CARNEGIE MELON PRIVATE LTE

JMA Wireless, AWS, and Crown Castle have completed a private LTE network deployment for Carnegie Mellon University using CBRS spectrum

FOUR SEPARATE SITES

There are four outdoor sites using JMA CBRS cell hubs

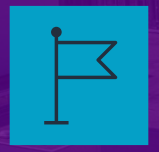
The JMA vRAN operates on a commercial off-the-shelf server and wireless evolved packet core (deployed on AWS Snowball) that are in the Living Edge Lab data center and connected by a Crown Castle fiber network

UNIVERSITY DEMAND

Customers at universities globally have asked for private 4G and 5G reference architecture for technology research in 5G and for better connectivity on their campuses

aws

SERVICES USED



AWS Region



AWS Local Zone



AWS Snowball Edge

CROWN CASTLE

JMA WIRELESS

Remote learning



INTEL & ATHONET

CLOSING THE DIVIDE

CBRS private network solution that will cover a three-quarter-mile area and enable remote learning with broadband access as an essential service for an underserved community in Sacramento, California

DISTANCE LEARNING

According to the US census, 4.4 million households with students still lack consistent access to a computer and 3.7 million lack internet access

BRIDGE TO 5G

Private CBRS networks are gaining momentum as a bridging strategy to 5G and have created an inflection point in wireless technology

aws

SERVICES USED



AWS Region



AWS Snowball Edge

intel

ATHONET

Smart Warehouse

FEDERATED WIRELESS, CISCO & JMA WIRELESS

NATIONAL SECURITY

5G is one of the key technologies covered by the $2.5 billion award DoD made to the National Spectrum Consortium

LOW LATENCY

End-to-end network to support industrial IoT using Open RAN, virtualized 5G packet core, and mobile edge compute

CBRS shared spectrum along with millimeter wave spectrum to create a robust 5G private wireless network

USE CASE

Marine Corps Logistics Command warehouse operations for digital transformation of receipt, storage, issuance, inventory control, and auditability of material and supplies that support Marine Corps global operations

aws

SERVICES USED:



