

Could Starlink be the answer to GPS interference?

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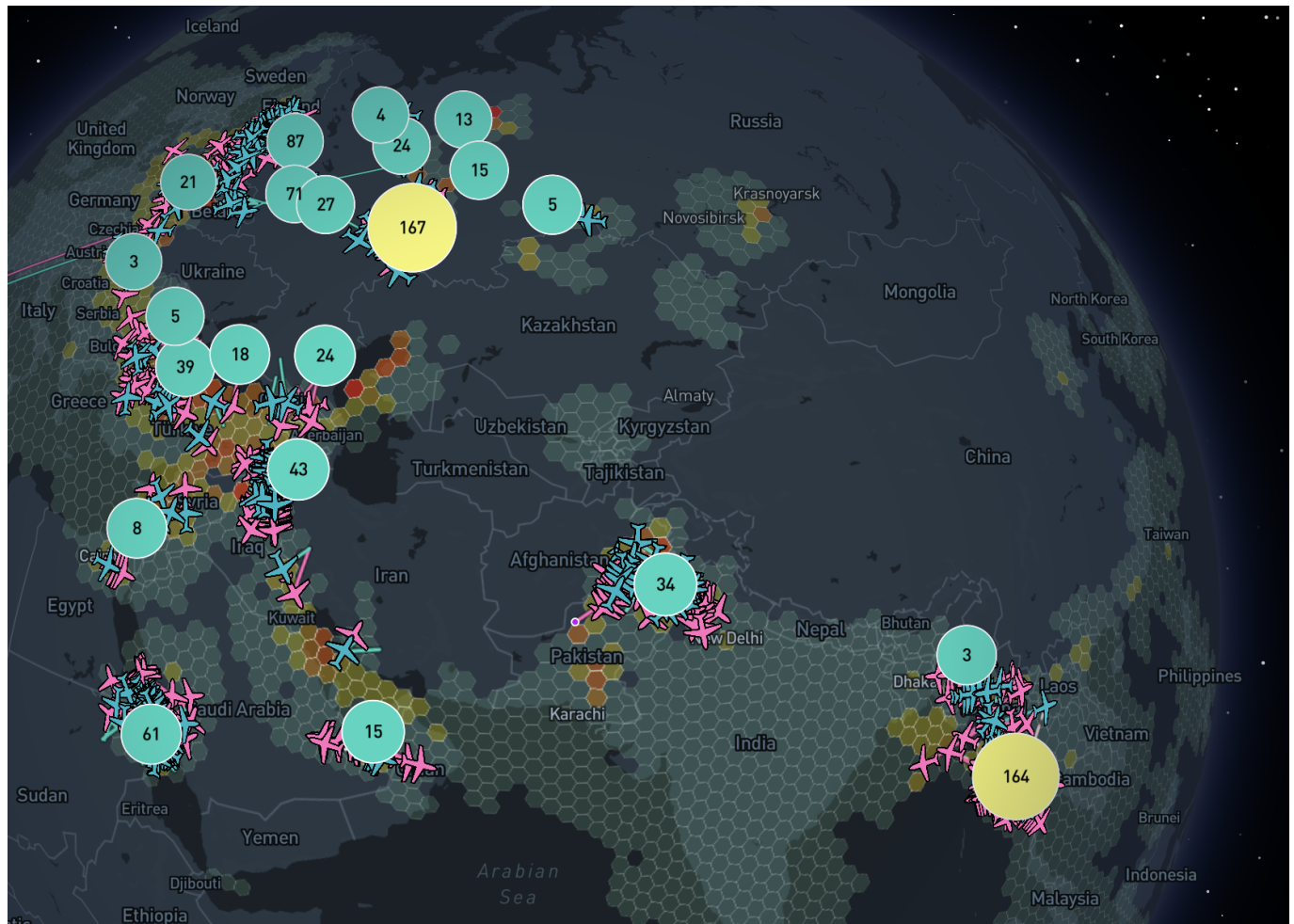
Quick Summary

- **GPS interference is widespread - and actually getting worse.**
- **Hopes kindled: Starlink could potentially help, thanks to their stronger signals which are harder to jam/spoof.** ☐
- **Hopes crushed: Starlink isn't approved for navigation (yet), and SpaceX disabled access to terminals' location data. Thanks guys.** ☹

It's been over two years since OPSGROUP and nearly a thousand industry professionals published a comprehensive report on the problem of GPS spoofing. And more recent data shows **this safety risk has continued to escalate.**

Earlier this month, IATA shared some worrying numbers. When compared to 2023, 2025's data showed that **spoofing incidents had risen by 193%**, along with a 67% increase in jamming.

