



Determinism

New use-cases for next generation disruptions

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NX Wireless CTO

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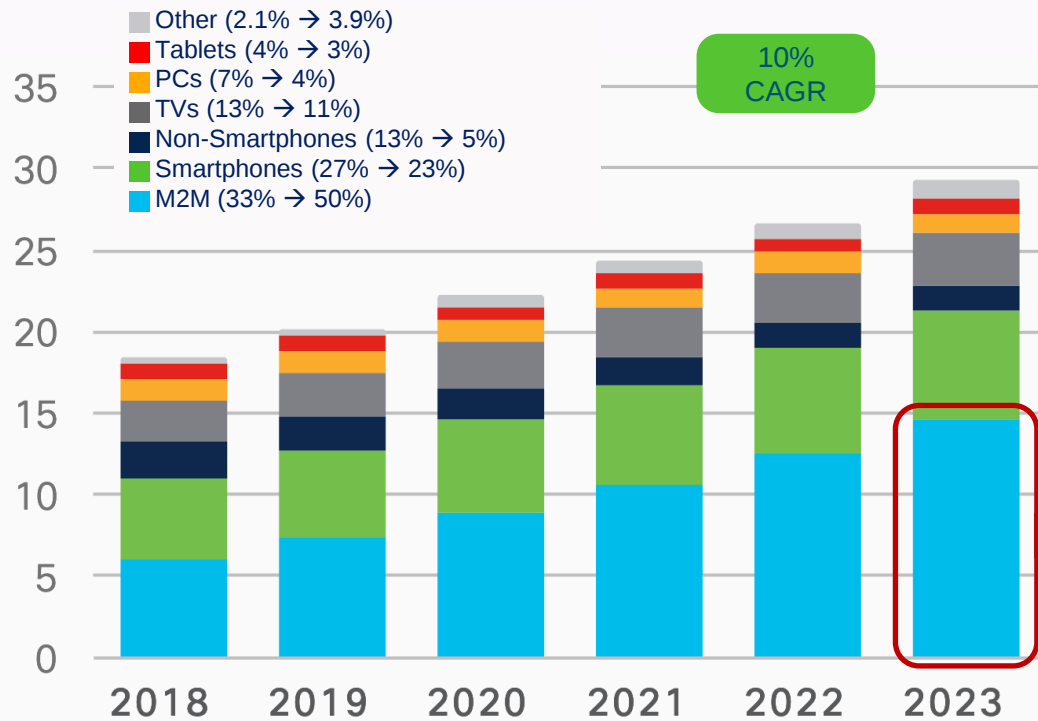
Deterministic Wireless*

