

Data strategy examples from telecommunication service providers around the world

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Data? Why?



- 2014:

• 2014: 1.5 ExaByte per month

- 2024:

• 150 ExaByte per month

x100

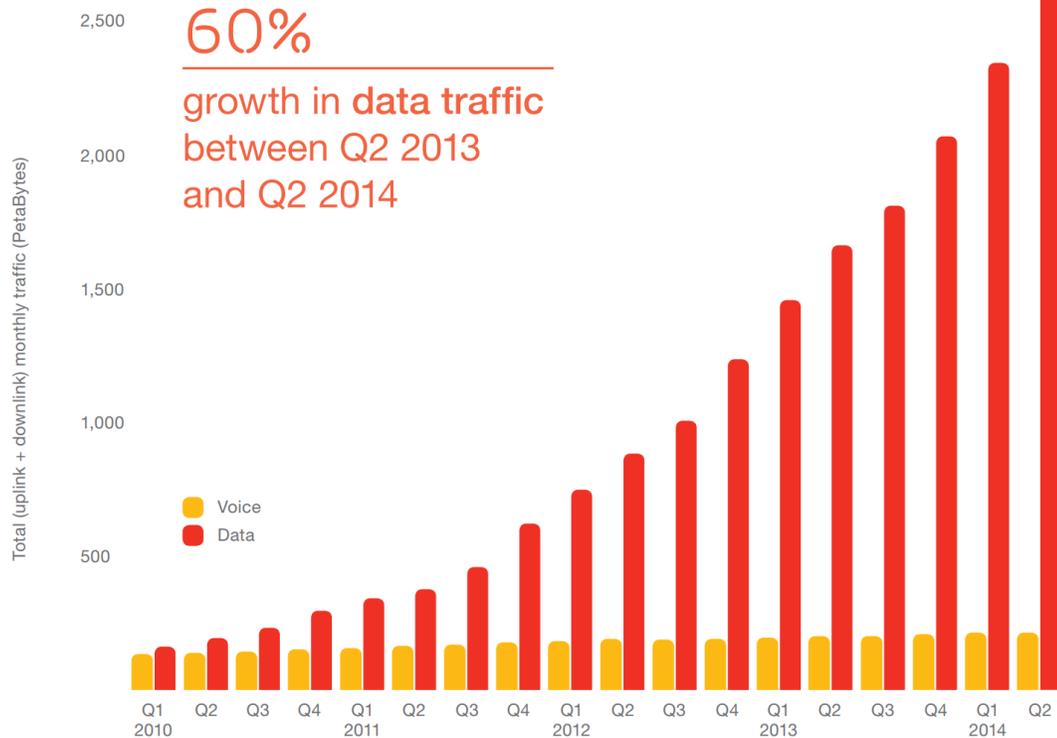
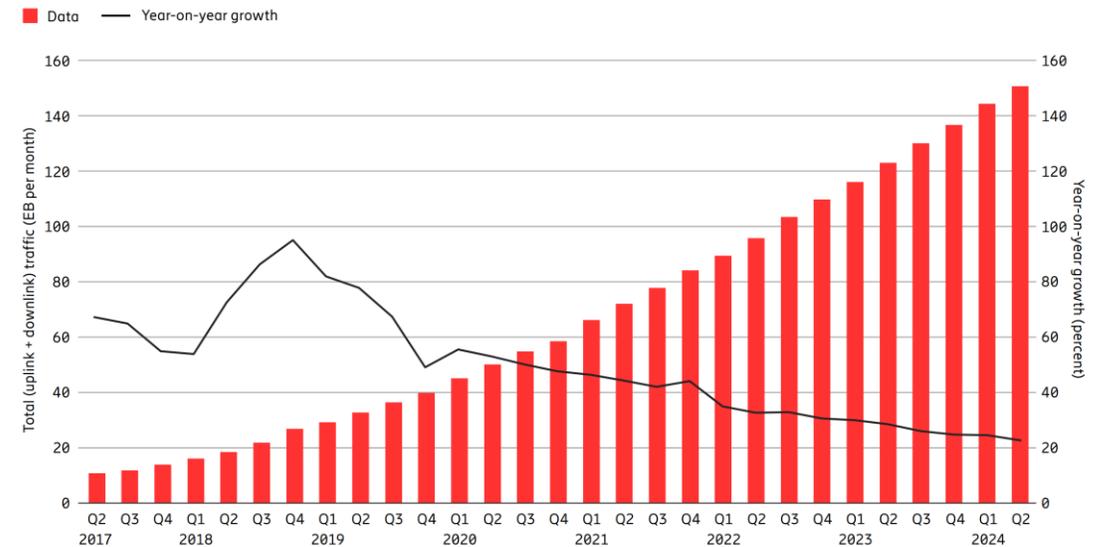
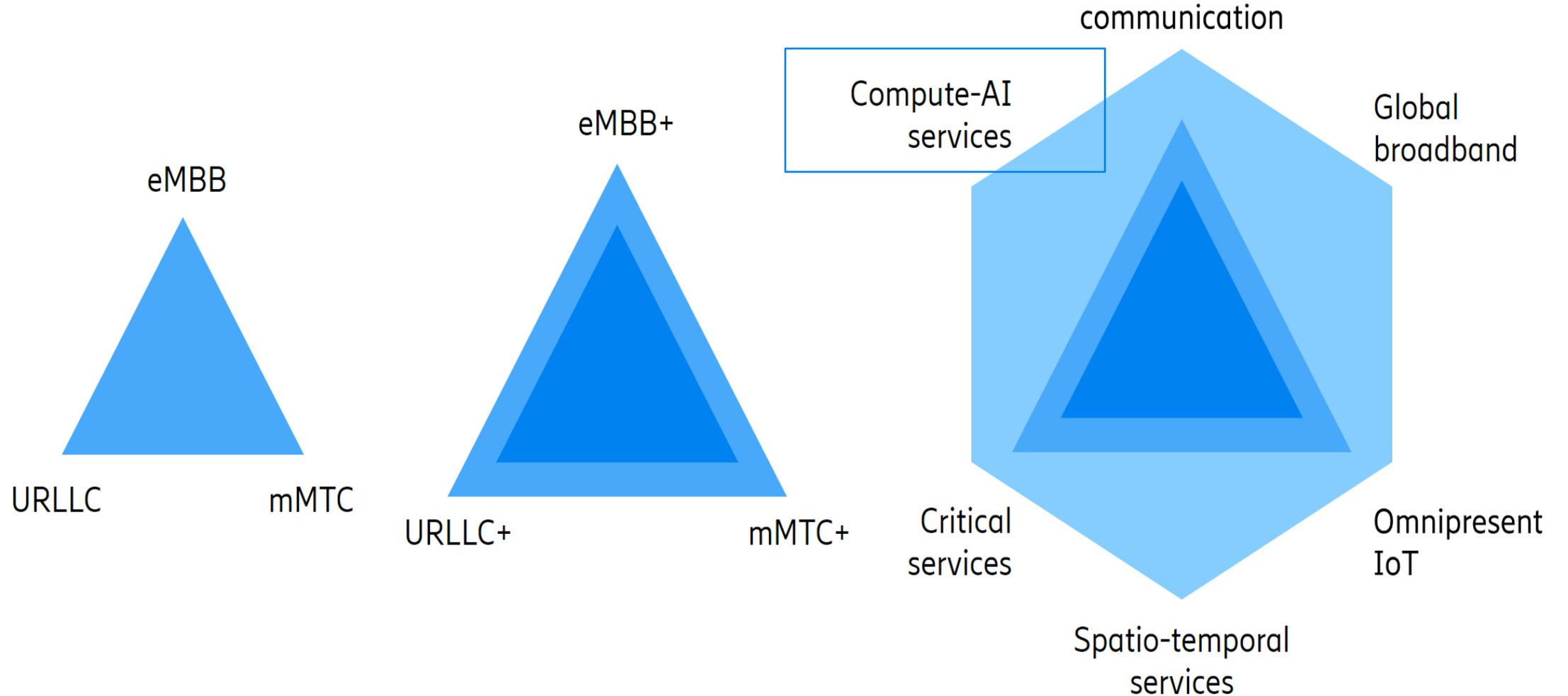


