KYMETA™
MAKING MOBILE GLOBAL™

The Role of Mobile Edge Compute in a Satellite-Enabled 5G Network

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Kymeta Corporation

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The Concept

Mobile Broadband

Ubiquitous broadband connectivity delivered to a mobile platform enables global connectivity regardless of physical infrastructure.

+

5G

The next generation of wireless networking is poised to provide significant advancements by leveraging software defined networking and network function virtualization.

+

Edge Compute

Compute resources at the edge of the network provide a localized orchestration and management service as well as local analytics and processing.

=

A revolutionary mobile platform optimally equipped to deliver the critical and emerging benefits of the 5G network while optimizing for economics and performance.

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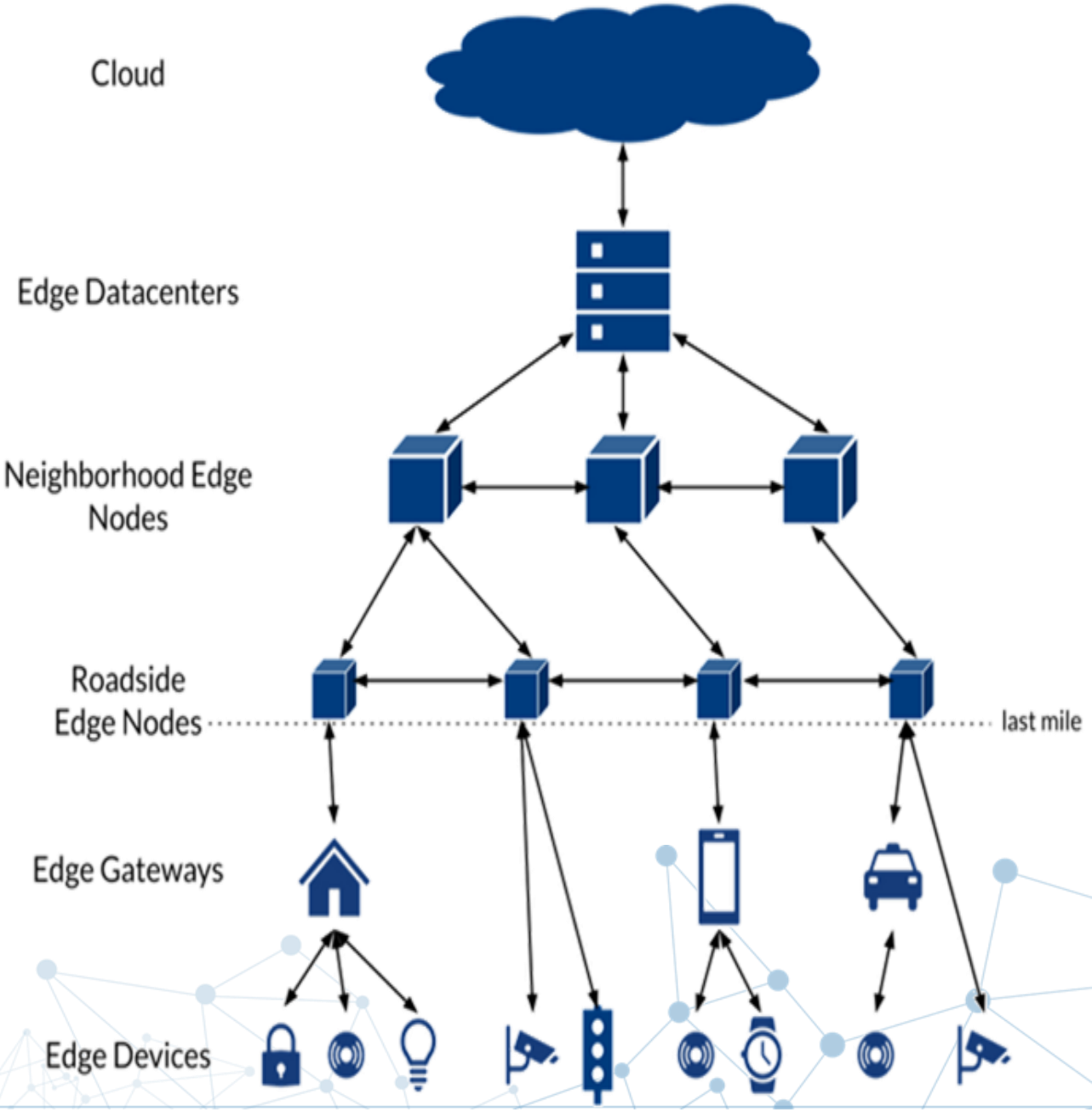
Edge Computing