AWS Region



AWS Snowcone



AWS IoT Greengrass

fw connecting you to the future

cisco

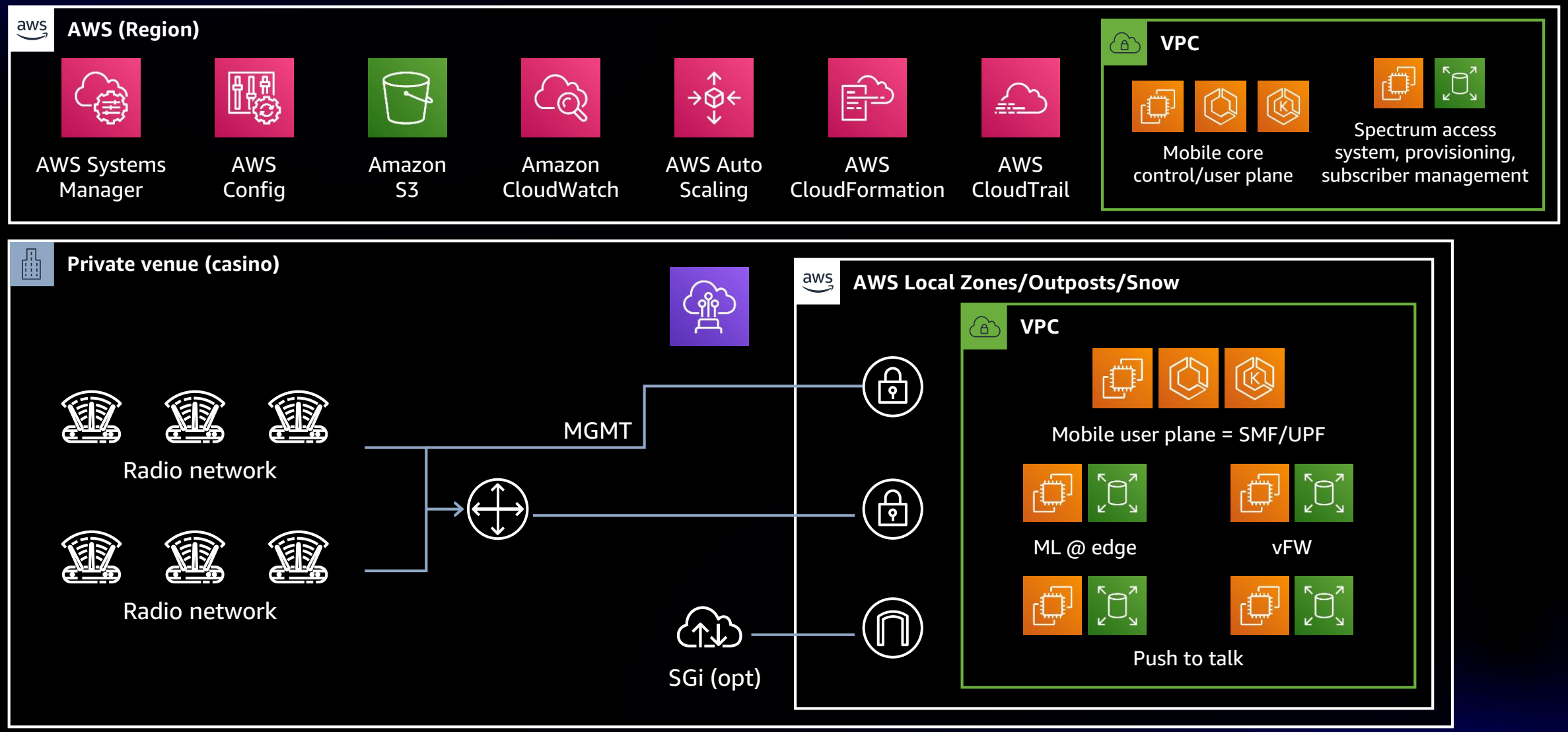
JMA

Where do you start?



