
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

HYB305

Successful edge deployments: From connected to disconnected locations

Leonardo Solano (he/him)

Senior Hybrid Cloud Solution Architect
AWS

Kate Sposato (she/her)

Senior Solution Architect, Snowball
AWS

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Agenda

Edge-to-cloud continuum

AWS Hybrid Cloud architecture overview

Hybrid Cloud and edge computing use cases

Connected use cases at the edge

Disconnected use cases with the AWS Snow Family

Q&A

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Edge-to-cloud continuum

EXTEND AWS INFRASTRUCTURE AND SERVICES ON PREMISES AND AT THE EDGE

REGIONS



METRO AREAS & TELCO NETWORKS



ON PREMISES



REMOTE & LIMITED CONNECTIVITY LOCATIONS

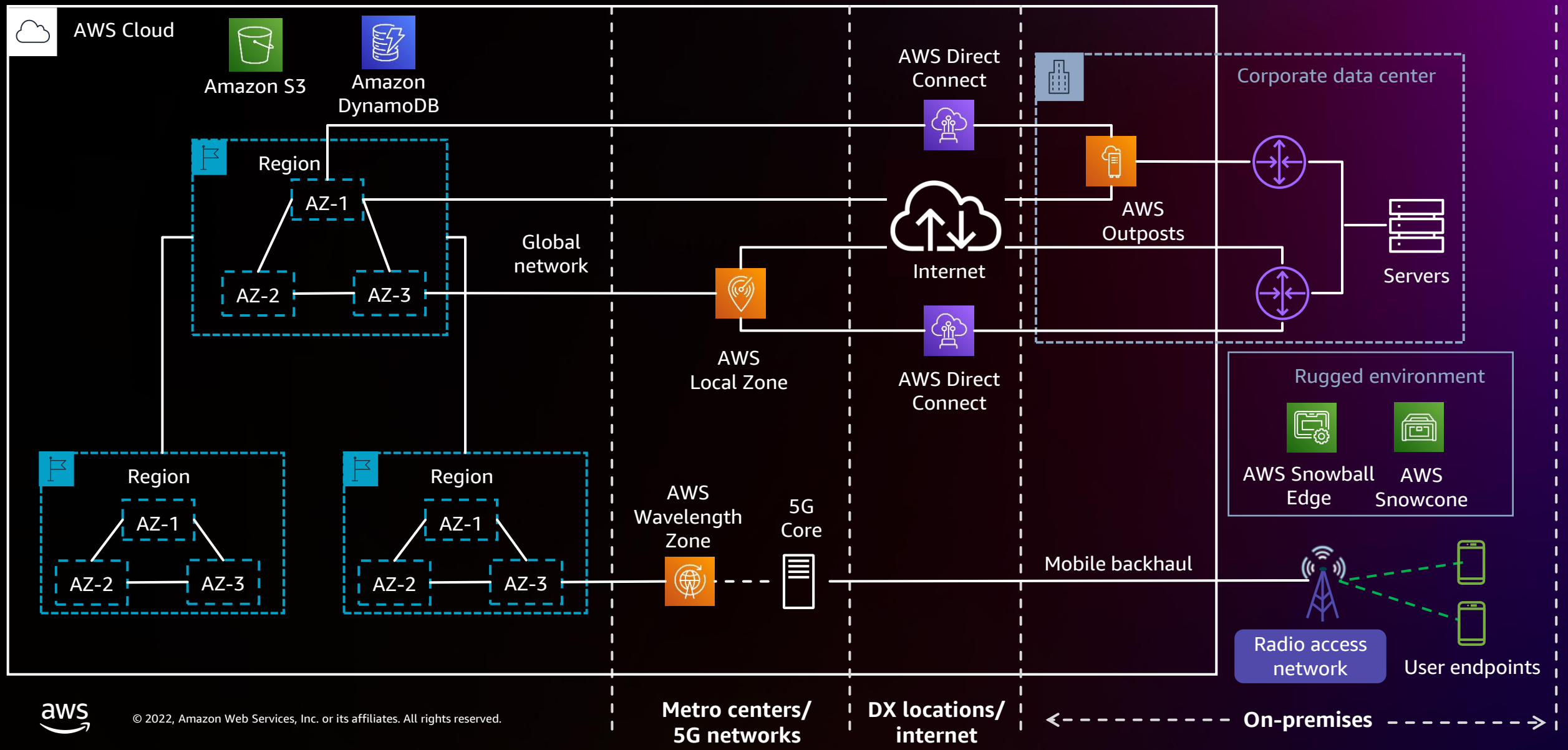


SMART DEVICES



© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

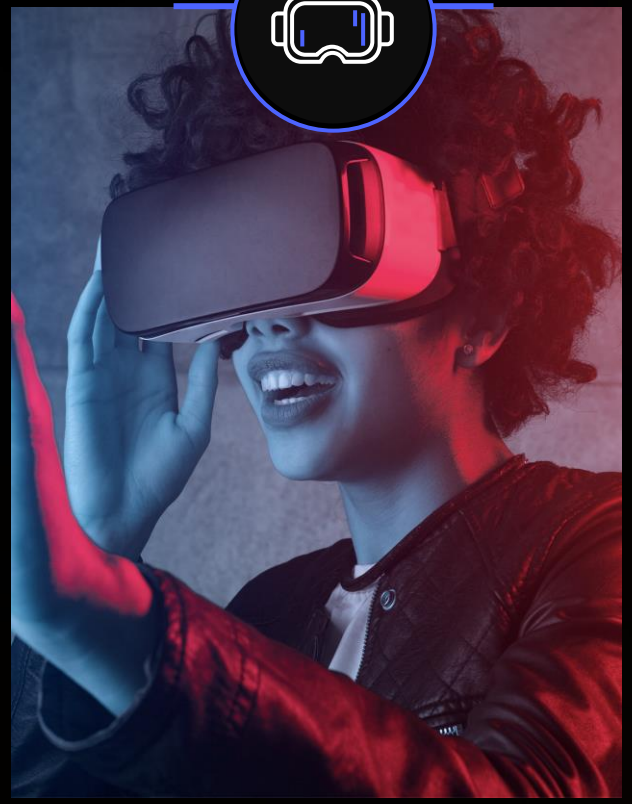
AWS Hybrid Cloud architecture



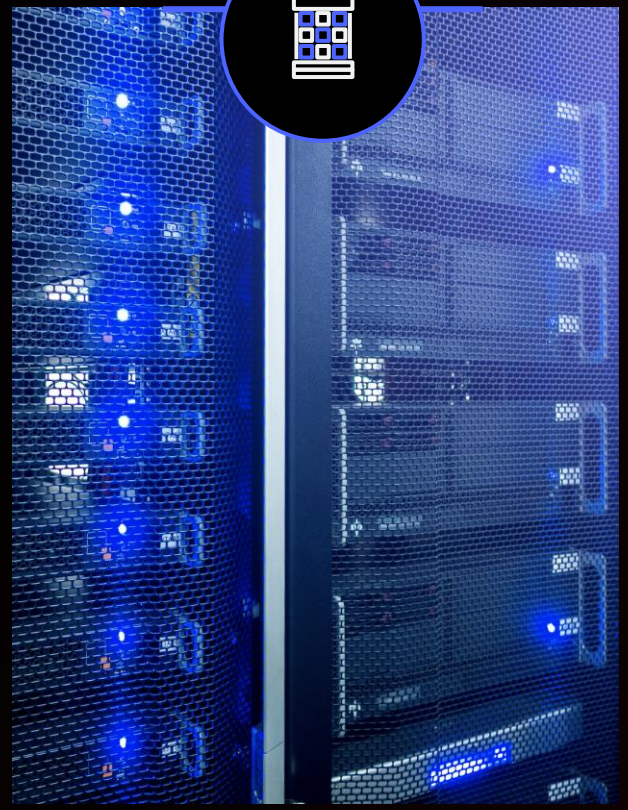
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Hybrid Cloud and edge computing use cases

