

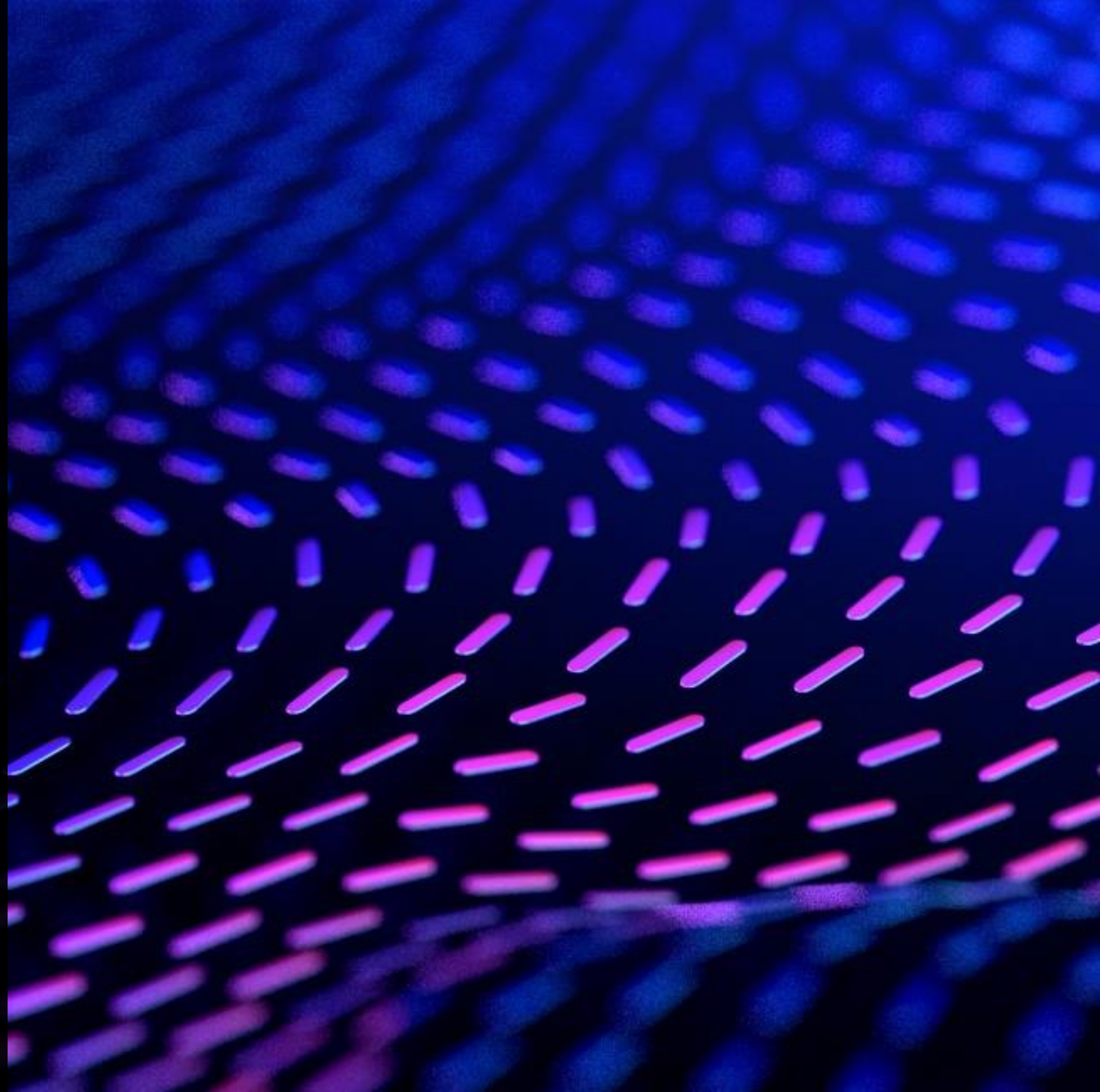
Supercharge Telco with "AAA"

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Dec 2023



Where Do We Want To Be In 2030?



