
AWS
re:Invent

MOB407-S

New solutions leveraging Verizon's 5G network

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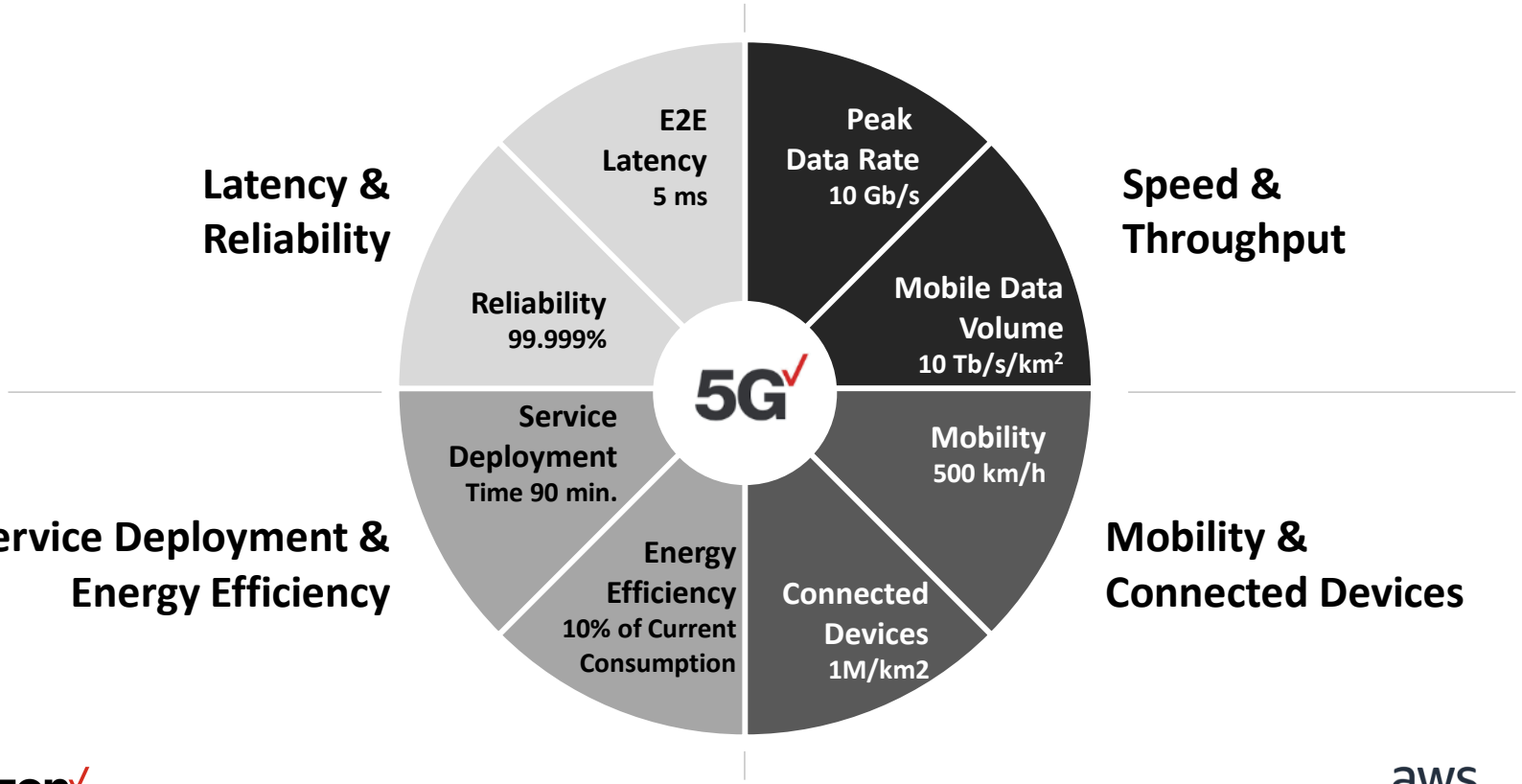
Robert Duffy
Chief Technology Officer
ID Software

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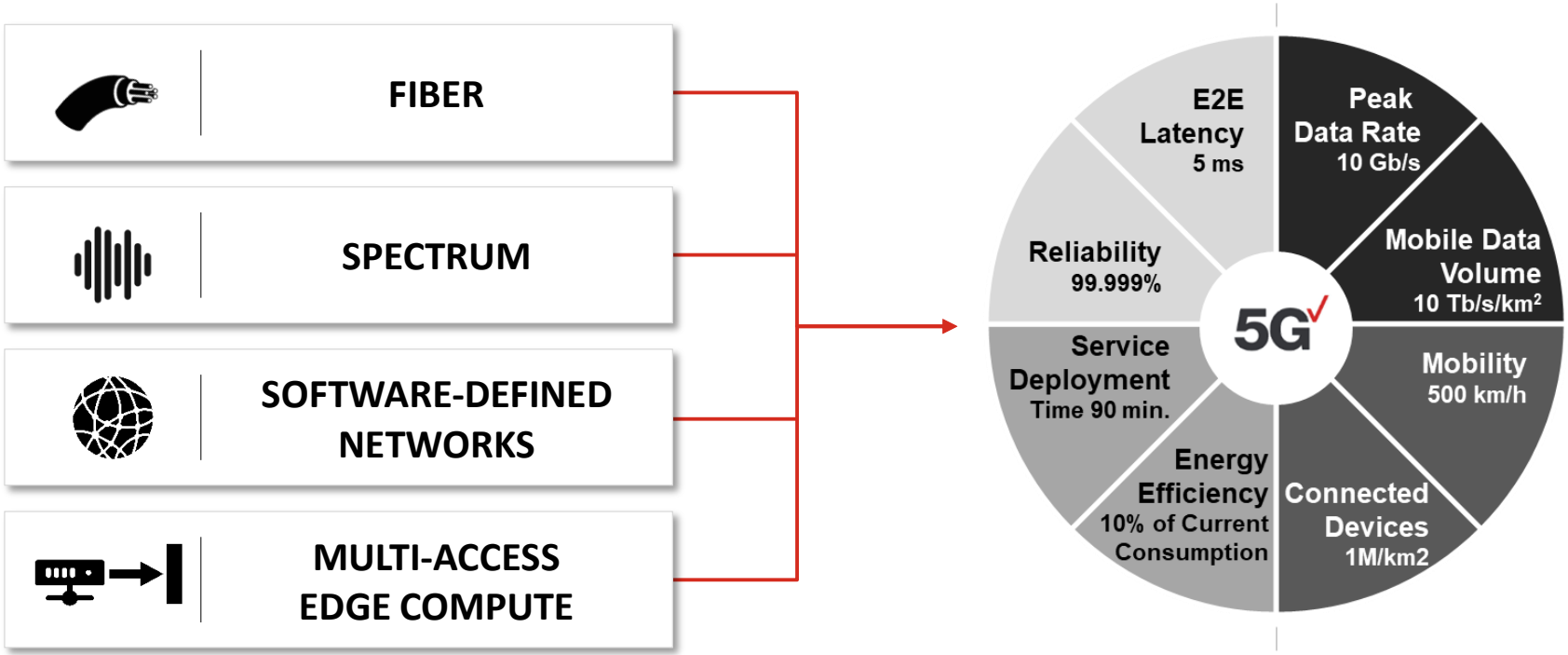
5G Edge