Reliable communication while meeting
application latency/jitter Requirements

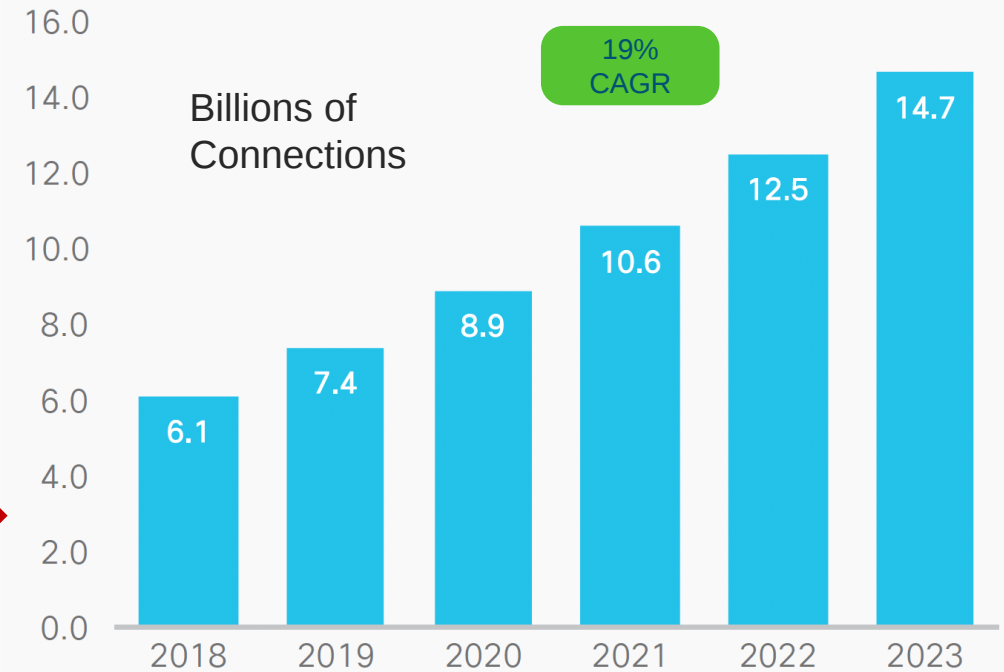
Density Megatrend

An Explosion of Access and Devices

Billions of Devices



Global M2M (IOT) Connection Growth



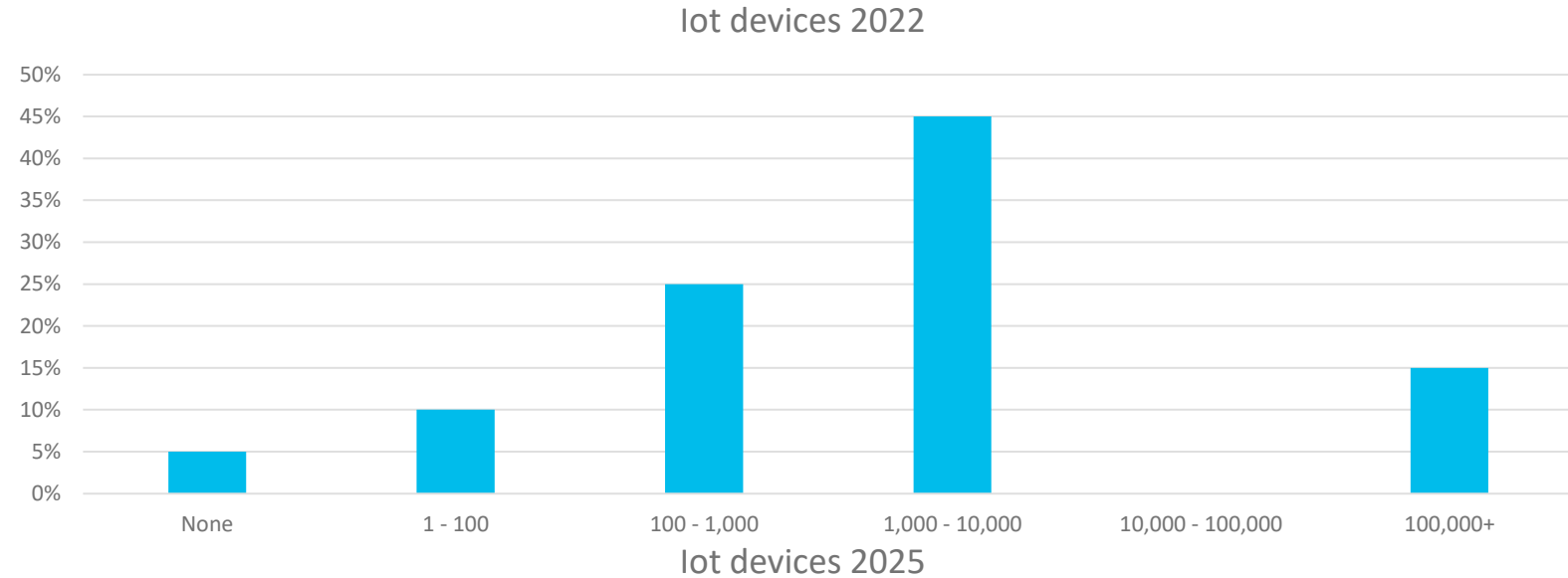
Globally, Wi-Fi 6 hotspots will grow 13-fold from 2020-2023, 11% of all public hotspots by 2023



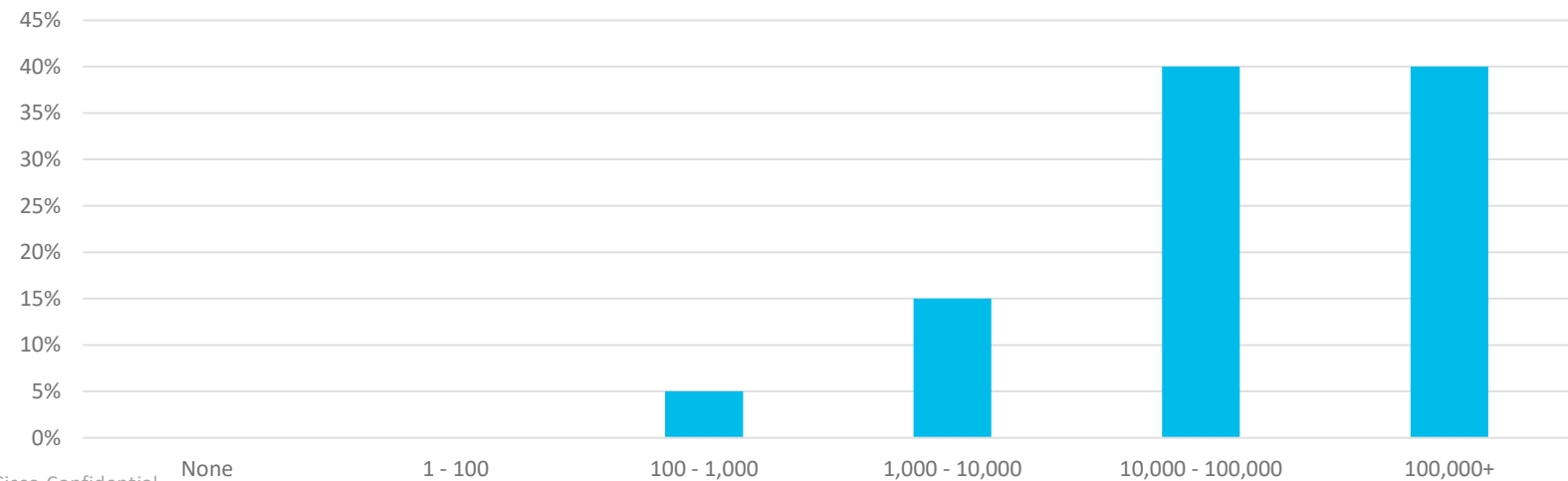
5G devices and connections will be over 10% of global mobile devices and connections by 2023.

Customer expectation of IoT device evolution

2022



2025



Cisco Smart Buildings

Your step-by-step guide for real estate transformation

Putting a sustainability plan together

As companies move to more sustainable operations, redefining the value of real estate to ensure your outcomes has never been more important. Cisco smart buildings technology lets you create an intelligent workplace with sustainable and substantial energy savings.



74% of CEOs are accelerating their digitization plans.

Source: Fortune/Deloitte CEO survey, 2021.



89% of companies have sustainability as a strategic initiative.

Source: JLL, 2021.



20% of companies actually have a strategic plan for sustainability.

Source: JLL, 2021.