Possible 6G Use-Cases:

- **“Holographic Society” and Merged Realities**
- **Massive Digital Twinning and JCAS**
- **Situational Awareness and Reprogramming of Cyber-Physical Worlds**
- **Efficient and Pervasive Mobile Broadband**
- **Sustainability and e-Health**

Humans & Machines Will Be Empowered



Human-Centric Devices

Machine-Centric Devices

Smart Phone



XR Device



Haptics



IoT



UAV



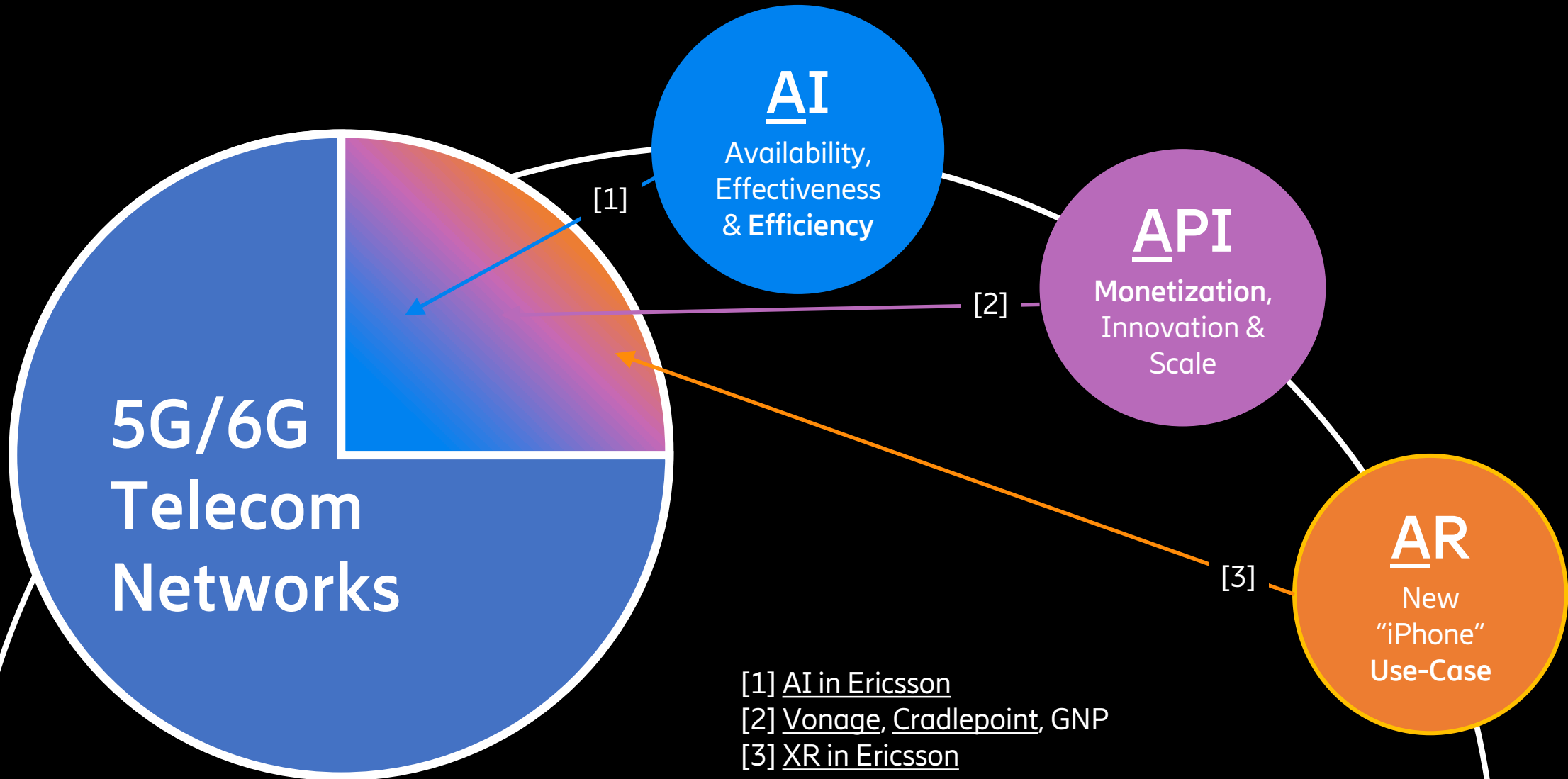
Humanoid



Supercharge Telecoms With «AAA»



