5G Native Video Streaming

Dave Pirrocco – Distinguished Architect Verizon

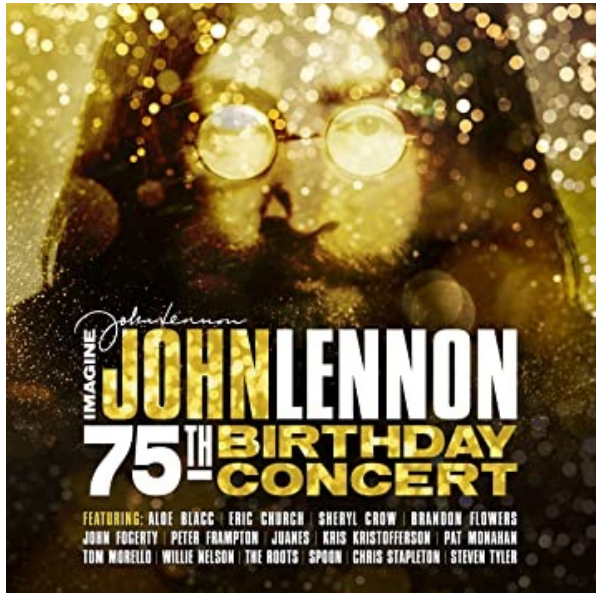
IP SHOWCASE

Audio Engineering Society · AIMS Alliance for IP Media Solutions · AMWA Networked Media. Working. · EBU · SMPTE · VSF Video Services Forum

Bio:

- 19 year Verizon employee
- Distinguished Architect on 5G MEC Strategy & Innovation Team
- My other day jobs include:

Chasing big waves in Nazare, Portugal



Mixing & mastering albums for artists you might recognize

What is 5G?

5G is a broad term that has different characteristics depending on the spectrum

- mmWave – Great speeds – Coverage varies
- C-band - Good mix of speeds – Dense coverage
- Low Band – Lower speeds – Very dense coverage

5G Network Types

- Public – Commercial network offering that integrate with Public MEC nodes

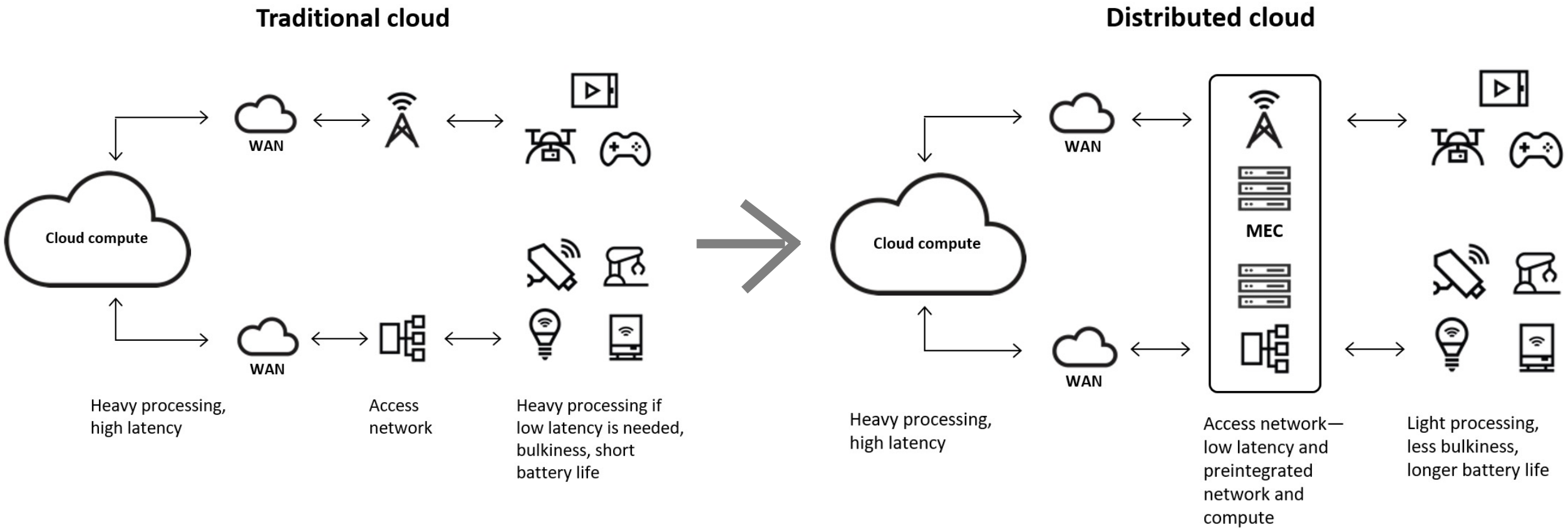
  Uses – Location Shoots, News Gathering, Ad Hoc Events, Distribution