Figure 4: Global mobile network data traffic and year-on-year growth (EB per month)



Note: Mobile network data traffic also includes traffic generated by Fixed Wireless Access (FWA) services.
 * Traffic does not include DVB-H, Wi-Fi or Mobile WiMAX. VoIP is included.

From 5G towards 6G evolution

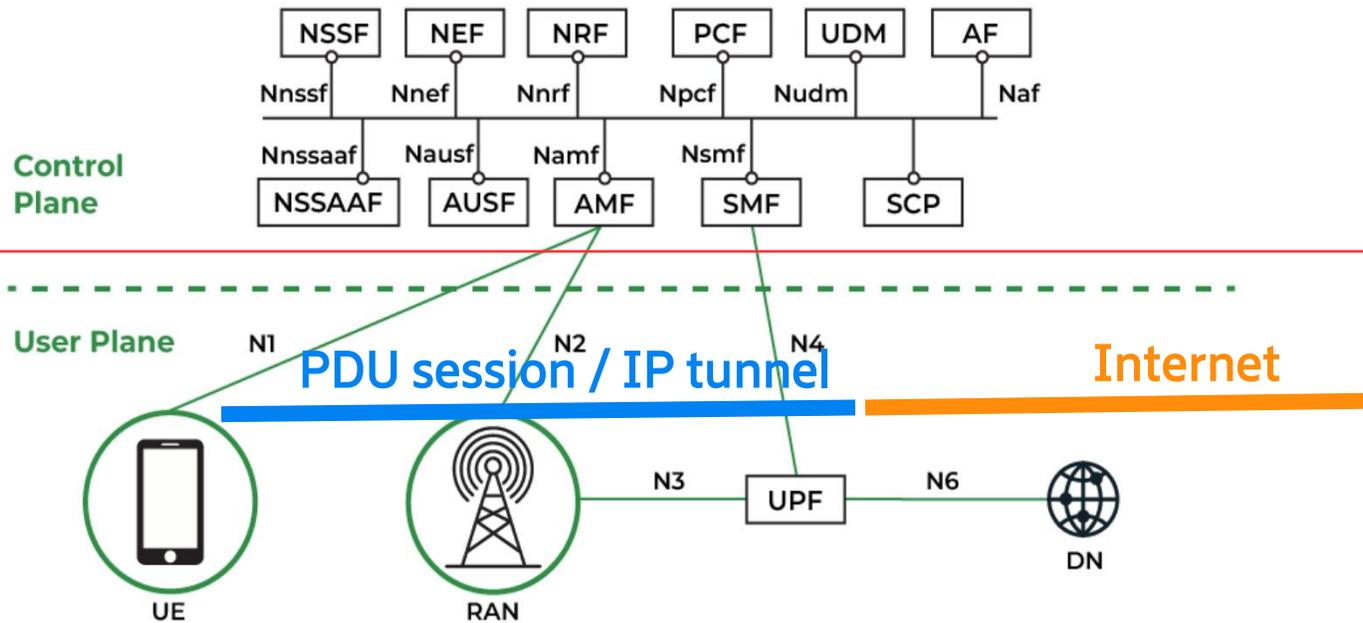


User Data Application data



User Data produced and consumed by mobile applications

User data is stored and processed by the application provider



5G Architecture Diagram

Network data