Erik Ekudden, "Networking trends: Building the platform for next-level digitalization," Nov 2023





01 AI in Future Networks

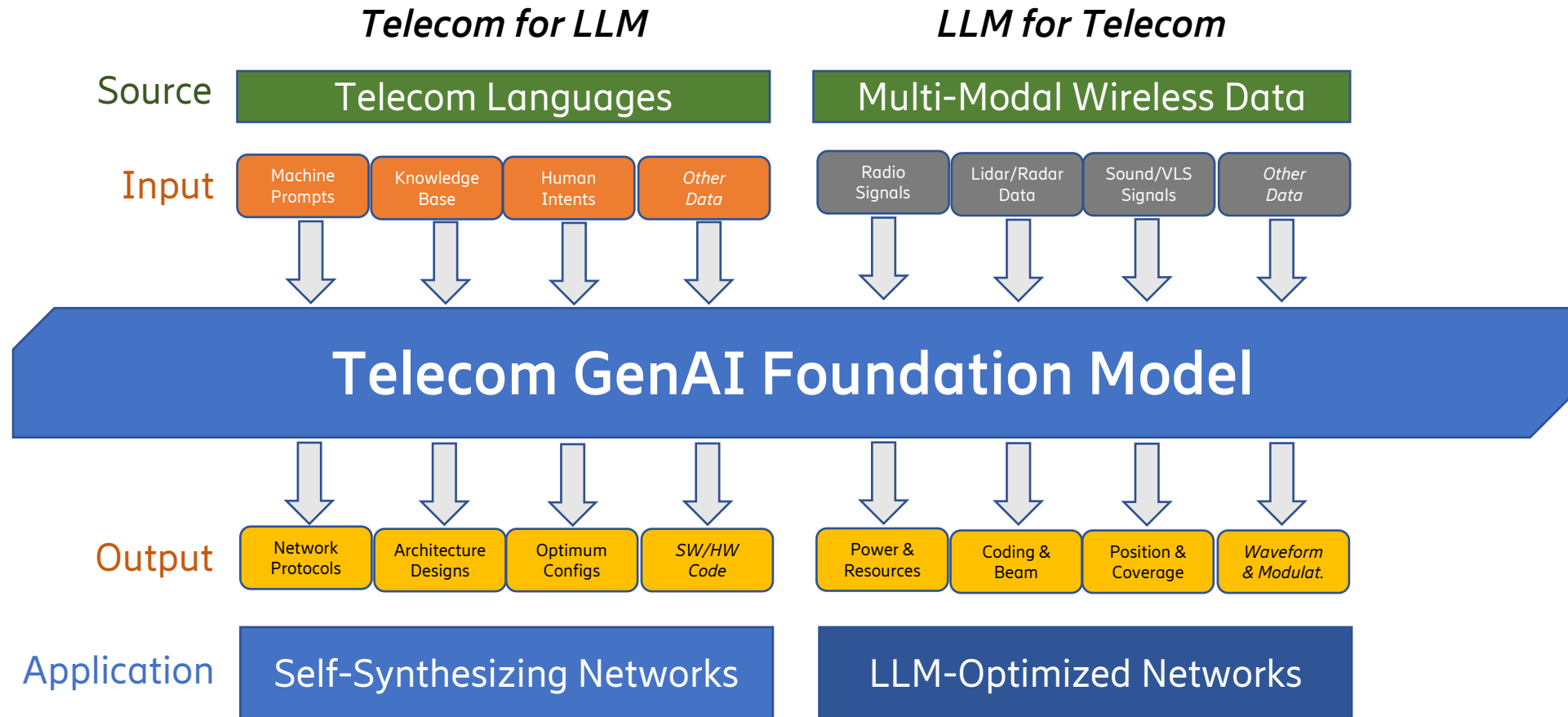
An overview of Artificial Intelligence in Future Networks, across OSI Layers and operations.