- Private – Network that leverages dedicated radios, packet core, and private MEC nodes

  Uses – Venues, Campuses, Enterprise, Arenas

What is MEC?

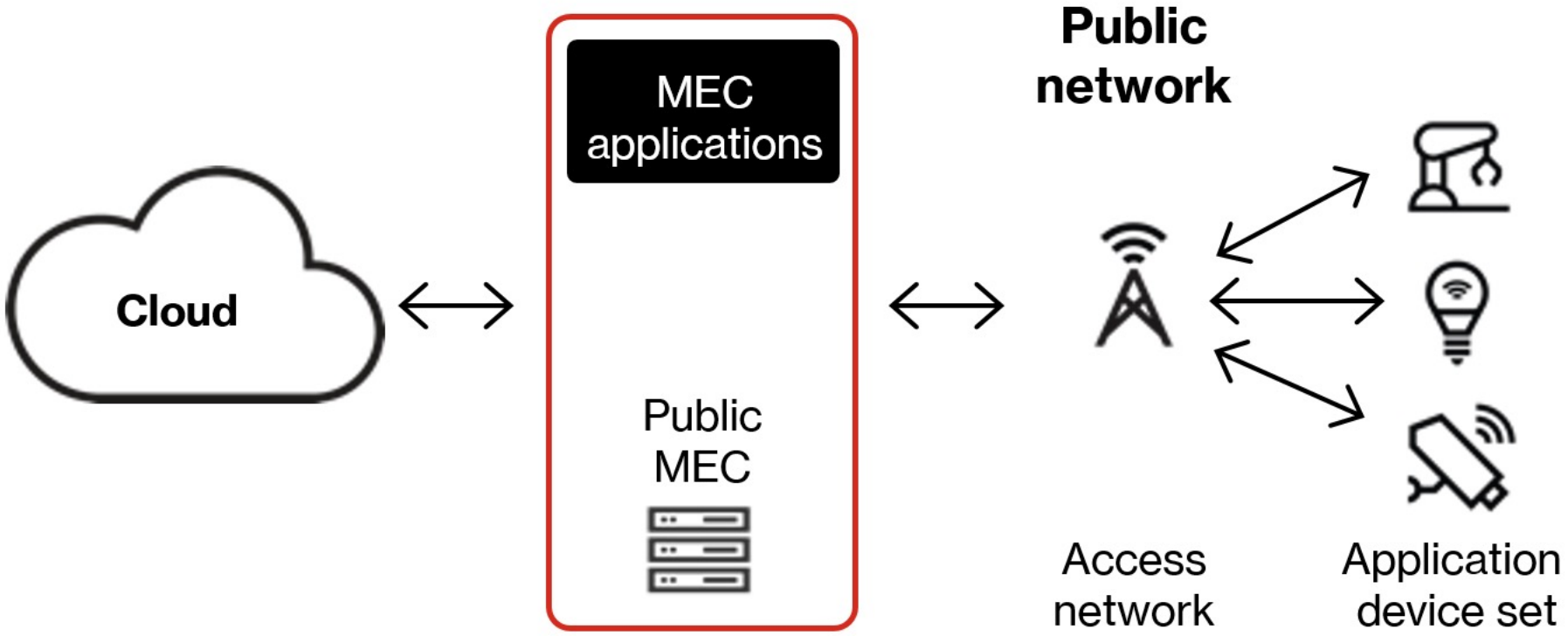
- Multi-access edge computing (MEC) enables cloud servers to run closer to endpoints, reducing latency and speeding local processing.