verizon 5G + aws Wavelength

5G Currencies / Capabilities



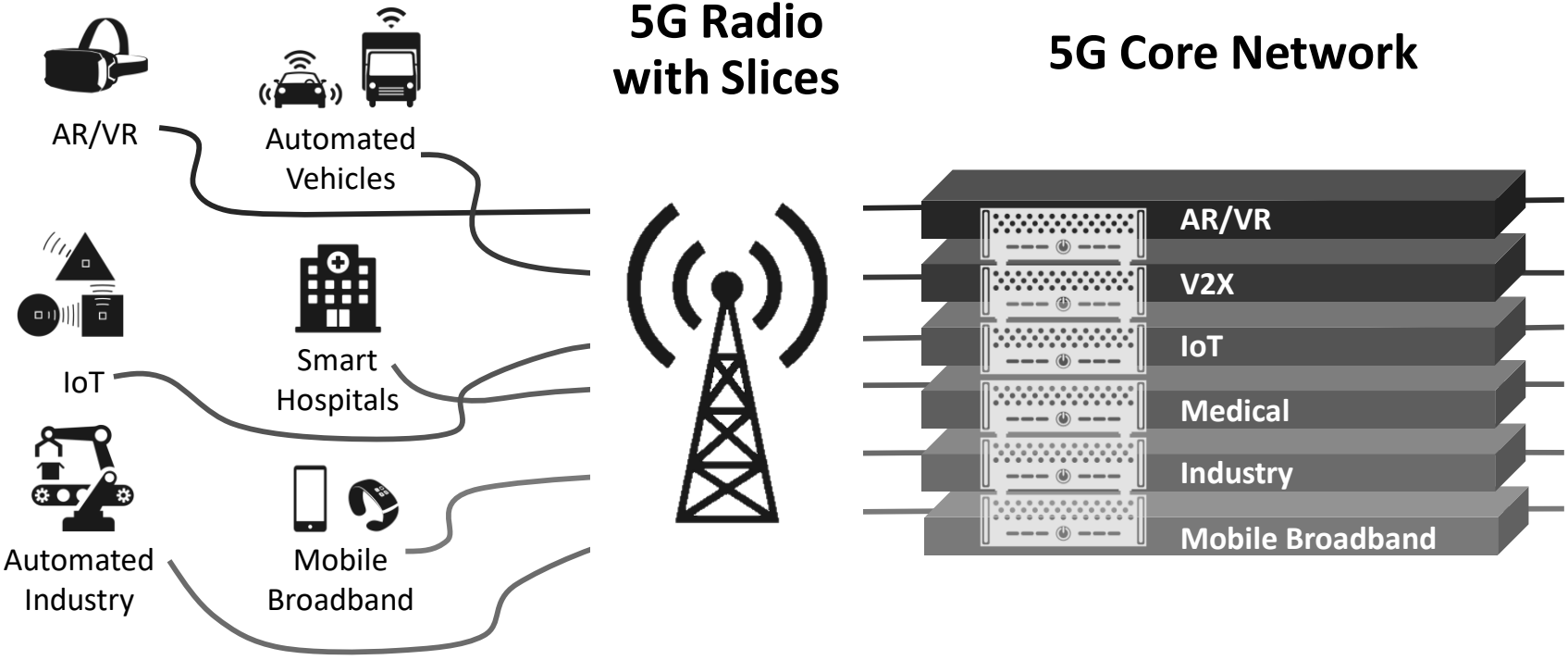
Critical Technologies for the 5G Future



verizon

aws

Network Slicing – Emerging Differentiator



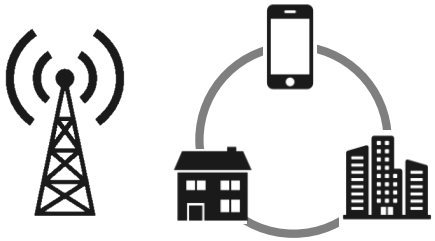
verizon

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Verizon – First to Tomorrow. First to 5G.

5G✓ built right

First to launch 5G



Reaching 30 cities by end of year



14 NFL stadiums 5G-enabled



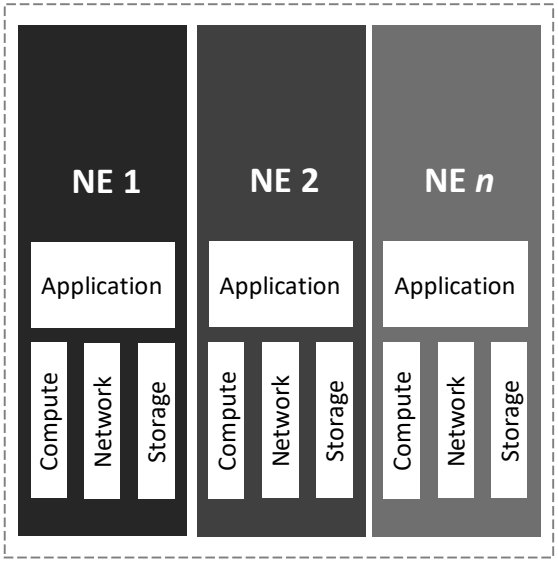
verizon✓

aws

Virtualization Transforming Networks

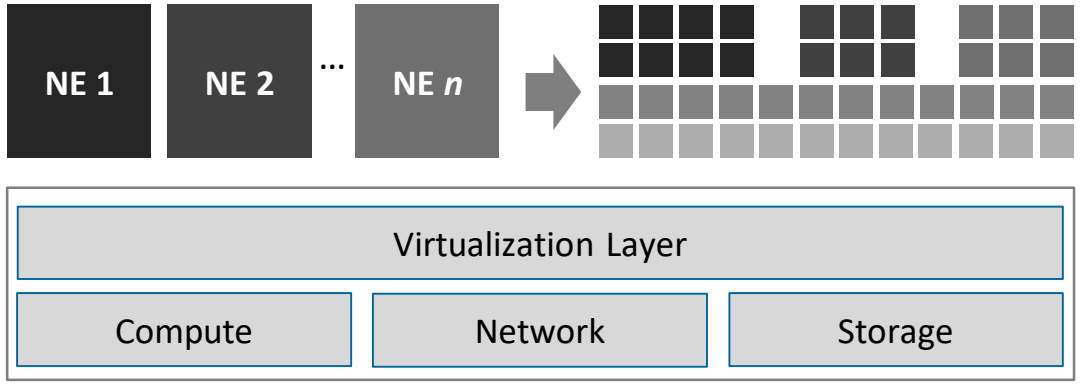
Past

Legacy
Bare Metal



Today

Virtualization
Virtual Machines (VMs)



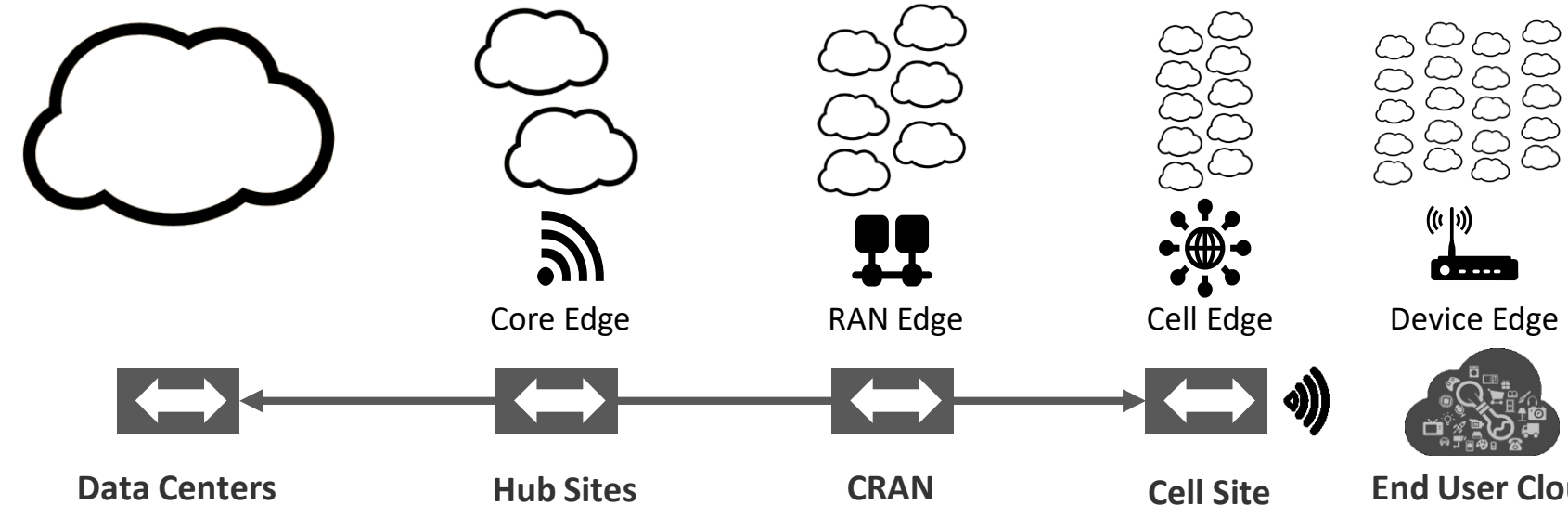
Future

Webscale
VMs & Containers

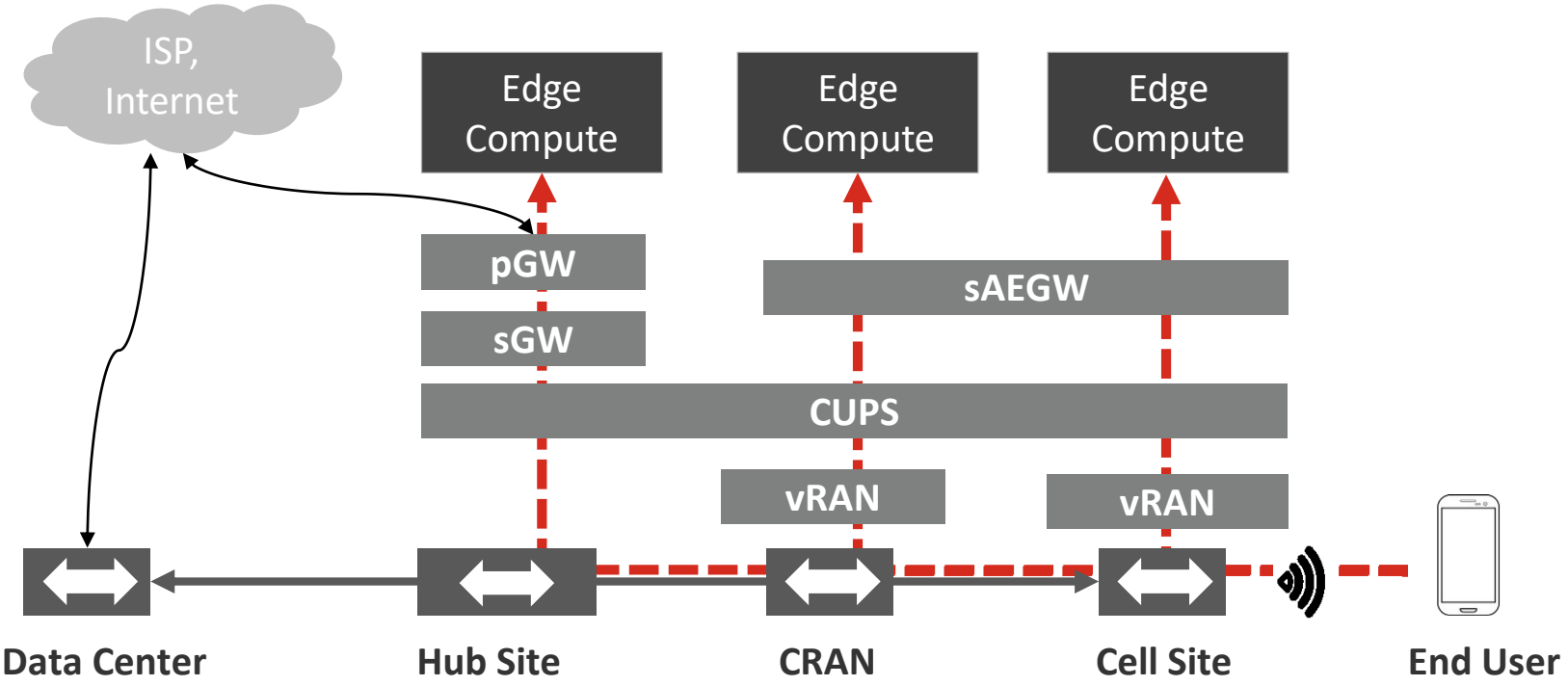
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Network of Distributed Clouds