The Telecom Foundation Model



M Dohler, "6G Self-Synthesising Networks For An Immersive World," IEEE Meditcom 2021.

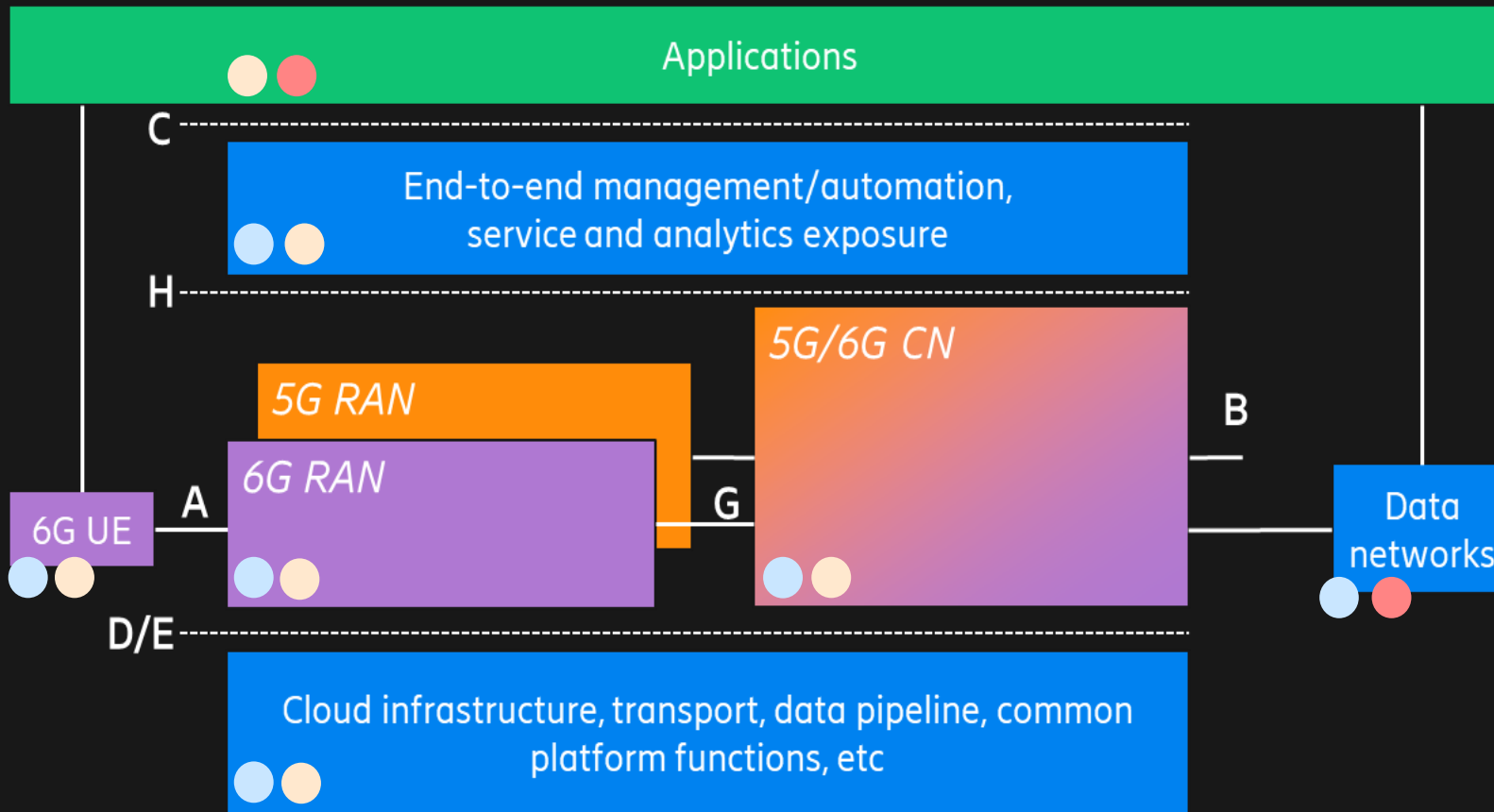
M. Debbah, M Dohler, et al. "Foundation Models for Telecom [...]" WWRF 2023