Public MEC vs Private MEC

Public MEC – Multitenant customer support from publicly situated network/compute infrastructure

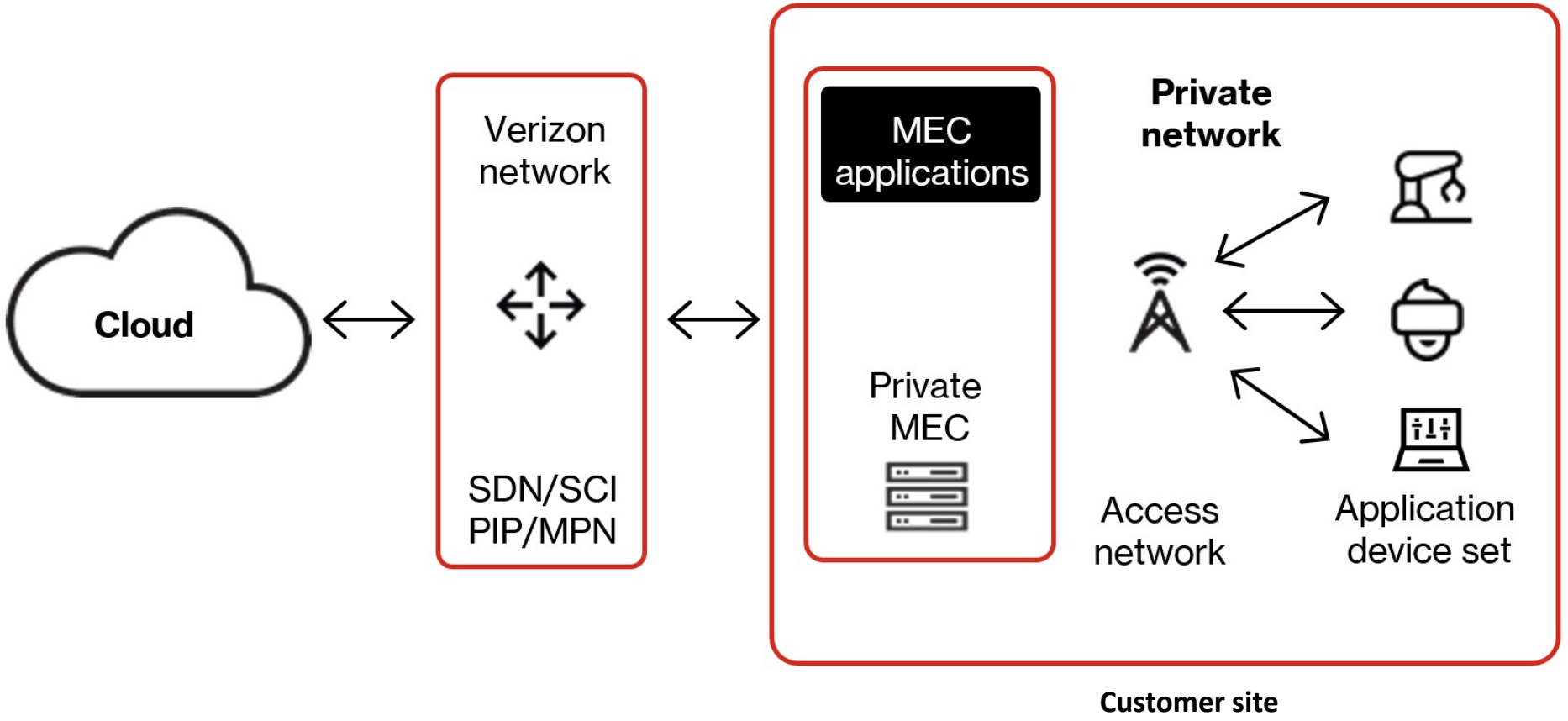
- Locations at select SAP and C-RAN locations
- Latency in the 7 to 20 ms range at the C-RAN or 20 to 80 ms range at the SAP
- Access connectivity via public 4G/5G radio access network (RAN)
- Enterprise-level performance and security