60% of real estate is underutilized.

Source: JLL, 2018.



98% of CRE's view technology as critical to safety and workplace performance.

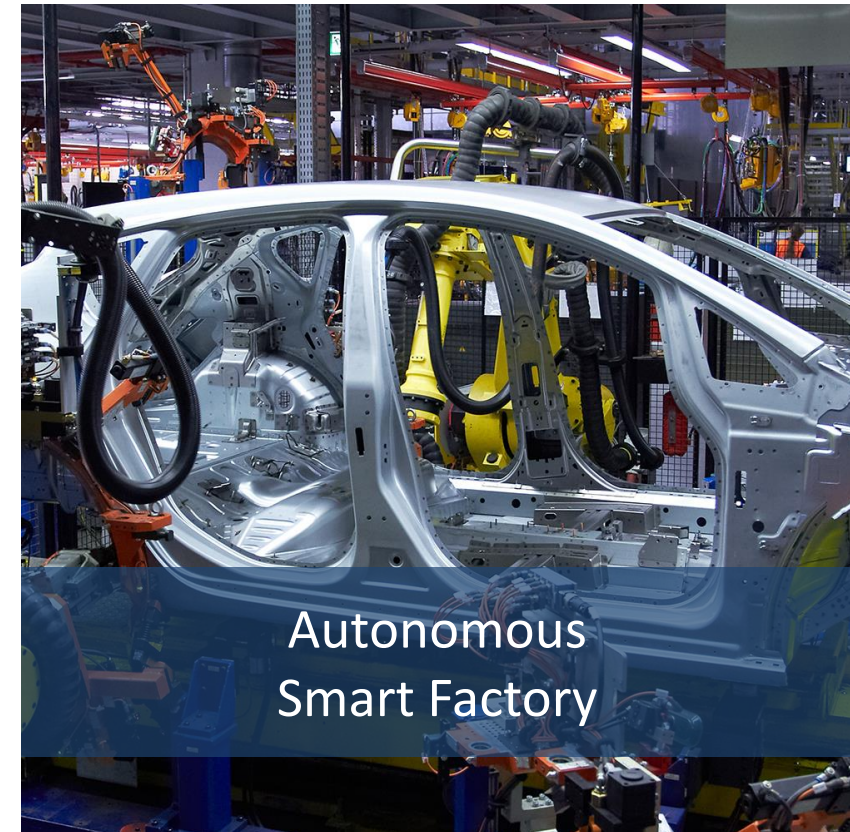
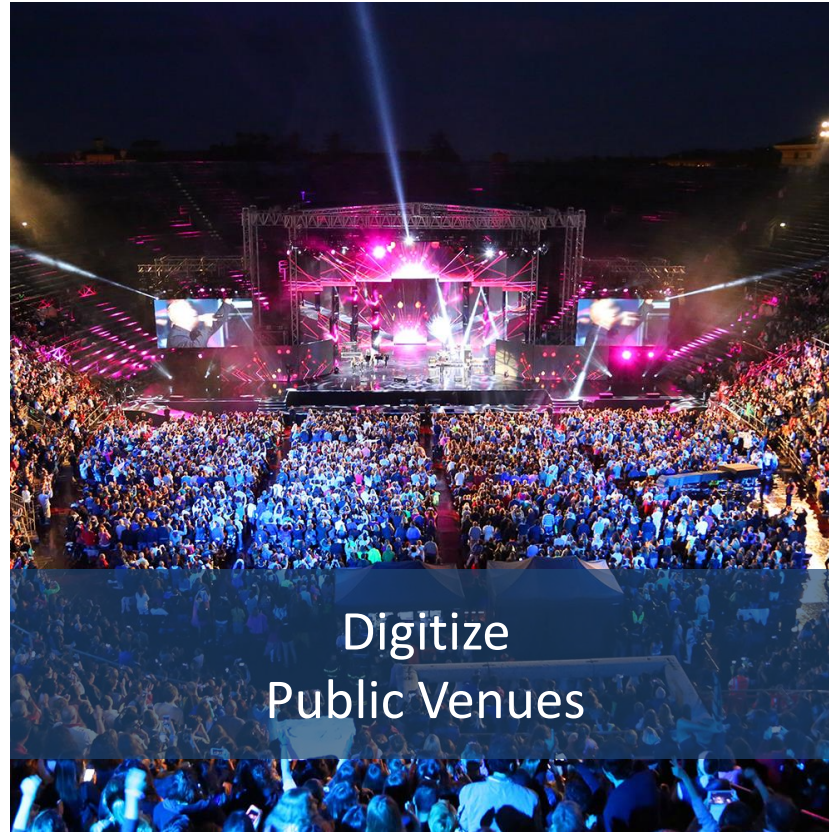
Source: JLL, 2020.



70% of city energy use is buildings.

