Gogo is developing a 5G network for planes

In-flight internet provider Gogo has announced plans to bring 5G to the North American skies starting in 2021. Gogo says the new 5G service is being designed to power faster in-flight Wi-Fi on smaller commercial airlines in the continental United States and Canada, those companies' even smaller regional jets, and on business jets as well.

Gogo says it will essentially graft the 5G network onto the 250 towers the company currently leases to power its air-to-ground (ATG) service. Most Gogo-equipped commercial aircraft (on airlines like Delta) still predominately get their internet connections from these ground stations, to the tune of 1,881 out of 2,551 in North America at the end of 2018, according to the company's most recent annual financial report.

The 5G connection will be delivered to aircraft via a combination of unlicensed 2.4GHz spectrum, a "proprietary modem" made by Gogo, and advanced beamforming technology. The company says it will support "all spectrum types (licensed, shared, unlicensed) and bands (mid, high, low)" in a bid to future-proof Gogo's ability to increase speeds and bandwidth capabilities as 5G technology matures.

Planes that have the 5G capability will still be able to use Gogo's 3G and 4G connections as a backup. In an email to *The Verge,* Gogo's director of communications Dave Mellin said the company will first deploy the 5G technology on "a few towers" for testing, but could not say when that will happen.

Gogo's counting on 5G and an increased reliance on satellite

internet to keep its business afloat
Gogo has also spent the last few years outfitting aircraft with the ability to connect to the internet via satellites, and at a rather rapid clip. While just 59 Gogo-equipped commercial aircraft used satellite-based internet in 2016, the company recently reported that number grew to 670 by the end of 2018, with connections provided by a combination of satellites from SES, Intelsat, and others. In the business aviation sector, Gogo uses satellite-based internet (provided by Iridium) on roughly half of the 10,000-plus aircraft for which the company provides connections.

One reason Gogo has shifted toward satellite internet is that it can be less troublesome than ground-based connections. Most complaints about Gogo are often about connection interruptions and sluggish speeds. The ATG system is rather susceptible to these problems, especially when an aircraft switches from tower to tower, or when multiple aircraft wind up connecting to the same tower.

That said, Gogo — which hasn't turned a profit since it went public in 2013 — said in its 2018 financial report that evolving the ATG network is crucial to the company's success, especially because it's currently capacity constrained. "If our next generation ATG solution fails to perform as expected or its commercial availability is significantly delayed as compared to the timelines we establish, our business, financial condition and results of operations may be materially adversely affected," the company wrote.

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