ANNEX G: A*STAR-I²R MEDIA FACTSHEET

I²R's 5G & BEYOND PLATFORM TRIALS AT 5G@SENTOSA SITE

In line with Singapore's Smart Nation and Digital Economy priorities in RIE 2025, the Agency for Science, Technology and Research's (A*STAR's) Institute for Infocomm Research (I²R) has embarked on a 5G & Beyond programme.

This 5G & Beyond programme explores the research and development of scalable technology platforms and solutions to achieve significant connectivity and computational performance for advanced manufacturing and smart urban environments. This programme supports softwarisation, state-of-the-art machine learning techniques and advanced wireless communication algorithms. It leverages capabilities of the new 5G standard such as ultra-short latency, extremely high transmission rates as well as robust, reliable, and secured connectivity.

The infrastructure and resources available at the 5G@Sentosa site provide an excellent testbed to develop and test components of a 5G-based advanced manufacturing operations technology (OT) network platform, advanced manufacturing, and smart urban applications/solutions.

Key areas of A*STAR I²R's 5G & Beyond platform include, but not limited to:

- Cybersecurity for 5G-enabled manufacturing
- Network slicing for manufacturing applications
- End-to-end reliable low latency communications
- 5G uplink/downlink throughput and latency for smart urban solutions
- Robotic remote operations and control
- 5G modem for drones
- Video analytics for smart urban solutions

The 5G@Sentosa site provides a safe ground to navigate and iron out any teething issues in the initial development of these advanced technologies. Its extensive state-of-the art systems also enable researchers to carry out development in stages by minimising potential constraints in connectivity, network infrastructure. It also supports a safer platform for cybersecurity tests.

The platforms that are tested at the 5G@Sentosa site, could then be adapted into various applications and solutions such as:

- Predictive maintenance solutions
- Edge analytics for machines
- Industrial robot controls
- Machine control application etc.

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About the Agency for Science, Technology and Research (A*STAR)

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