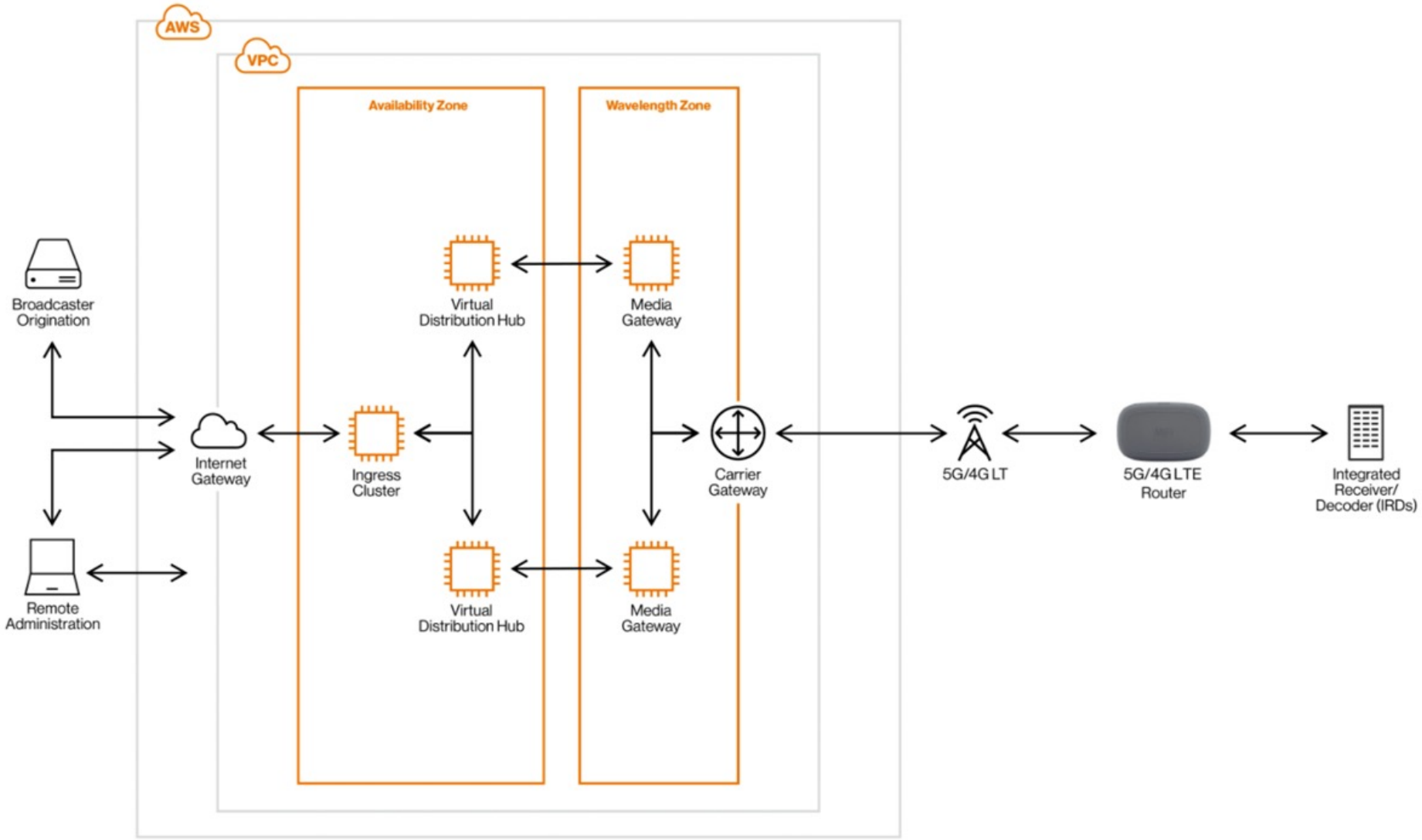
Public MEC vs Private MEC

Private MEC – Onsite at and dedicated to a single enterprise (single tenant)

- Access connectivity via private 4G/5G network
- Ultralow latency in the sub-10 ms range