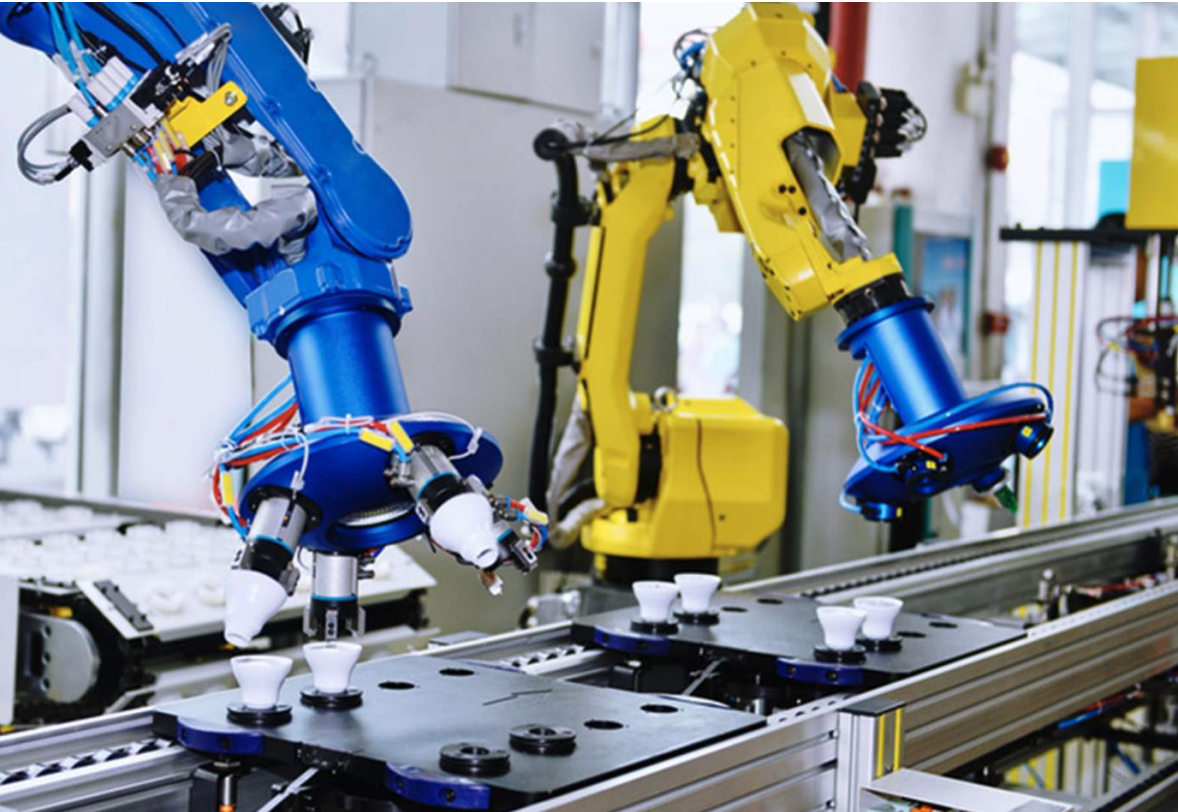
Source: Connected Cities Privacy Summit, 2019.

Digitization for People, Places and Things



Industrial IoT

Industry 4.0, agile factory & warehouse



Robotics (Real-Time Control) <2mS



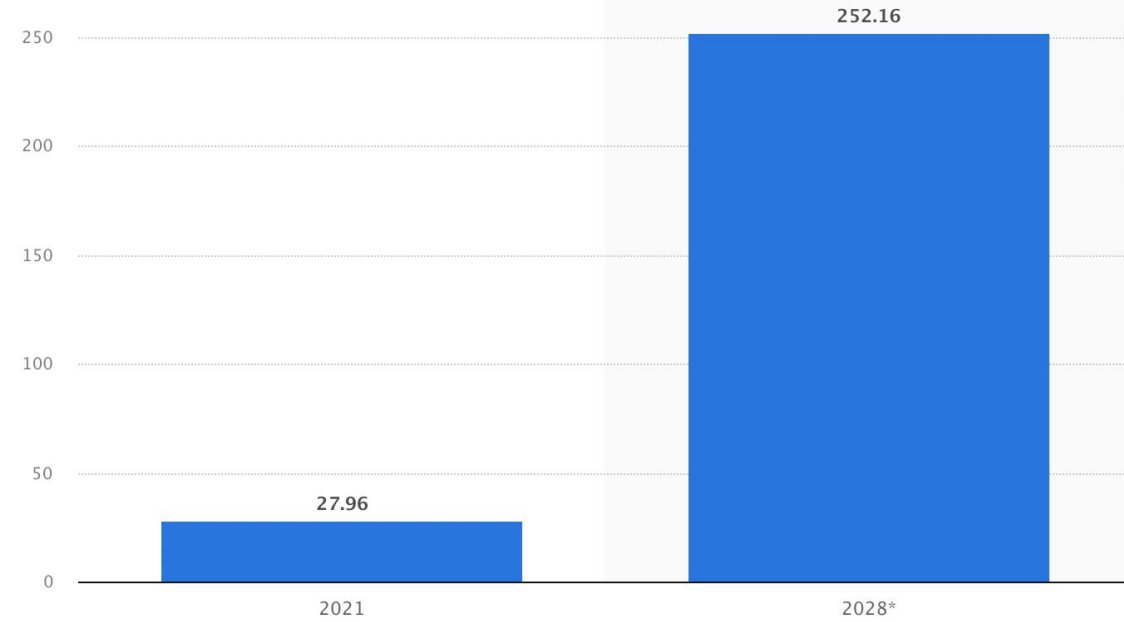
AMR (Autonomous Mobile Robot)
AMR (w/ positioning)
AMR (w/ Wi-Fi6E + 5G)

Safety (remote control)