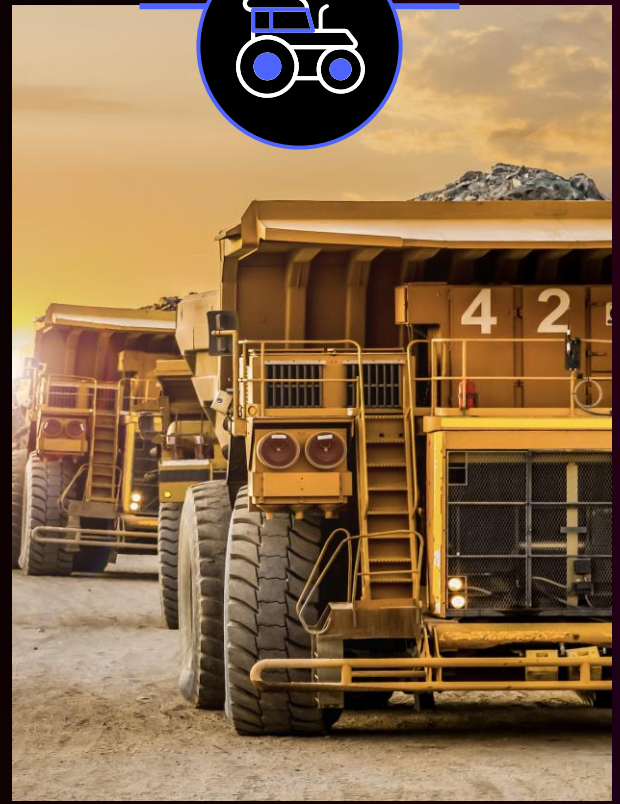
VR/AR experiences



Distributed DB at the edge



Real-time decision making



Private 5G

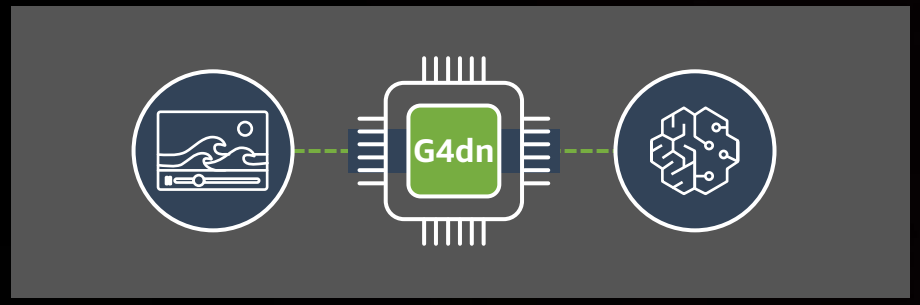


aws

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

GPU-enabled EC2 instances at the edge

G4DN INSTANCES IN AWS WAVELENGTH ZONES, LOCAL ZONES & OUTPOSTS



For machine learning inference and graphics workstations

NVIDIA GPU

Powered by NVIDIA T4 GPU

INCREASE PERFORMANCE AND REDUCE MACHINE LEARNING INFERENCE COSTS

COST-EFFECTIVE SMALL-SCALE TRAINING

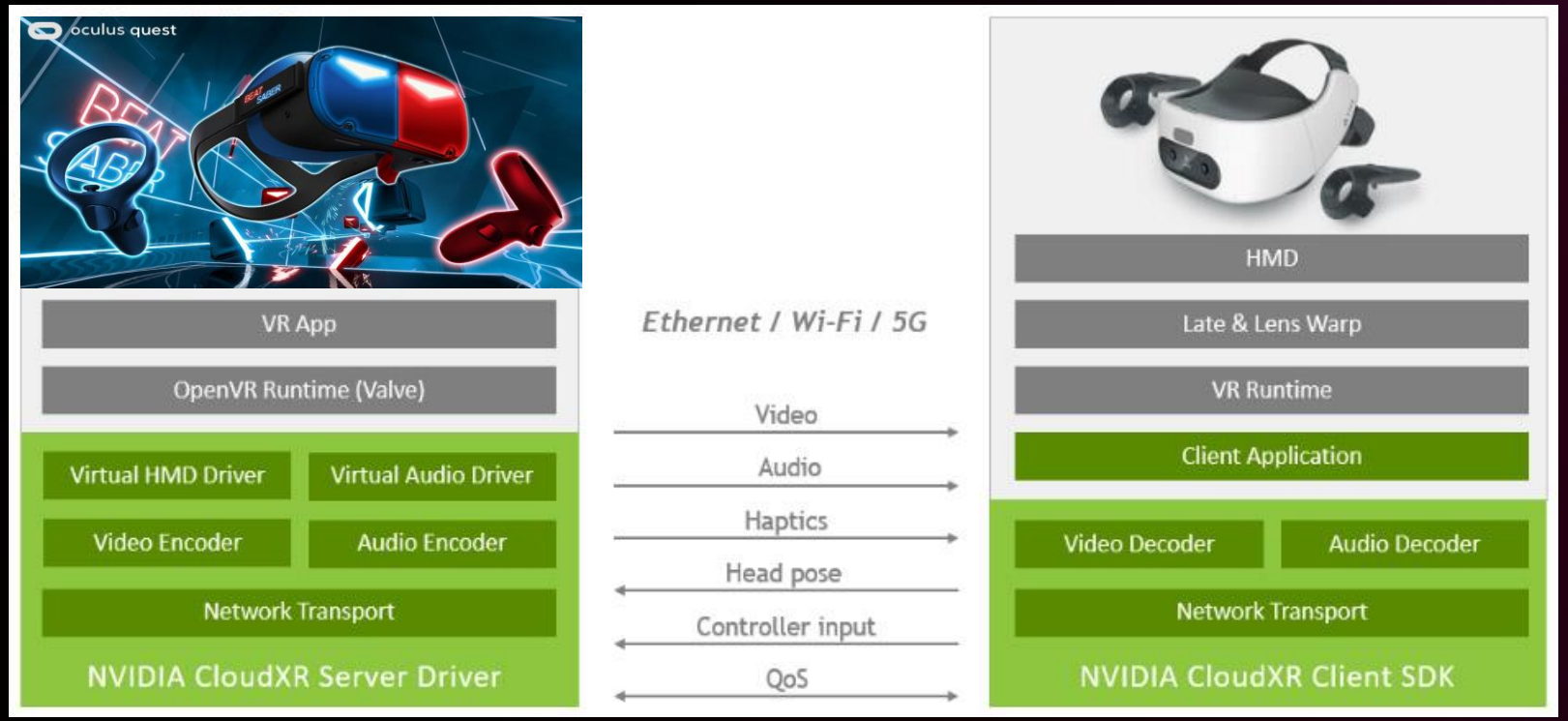
HIGH PERFORMANCE FOR GRAPHICS-INTENSIVE APPLICATIONS

aws

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

AR/VR at the Edge

REMOTE ASSISTANCE USING CLOUDXR



Latency – Designed to deliver ultra-low latency (<20 ms)