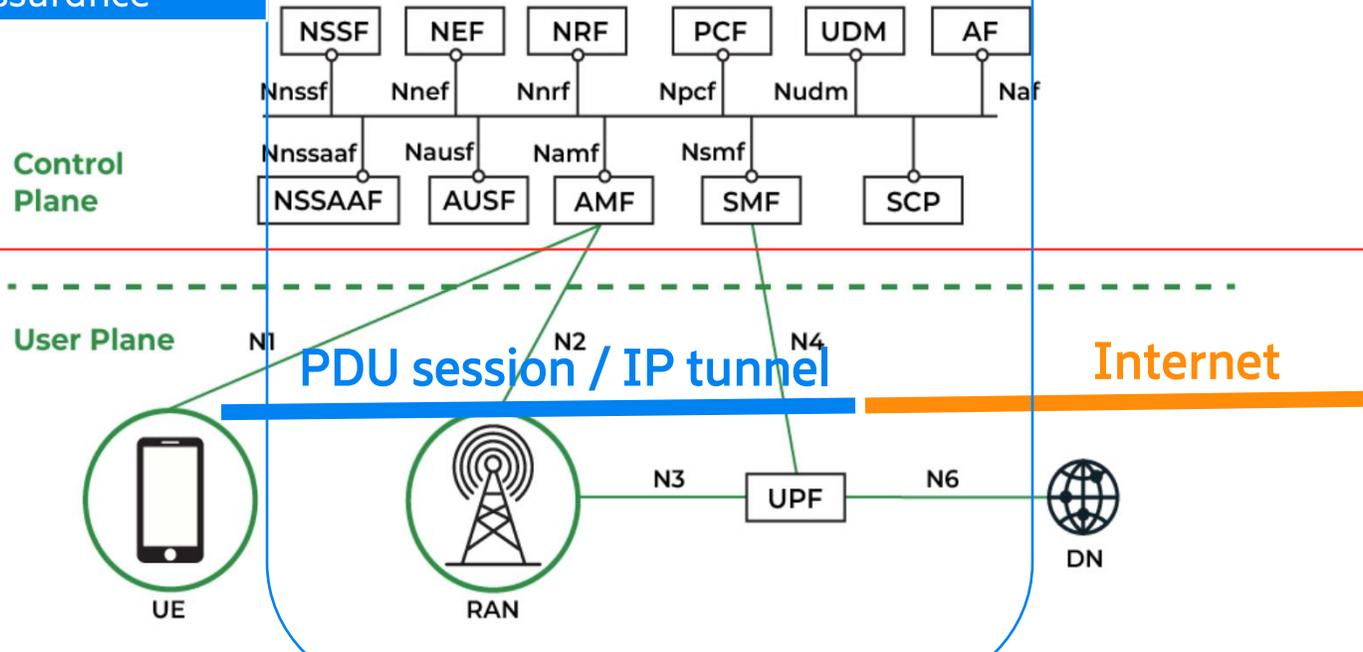


Network data is generated during network operations, used and processed by the network provider for management, configuration and assurance



User Data produced and consumed by mobile applications

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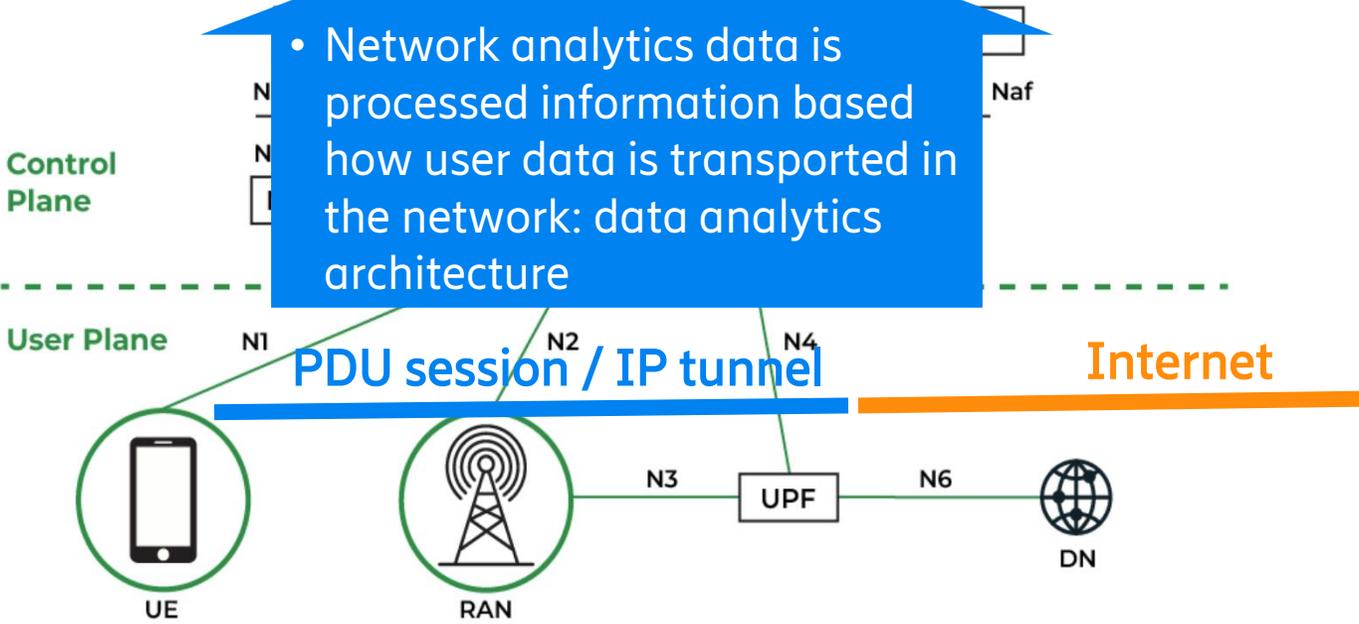
5G Architecture Diagram



Assurance



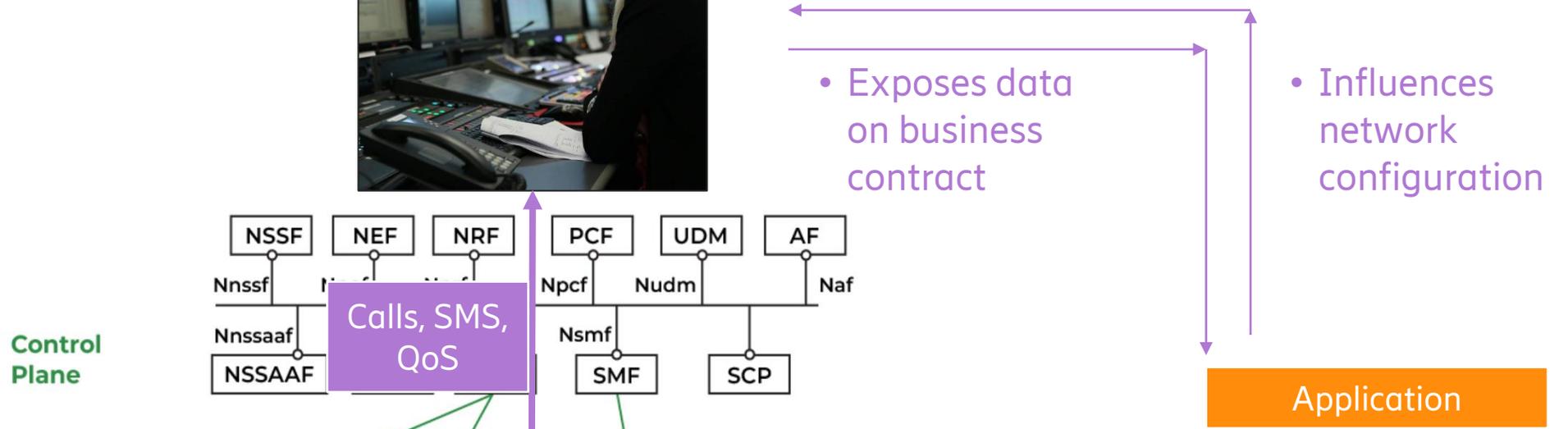
- Network analytics data is processed information based how user data is transported in the network: data analytics architecture