Building a private mobile network

STEP 1

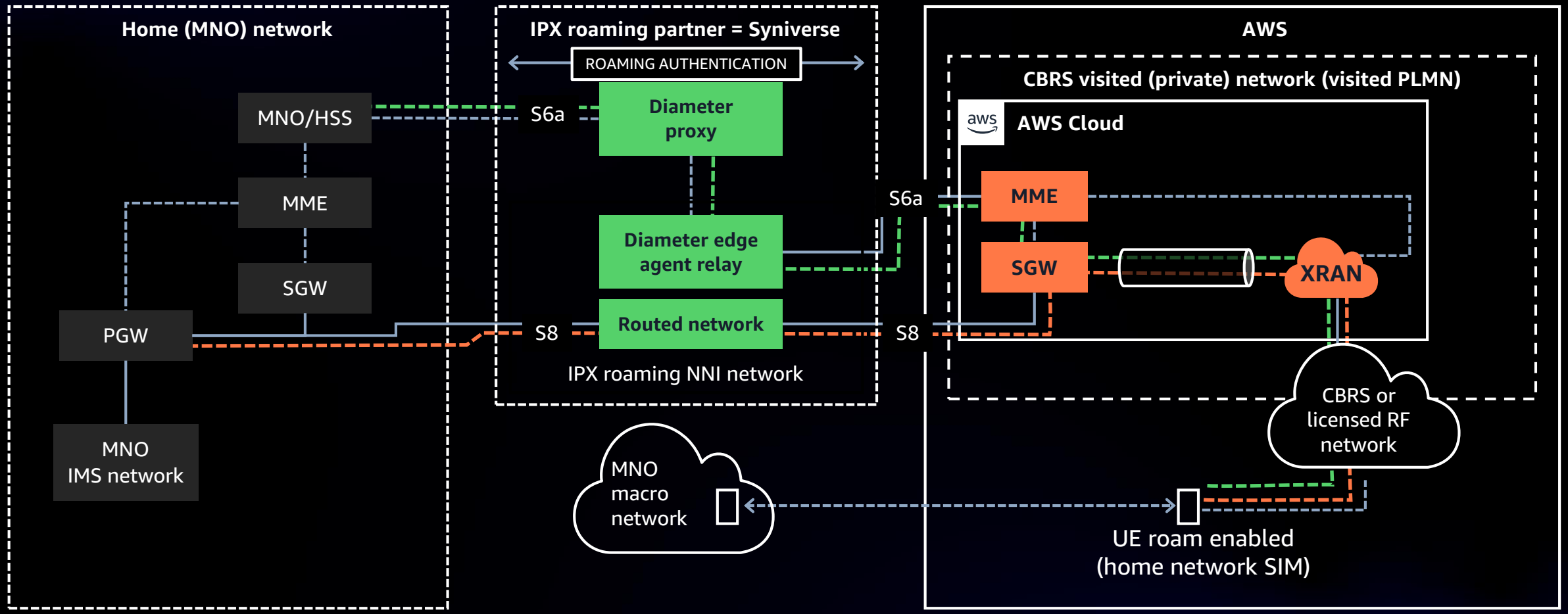


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Integrating with roaming partners

STEP 2

IPX INTEGRATION (FOR EXAMPLE, SYNIVERSE)

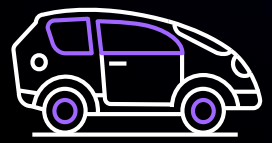


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Deploy edge use cases to integrate software delivery

STEP 3

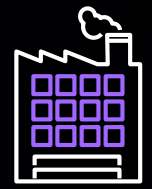
DEVICE EDGE COMPUTING, AWS IOT GREENGRASS, SDK, RTOS



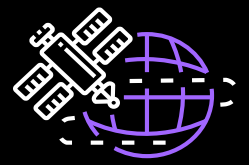
Unmanned vehicles
AUTONOMOUS DRIVING
DRONE DELIVERY



Industrial automation
WAREHOUSE
MANUFACTURING
ROBOTICS



Manufacturing
CONVEYOR BELT
AUTOMATION



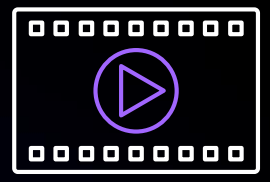
Data fusion & inference
SENSOR NETWORKS
VIDEO SURVEILLANCE



Content
VIDEO STREAMING
AUGMENTED/VIRTUAL REALITY



Gaming
LOW LATENCY
STREAMED GAMING



Smart home & city
VIDEO & DATA MANAGEMENT

aws

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Introducing Telenor



PREVIEW

AWS Private 5G

Managed service to deploy, operate, and scale your private cellular networks



Order and deploy a private mobile network with just a few clicks in the AWS console

Automatically configures, deploys, and manages the mobile network

Scales easily to accommodate more connected devices or increase in network traffic

