

Ultra-fast 5G networks to be trialled on cloud gaming, new Haidilao outlet, ahead of national rollout

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The introduction of ultra-fast 5G networks is expected to usher in a revolution in communications, affecting everything from autonomous vehicles to cloud gaming and the linking up of all types of consumer devices.

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Amid global race to reap benefits of 5G 'revolution', IMDA to allocate four 5G networks for mobile network operators instead of two

SINGAPORE — From Haidilao restaurants to cloud gaming, more areas in Singapore will be involved in the trial of ultra-fast **fifth generation (5G) networks**, ahead of their islandwide rollout expected to start next year.

News of the expanded 5G trials was unveiled on Thursday (Oct 17) by Communications and Information Minister S Iswaran as the country presses ahead with networks that are said to offer surfing speeds up to 20 times faster than current 4G technology.

By 2022, half the island could be covered by 5G networks, a technology some expect to revolutionise the digital world.

Mr Iswaran also announced that the telecoms regulator, the Infocomm Media Development Authority (IMDA), will allocate up to four 5G networks for mobile network operators, instead of the two originally planned.

On top of two nationwide networks, the two additional localised 5G networks — intended to offer “hotspot” coverage — will now be up for grabs among telcos here. Localised 5G networks can be used by industries and businesses such as smart laboratories and factories, for **autonomous vehicle** trials, for example.

Calling on operators to bid for the new 5G spectrum at the SG:D Industry Day on Thursday, Mr Iswaran said that having four networks will mean all four existing mobile network operators can participate in the provision of 5G services.

Read also: [Explainer: IMDA's proposed framework for ultra-fast 5G networks in Singapore](#)

“With the participation of more mobile network operators, IMDA expects the greater competition to benefit consumers and businesses, and bring about greater choice, competitive prices and service innovation,” he added in his speech at Suntec Convention Centre.

Mobile network operators can bid for the 5G spectrum via a call for proposal, which Mr Iswaran launched on Thursday.

WHY IT MATTERS

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The announcements mark a significant step forward as the nation boldly moves ahead in a fast-changing communications landscape centred on 5G technology.

5G has been touted as the next **big leap forward** in mobile and wireless communications, promising ultra-high speeds and unparalleled connectivity. 5G networks could eventually open up the so-called Internet of Things (IoT), where many devices are connected — robots, cars, fridges — almost any device. The networks are also seen as a vital cog in the push to develop “smart cities”.

Countries worldwide are racing to build 5G networks to exploit these vast opportunities. 5G networks are expensive to build but Singapore is aiming for standalone, brand new 5G networks — unlike some countries which aim to piggyback 5G networks on the older, slower 4G networks.

Read also: [Singapore reveals more details on 5G rollout plans, launches 2nd feedback round](#)

TODAY breaks down the 5G related announcements and what they mean for users.

WHERE 5G WILL BE TRIALLED

Mr Iswaran said IMDA has granted 5G trials to begin in three new areas: Consumer applications, smart estates and urban mobility.

In June, IMDA set aside S\$40 million to support the strategic development of 5G technology, with the initial projects already being implemented in the maritime and manufacturing industries.

5G-enabled cloud gaming

Singtel and gaming accessories firm Razer will team up to test high bandwidth and networks with low latency — that is, minimal delays.

The trial sites will be: Shaw Centre and Ngee Ann City on the Orchard Road shopping belt, and Razer's upcoming South-east Asia headquarters at One-north.

How this trial could benefit consumers: 5G could allow users to play high-quality and performance-demanding games on low-end mobile devices. Think faster download speeds, better picture quality and a smoother gaming experience without being tied down to expensive hardware or home networks.

Success in these trials will also put Singapore in good stead as the Republic pushes towards its goal of being a hub for **e-sports competitions**.

Autonomous vehicles (AVs)

Nanyang Technological University (NTU) and telco M1 will be launching a testbed to develop 5G vehicle communications solutions.

Trials will be conducted at the 200ha NTU Smart Campus.

How can it benefit consumers: AVs running on 5G could react faster and have shorter braking distances due to the lower network latencies on 5G networks. This could mean more efficient, safer and smoother rides.

In addition, with 5G, **AVs** can now “talk” to outside devices such as cameras, traffic lights, other AVs and vice-versa – a concept which is called vehicle-to-everything (C-V2X) — thus allowing real-time alerts on traffic situations.

Smart estates

Property developer CapitaLand, telco TPG Telecom, a recent Australian entrant, and NavInfo DataTeach will partner IMDA to test 5G technologies.

The trials will be at Science Parks 1 and 2, starting with intelligent mobility solutions for last-mile passenger transport before being opened to other tenants to test 5G solutions that support business innovation.

How it could benefit consumers: 5G could improve existing estate management solutions. Using 5G can bring IoT into home and business devices such as better security, lighting and audio, and lower operating costs.

Food and beverage

Separate to IMDA's grants for 5G trials, M1 also said that it is partnering with hot pot restaurant Haidilao to trial 5G networks at the chain's new store at Marina Square.

What it means for consumers: This could change the entire dining experience. For example, customers waiting in line could be playing virtual and augmented reality games — and then get served by food delivery robots who pick up the food from a smart kitchen.

WHAT ARE THE FOUR NETWORKS AND WHY DOES IT MATTER?

In May, IMDA originally proposed to have at least two nationwide 5G networks.

However, having four networks will allow all four mobile network operators (MNOs) — Singtel, StarHub, M1 and TPG — to provide 5G services. This is in turn expected to spur competition and give consumers greater choice.

MNOs can submit proposals to IMDA, with evaluation criteria emphasising network performance, rollout, design and resilience, according to IMDA.

MNOs need to submit their proposals by Jan 21 next year, and IMDA will award 5G spectrums in the first half of next year.

Operators which are granted the nationwide network can start deployment from 2021, while those granted localised coverage must deploy 5G within 12 months of the spectrum allocation in 2020.

With this, consumers can expect 5G coverage across half the island by 2022.

These are the two types of network spectrum MNOs can bid for and their pricing:

Nationwide networks: A wide-area coverage using 3.5GHz. Operators bidding for this spectrum need to each offer at least S\$55 million for the scarce 3.5GHz band of airwaves. There is an annual fee of S\$154,000 per year over 15 years for this band.

Localised networks: The operators will also be given the millimetre wave (mmWave) spectrum in the 26GHz and 28GHz bands free of any licence fees. But there is an annual fee of S\$1.232 million, which will apply over 16 years.

CONCERNS OVER HUAWEI

As 5G is adopted in more areas of business and daily life, concerns loom over its security risks.

The United States has alleged that Chinese communications **giant Huawei poses a security risk** and has urged other countries to block Huawei, amid concerns that the Chinese government could use the equipment for spying.

In response to questions if the Republic has come to a decision on whether to block any network vendors, Mr Iswaran said: “We have not specified any positions on specific vendors, but what we have emphasised is the need for resilience in our system and vendor diversity, and ensuring that the system meets our security requirements.”

“(Security) is a key consideration... because when you have large amounts of data flowing, we have to ensure that they are also well secured. And that is why we have made this an important consideration in the call for proposals,” Mr Iswaran added.

Topics

- Haidilao
- 5G network
- IMDA
- telecom