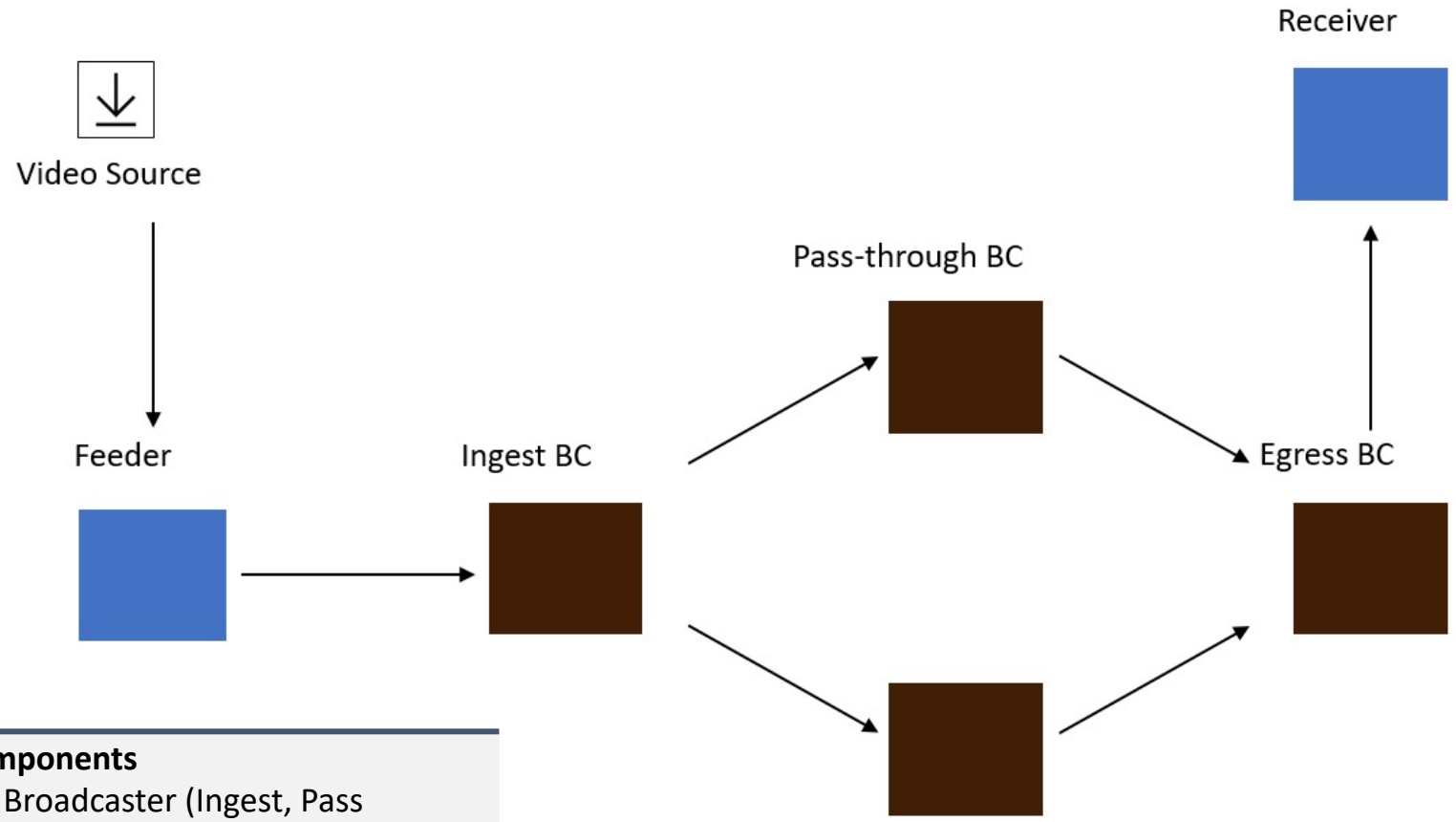
MEC Video Architecture



What are Media Gateways?