Network quality of service (QoS) – Consistent bandwidth with QoS is required

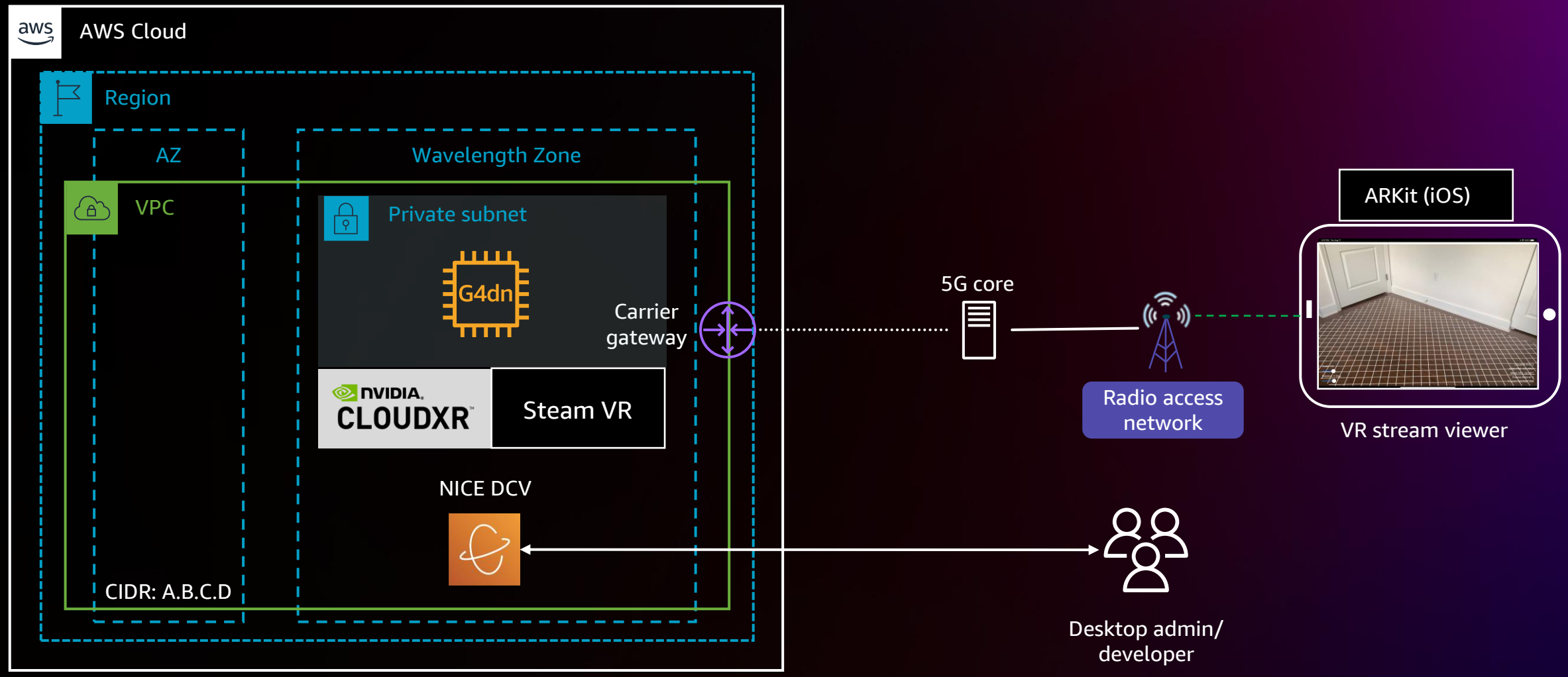
Device connectivity – Tethered device (GPUs); Android devices (Vive, GearVR, Oculus Quest)

Use cases – VR gaming, enterprise VR apps, safety, collaboration, and remote quality control