What is 'Edge Computing'

- Decentralized computing and storage of data closer to the end user, user devices, or service area

Why move the network to the edge?

- Processing and storage where the data is collected and actioned upon decreases overall latency, increases reliability, and in the case of challenged environments, enables localized information exchange



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Why Edge

Three Rules of Edge

1. Addictive high value edge native
2. Must alleviate at least one:
   - intense bandwidth demands
   - low latency requirement
   - data privacy/security
   - local availability
   - data export compliance
3. Cost to process at the edge is less than transport + cloud

Maximize	• Maximize the capability density of the solution
New Revenue	• Create new revenue streams service revenue
Applications	• Support a diverse set of edge native user applications
Reduce	• Reduce total operating cost
Analytics	• Provide business and network intelligence
Use	• Use our antenna platform as a local hub for various radios and access networks

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Kymeta Technology

Enabling mobile broadband in any environment

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Purpose

Kymeta was formed in 2012 for the express purpose of commercializing metamaterials in satellite communications and building an electronically-steerable antenna for satellite using metamaterial science.

Today, Kymeta is chosen by enterprise, military, and first-responders worldwide. Our complete Kymeta Connect™ solution combines revolutionary portable hardware, broadband satellite connectivity, and an all-in-one powerful suite of services, **making mobile global.**

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Making Mobile Global™

The Kymeta solution combines hardware for connecting to satellite and cellular networks and SD-WAN technology for optimized connectivity, resulting in a fully digital virtualized platform that provides access to information from virtually any moving platform in any part of the world.

With a highly capable information-enabler, the future of networking can be realized from a common platform.

On the move communications enables industries such as healthcare to commit to robust and reliable telemedicine services.

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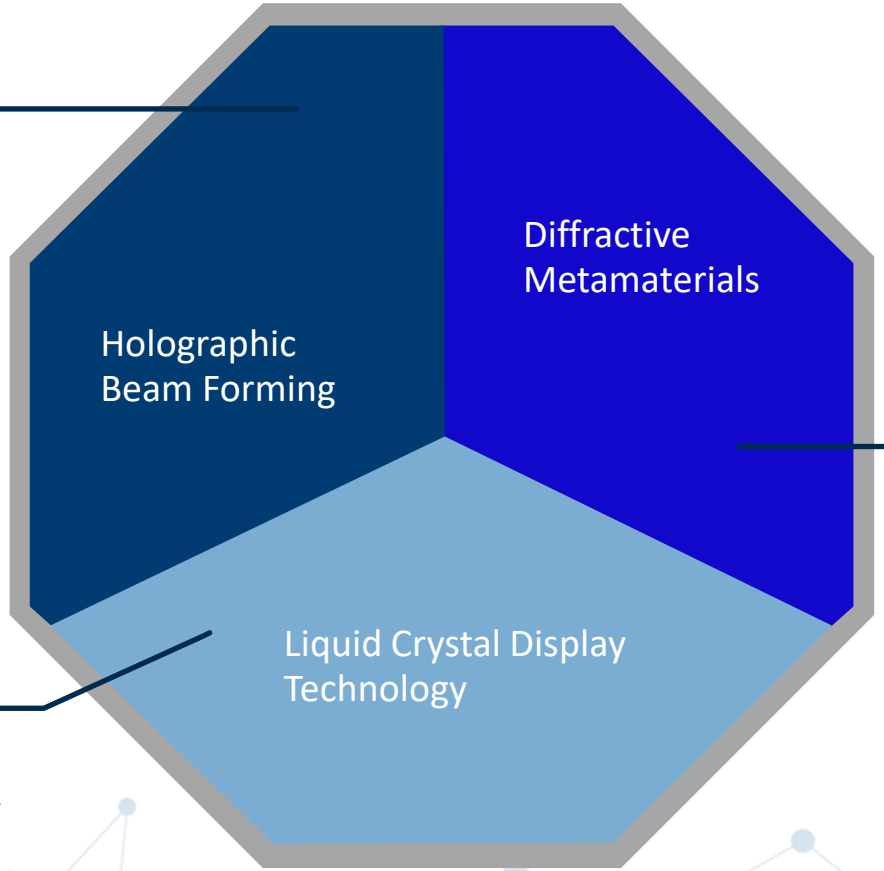
Kymeta Core Technology Building Blocks