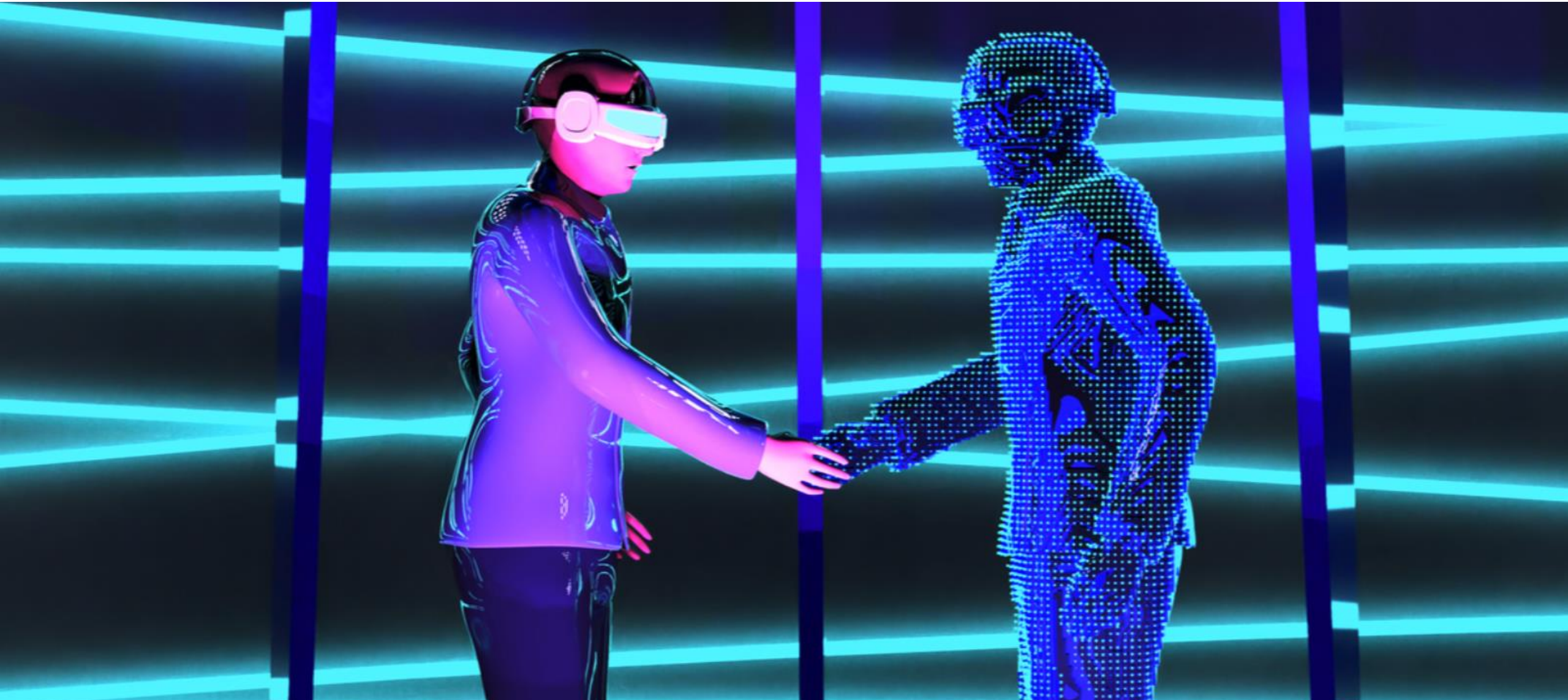


Enterprise scale XR



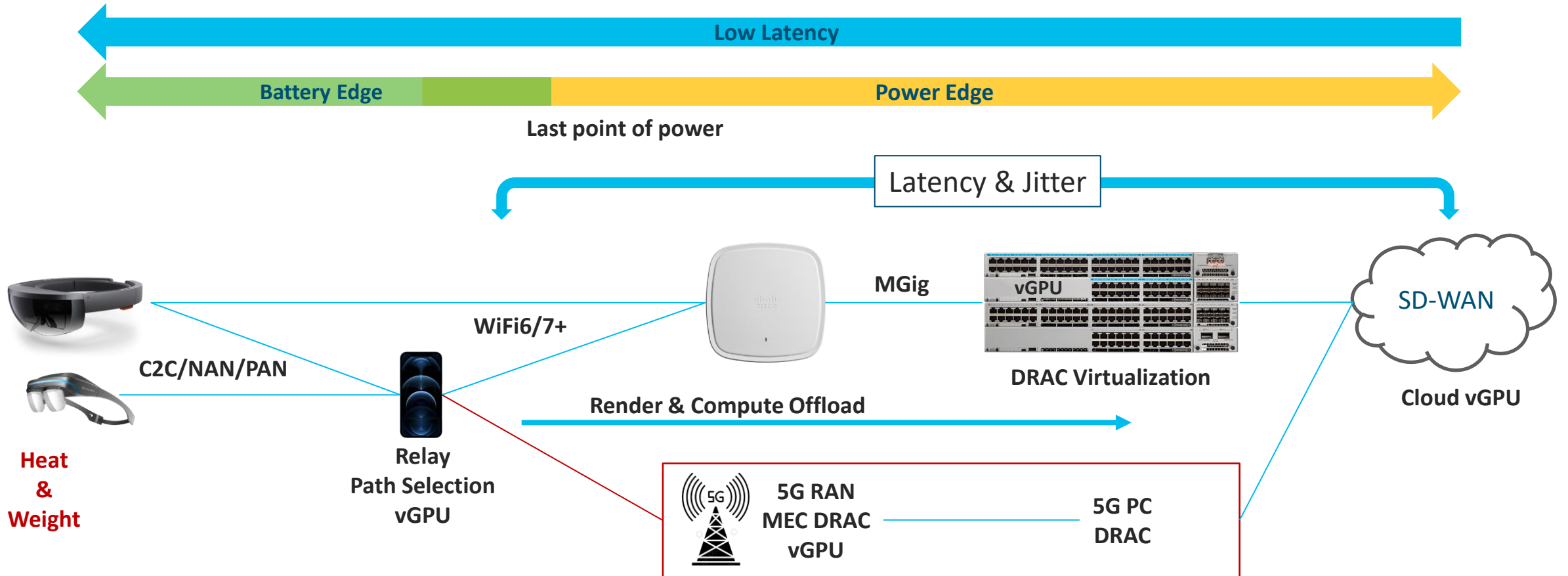
Metaverse

Next Generation Collaboration



Evolution of XR Architecture

From self-contained HMD to Distributed Rendering & Compute (DRAC)