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

VR use case implementation in Wavelength Zone

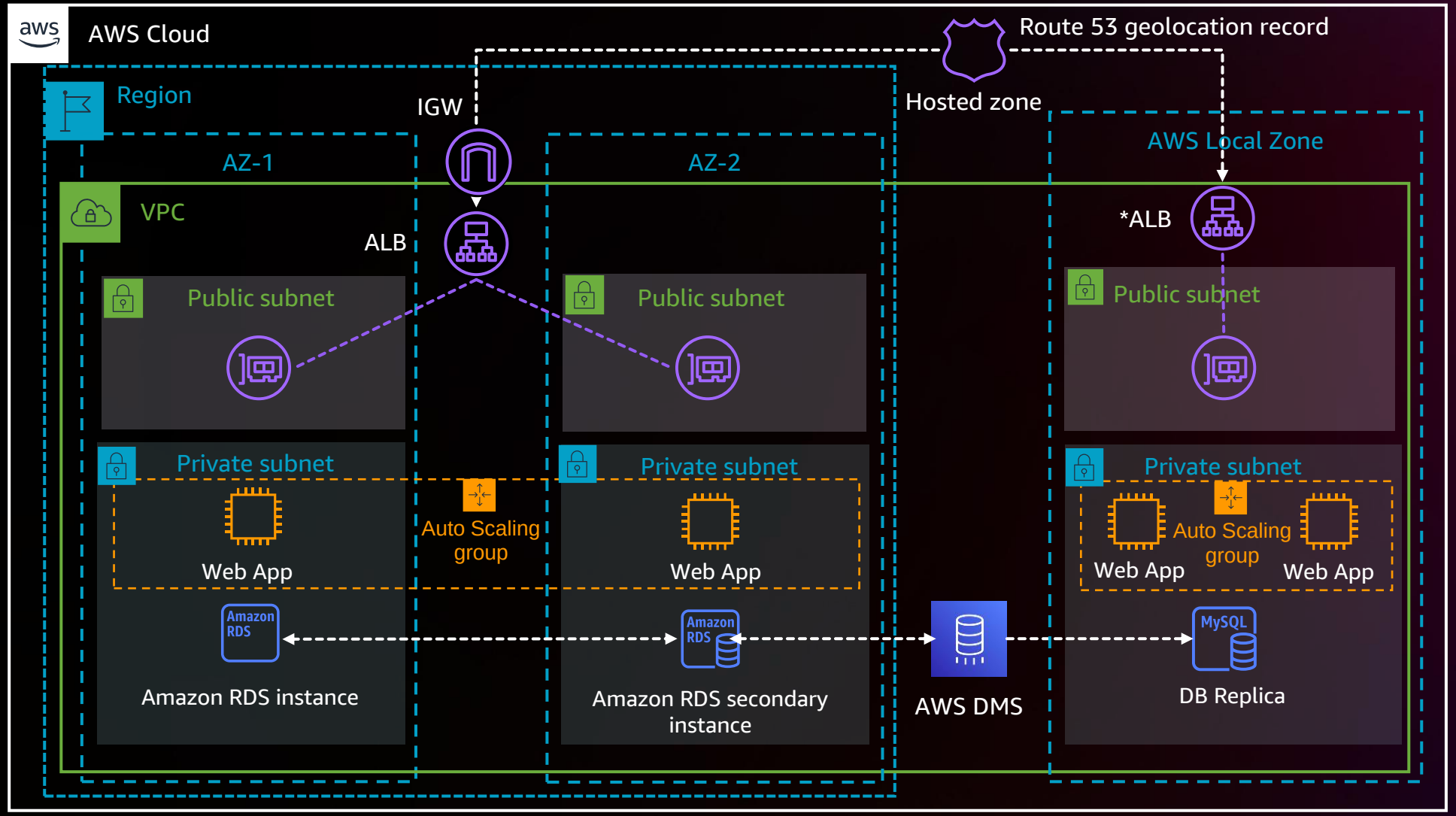
CLOUDXR DEPLOYMENT ON EC2 LOCATED IN A WAVELENGTH ZONE



© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Database synchronization to Local Zones

FROM REGIONS TO LOCAL ZONES – RELATIONAL DATABASES REPLICATION



Use cases

- Media and entertainment content
- Content creation
- Real-time multiplayer gaming
- Web apps

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

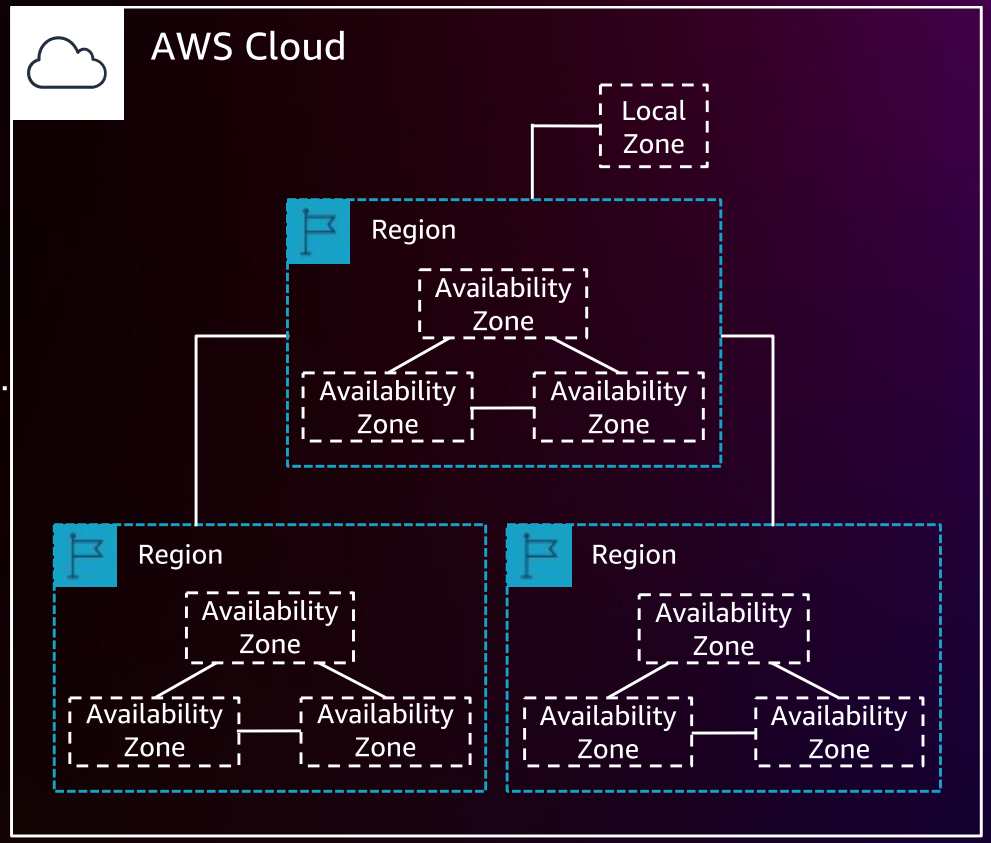
** ALB is only available in US Local Zones*

