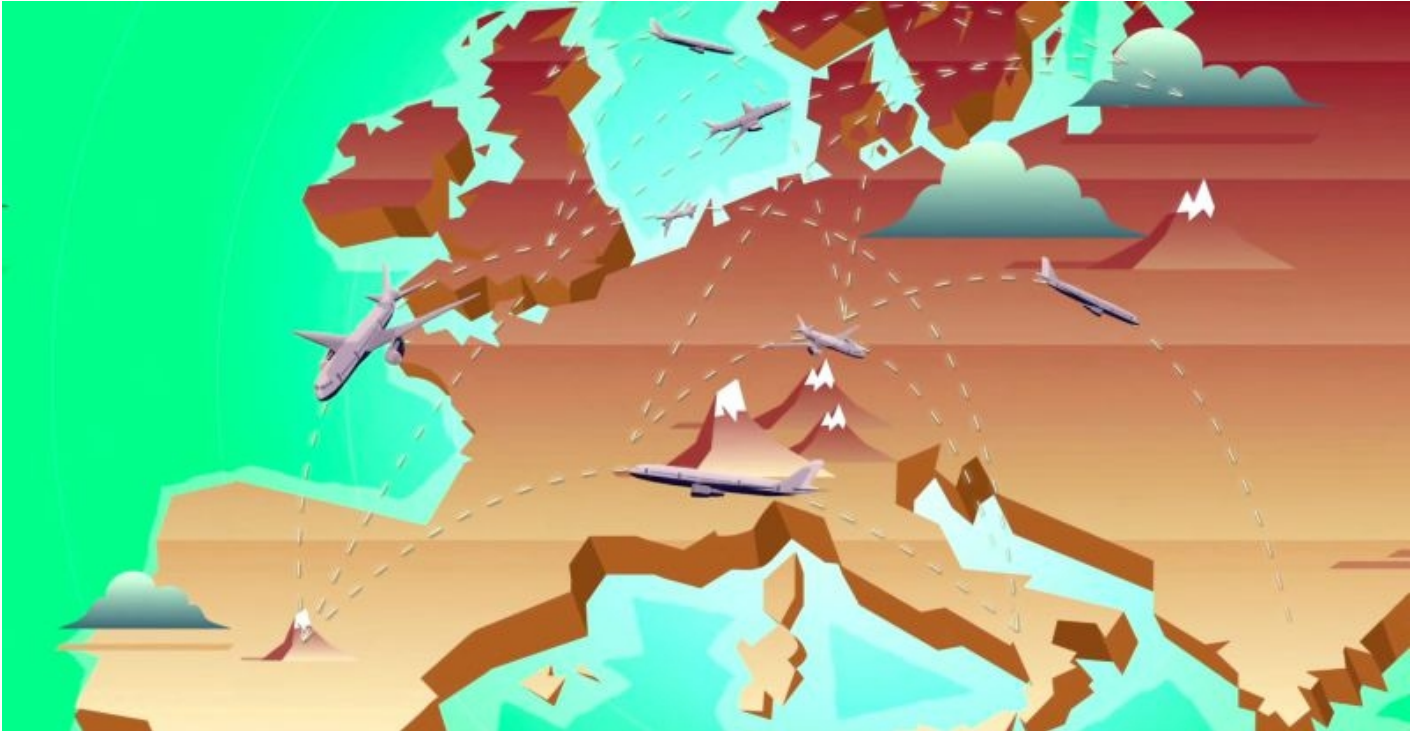


DEUTSCHE TELEKOM GETS TECHNICAL ABOUT EUROPEAN ATG NETWORK

News / Manufacturer



The hybrid European Aviation Network (**EAN**) **connectivity system**, which combines ground-based LTE technology from **Deutsche Telekom** and an S-band satellite from Inmarsat, could be a step change in the passenger experience for European flyers once the first Lufthansa test aircraft begins flying with the system in 2017, and when IAG member airlines start fitting their shorthaul fleets, as suggested by IAG management earlier this month.