Beam Forming Scheme

- Software-controlled pointing
- Software-controlled polarization
- Wide scan range



Radiative Aperture

- Implements the hologram
- Allows combined RX/TX aperture
- Allows low loss feed

Reconfigurable Mechanism

- Dynamic beam control
- Low-cost and high-volume technology

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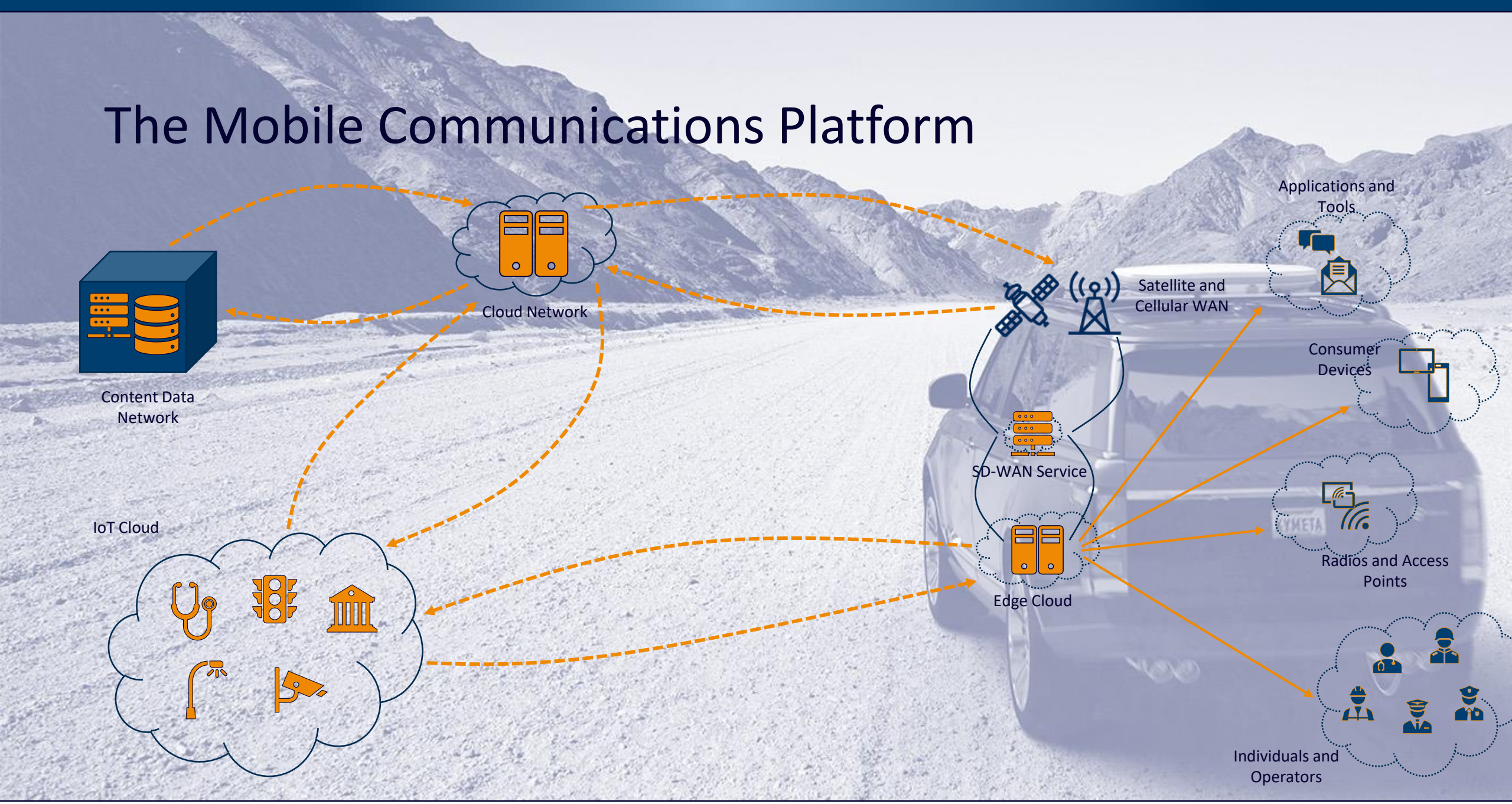
The Mobile Communications Platform