Network Designed for Edge Compute

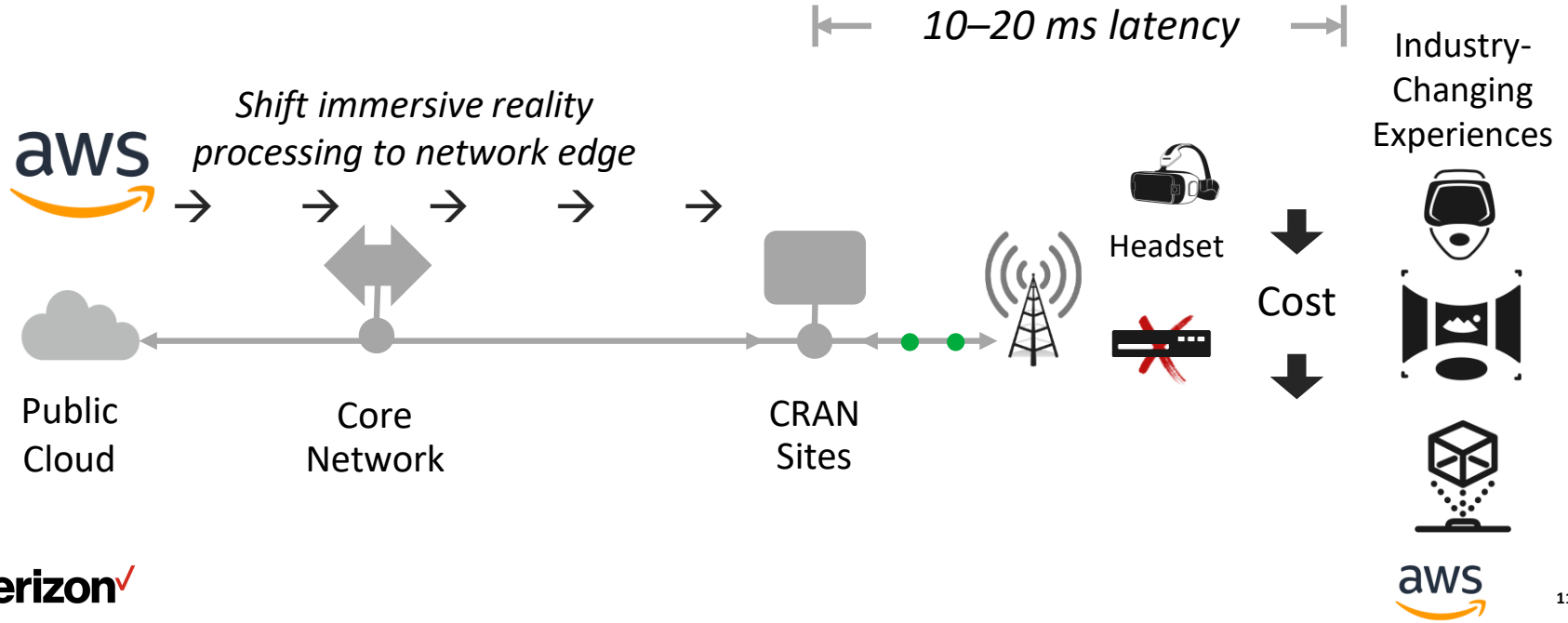


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aws

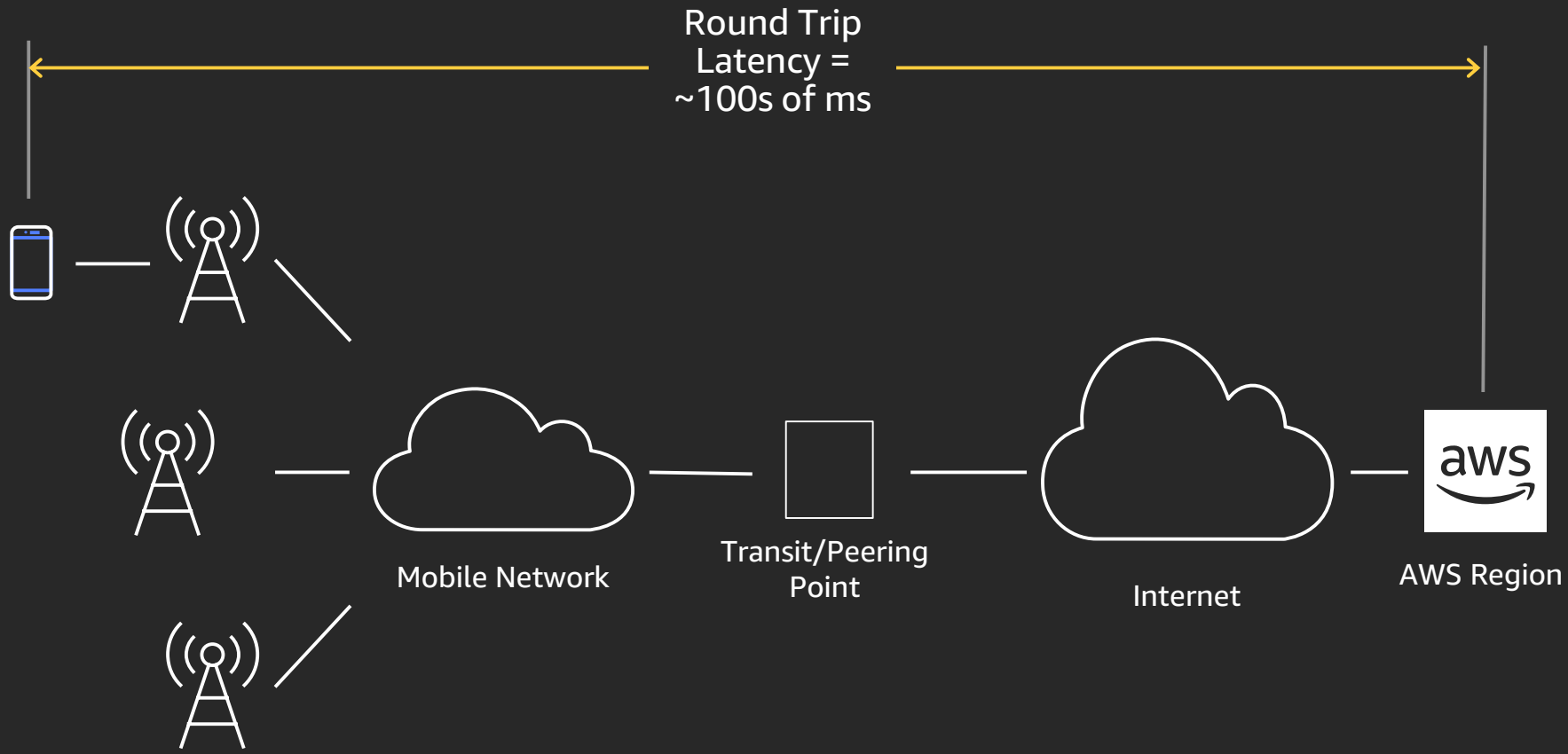
Emerging Applications Demand Low Latency

