



5G Futures Lab Fact Sheet

The 5G Futures Lab is a place where Nokia, our partners and our customers come together to explore the potential of 5G using our cutting-edge technology and solutions and the world-class research facilities of UTS Tech Lab.

Established: 2021
Size: 100m²
Location: Level 2, 32/34 Lord Street, Botany 2019, Sydney, Australia
Website: www.nokia.com/about-us/company/worldwide-presence/asia-pacific-and-japan/5g-futures-lab-australia

Facts and figures

- The 5G Futures Lab supports 3 network lab test lines and 1 RF Chamber test line.
- Nokia is licensed to transmit mmWave spectrum for a 1km radius around the 5G Futures Lab.
- Our Engine room is home to just over \$2.5M AUD worth of Nokia products.
- It took 4 people to mount the IPAA onto the pole in the Engine Room. We use a crane in the field!
- Our Equipment Room antenna poles can each support up to 200kg of equipment.
- COVID-19 social distancing requirements meant our build team had to work in 2 shifts per day
- There are four 8K TVs in the 5G Futures Lab
- A MonitEM-Lab Detector has been fitted to monitor electromagnetic radiation levels within the lab, ensuring a safe working environment.

Technology & Solutions

As well as providing ultra-fast 5G coverage across the UTS Tech Lab campus to support real-world 5G use case testing – the 5G Futures Lab is also a showroom for the best Nokia 5G technology available today.

Nokia AirScale

Nokia's new generation AirScale baseband, remote radio heads and massive MIMO antennas deliver the highest capacity and network performance, while enabling efficient deployment and operation. Powered by the latest generation of Nokia's ReefShark System-on-Chip (SoC), the new AirScale products ensure that 5G networks smoothly scale to meet the massive capacity necessary to support more immersive user experiences and advanced 5G use-cases.

[New generation Nokia AirScale | Nokia](#)

Optical Networks

Our optical network products and solutions let you build smarter, more automated networks that streamline service delivery and lower network TCO, helping operators to stay competitive and turning optical networks into assets that create value. Nokia's optical network solutions are powered by our



Photonic Service Engine (PSE) chipset, the world's most advanced programmable super coherent digital signal processors. This portfolio gives industry-leading optical network capacity; more wavelength capacity and wavelengths per fibre and platforms that can efficiently deliver differentiated services.

[Optical networks | Nokia](#)

IP Anyhaul

Our IP Anyhaul solution addresses critical 5G network requirements and delivers multigigabit cell-site connectivity, dynamic interconnectivity, and high-performance aggregation. IP Anyhaul can accelerate your evolution to 5G and help you create value for existing and new customers by supporting ultra-broadband connectivity, new Internet of Things (IoT) applications, and mission-critical use cases that require ultra-low latency and high reliability.

[IP Anyhaul | Nokia Networks](#)

5G Fixed Wireless Access

5G Fixed Wireless Access (FWA) brings fibre-like broadband to customers wherever you have mobile coverage. Plug gaps in your fixed line coverage area, increase service levels in rural areas, or compete out of territory. Nokia's broad range of 5G fixed wireless broadband solutions means you can deploy 5G FWA quickly and easily to keep ahead in the broadband game and accelerate the ROI of your 5G network. Nokia's FastMile 5G FWA devices are providing 5G powered broadband connectivity throughout the lab.

[Connect more people with 5G fixed wireless access | Nokia](#)

Nokia Digital Automation Cloud (DAC)

Nokia Digital Automation Cloud (DAC) is a high-performance, end-to-end private wireless networking and edge computing platform. Offered as a service, it lets you combine plug-and-play 4G and 5G connectivity with on-premises data management and processing to support real-time applications for smart manufacturing, predictive maintenance and remote operations.

[Nokia Digital Automation Cloud | Nokia](#)

Nokia EdenNet

Nokia EdenNet lets operators automate their operations and realize the full potential of networks while also supporting the transformation to 5G. Providing a centralized SON platform, it automates operations across multiple technologies, eliminating complexities from multi-vendor and multi-layered networks.

[EdenNet SON | Nokia](#)



Nokia NetAct Cloud

Nokia NetAct is a field proven network management system that offers best-in-class applications for seamless daily network operations, including configuration management, monitoring and software management. NetAct supports network elements in mobile radio and core, Wi-Fi, IoT, public safety and telco cloud.

[NetAct | Nokia Networks](#)

ProxyTwin™

Nokia is proud to partner with Australian startup ProxyTwin™, creators of a 5G connected ProxyTwin™ interactive demonstration showcasing the exciting potential of Artificial Intelligence applications when combined with 5G.

ProxyTwin™ is developing key applications for our 5G future. Ever needed two of yourself? Your personal verified ProxyTwin™ appears for you in video meetings, representing you when you can't be there. Notable ProxyTwins have even helped spread key health messages during the pandemic. A ProxyTwin™ of Dr Nick Coatsworth, former Deputy Chief Medical Officer of Australia, delivered key vaccination Q&A sessions while the real Dr Nick attended to his daily clinical duties.

mmWave at the 5G Futures Lab

Spectrum licence

Nokia has rights to an area wide mmWave apparatus licence for a 1km² area around the building. The spectrum band is between 27.7GHz to 28.6GHz. This spectrum enables 5G and beyond use cases to be tested and demonstrate outdoors, with the flexibility to prototype within a lab then transition to a real-world environment.

Prototype testing

A Nokia prototype 5G mmWave FWA device is currently being tested at the 5G Futures Lab part of Nokia's efforts to make widescale 5G mmWave broadband a reality sooner.

A high-gain antenna with 360° field of view allows a fixed wireless access (FWA) CPE to connect to a signal coming from any direction. We have combined this with intelligent algorithms that create a fingerprint of the radio signals in a room—direct, reflected or refracted—and Nokia's CPE can instantly switch between signal sources to ensure the best possible connectivity.

These breakthroughs make customer self-install a possibility for the first time, as neither the precise location or orientation of the CPE is a barrier to effective operation.

Operators with mmWave and sub-6 GHz spectrum can use both frequency bands together for a more robust FWA service and cost-effective deployment.