aws

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AWS Private 5G

THREE API'S TO CREATE A FULLY MANAGED PROGRAMMABLE NETWORK

```
admin:~/environment/aws $ aws e5g --endpoint $AWS_ENDPOINT create-network\

admin:~/environment/aws $ export NETWORK_ID=914EyZAZwJa6c23Vx2quFLY8wzM

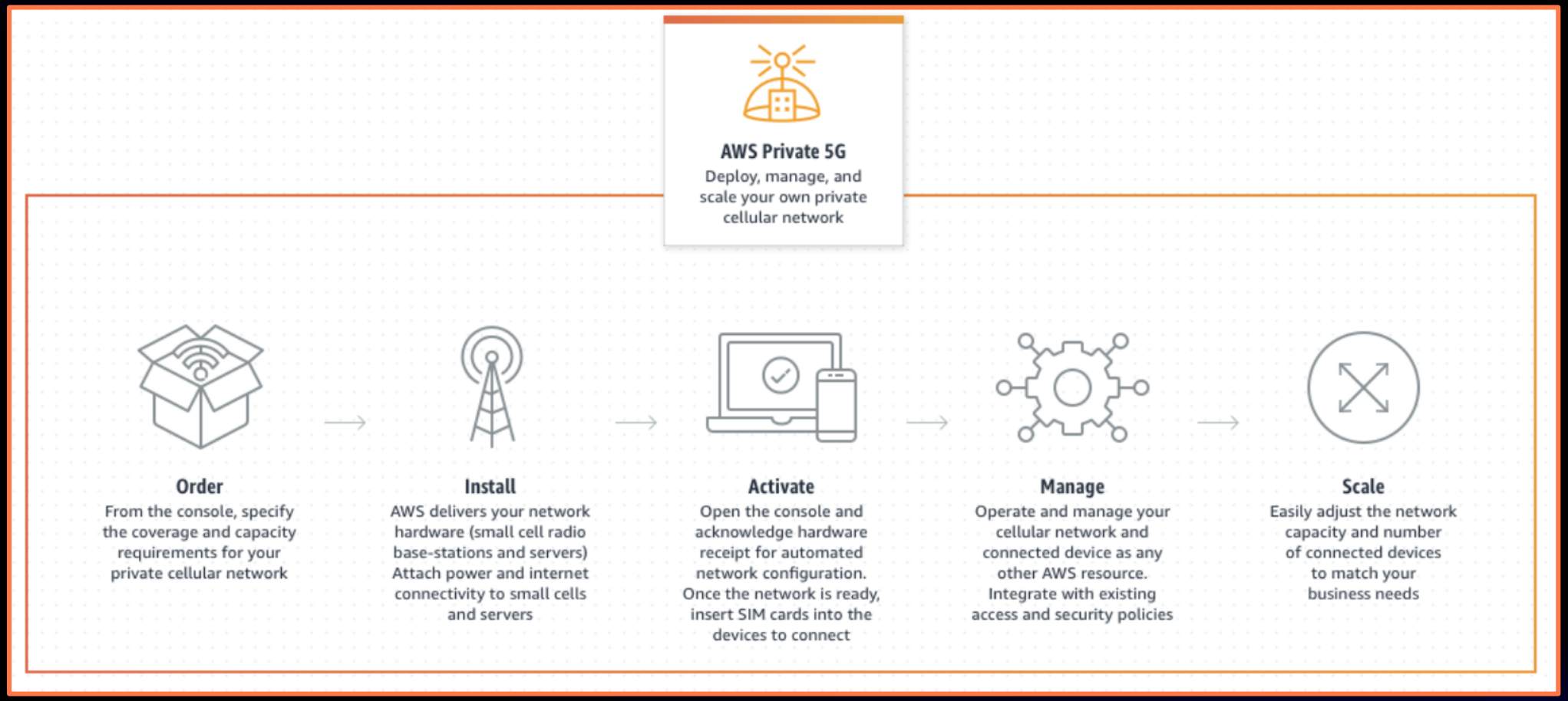
admin:~/environment/aws $ aws e5g --endpoint $AWS_ENDPOINT activate-network\
```

