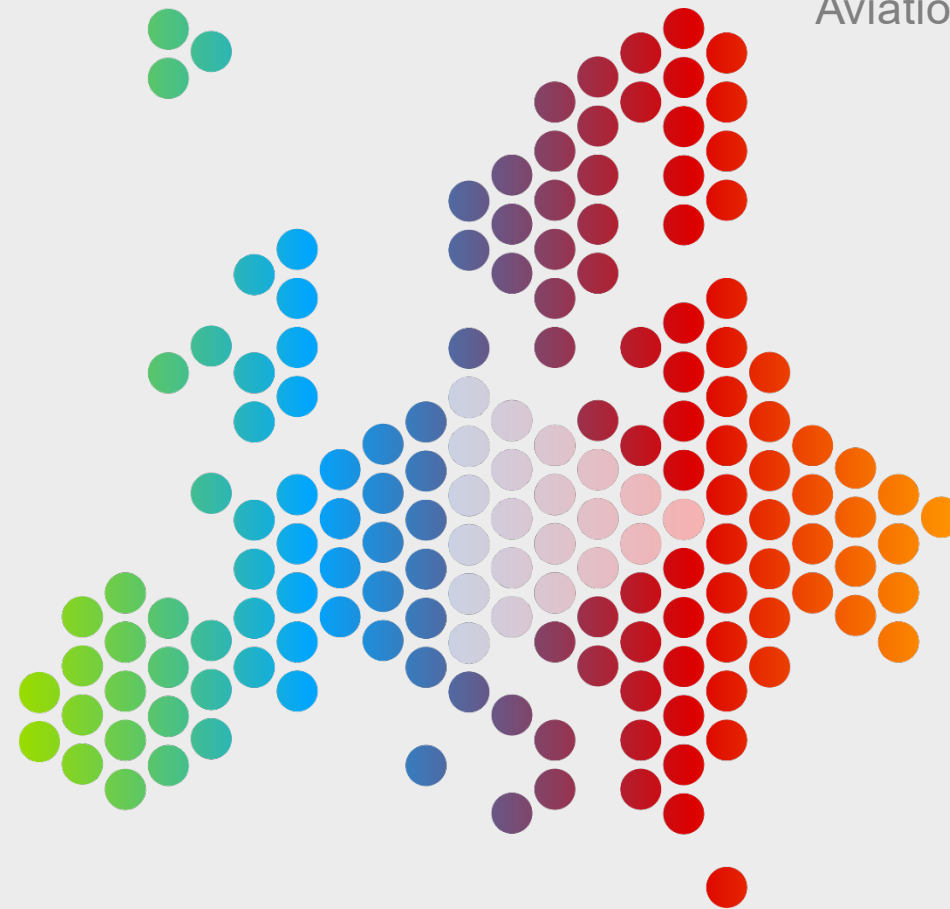


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WELCOME to the
GNSS webinar

Our moderator today is
Gary Berz

Supporting
European
Aviation



Does Radio Frequency Interference (RFI) to Satellite Navigation pose an increasing threat to **network efficiency, cost-effectiveness** and ultimately **safety**?

Our latest **Think Paper #9** explores this big question!