Moving the Cloud to the Network Edge



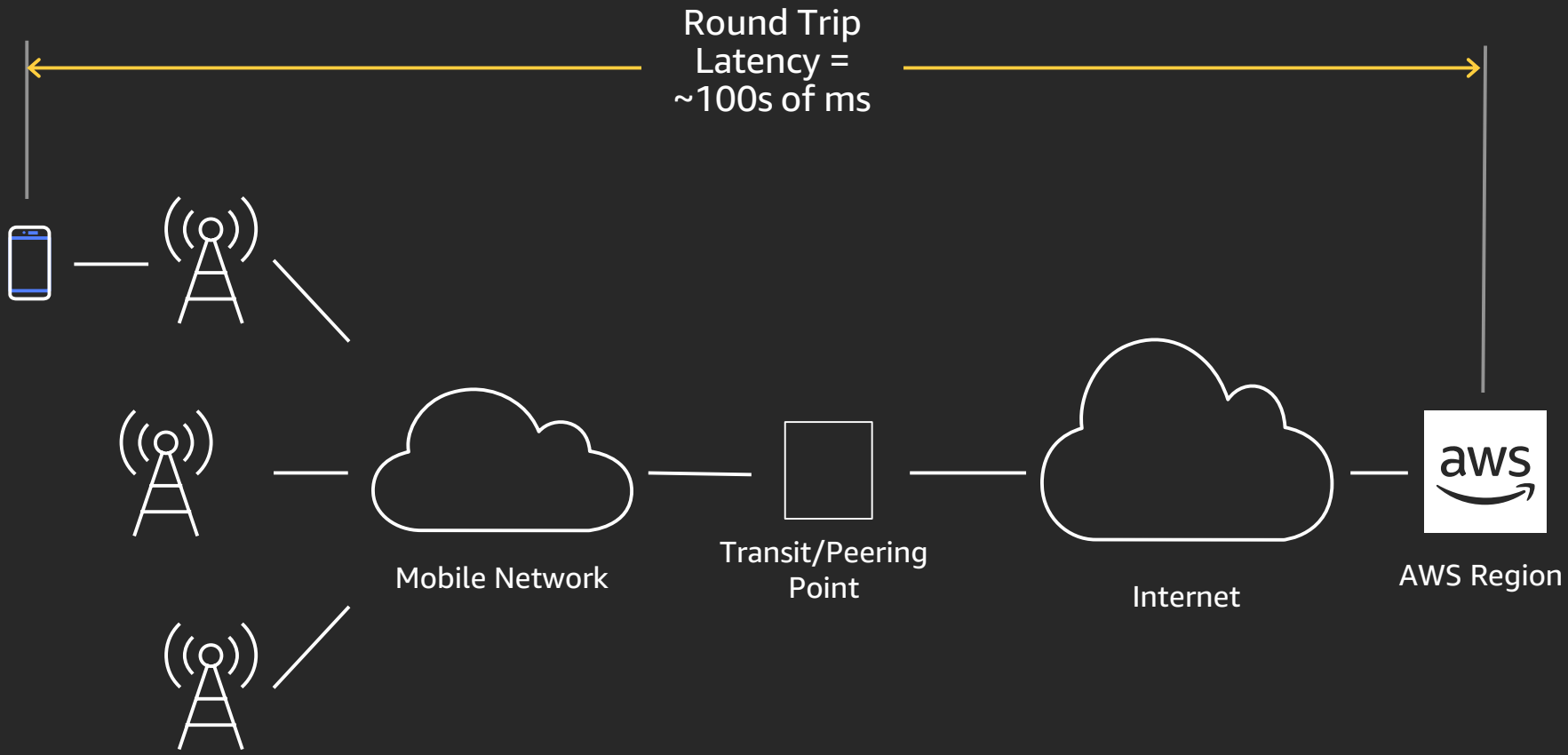
verizon

The End-to-End Network



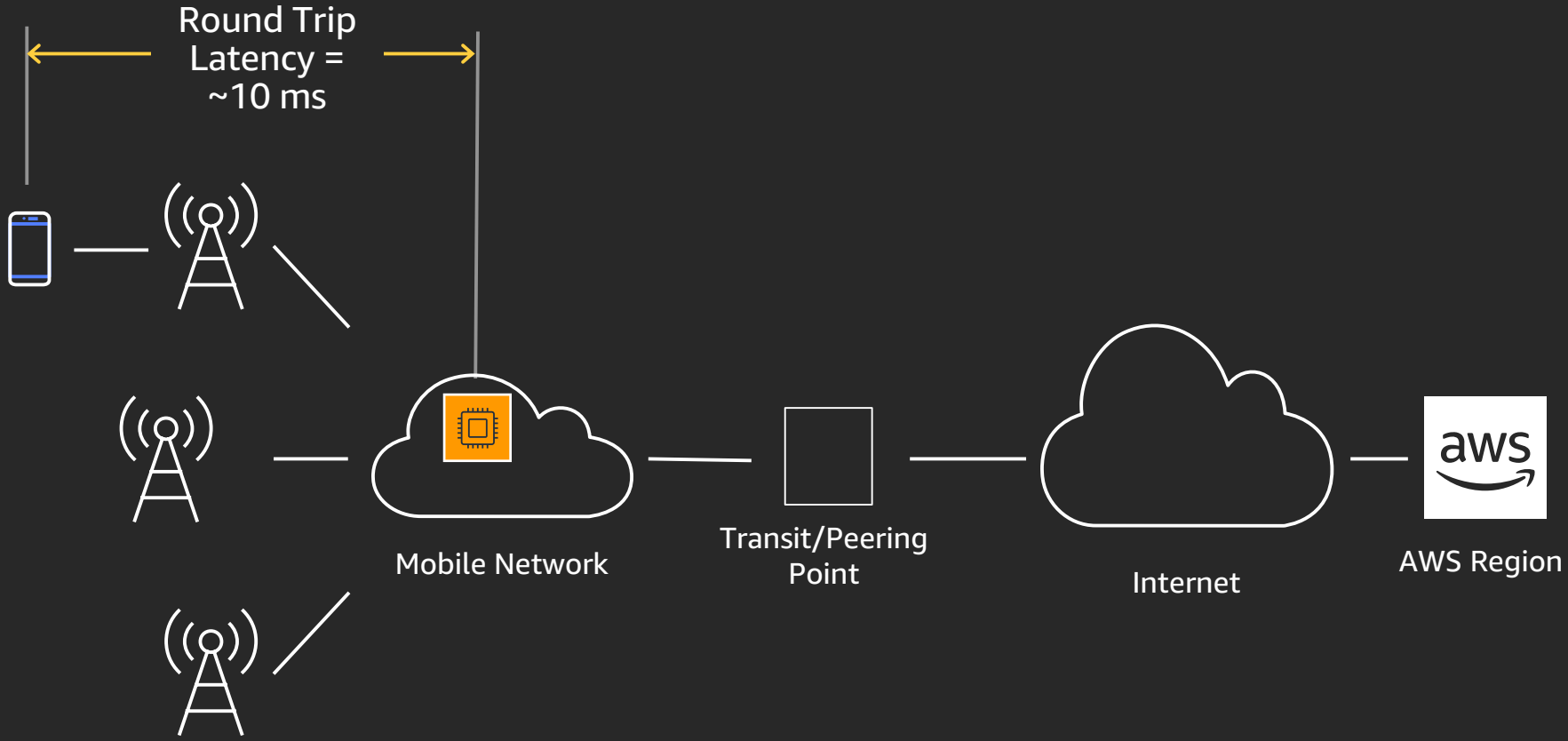
Note: p90 latency across user population across the US

The End-to-End Network



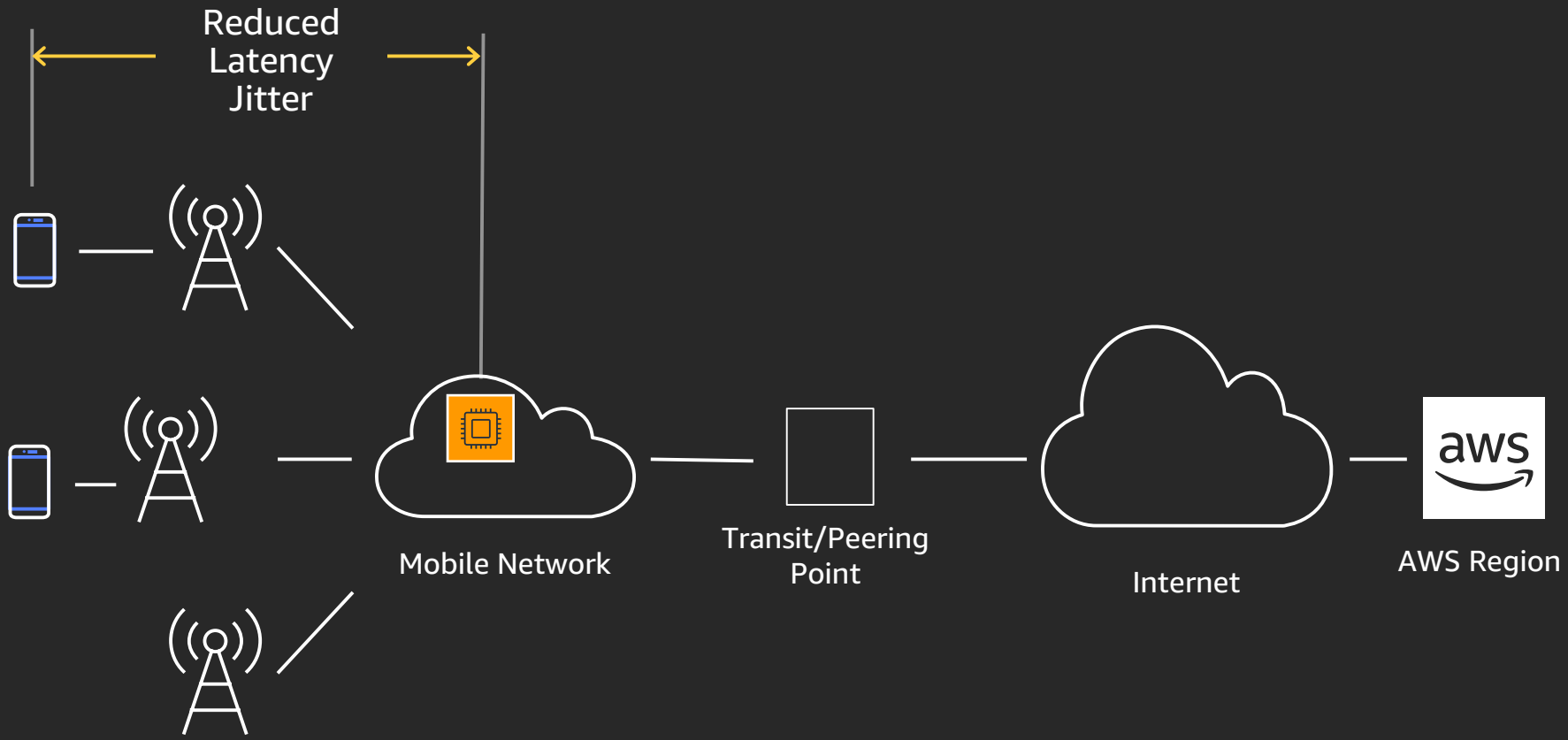
Note: p90 latency across user population across the US

