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PRIVATE NETWORKS
WIRELESS STANDARDS REFERENCE

IoT Sensor Types used in Private Networks

One network / Multiple use cases and industries

4G, 5G | 5G

Massive IoT

- Smart metering
- Asset management

- ✔ Low cost devices
- ✔ Low energy requirements
- ✔ Small data volumes

Broadband IoT

- Fleet management
- Drones / UAV
- VR / AR

- ✔ High throughput
- ✔ Low latency
- ✔ Large data volumes

Critical IoT

- Automotive C-ITS
- Traffic safety & control
- Smart grid automation

- ✔ Ultra reliability
- ✔ Ultra low latency
- ✔ Very high availability

Industrial Automation IoT

- Collaborative robotics
- Advanced automation & control

- ✔ Industrial protocols
- ✔ Time sensitive networks
- ✔ Precise indoor positioning

Source: Ericsson

4G vs 5G vs Wi-Fi vs Wi-Fi 6E

	4G	5G	Wi-Fi	Wi-Fi 6E
Data Rate	Low/Medium	High	Low/Medium	High
Latency	Low/Medium	Ultra Low	Medium	Low/Medium
Scheduler	Yes	Yes	No	No
Interference	Low	Low	High	Low
Security	High	High	Low/Medium	Medium

Connected Technology using Private Networks in Smart Buildings

Source: Johnson Controls

Key Use-Cases for Indoor Private Wireless Networks

- Public MNO indoor coverage (of offload)
- Use of DAS, small cells, Wi-Fi for indoor coverage of MNO mobile broadband services

- Local / Guest IT LAN & Internet access
- Mostly Wi-Fi for accessing cloud/web/compute

- Local IoT (static)
- Various techs for sensors, other fixed IoT
- Mix of Wi-Fi, BT, LoRa, NBIoT, etc.

- Local IoT (mobile)
- Devices that move of need indoor/outdoor coverage

- Local OT (operational / critical / industrial)
- Very high reliability / low latency / deterministic

- Local voice / comms
- Walkie-talkies, 2-way radio, etc.

Source: Disruptive Analysis

Top Reasons for Enterprises to Adopt Private Cellular Networks

COVERAGE

- In-building
- Rural
- Industrial
- Offices
- Road / Rail
- Utility
- Metro areas
- Military / Govt.

CONTROL

- Security
- Autonomy
- Customized
- Beyond Wi-Fi
- Deployment
- Lifecycle
- Mobility
- Private QoS

COST

- Replace legacy Land Mobile Radio
- Factory 4.0
- Less costly than Replacing Fiber
- Avoid carrier per/GB fees
- Own IoT connectivity

COMPENSATION

- Productivity
- Private SIMs
- Roaming
- Local MVNO
- Govt. funding
- Local FWA
- MNO offload

Source: Disruptive Analysis