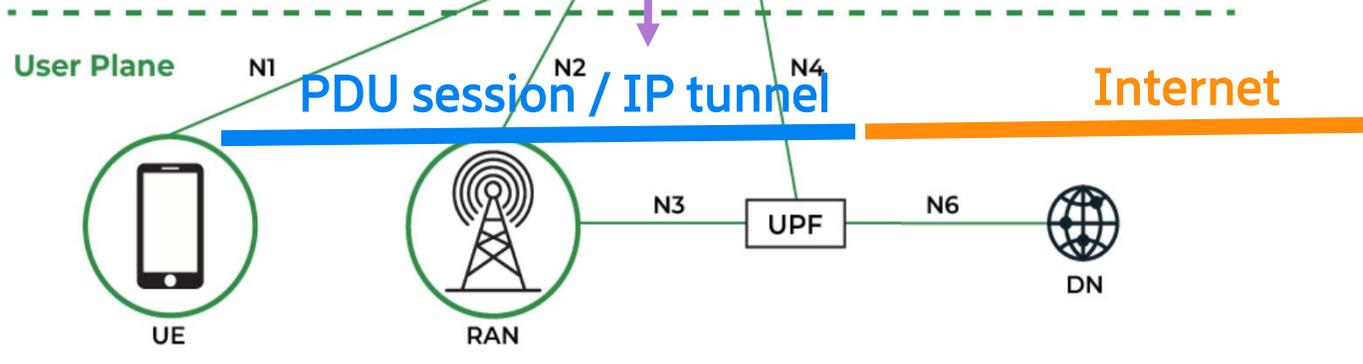
5G Architecture Diagram



Exposure



Application

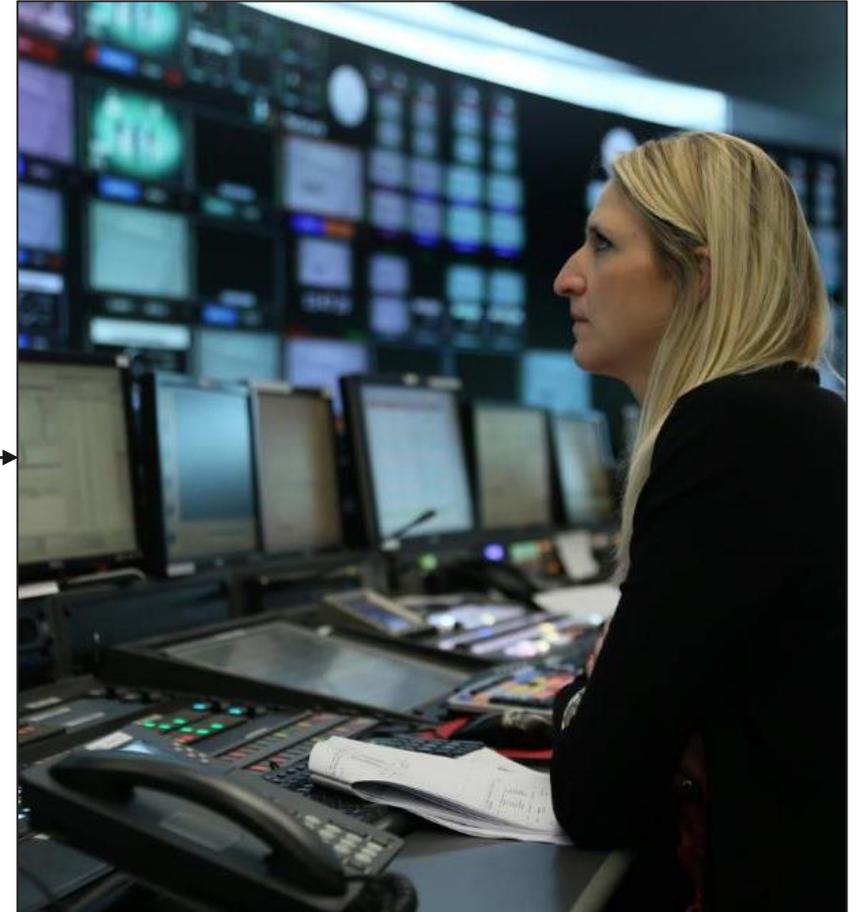


5G Architecture Diagram

Network programmability through API Exposure



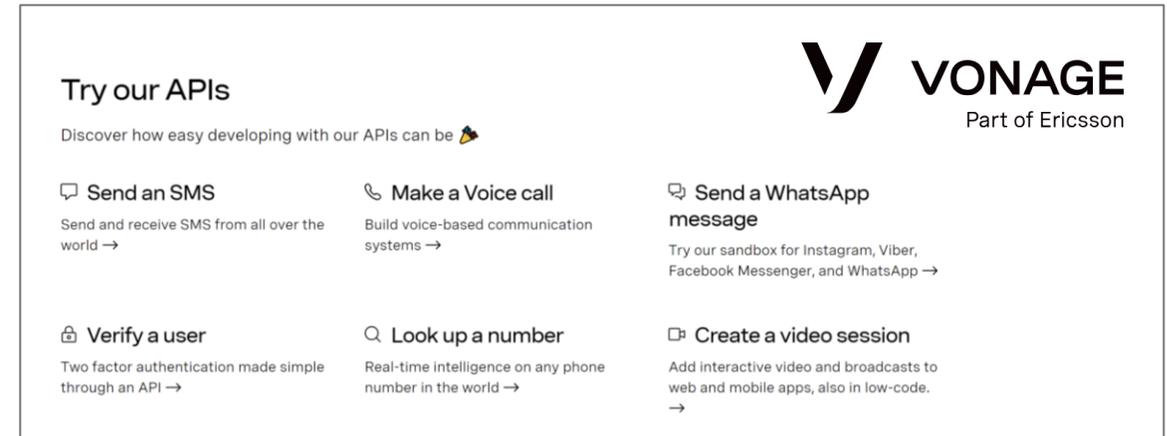
- Security by design (SIM-based, trusted, authenticated)
- Works Globally
- Provides network quality
- Enables new business models



Communication APIs: SMS, Call, Video, Chatbot, etc.