aws

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AWS Private 5G

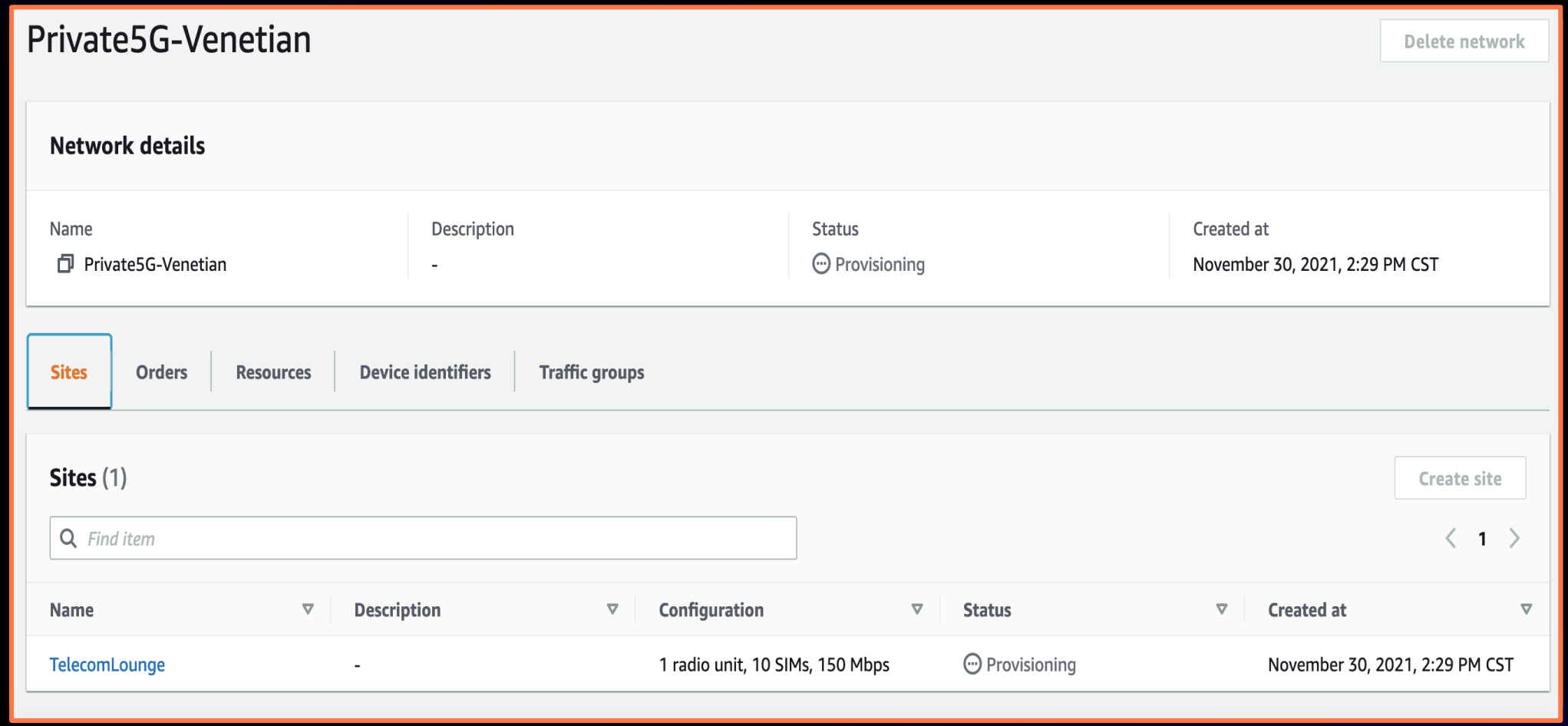
CONSOLE DRIVEN WITH EASY INTEGRATIONS TO AWS SERVICES



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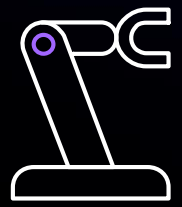
AWS Private 5G

CONSOLE DRIVEN WITH EASY INTEGRATIONS TO AWS SERVICES



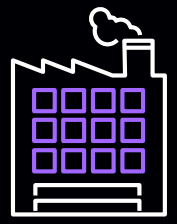
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Applications at the telecom lounge



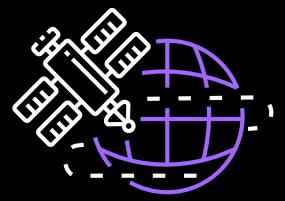
Industrial automation

WAREHOUSE
MANUFACTURING
ROBOTICS



Manufacturing

CONVEYOR BELT
AUTOMATION

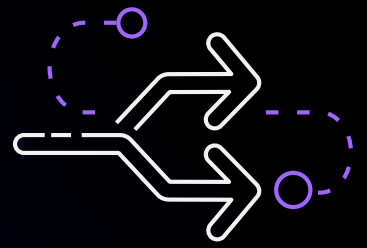


Data fusion & inference

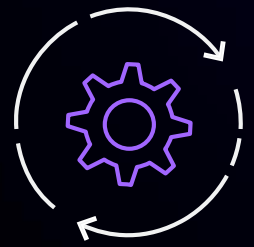
SENSOR NETWORKS
VIDEO SURVEILLANCE

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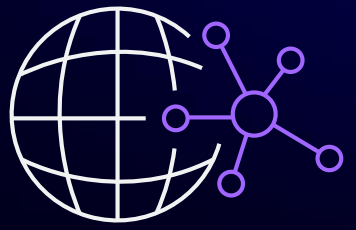
Summary



Understand the available AWS edge services and architecture best practices before selecting the solution



Automation, orchestration, and zero-touch device and application experiences are not value-add but fundamental to the solution



Industrial customers in AgTech, mining, airport, factories, and warehouses are transforming experiences with AWS edge driving convergence for telecom and cloud

aws

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Please join us for a live demo of AWS Private 5G

Telecom Lounge

Venetian, Level 3

East Alcove

Across from Toscano 3601-3806



Thank you!

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