GenAI Applications In Horizontal Architecture



A. Karapantelakis, et al. "Generative AI in mobile networks: a survey," *Annals of Telecoms*, July 2023



- **Design:**
 - Coding and DevOps
 - Traffic & Synth Data Generation
 - L1-L3 AI Design & Config

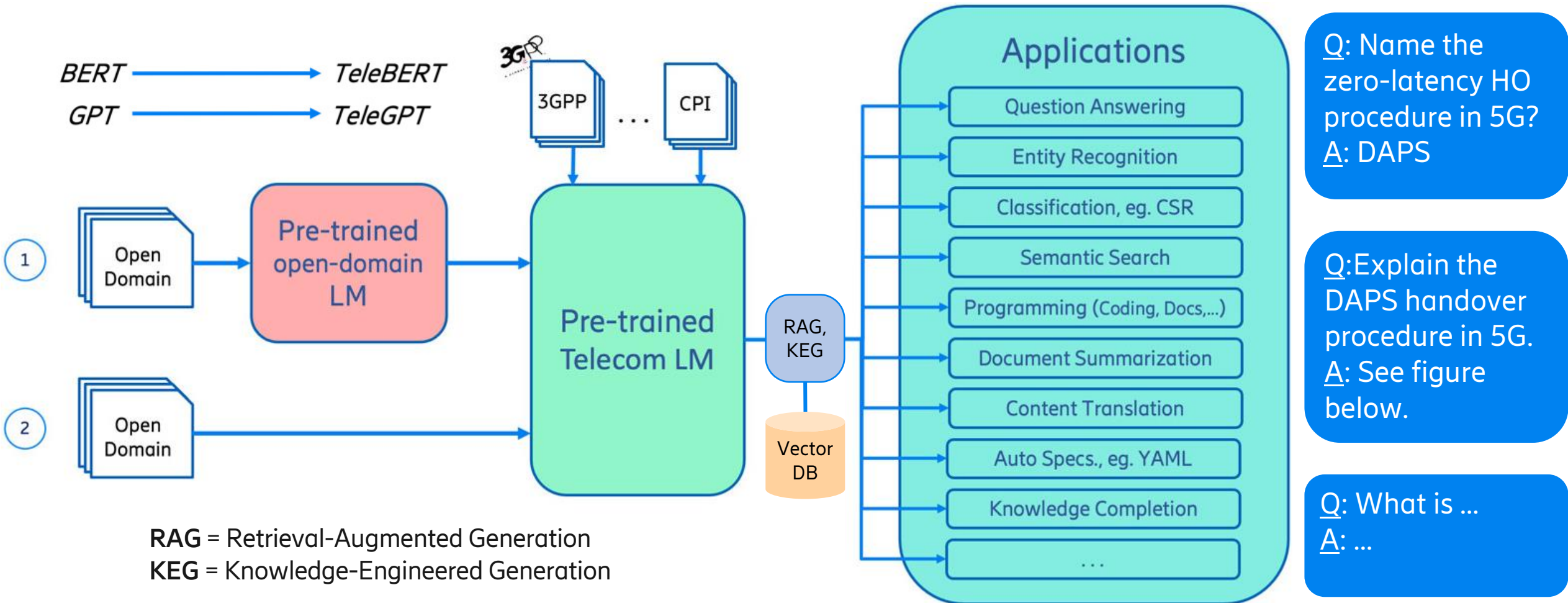
- **Operations:**
 - Semantic Communications
 - XR: SLAM & JCAS
 - Intent-Based rApp

- **Support:**
 - Internal Search Engine
 - Field & Engineering Support
 - Consumer Chatbots