Edge computing for rugged environment

SMART DEVICES & DATA PROCESSING ON FACTORY FLOORS

- Industrial use cases in manufacturing environments - robotics, AR, AGV
- Integrated edge compute and industrial applications
- Safe human-robot (cobot) interaction
- Cycle time optimization using video analytics
- AR for unsupervised training

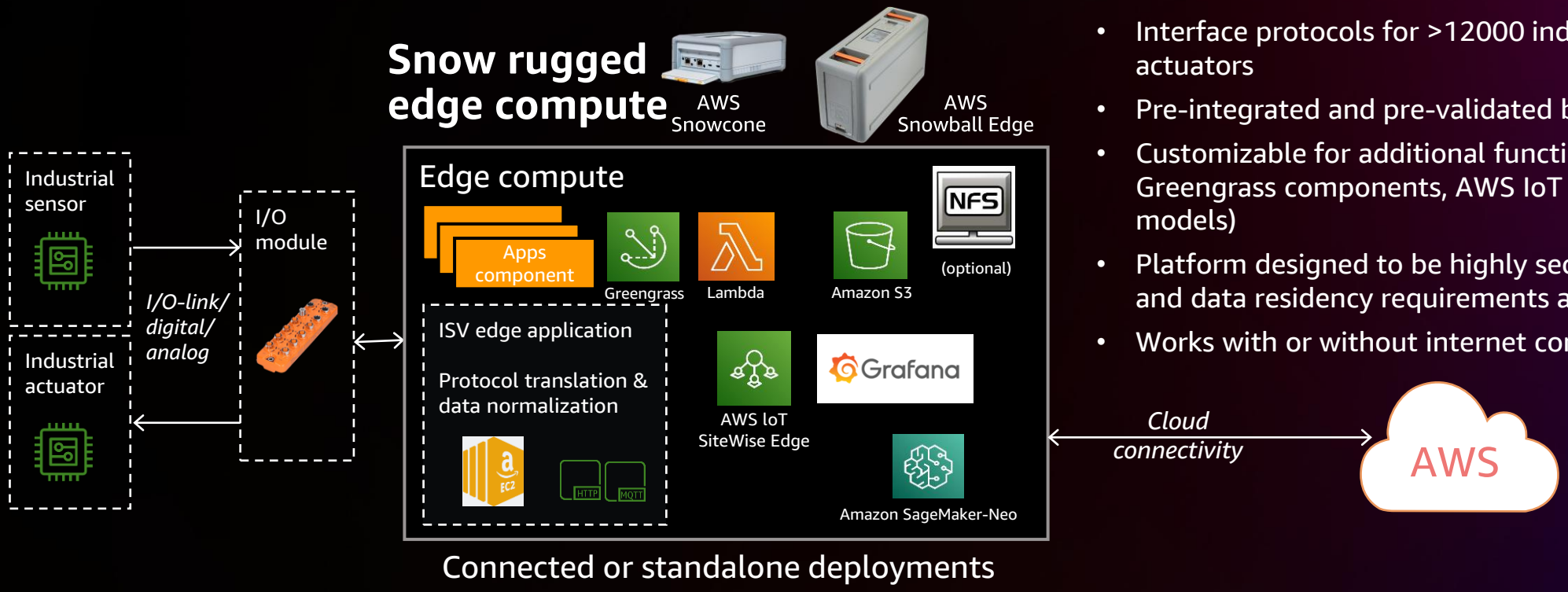




© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Hybrid IoT edge architecture

- IoT, ML, and monitoring services in one easy-to-use and pre-integrated bundle on AWS Snow
- Applications in signal monitoring, condition monitoring, quality control, and predictive maintenance use cases
- Improve enterprise response time to anomalies, health & safety, operational capacity planning, and CAPEX/OPEX cost savings