Computing at the 5G Network Edge

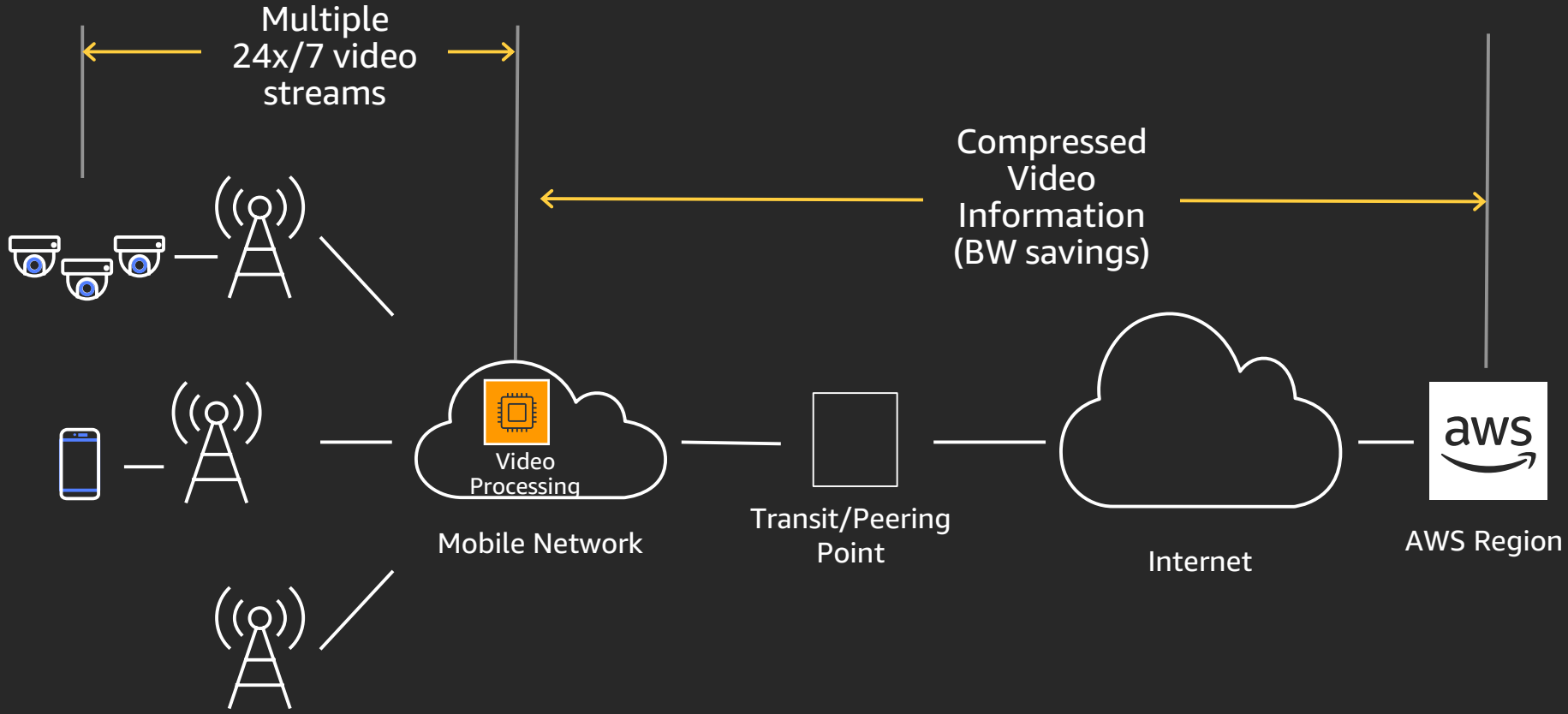


Note: p90 latency across user population across the US

Computing at the 5G Network Edge



Computing at the 5G Network Edge





Edge Data Processing



Machine Learning Inference at the Edge



90%

Wavelength Zones

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What Is a Wavelength Zone?



Same AWS-designed infrastructure as in AWS data centers



Hosted in a site within the 5G network



Managed and monitored from an AWS Region



Integrated into the 5G network

What Is Unique About AWS Wavelength Zones?



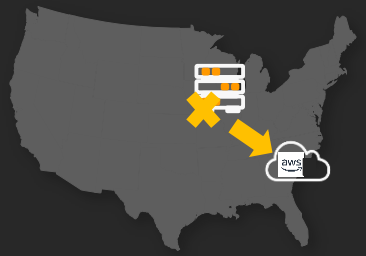
Single pane of management across zones and AWS Regions



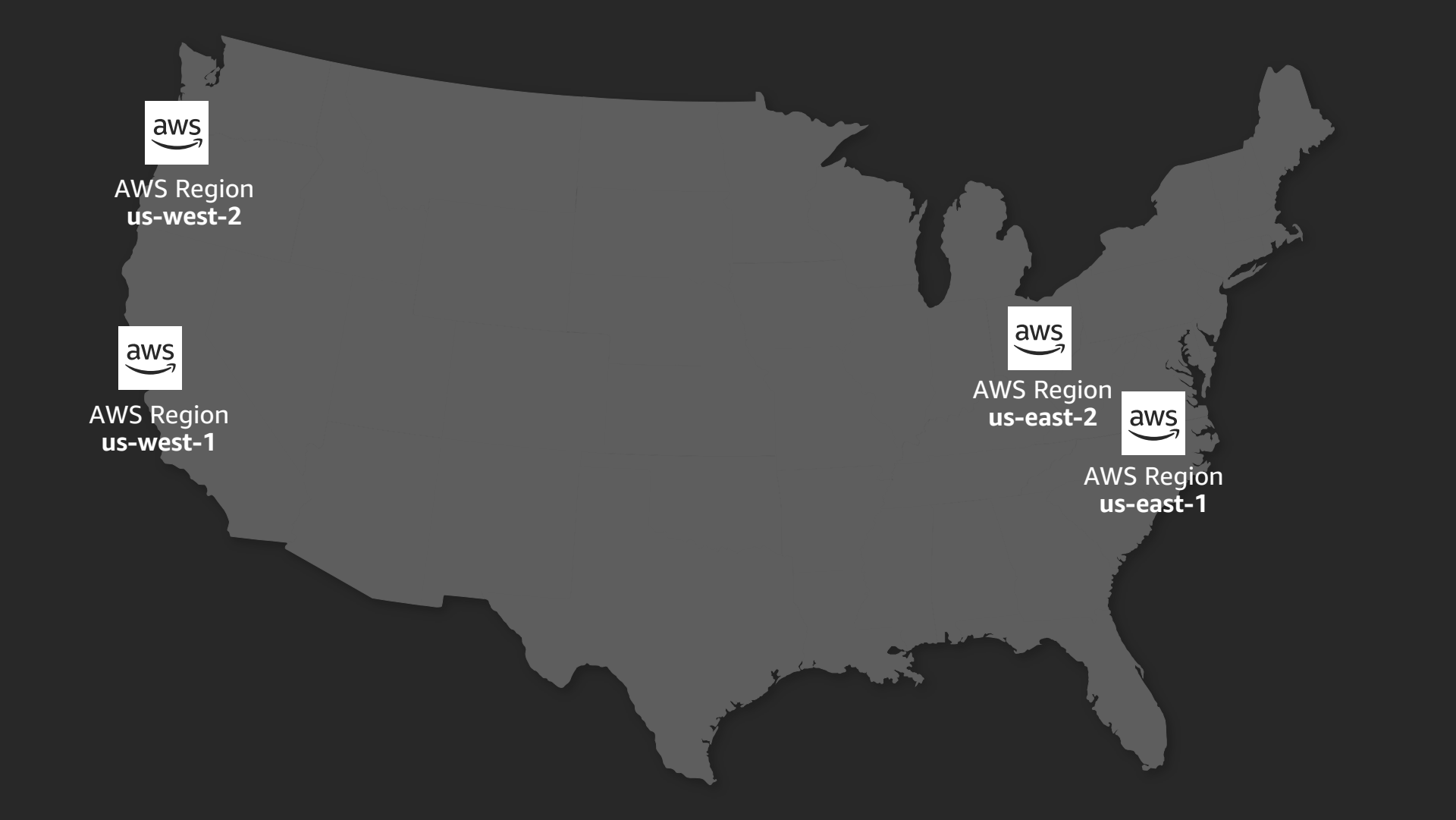
Same operational consistency (upgrades, patches, versions)