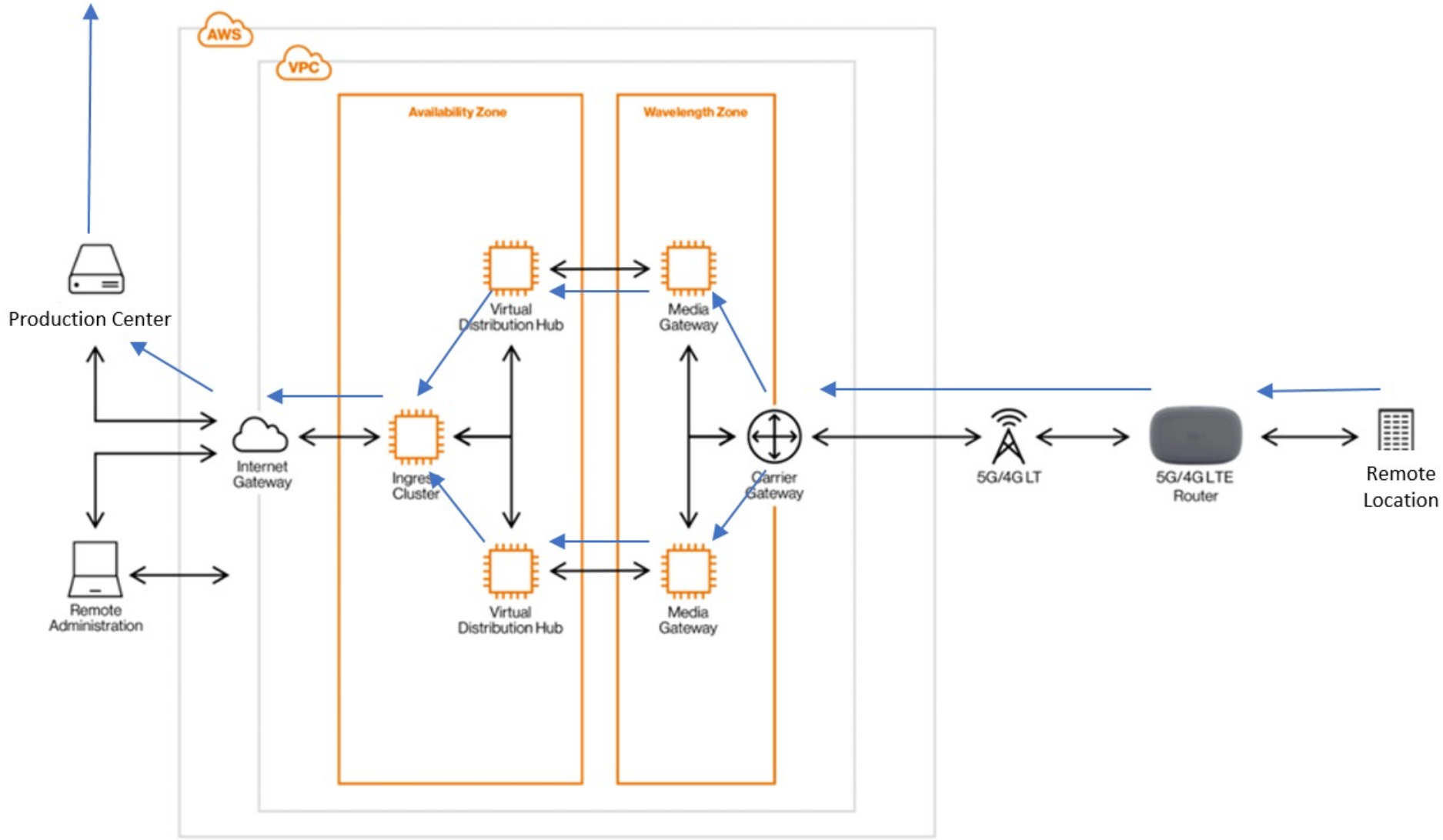
Media Gateway - Entry and exit point for bidirectional media workflows that facilitates untethered Contribution and Distribution workflows

- Serves a local market
- Provides access to other services leveraged by the workflow
- Component of a software defined media network