Telecom LLMs: Embedding Telco Knowledge



<https://www.ericsson.com/en/blog/2022/1/neural-language-models-telecom-domain>



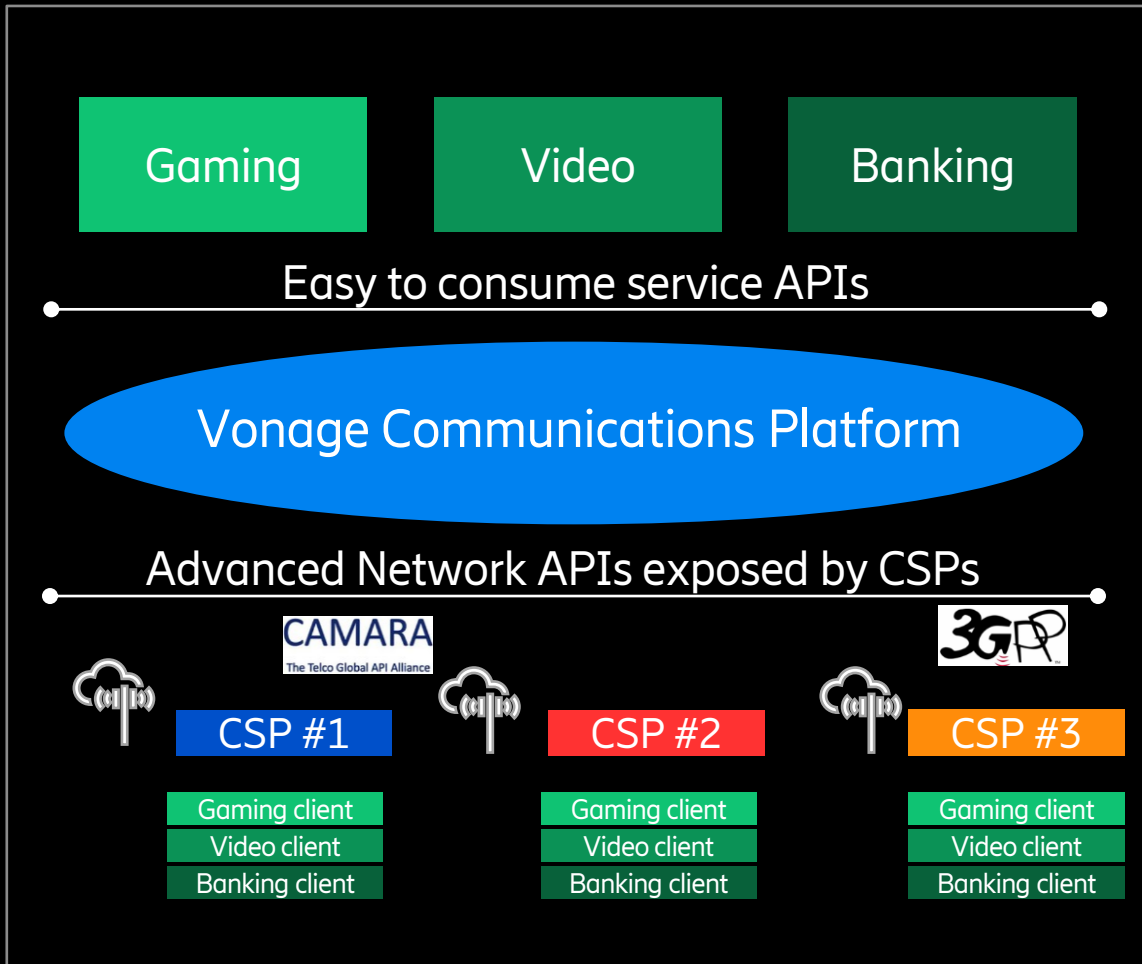


02

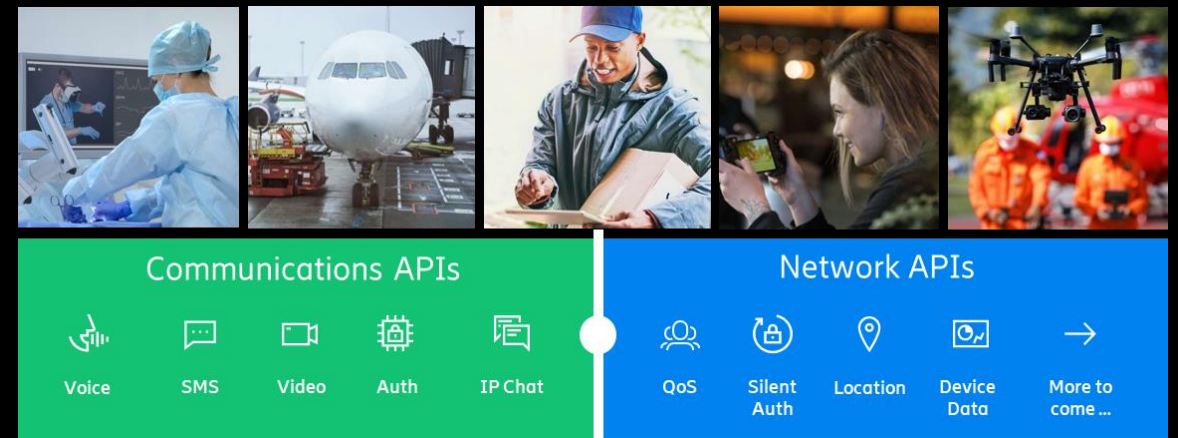
API in Future Networks

An overview of APIs in 5G SA & Beyond Networks and their value towards monetization in telecoms.

Opening Up Telco Networks To App Devs