RGN sat down with David Fox, Telekom's head of inflight, and Stefan Wimmer, sales & business development manager, to talk about Telekom's involvement with the system and the future of inflight connectivity over Europe. Our first question: has Telekom moved too late into the air-to-ground world?

"We've been in the development of this for quite some time," Fox said. "It's never too late for something that offers a strong cost-benefit to the airline, with very lightweight equipment, and also the capacity benefits and speed we can bring. It's not too late for it. Most of the airlines, at least in Europe, have focussed on satcom for their intercontinental fleets. There's not that much satcom going around for domestic, shorthaul and medium haul. The timing is just right to introduce this as a game changer."

"Together with Inmarsat," Fox noted, "we've been going around trying to find homogenous frequency band spectrum in Europe, and we saw that it would be hard to get that throughout the thirty countries involved. With Inmarsat, we have this frequency available, and the two systems

complement each other very well.”

The clear issue with Europe, Fox admitted, is the varying regulatory landscape across the 28 EU countries, plus Switzerland and Norway. RGN asked whether regulatory approval was required for all countries, given the size of, say, Luxembourg or Liechtenstein.

Aircraft antenna for ATG network

“If you do this coverage area, this is something we can do with around three hundred-odd sites. There’s a grid for network planning, and you’re right, you could probably skip Luxembourg as a city. To be honest, I don’t know if we have a spot in Luxembourg in the grid, but we’ve got a distribution plan for these sites that is being put together now as we speak.”

Wimmer continued: “The connectivity will be fulfilled by the air to ground network, because you have the lowest latency and the best bandwidth available. At the beginning of the first phase, only in the areas where — the Balkans are not part of the EU28 countries — if you are flying over there then we see the switchover to the S-band satellite antenna, or if you’re going down from Ireland to Spain or Portugal, or northern Africa, where you have to cross the sea, then we definitely need S-band coverage. Then we see the switchover to the satcom technology.”

“The air to ground component is working on two separate frequencies within the assigned spectrum, for uplink and downlink.”

Launch customer Lufthansa, of course, is installing Inmarsat’s Global Xpress Ka-band solution on its narrowbody aircraft beginning in the summer of 2016. “It shows very clearly how much the need for connectivity over Europe is,” Wimmer said. “Lufthansa has said ‘we can’t wait and we won’t wait for another two years.’”

But Fox is bullish about the advantages of the hybrid ATG/S-band network. “We have the capacity over a busy airspace. If you compare what we’re advertising, we’re looking at a peak data rate of 75 Mbps. [Our competitors] will all give you a similar number. For regional Ka, that may be true, and they may even have more than 75 Mbps. However, what happens if there’s more than one aircraft in that beam?”

With the relatively low capital expenditure of adding base stations in areas of particular congestion, even while the S-band satellite can take up some of the slack in the meantime, it’s clear that the EAN has advantages over single-technology systems. Yet the regulatory framework around the spectrum award may prevent some flexibility.

Interestingly, Telekom had something of a yes-but-no answer when RGN asked whether it is possible to take the air-to-ground component separately. “It is,” said Wimmer. “At this point in time, we are the complementary ground component. This is a bundle deal, as of today.”

But would Telekom look to do so in the future? “It may change for us, especially for regulatory purposes. This [bundle of systems] would very happily work without each other, as individual components. They’re better together, but we have very clear guidelines on what is the frequency to be used. It is a satellite award, and we are the complementary ground network.”

Fox elaborated, “Technically it is working independently. The question is, aside the regulatory topic, does it really make sense? Airlines just improved their logic around setting aircraft on different routes. They do not have certain aircrafts flying certain routes. You can’t just define up front that, for example, the A319s are only flying over land, and A320s are flying overseas as well.”

RGN notes that there will be aircraft — particularly smaller aircraft operating from bases at the centre of the European continent that do not need to span, say, the North Sea or the Bay of Biscay — that would not require the S-band satellite terminal for coverage reasons. Being able to cut the cost of the system by omitting the S-band half, even though the S-band radome, antenna, and terminal are smaller than others, may well make a lot of sense, especially for turboprop and regional jet operators.

The big question would seem to be whether regulators will allow it.

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