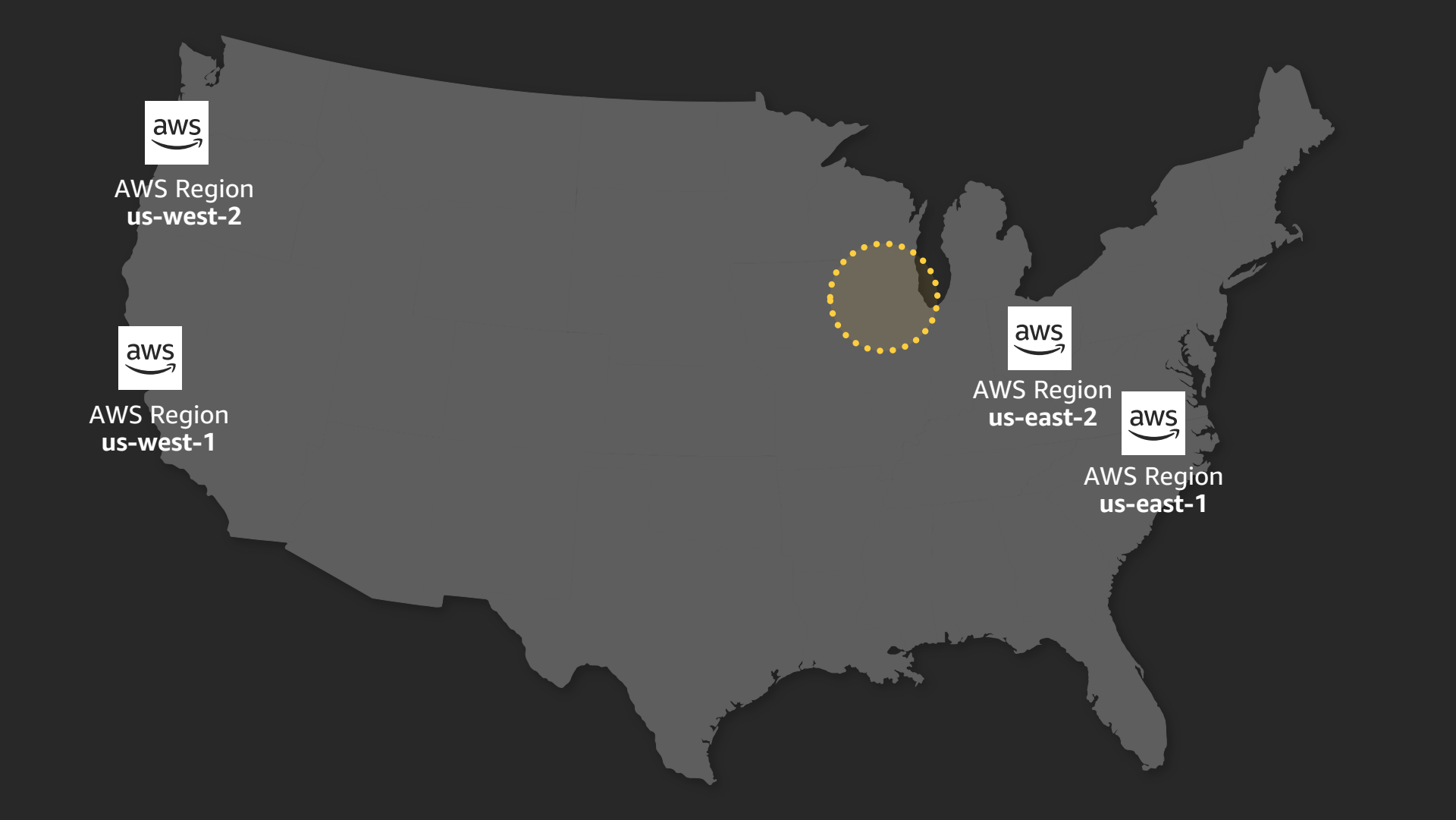


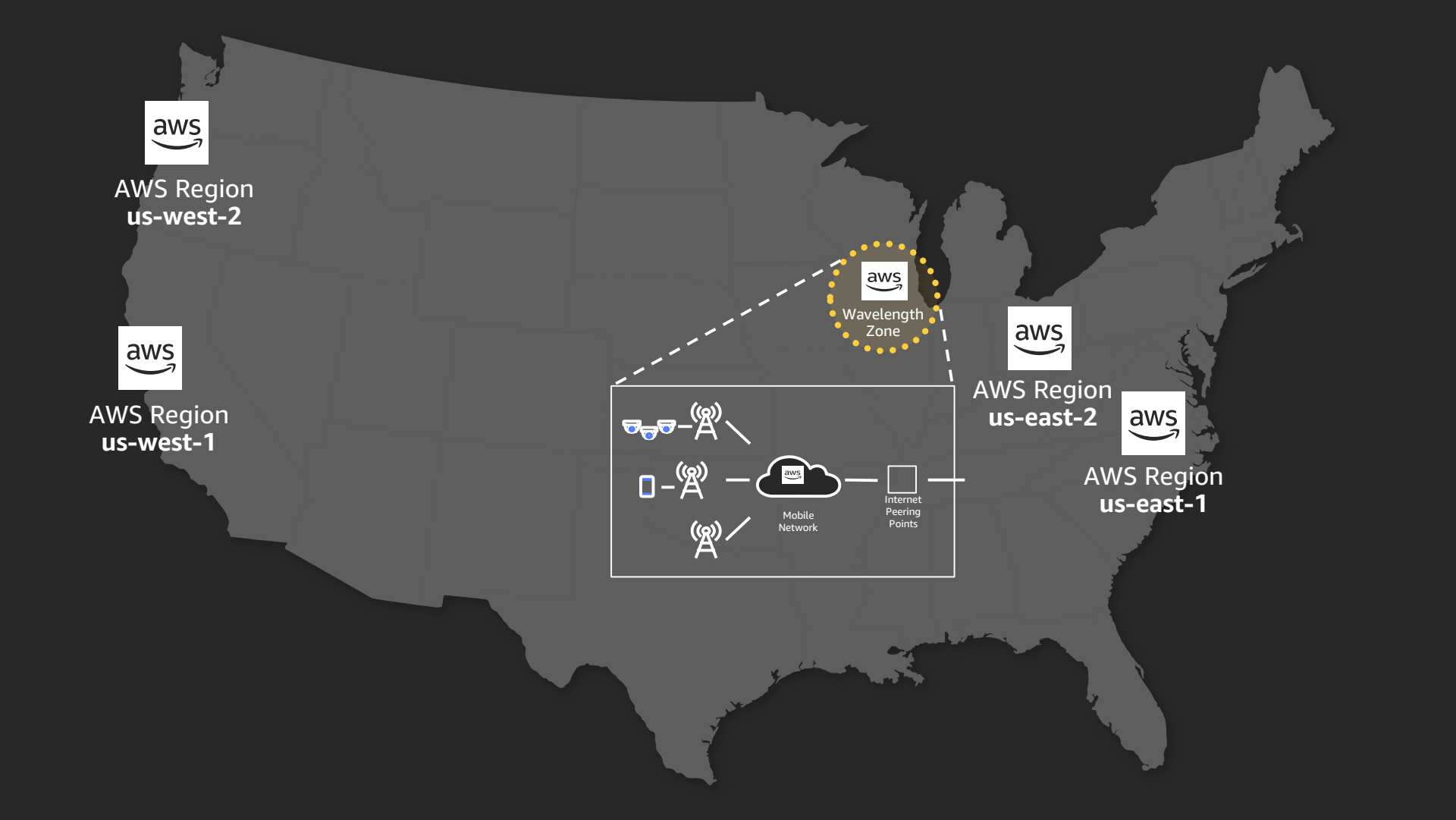
Same pace of innovation as in the AWS Regions