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The 5G and Edge Compute Advantage

What we gain by combining the two technologies

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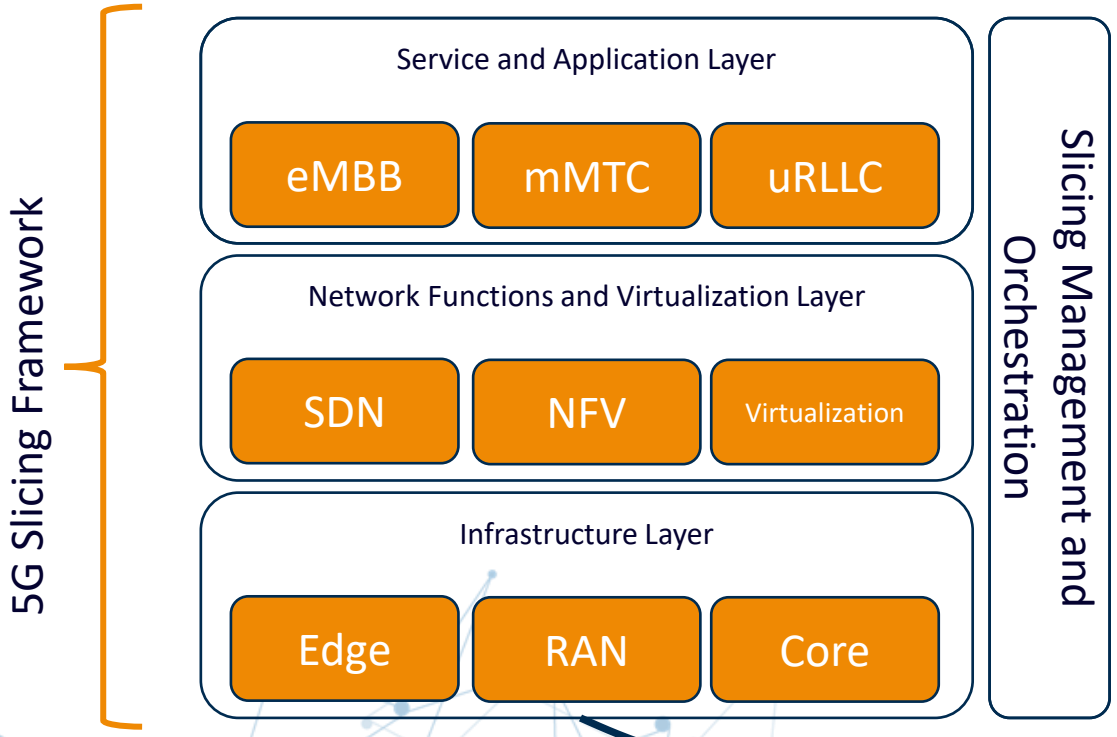
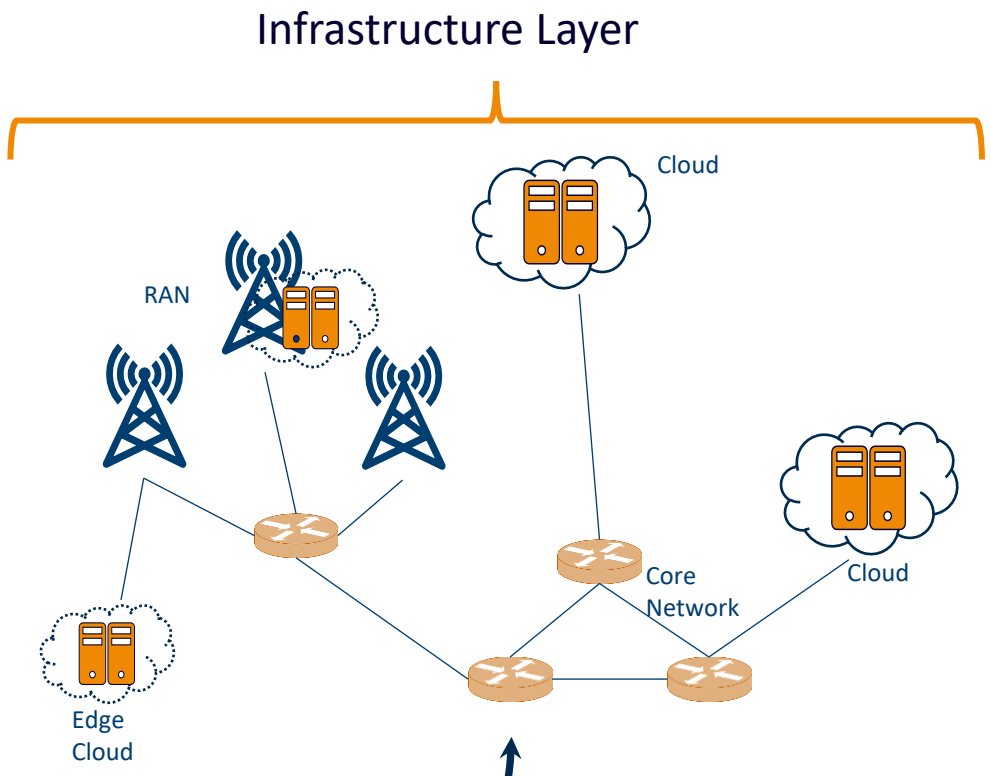
The 5G Network





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Transitioning to a Mobile Network

- Network slicing and virtualization is key to the 5G physical multi-service network.
  - NFV and SDN technologies are being widely leveraged to perform the critical functions of 5G.
- Edge computing will help deliver content, information, and orchestration closer to the users and the edge infrastructure.
  - This will undoubtedly create performance increases and overall cost savings in network deployment.
- However, end users are still subject to network connectivity.
  - Everything works great when access to the core is available.
  - We need solutions to benefit from the edge architecture while in a truly mobile environment.