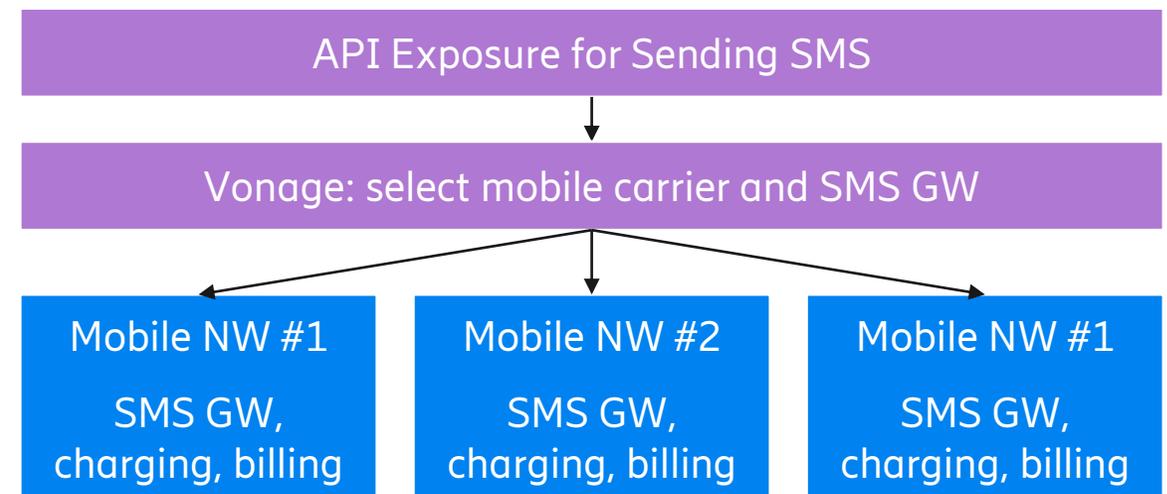


- One time passcode SMSs for ID verification
- Making a voice call from web browser directly to mobile phone ([Connecting WebRTC and PSTN with OpenTok and Nexmo](#))
- Look up a number
- Main challenges solved: global availability
 - Enabled by standardization of mobile connectivity and communication network functions



The screenshot shows the Vonage website's 'Try our APIs' section. It features the Vonage logo (Part of Ericsson) and a grid of six API services, each with an icon, a title, a brief description, and a right-pointing arrow:

- Send an SMS:** Send and receive SMS from all over the world →
- Make a Voice call:** Build voice-based communication systems →
- Send a WhatsApp message:** Try our sandbox for Instagram, Viber, Facebook Messenger, and WhatsApp →
- Verify a user:** Two factor authentication made simple through an API →
- Look up a number:** Real-time intelligence on any phone number in the world →
- Create a video session:** Add interactive video and broadcasts to web and mobile apps, also in low-code. →