Attach driven by OpenRoaming

Immediate Impact: Coverage issues solved



Good IDP distribution

Devices By IDP

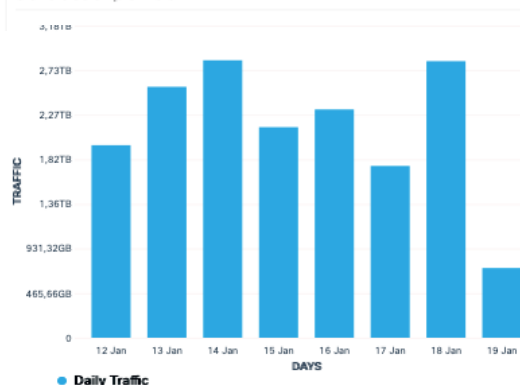
Distribution based on Identity provider.



High Usage

Data Usage

Total data exchanged on the network during the selected period.

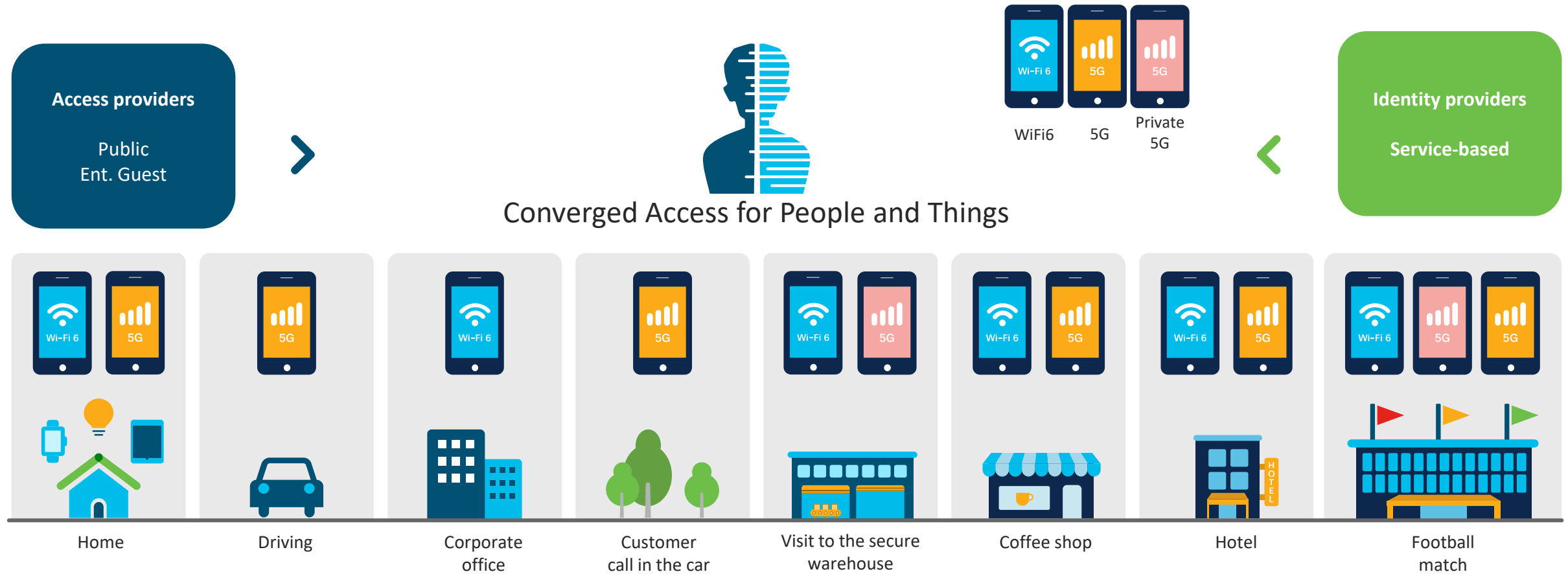


User Feedback

- Delight!
- Some users do not notice they are on Wi-Fi, but they notice good data / voice
- Other users want to get on Wi-Fi and notice they are already on, compliment the great experience
- Reduced visitor coverage complaints
- Lower burden on staff

Intelligent Multi-Access Convergence

Required to carry traffic demand!



To use all stacks better, we need...

Frictionless Onboarding

OpenRoaming for all stacks
(assure access to all available paths)