- Making it easy for developers to use and bundle API services in 5G SA & Beyond
- Exposing communication services and new advanced network functionality through easy-to-use APIs
- Enable native monetization in telco networks









03

AR in Future Networks

An overview of AR in 5G SA & Beyond Networks and their value as a unique 6G use-case.

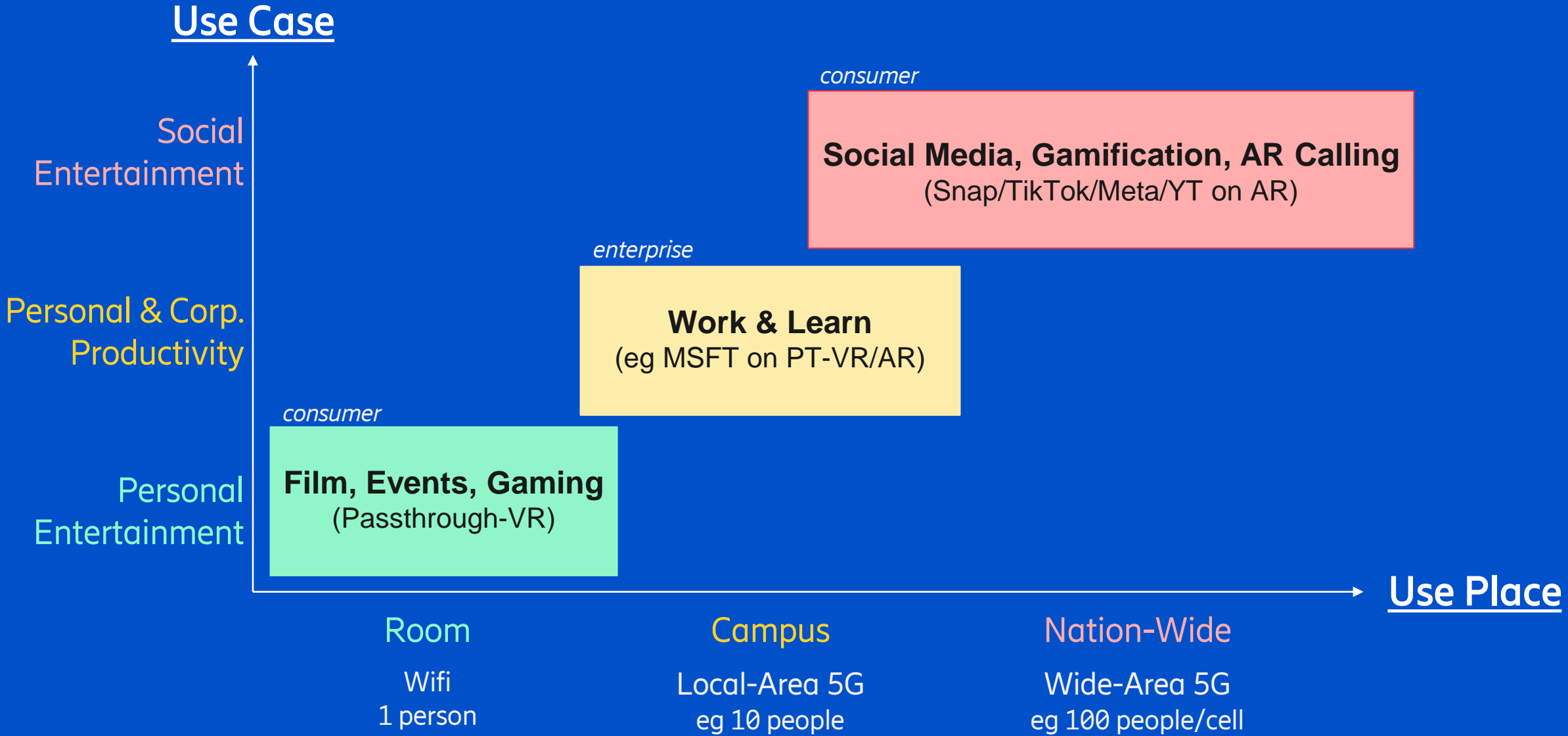
Devices – XR HMD State of Affairs 2023 [examples]