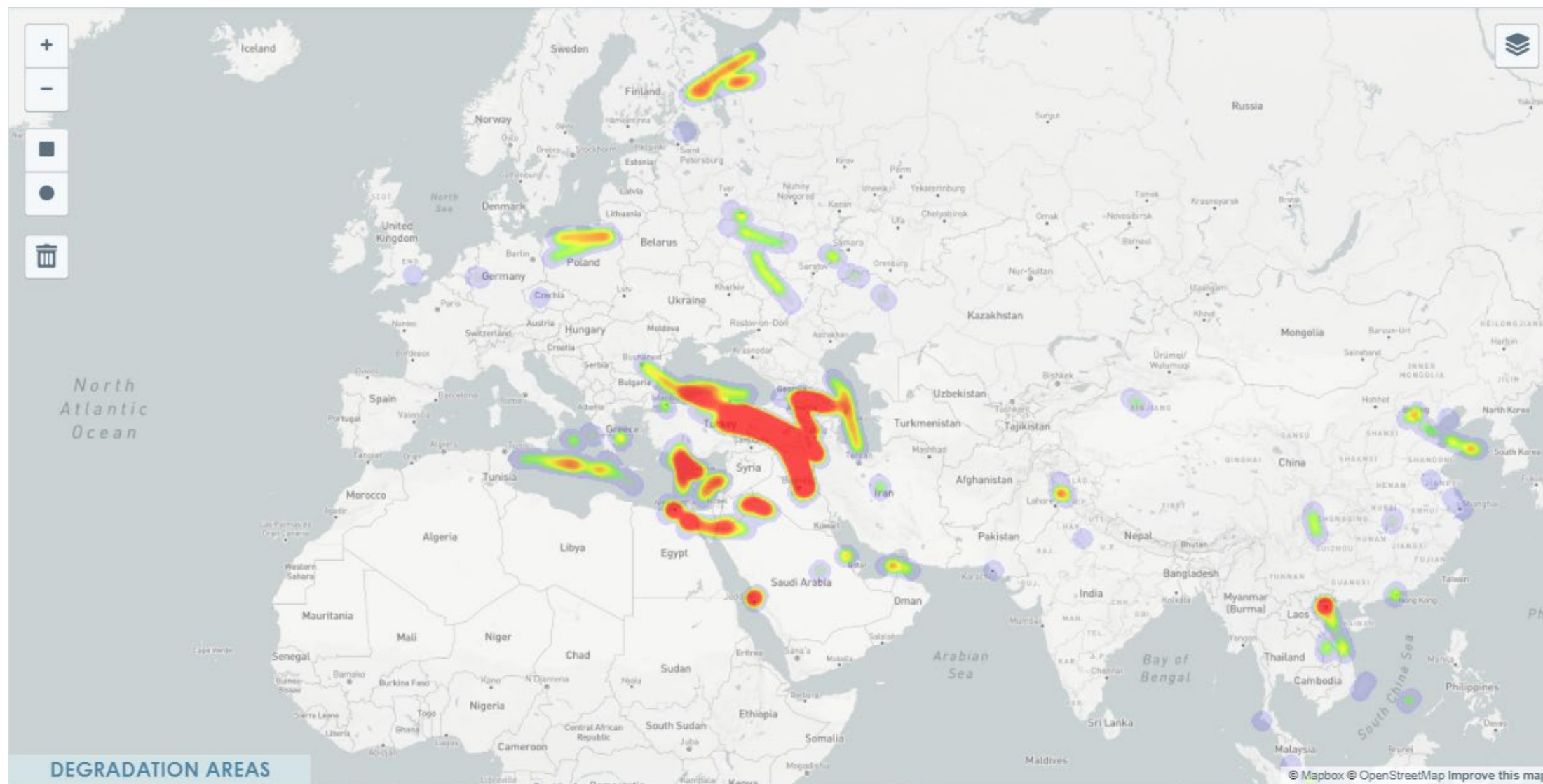


Highlights

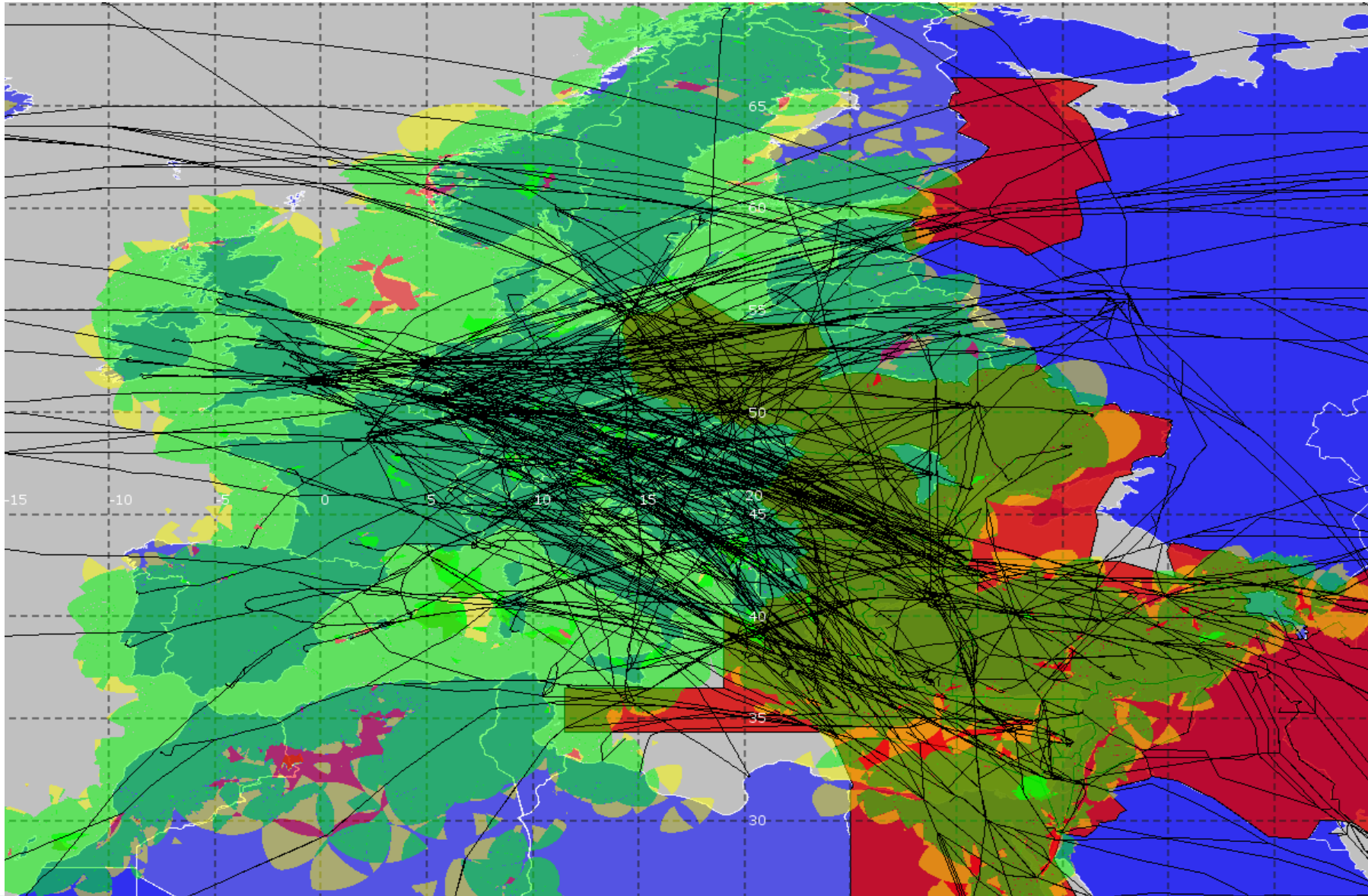


- **2,000% increase in GNSS RFI incidents in 2018** as measured by voluntary incident reporting, with a sustained high rate since
- **38.5% of European en-route traffic** operates through regions intermittently, but regularly affected by RFI
- **5% of traffic in these regions could**, given current RFI levels, **need special assistance**, measurably increasing pilot and controller workload as well as the overall safety risk.
- **RFI jamming is disproportionate**: while the majority of RFI hotspots appear related to conflict zones, they affect civil aviation at distances of up to 300km from these zones, reflecting a use of jamming that appears to go well beyond simple military mission effectiveness.
- **States need to be aware of the problem** and increase internal cooperation between their civil and military aviation bodies.

GNSS RFI as detected by Airbus Aircraft, 2nd Sem 2020



EUROCONTROL Airspace Risk Assessment



Dark RED: FIR affected by GNSS RFI

Black: Flights crossing affected FIRs

Green: Alternative DME/DME RNAV Coverage Available

Yellow/orange: DME/DME RNAV Coverage Available but no redundancy

Light red: No DME/DME RNAV Coverage

Could Military Jamming Power be LIMITED?



Jammer Power	Impact Radius on Aircraft at FL350 ¹	Maximum Outage Duration at ENR Speed ²	“Protection” against military GPS system near ground ³
10W	77NM	20min	20km
100W	230NM	1h	60km

1: Assuming -6dB antenna gain and 15dB tracking margin

2: ENR speed assumed 450 knots

3: Assuming a +20dB J/S capability

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THANK YOU
TO OUR PANELLISTS
& PARTICIPANTS!