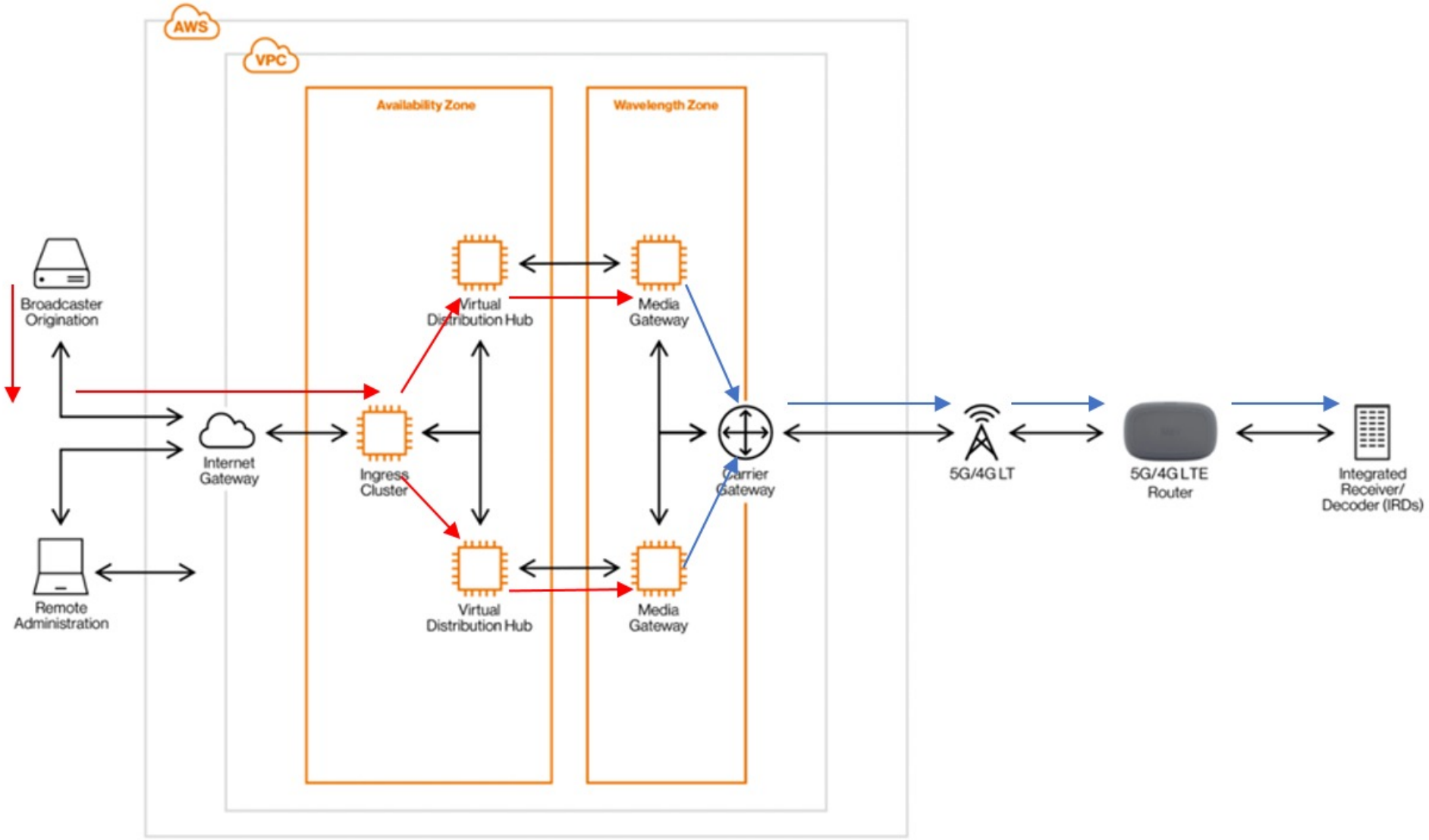


Key Components
Feeder, Broadcaster (Ingest, Pass through, and Egress), and Receiver

Media Gateway High Level Design - Contribution



Media Gateway High Level Design - Distribution



5G Edge Resources

- Verizon 5G Edge Compute
  https://www.verizon.com/business/solutions/5g/edge-computing/

- Verizon 5G Edge Developer Resources
  https://www.verizon.com/business/solutions/5g/edge-computing/developer-resources/

- Verizon 5G Edge Tutorials

  https://github.com/verizon/5gedgetutorials

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FUTURE OF DELIVERY

Transforming Broadcasting with 5G and Mobile Edge Computing

Delivering live video over 5G networks is no longer just a theory – 5G deployment is real and has the power to transform the way content is created, distributed, and consumed. Verizon's Tim Stevens will host a panel of experts from AWS, Bloomberg, Verizon and Zixi to discuss how they're working together to use 5G and edge computing to stream live 4K UHD content for broadcast across various platforms. This session will cover real-world architectures, best practices and how content providers can leverage the right infrastructure to deliver new and improved experiences over 5G for the end consumer.

Tuesday, April 26 | 3:00PM - 3:40PM | W10619-CMIP Debate Theater

Tim Stevens
verizon

Loic Barbou
Bloomberg Media

Eric Bolten
ZIXI

Saravanan Shanmugam
aws

Dave Pirrocco
verizon

Thank You

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