Recent updates by the team at SKAI also confirm that **GPS interference remains rife throughout the usual major hotspots** including the Southeastern Med, the Red Sea, Persian Gulf, in and around Russia, the India-Pakistan border and Myanmar.



It seems clear the problem isn't going away anytime soon. If you get a chance to read the report mentioned above, you'll begin to get a feeling of just how deeply-embedded GPS actually is in what we do. The problem now is that we are **heavily reliant on a system that is known to be easily manipulated** or degraded with safety-critical consequences.

And we cannot continue to accept this status quo forever. **GPS needs a back-up**, and one that works reliably, everywhere. Granted, advances are being made in magnetic navigation which uses sensors to read fluctuations in earth's magnetic field to fix a position – it's clever, but also complicated!



Recent test flights using magnetic aviation have been successful, but its wider application is still to be proven.

There may be a more obvious solution using existing technology staring us right in the face – **Starlink**. But the problem is that SpaceX recently made changes to prevent this.

All the right signals

Here is the inherent issue with GPS. The satellites orbit high – around 20,000km (12,500 miles) above the ground. By the time their signals arrive here on earth, they are weak. So weak in fact, that low-powered devices on the ground can easily interfere with them.

Starlink on the other hand has thousands of satellites in low-earth orbit at altitudes of only around 550km (340 miles). This presents an opportunity – **because the Starlink satellites are so low, their signals are much stronger than conventional GPS.**

Starlink terminals themselves are also different to traditional GPS receivers. They consist of a flat panel with an array of small antennas. Together these direct a narrow beam towards orbit, inadvertently helping to phase out sources of interference low on the horizon. If used for navigation, the signals could be much harder to jam or spoof. Not entirely (as recent events in Russia and Ukraine have shown), but more so than regular GPS.

On the customer side, hobbyists soon noticed that a built-in feature previously accessible via the Starlink mobile app allowed un-authenticated network access to a terminal's precise lat, long and altitude. In this sense, the system could be used as a form of **'pseudo-GPS'**.

It was an unintended consequence with surprisingly accurate results – even SpaceX itself recognizes the potential in this, and its inherent robustness towards interference. In 2025, it advised the Federal Communications Commission (FCC) that **Starlink could theoretically act as a back-up to GPS** for both the military and civilian applications.

But here's the kicker – on May 20 this year, **SpaceX officially turned off this feature**. And we're still not sure why...

SpaceX closed the door

No official reason was given for the change, but there are a couple of possible explanations:

Explanation 1 - Commercial

SpaceX recently went public, and the Starlink network has been designed and optimized for commercial broadband – an endeavor that yielded multi-billion-dollar revenue last year. So there may be a desire not to dilute its core purpose.

Or it may be about access. Blocking location data may be indicative of charging for it in the near future. But we just don't know yet.

And of course – **the legal problem**. No one likes being sued.

This is all a side effect of how Starlink works, not an officially supported product. It's possible SpaceX wants to mitigate any legal liabilities to anyone using unapproved navigation for anything remotely safety-critical.

Explanation 2 - Security

The location feature was a setting that shared a terminal's coordinates with any device on the local network, with no authentication required. This is a concern because Starlink is actively being used as **critical infrastructure in conflict zones**. Access to this information can unfortunately be used as a weapon.



It's plausible that a network or device may be compromised, revealing a terminal's exact location. This raises fears that it **could be used to deliver targeted attacks** or for other nefarious purposes.

So where to from here?

Starlink isn't the answer - at least not yet. Whether SpaceX ever builds on this capability remains to be seen. It has never been an approved source of navigation, nor have any avionics used it.

But it's one of the few times such a promising alternative to GPS has been this close without needing decades of future development - something worth watching!

Related: Sep 2026 - Starlink prices for business aviation have doubled. We looked at what the changes mean for operators and what they'll be paying. [Read the post.](#)