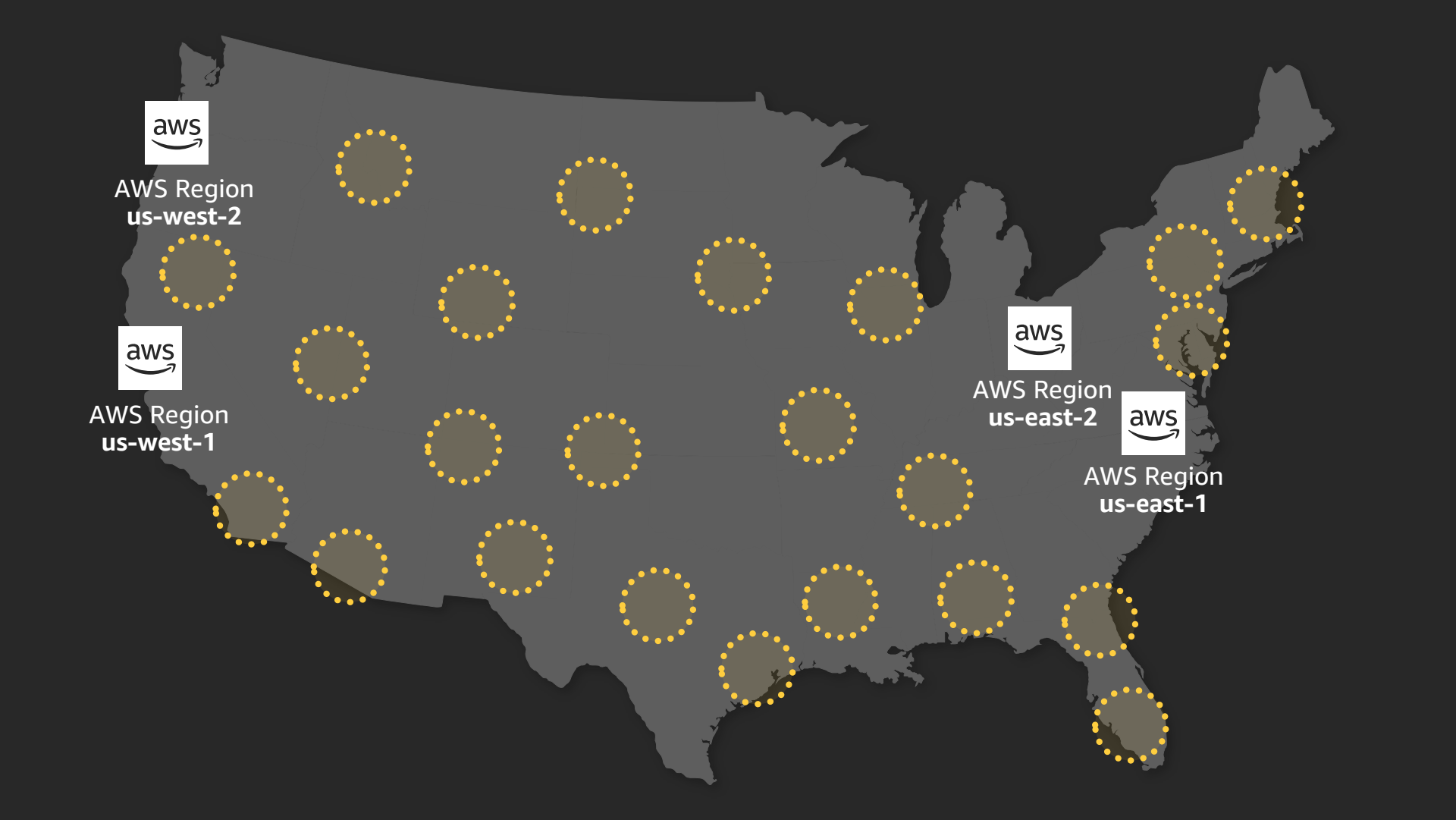


Failover from Wavelength Zone to AWS Region


AWS Region
us-west-2
AWS Region
us-west-1
AWS Region
us-east-2
AWS Region
us-east-1


AWS Region
us-west-2
AWS Region
us-west-1
AWS Region
us-east-2
AWS Region
us-east-1


AWS Region
us-west-2
AWS Region
us-west-1
Wavelength
Zone
AWS Region
us-east-2
AWS Region
us-east-1
Mobile
Network
Internet
Peering
Points


AWS Region
us-west-2
AWS Region
us-west-1
AWS Region
us-east-2
AWS Region
us-east-1

