

Laying the foundation for tomorrow's smart airport

Preparing for the next level of airport operational efficiency

Singapore's aviation sector is flying high as travel demand soars. With global air passenger numbers set to double over the next 20 years,¹ Singapore is on track to harness this growth as a world-class air hub.

But as the skies grow busier, ground operations are becoming more complex. The aviation sector is facing a significant shortage of skilled workers, including pilots and maintenance technicians.²

250,000

By 2042, Asia-Pacific will need over 250,000 aircraft maintenance technicians to meet travel demand and stay competitive.³

Digital transformation holds the key to future-proof aviation. Cutting-edge technologies like AI and automation can support time-pressed workers, drive efficiency, and enhance the passenger experience.

But to unlock their full potential, these technologies need high-speed and low-latency connectivity – capabilities that call for 5G.

Shaping the smart airport of the future

Singtel is working with the aviation sector to transform airside operations with a new frontier of technologies. Here's a look at some potential use cases enabled by 5G connectivity:



1. Efficient baggage handling

Baggage delays due to labour shortages are a key pressure point in today's airports. Autonomous vehicles (AVs) can automate baggage transportation, but they need high-speed connectivity to manoeuvre safely in real-time.

5G's ultra-high speeds enable AVs to reliably transmit massive amounts of sensor data to remote operators. When a sensor detects a potential collision, the remote operator can take control and drive around the obstacle.



Faster baggage handling



Shorter waits for passengers



Ready to scale with 5G's high bandwidth



2. Faster transfer of critical flight data

Before take-off, aircrafts need the latest data on weather forecasts and airport conditions. Some airlines rely on WiFi to transfer critical flight data, which poses challenges when planes are not docked or cannot connect to Wi-Fi.

5G wireless data transmission is a faster alternative. Aircrafts can link to the Singtel 5G+ network wirelessly and receive data at high speed – even when docked at remote stands.



Rapid data transfer



Faster response to real-time disruptions like bad weather



3. Enhanced traveller experience

As airports strive for a competitive edge, a premium passenger experience is paramount. With 5G, airports can elevate the customer journey beyond the flight itself.

With 5G's high bandwidth and low latency, travellers can enjoy uninterrupted online entertainment even in crowded terminals, transforming waiting time into a stress-free and enjoyable part of their journey.



Premium passenger experience



Stronger brand reputation



4. Flights that stay on time

Globally, 37% of flights had minor or major delays in 2024.⁴ As airports manage rising numbers of flights, on-time performance is essential to smooth operations and happy customers.

Fuelled by high-speed 5G, video analytics and artificial intelligence tools enable airlines to better predict turnaround time and stay on schedule.



More precise estimates of turnaround time



Optimised flight scheduling in real-time



More loyal customers



5. Smoother aircraft maintenance at lower cost

After touchdown, what happens when an aircraft needs urgent maintenance? No need to scramble to get an aviation inspector on the ground – a remote inspector can collaborate with on-site technicians via live video to verify airworthiness.

Backed by low-latency 5G, inspectors can don smart glasses to examine the aircraft in high-resolution render. This enables inspectors to collaborate with technicians lag-free – so that the plane can get back in the air quickly.



Lower time and costs



Minimal downtime



Easy to perform maintenance at scale

Taking the smart airport journey to new heights with 5G+

Looking ahead, the digital transformation of Singapore's aviation sector is poised to accelerate further with 5G+.

Singtel is the first telco in Singapore to deploy 700 MHz spectrum, further boosting its 5G coverage nationwide. With this enhancement, Singtel's 5G will be known as Singtel 5G+, and features increased signal strengths of up to 40% in high-rise indoor and underground spaces, as well as remote airside locations like Changi, guaranteeing connectivity for critical operations.



Full coverage in underground airport spaces, such as baggage handling areas



Always-on connectivity to keep essential systems running around the clock



Smoother performance of real-time applications like AVs



Ready to scale with growing travel demand

In addition, 5G network slicing capabilities can enable aviation companies to create independent virtual networks tailored to specific applications, delivering reliable performance and security for mission-critical use cases. Airport operations call for both seamless connectivity and utmost security, and Singtel's 5G Security-as-a-Slice offers real-time cyber protection for employees wherever they are.

Singapore's Changi Airport has long been known as a world-class airport and recently reclaimed its title as World's Best Airport 2025.⁵ With 5G solutions laying the digital foundation, Singapore's aviation sector is set for a new era of secure and seamless connectivity.

5G+ for the future of travel

[Learn more about Singtel 5G+](#)

References

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³ The Straits Times, Asia-Pacific will need over 230k new pilots, 250k aircraft maintenance technicians by 2042; ICAO chief, 2025

⁴ TravelPerk, Delayed and canceled flight statistics from 2024, 2025

⁵ World Airport Awards, Singapore Changi Airport is named the World's Best Airport in 2025, 2025