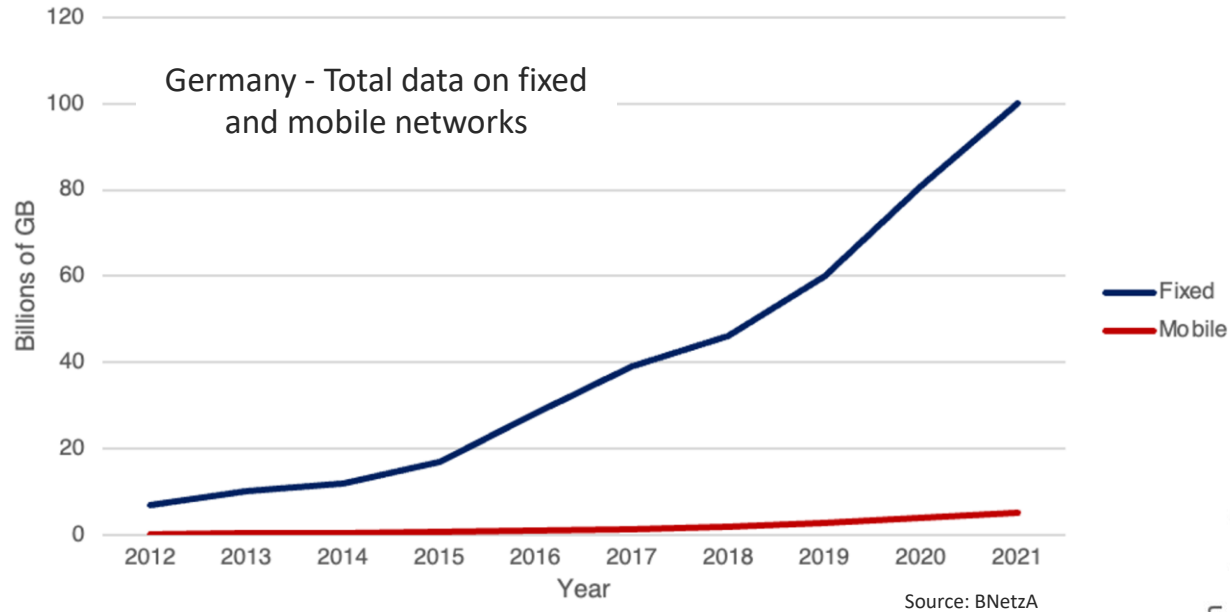
Seamless Interworking

Policy-based path selection for
Loosely coupled Access Networks

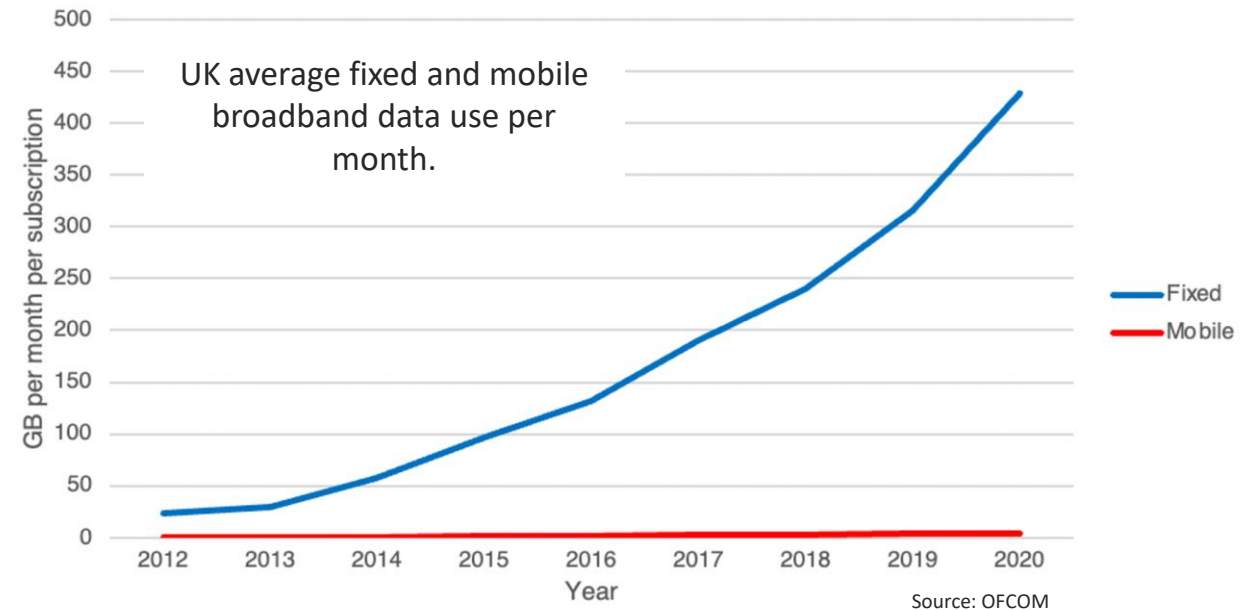
Seamless Handover

Roaming between Wi-Fi (private)
and cellular (public)