From Communication APIs to Network APIs



Communications APIs



Messaging



Voice



Video

Network APIs



Authentication



QoS



Location

Global network platform

APIs empower developers, simplify application creation, and optimize performance



High speed
& Low latency



Reliability



Wireless edge
solutions



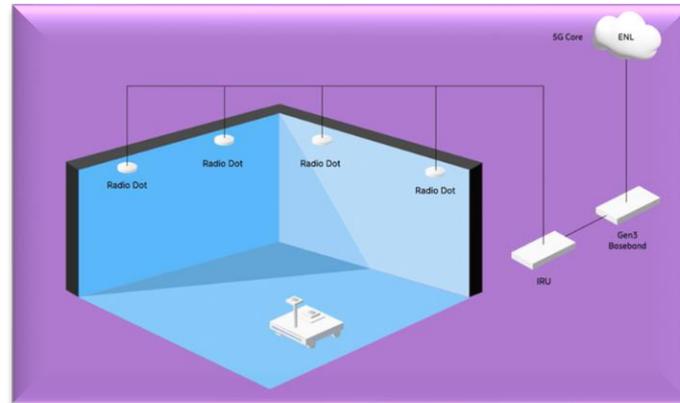
Security



Network
slicing

Worldwide 4G and 5G networks

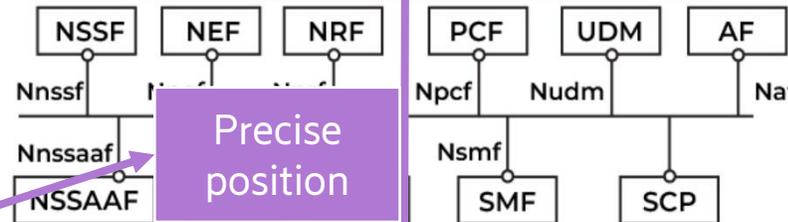
Exposure of precise location / position



- Exposes data on business contract

- Influences network configuration

Control plane

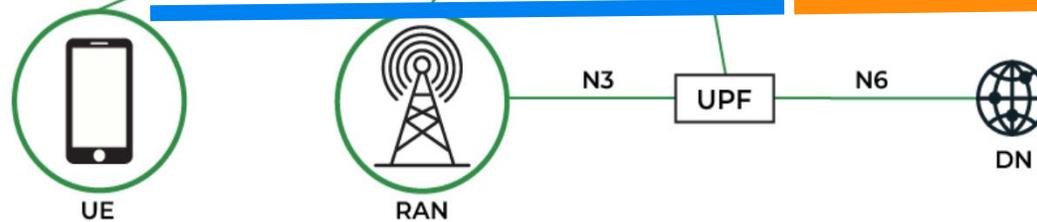


Application

User Plane

PDU session / IP tunnel

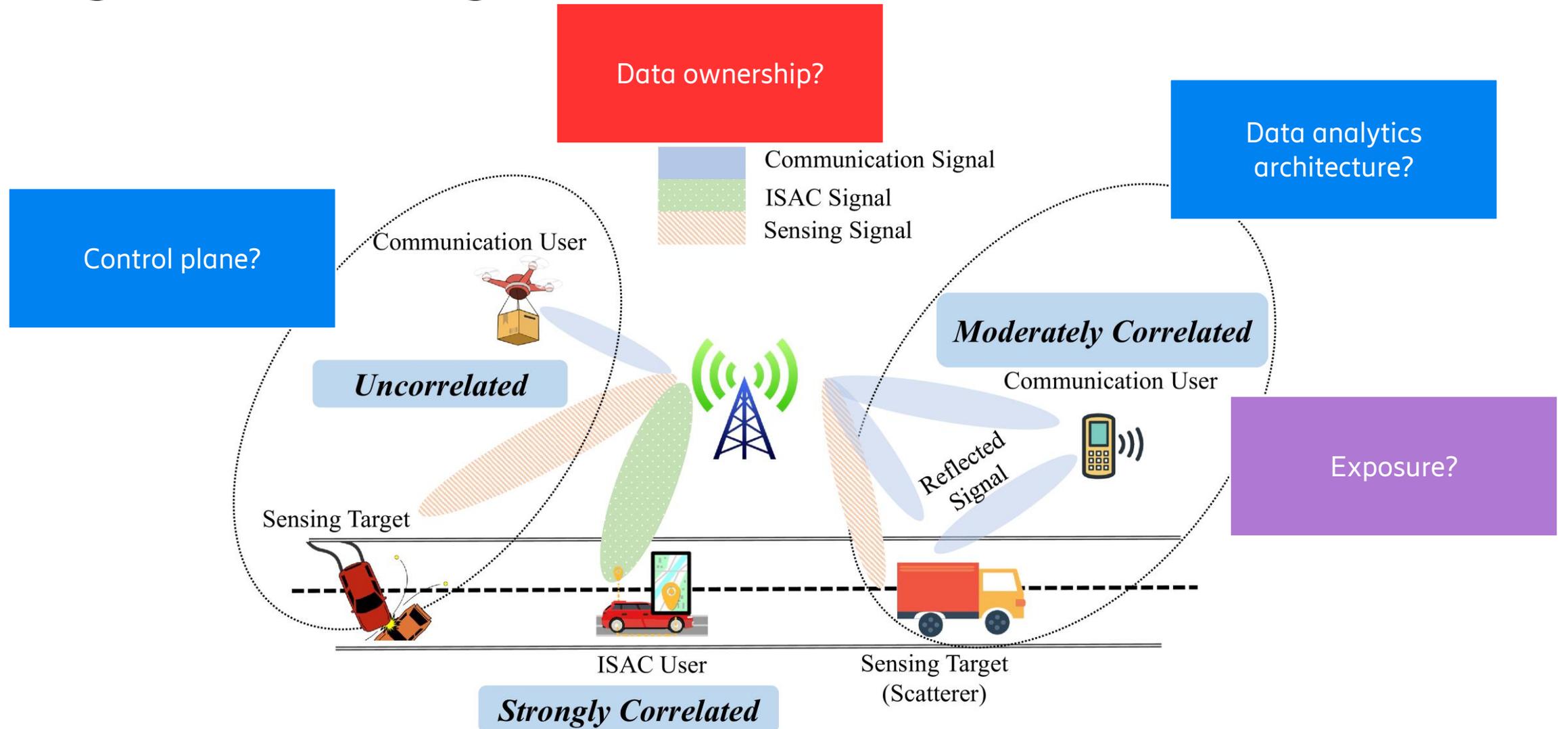
Internet



5G Architecture Diagram



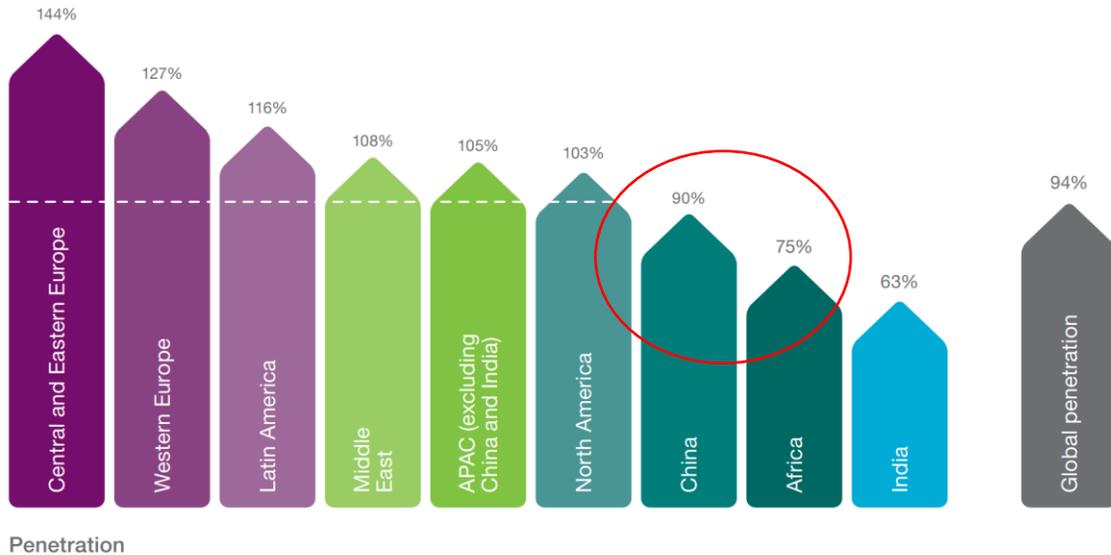
Integrated Sensing and Communication



Data? Where?



- 2014: 80% in China



- 2024: 125% in China

Figure 1: Subscription penetration Q2 2024 (percent of population)



¹ A 5G subscription is a 5G service agreement and an associated 5G-capable device.