Deploying Applications

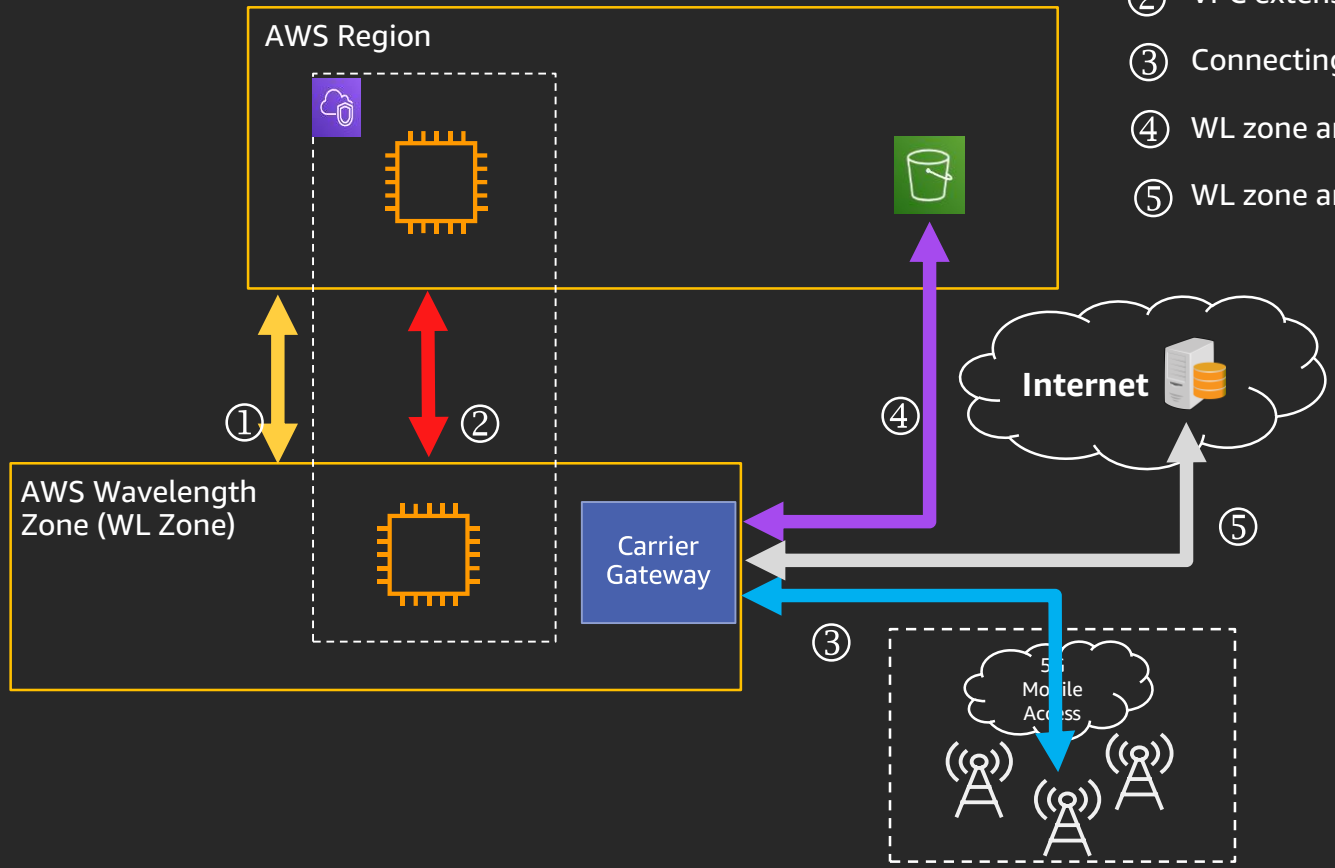
① Control, management, and monitoring

② VPC extension across Region and WL zone

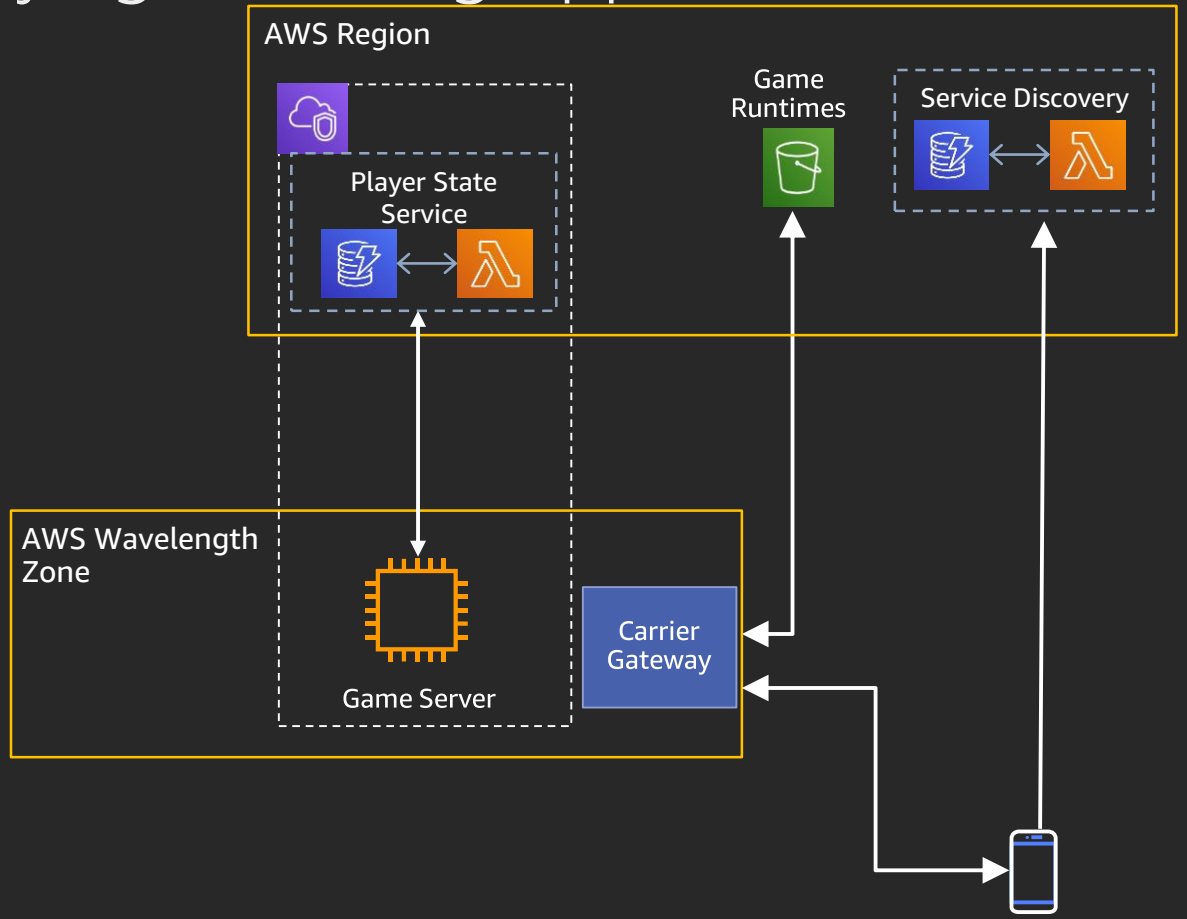
③ Connecting end users to WL zone

④ WL zone and region service endpoints

⑤ WL zone and server outside of AWS Region



Deploying a Gaming Application



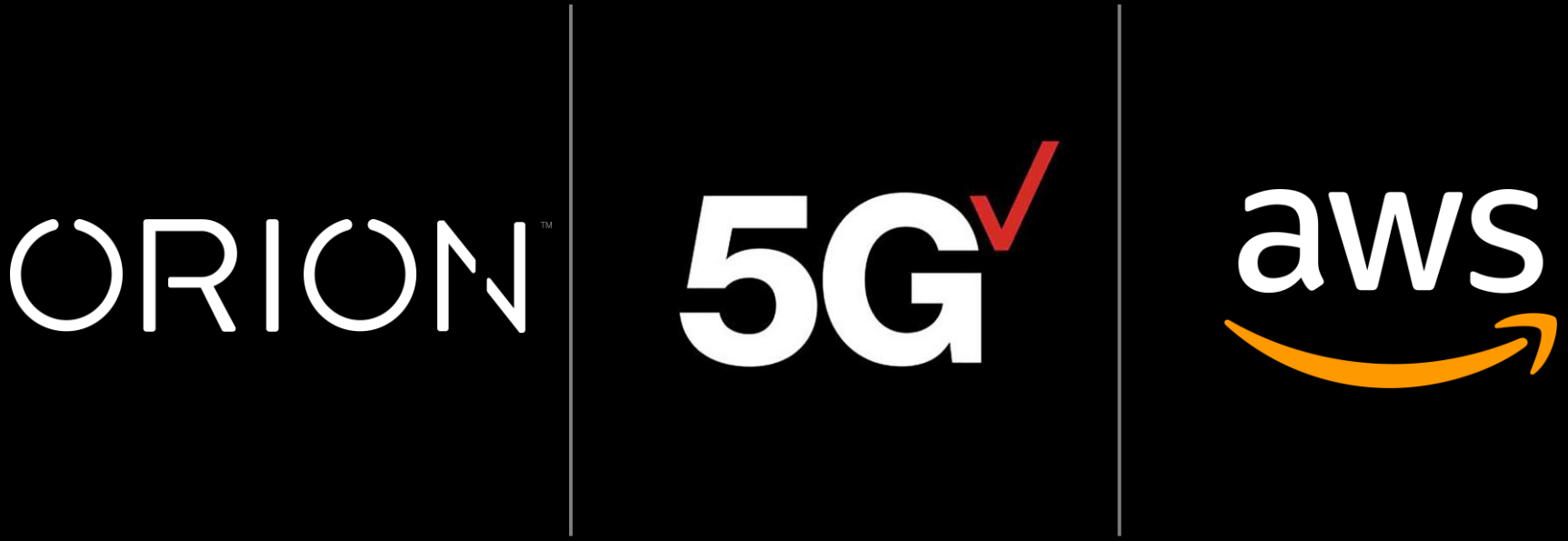


A Rich History of Gaming and Entertainment Innovations


ORION



Technology built from the ground up to address high latency, massive bandwidth, and compute usage in a cloud gaming environment

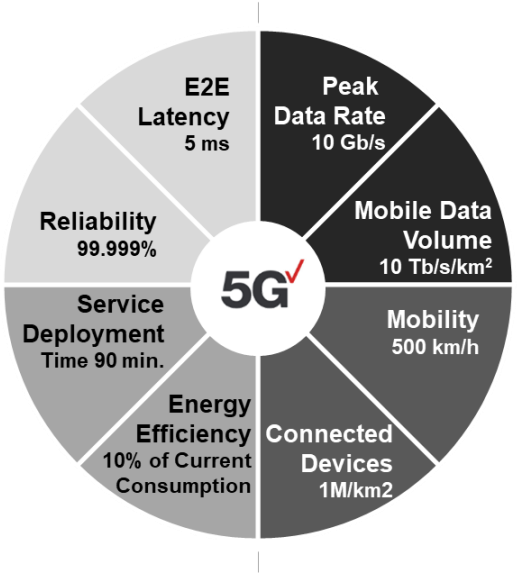

ORION
5G
aws


5G
aws
Looking Forward
ORION



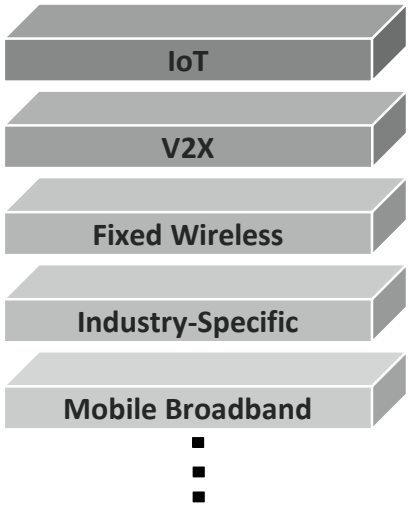
5G Edge – Enabling Transformative Experiences

5G Currencies



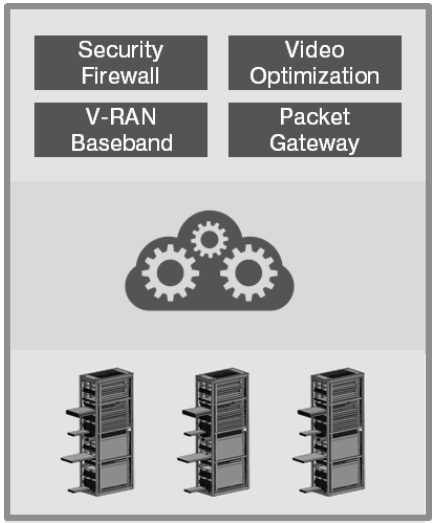
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Network Slicing



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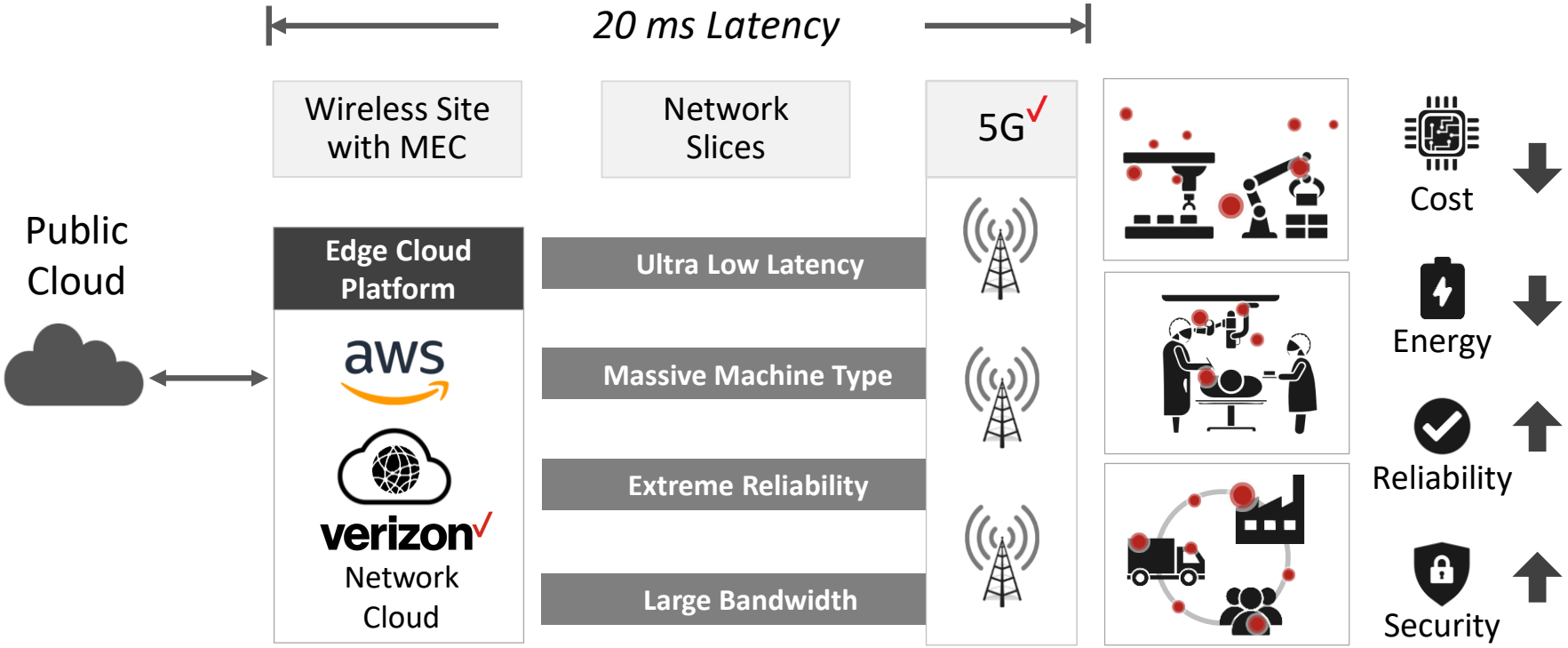
Multi-Access Edge Compute



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5G Edge – Powering 4th Industrial Revolution



The Case for Enterprise Private Cellular Networks





Enterprises Venues Campuses





Ports Logistic Hubs Airports





Remote Off-Shore Temporary



Coverage
Industrial, Rural, etc.



Reliability,
Prioritization & QoS



Security and
Access



Economics and
Efficiency

verizon

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Private Networks Vision – Enabling the 5G Enterprise



Public Mobile Connectivity **Campus Connectivity**

Technology Capabilities

- High-Throughput Network
- Low Latency
- Reliability and Performance
- Increased Security
- Edge Compute
- Energy-Efficient Devices

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