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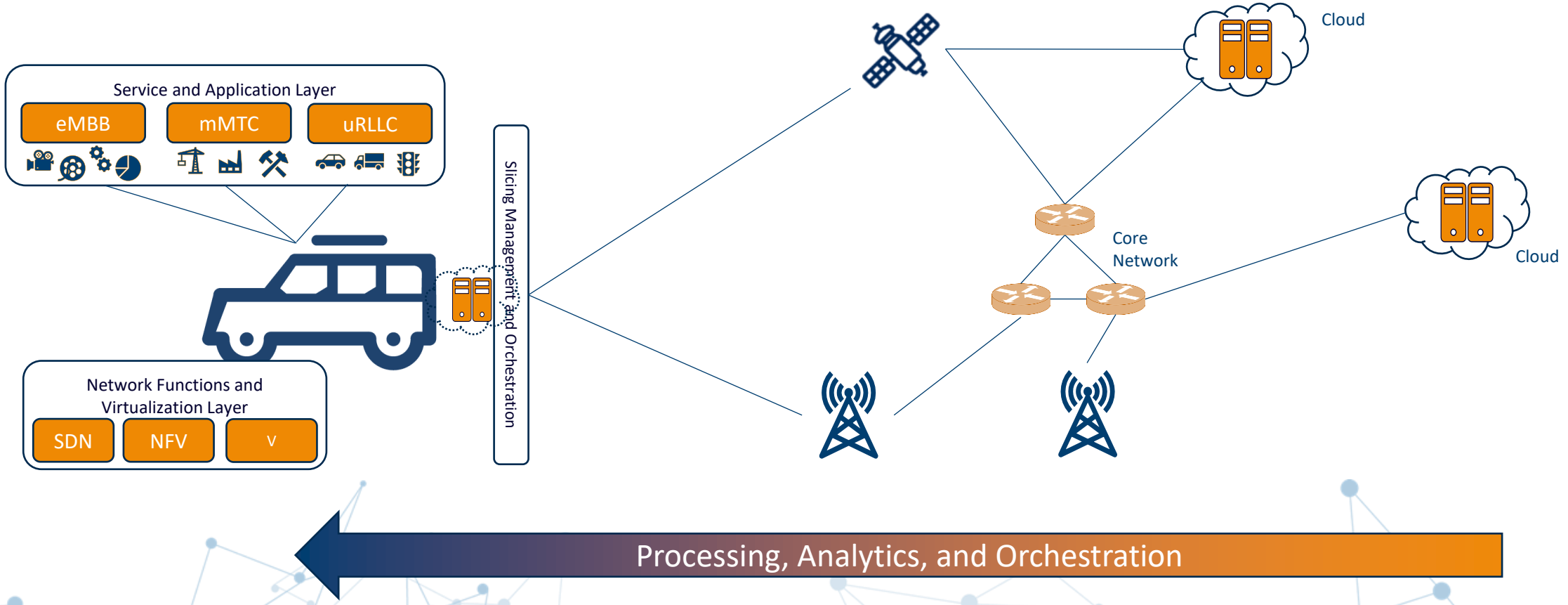
The Truly Mobile Network



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Satellite and Edge Compute as an Enabler

- Satellite connectivity back to the core and cloud networks is crucial to augmenting terrestrial connectivity.
  - It's not simply failover but a blended and orchestrated solution providing the best connectivity in any situation.
- Moving the edge processing to the mobile platform enables robust and reliable performance.
  - Moving processing, analytics, and orchestration to the mobile platform reduces the reliance on the core infrastructure.
  - This, in turn, reduces overall reliance on backhaul connectivity and reserves the backhaul for the user traffic.
- Reducing components of the infrastructure and orchestration layers increases performance and decreases cost.
  - Consumer grade components and compute resources in mobile platforms reduces the need for significant infrastructure build out.
  - Services and applications available at the point of consumption provides the best available performance for critical applications.

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Conclusion

- ✓ 5G provides key technology enablers as the backbone to the 5th Industrial Revolution.
- ✓ Great advancements are being made in the area of edge and mobile edge compute.
- ✓ The Kymeta platform is ideally suited as a mobile edge compute platform.
- ✓ We can identify ways to blend the technologies to make a truly mobile 5G-enabled edge compute platform.

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Thank You

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