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By Ang Hwee Min

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Singapore

5G coverage across half of Singapore expected by end-2022

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SINGAPORE: There will be 5G coverage across at least half of Singapore by the end of 2022, announced the Minister for Communications and Information S Iswaran on Thursday (Oct 17).

Speaking at the Infocomm Media Development Authority's (IMDA) SG: Digital Industry Day, Mr Iswaran said the agency decided Singapore should have two 5G networks as a start, as this will enable optimal network deployments and sustainable competition. It also found that the local market has room to accommodate two other localised 5G networks, thus allowing all four existing telcos – Singtel, StarHub, M1 and TPG Telecom – to provide this service.

"With the participation of more mobile network operators, IMDA expects the greater competition to benefit consumers and businesses, and bring about greater choices, competitive prices and service innovation," the minister said in his speech.

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IMDA said in a separate release that it had invited the four telcos to participate in its Call for Proposal, which opens on Thursday and closes on Jan 21, 2020. The winning proposals will be decided by the middle of next year, the regulator added.

The proposals will be evaluated based on network design and resilience, network rollout and performance, price offered for one lot of 3.5GHz band, and financial capability.

Operators of the two nationwide networks will be required to provide 5G standalone networks, meaning ones that do not piggyback on existing mobile networks. This will make Singapore among the first wave of countries to deploy standalone networks, with cities in China and South Korea due to do the same next year.

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The two nationwide operators will also be required to provide wholesale services to other mobile network operators and mobile virtual network operators like Circles.Life, for locations where the 3.5 GHz band is used.

This announcement comes after IMDA's public consultation between May and June this year. IMDA said it received 63 responses from industry players, network and equipment vendors and individuals.

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In terms of security, IMDA stressed that the 5G networks should be "resilient and secure" by design, meeting key resilience and security requirements stipulated in IMDA Codes of Practice. Defence-in-Depth and Zero-Trust Environment principles should also be applied.

Defence-in-Depth refers to a series of defence mechanisms that are multi-layered with redundancies to increase the security of a system and address different attack vendors, while Zero-Trust Environment refers to how an organisation should verify everything trying to connect to its networks and systems before granting access.

"These requirements are necessary in view of the increased security risks brought about by 5G networks that are virtualised with intelligence at the edge, and larger numbers of devices connected to them," said IMDA.

More spectrum for 5G will be issued in subsequent tranches around 2024 or 2025, as the ecosystem matures, said IMDA.

Addressing concerns about the business case for 5G technology, Mr Iswaran noted that costs tend to be higher at the start, citing past experiences with 3G and 4G technology.

"But as the technology matures and applications are scaled, it tends to find its own balance and equilibrium, in terms of the market. And so I think 5G is not going to be any different in that regard, and the telcos agree as well," he added.

He also said that IMDA's requirements and price points are in "the midpoint of the range that we have seen around the world", after a comprehensive study of what has been done in other markets.

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TELCOS EXPRESS INTEREST IN CALL FOR PROPOSALS

Singtel, StarHub and M1 have expressed their interest in the Call for Proposal.

Mr Sebastian Tan, head of StarHub's 5G business unit, said a portion of its network is already 5G-ready, to facilitate trials.

The telco is broadcasting live 5G signals from its headquarters and has identified areas at which to expand its initial 5G coverage.

M1's spokesman said it has "embarked on early 5G trials and partnerships with institutes of higher learning for 5G use-cases".

NEW USE CASES FOR 5G

IMDA also announced three new industry partnerships on Thursday to explore the use of 5G networks in the areas of cloud gaming, smart estates and urban mobility.

Razer and Singtel will partner to develop 5G cloud gaming, which refers to the ability to play compute-intensive games on a low-end mobile device because the actual computing will be done in the cloud.

This project will study the optimal design and engineering required for cloud gaming, as well as the effect of environmental interference on gameplay performance. Trial sites will be located at Shaw Centre, Ngee Ann City and Razer's upcoming headquarters in one-north.

Co-founder and CEO of Razer Min-Liang Tan said: "While this is not the roll out of a commercial cloud gaming service, this opportunity is the first step for Singapore to spearhead 5G projects."

Capitaland, TPG Telecom and NavInfo Datatech will also come together to create a 5G-enabled smart estate at Science Park 1 and 2.

The project aims to test "vehicle-to-everything" technologies to develop cloud-based processing, and reduce network latency to improve reaction time and braking distance of autonomous vehicles. It will also test whether data capacity transmission can be at least doubled, to better provide real-time alerts on traffic situations.

Those interested to leverage the 5G infrastructure to develop and trial new and innovative solutions can submit their use-cases through the Smart Urban Co-Innovation Lab, said CapitaLand in a separate news release.

"These use-cases can include solutions that would benefit from low latency and increased data rates of 5G such as drones and augmented reality or virtual reality applications," said the developer.

In addition, the Nanyang Technological University (NTU) will be partnering M1 to launch the NTU Connected Smart Mobility Testbed to research and test new 5G vehicle solutions, including autonomous vehicles and intelligent traffic infrastructure.

"Vehicle-to-everything" equipment will be installed in shuttle buses and autonomous vehicles that ply the NTU Smart Campus, enabling vehicle localisation tests in a real-world environment, they said in a joint news release.

Industry partners will also be invited to the testbed to explore the integration of "vehicle-to-everything" communications with autonomous vehicles, traffic infrastructure and unmanned aircraft systems, said the release.

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IMDA previously announced in June two 5G industry partnerships between PSA and Singtel and M1, and the Agency for Science, Technology and Research (A*STAR), JTC and Singtel respectively.

These five 5G projects tap into the S$40 million set aside to support "the development of an open and inclusive 5G innovation ecosystem".