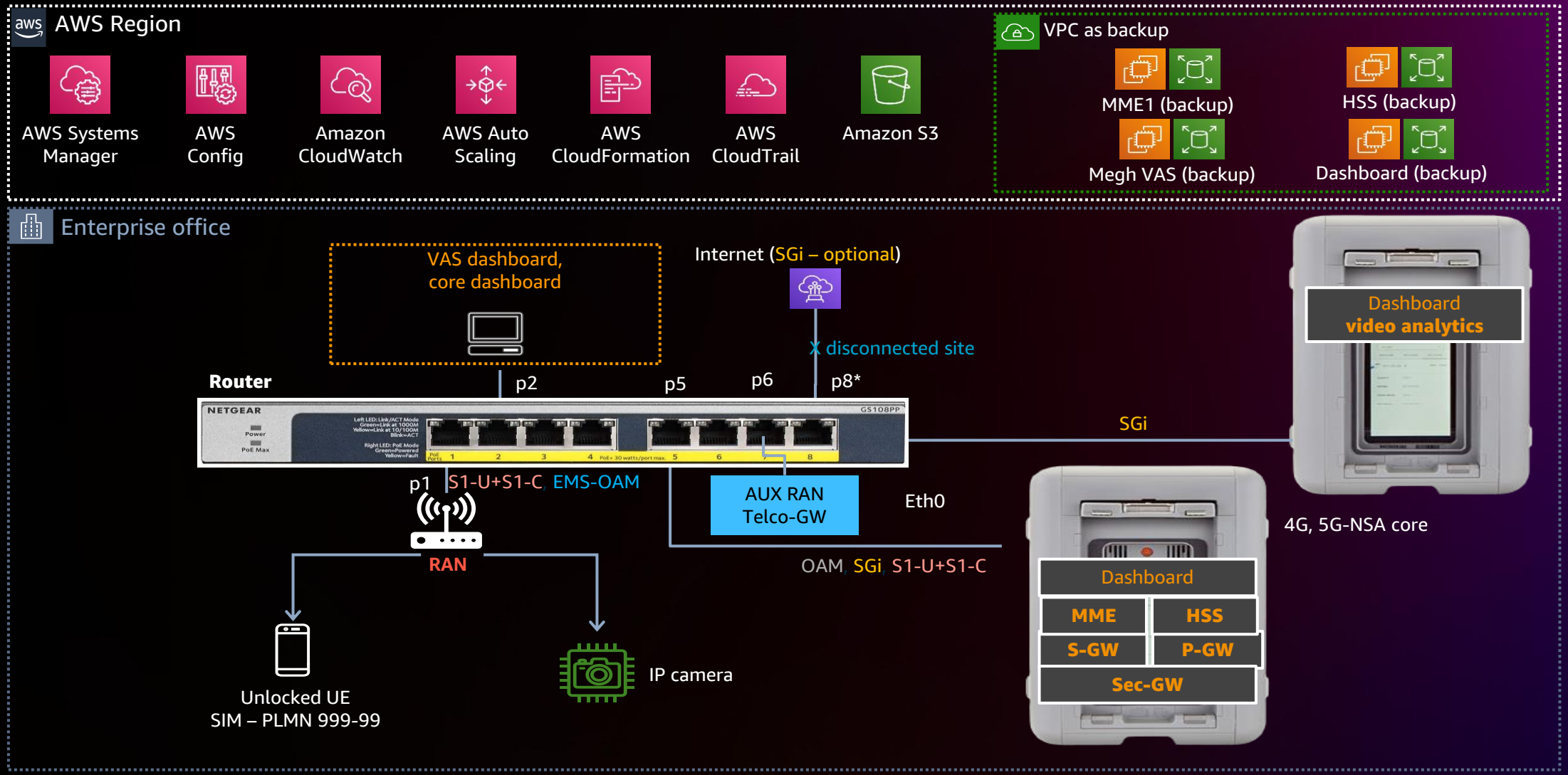


- Interface protocols for >12000 industrial sensors and actuators
- Pre-integrated and pre-validated bundle
- Customizable for additional functionality (Lambda, Greengrass components, AWS IoT SiteWise Edge, and ML models)
- Platform designed to be highly secure for mission critical and data residency requirements and use cases
- Works with or without internet connectivity