² GSA (August 2024)

³ GSA (August 2024)

*Central and Eastern Europe region includes Russia.

**India region includes India, Nepal and Bhutan.

***APAC region figure excludes China and India.

5G new calling



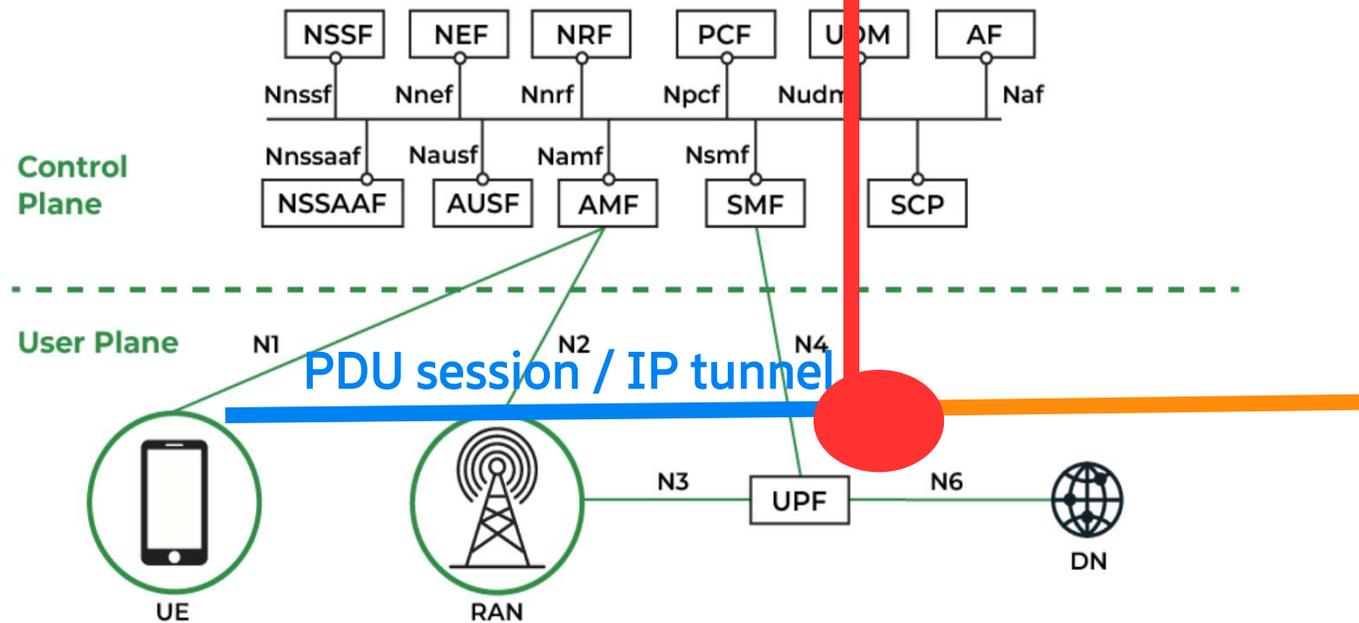
- IMS data channel enabled featured launched in 2022 by China Mobile
- This data channel is processed and manipulated by the network operator
- Evolution of voice codecs towards:
 - Picture replacement with avatar
 - Real-time capture of text
 - Real-time translation
- All provided by the communication service providers



User data processed in IMS



User data operated by communication service provider's IP multimedia subsystem (IMS)