VR Passthrough		AR	
High-End	Mass-Market	High-End	Mass-Market
Apple Vision Pro 	Meta Quest 3 	Magic Leap 2 	Xreal Air 
indoors, w/ wifi	indoors, w/ wifi	indoors, w/ wifi & cabled	anywhere, cabled
<ul style="list-style-type: none"> • <i>great user experience</i> • <i>noticeable weight</i> • <i>rich content</i> 	<ul style="list-style-type: none"> • excellent user experience • noticeable weight • sufficient content 	<ul style="list-style-type: none"> • very good user experience • low weight but noticeable • little content (OpenXR) 	<ul style="list-style-type: none"> • good user experience • light weight • little content (QC Spaces)
Edge Compute = slightly richer experience (*)	significantly richer	significantly richer	slightly richer

Note: Apple/Meta/Xreal are consumer-focused; Magic Leap is (today) enterprise-focused.
 (*) Personal (but explainable) estimate.

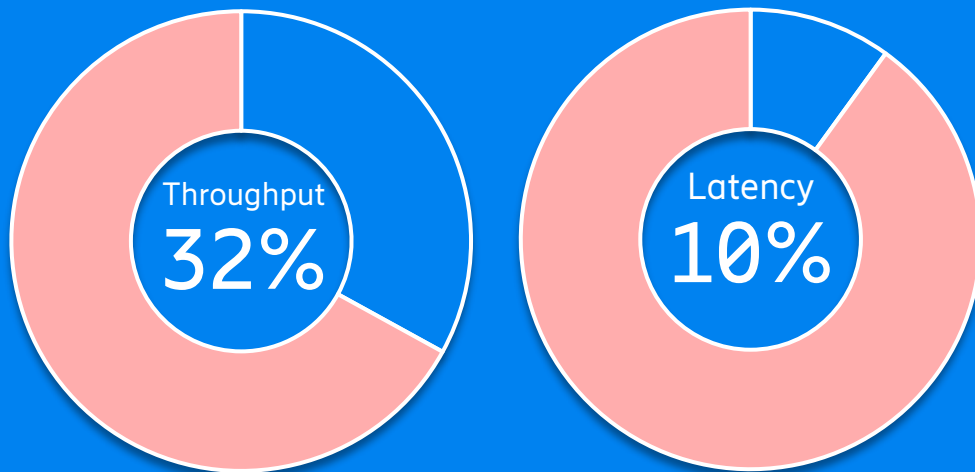
Applications – Is there scalable XR Demand?



Networks – We got work to do!



AR Readiness Findings



[1] www.ericsson.com/en/reports-and-papers/mobility-report/articles/mobile-qoe-network-readiness-new-services

Ecosystem Way(s) Forward

- **Regulators**
 - sufficient IMT spectrum for future use-cases
 - clarity on net neutrality
- **Operators**
 - embrace/align on slicing-based business models
 - implement/upgrade to URLCC/TCC features
 - prepare for massive XR uptake
- **Eco-system**
 - deliver and expand on URLCC capabilities
 - strong ecosystem engagements
 - refine sales & go-to-market strategies



ericsson.com/future-technologies