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

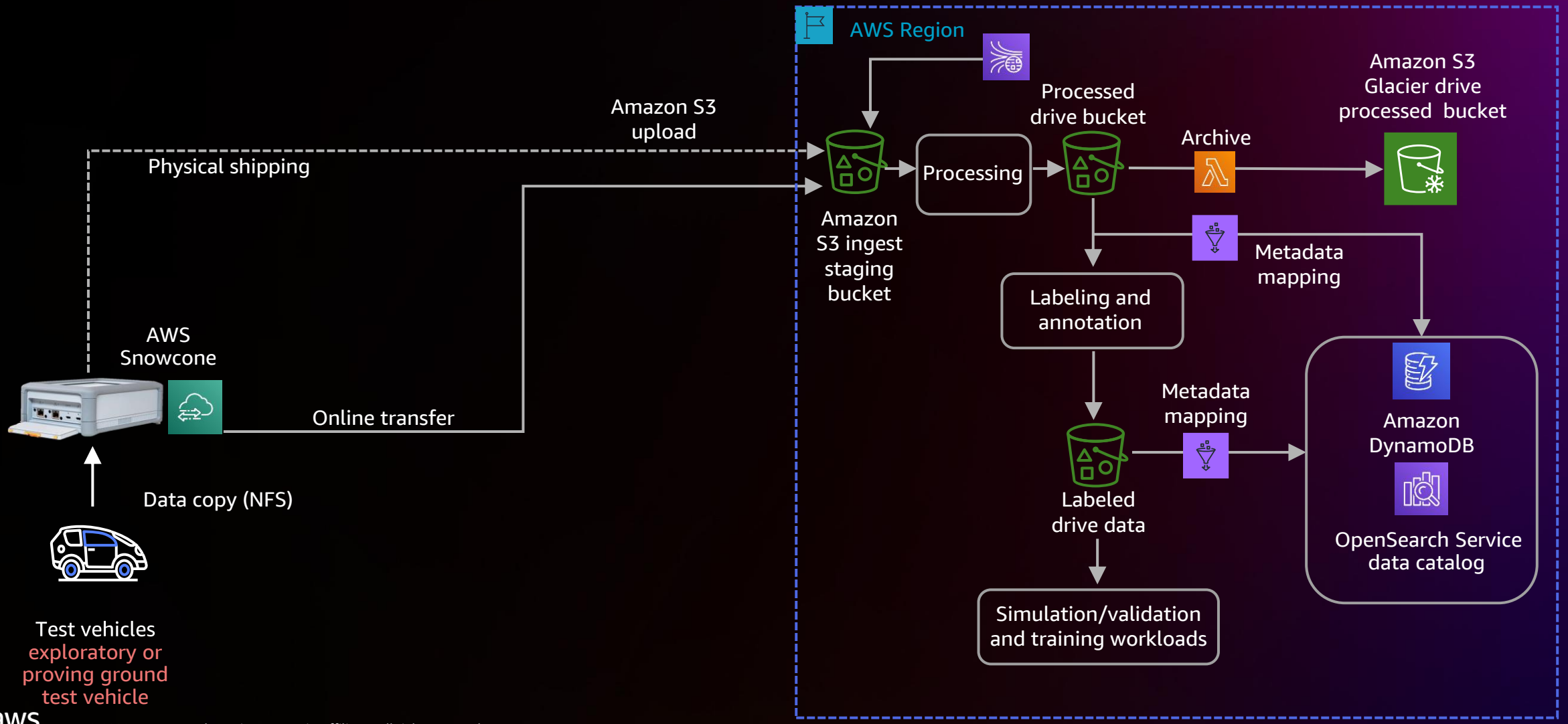
Hybrid cloud for private 4G & 5G

AWS SNOWBALL EDGE FOR PRIVATE 5G AND MULTI-ACCESS EDGE COMPUTING (MEC)



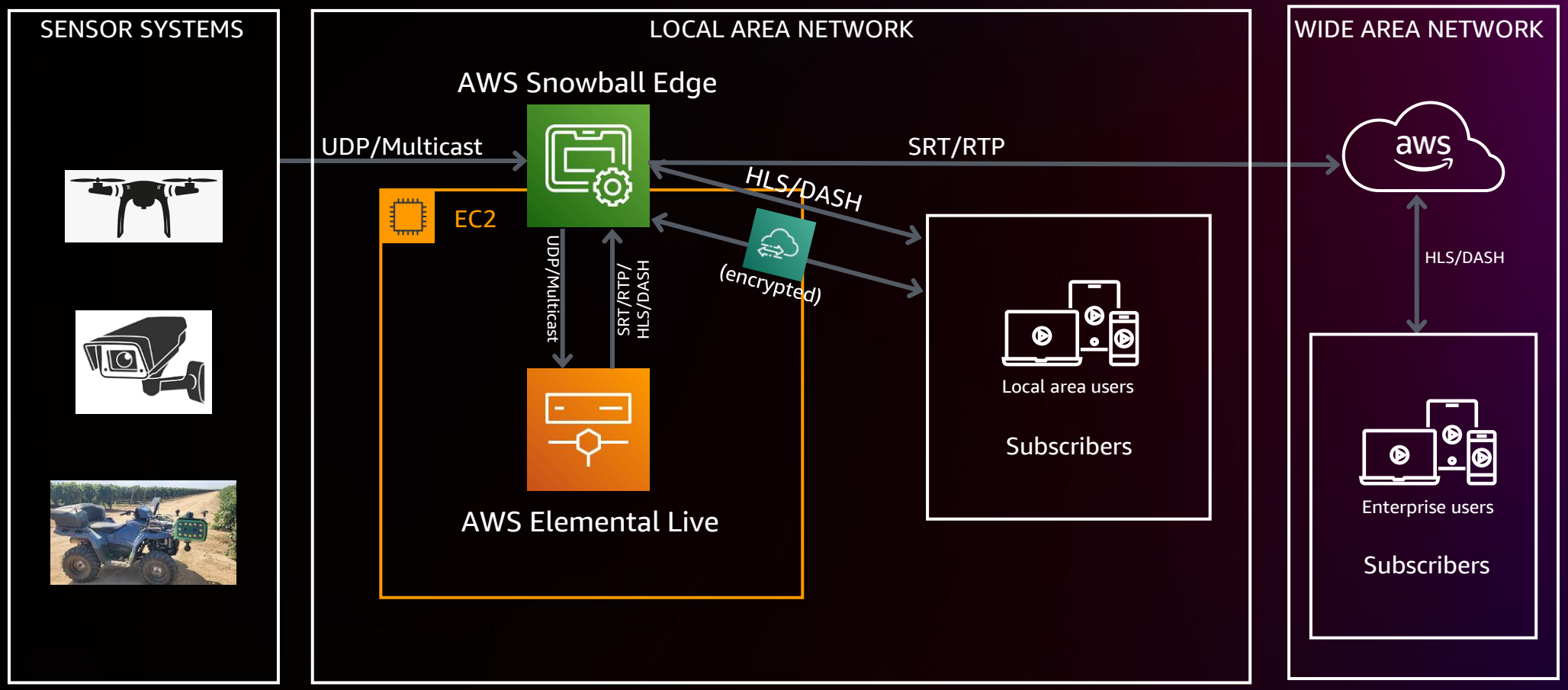
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Snowcone for autonomous test vehicles



© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Data format conversion at the edge



© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Thank you!

Leonardo Solano
leonsol@amazon.com

Kate Sposato
ksposat@amazon.com



Please complete the session survey in the **mobile app**

© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.