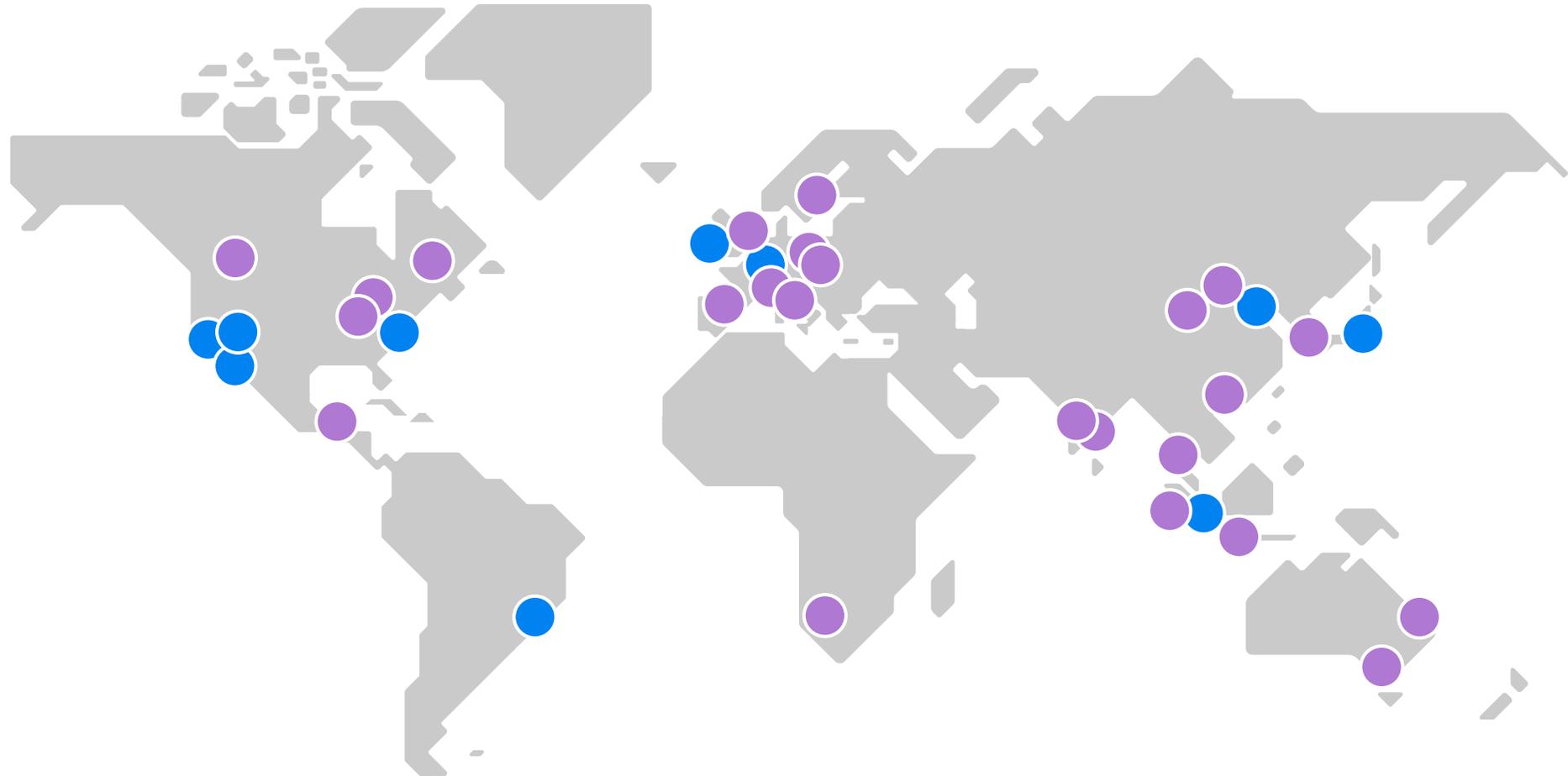
PDU session / IP tunnel

5G Architecture Diagram

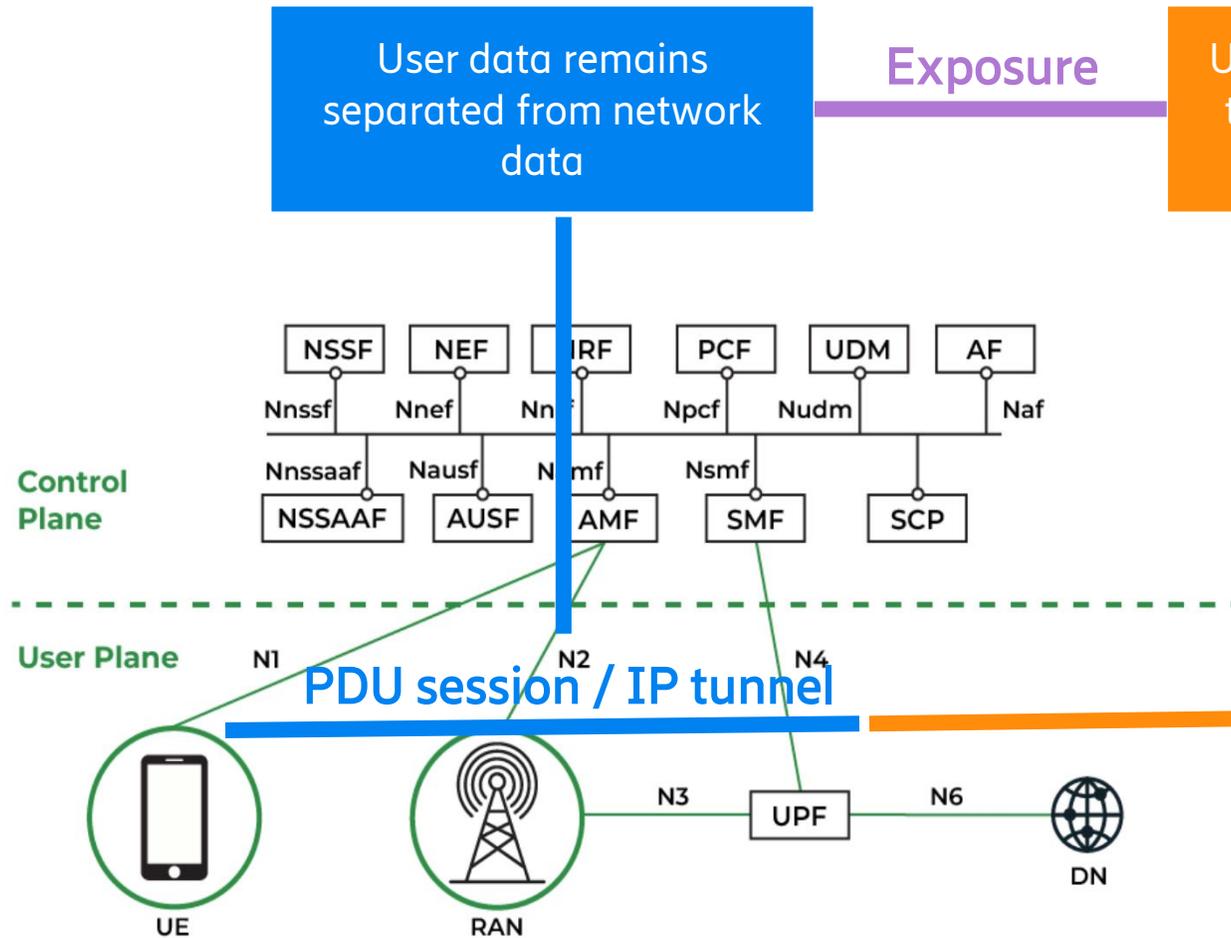
Any guess on what is this?



And where are we now...
At the edge?



User data processed in public cloud



User data remains separated from network data

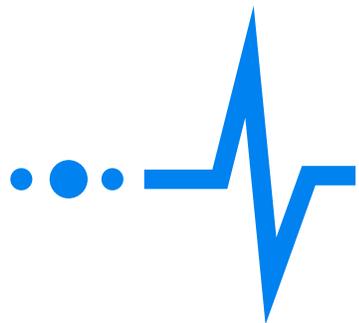
Exposure

User data is processed by the application (e.g. MS teams) in datacenters



5G Architecture Diagram

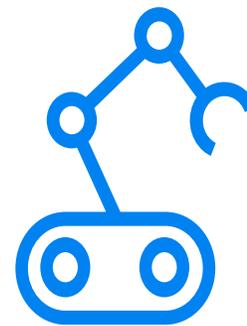
Takeaway



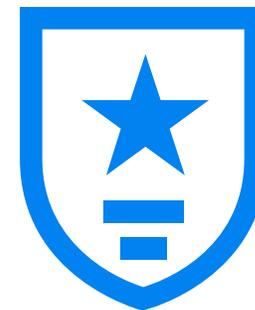
User Data
Grows



Exposure
through mobile
Applications



New use cases,
network as a
sensor



Increased data
privacy issues