Digitization demand driving convergence

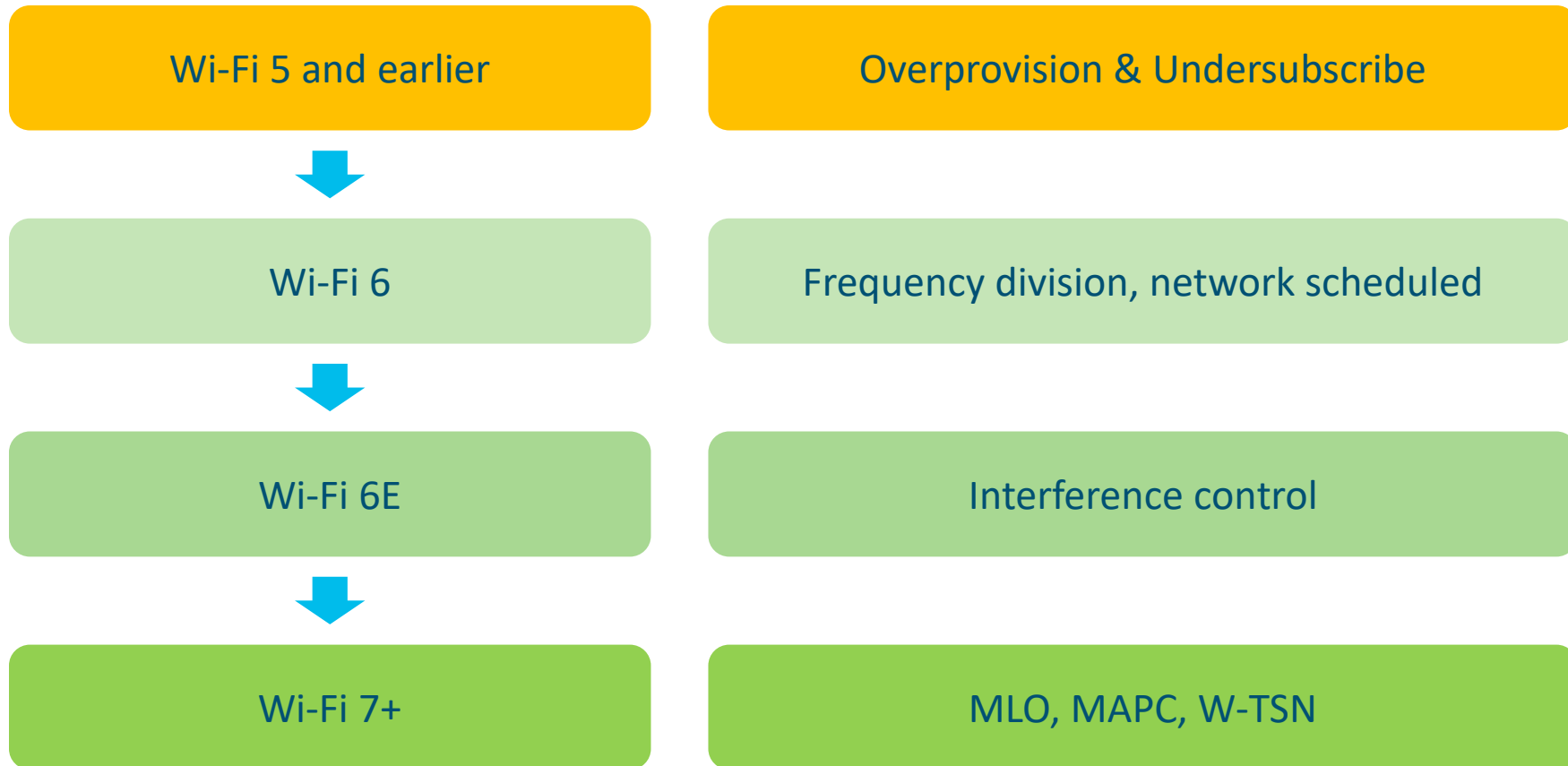


Unlicensed (Wi-Fi) relays
92.3% of the overall fixed
broadband traffic in Europe

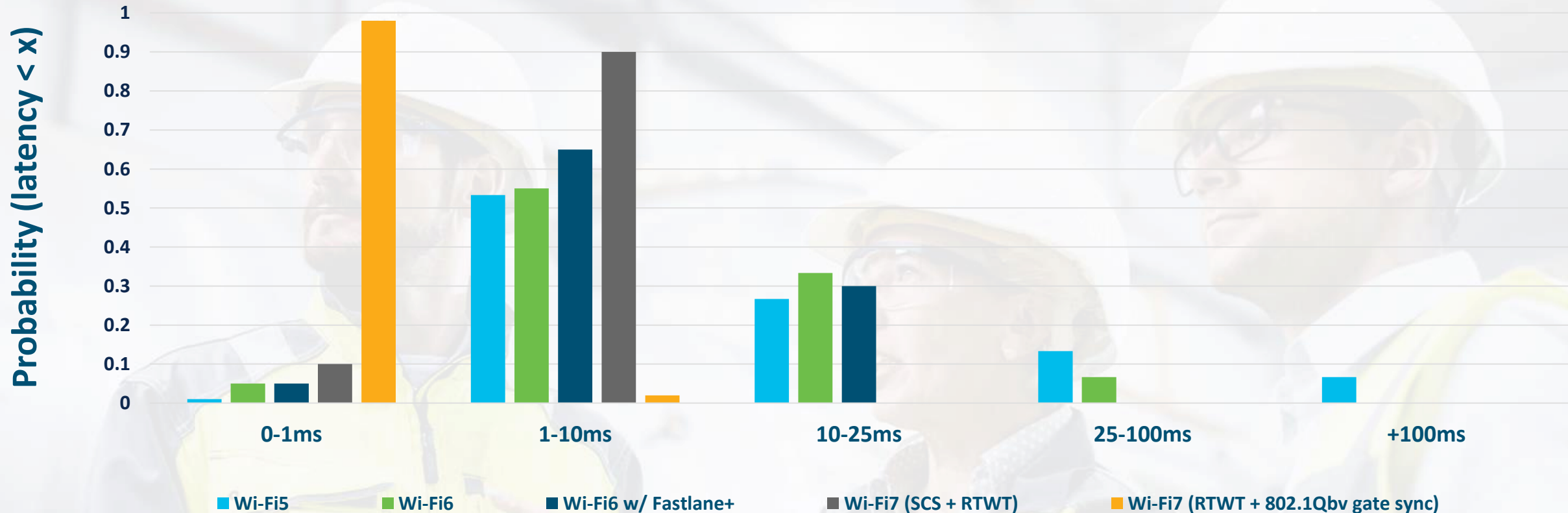


Wi-Fi Stack Progression

A gross over-simplification



Wireless first and the path to deterministic latency and high reliability



Latency performance bounded, even in high-traffic scenarios.

Discussion

- How important is determinism to your networks now? In the future?
- Is latency now more important than bandwidth?
- What air latency is good enough? 1mS, 10mS... 100mS

