

Supporting
European
Aviation



Monitoring GNSS RF Interference

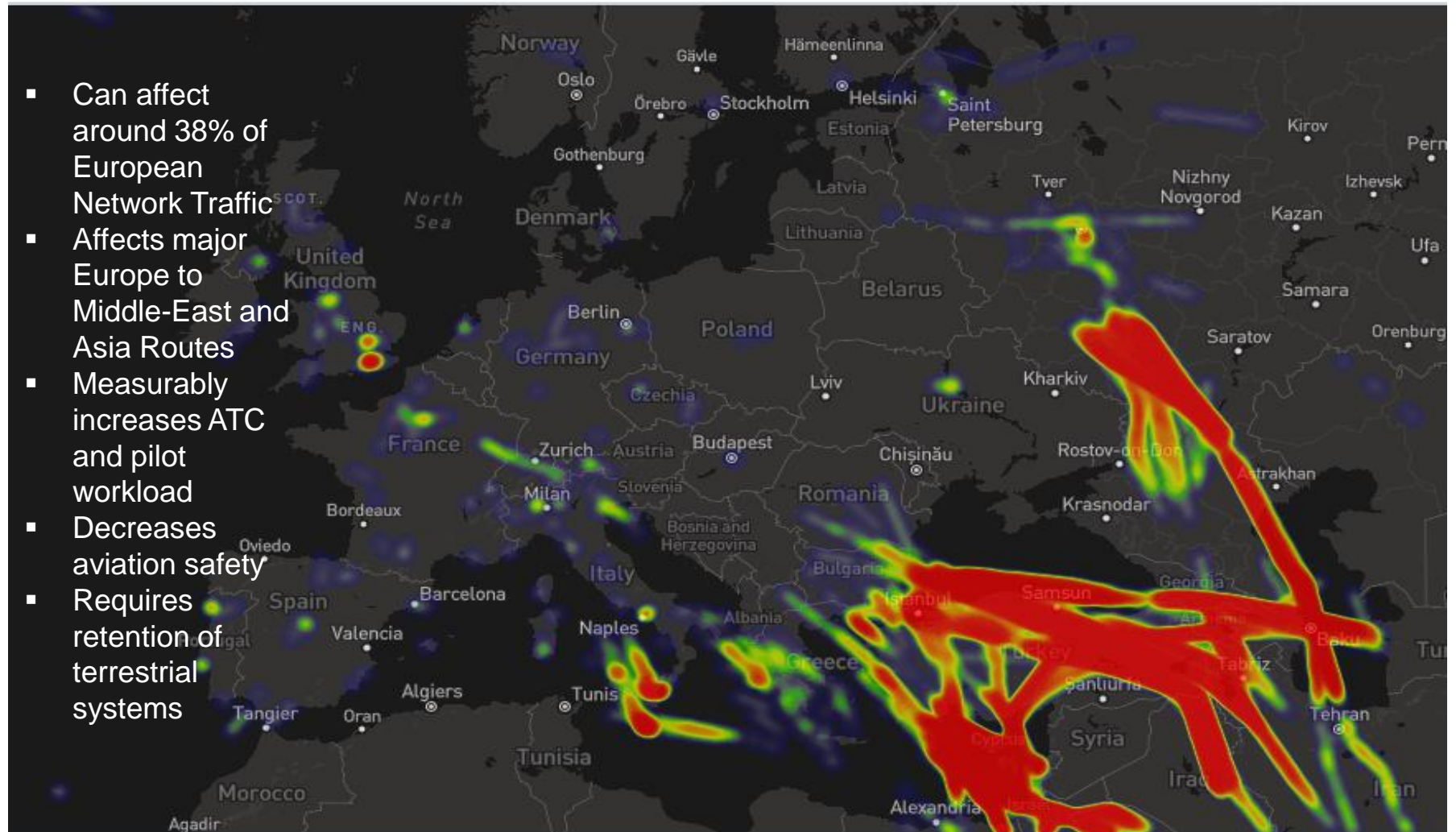
NM User Forum, Monitoring CNS Infrastructure Performance

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GNSS RFI as detected by Airbus Aircraft

- Post-OPS Monitoring from participating aircraft operators
- 1 JAN 2021 to 31 DEC 2021
- **RFI continues despite reduced pilot reports**
- Provided by Airbus through Skywise



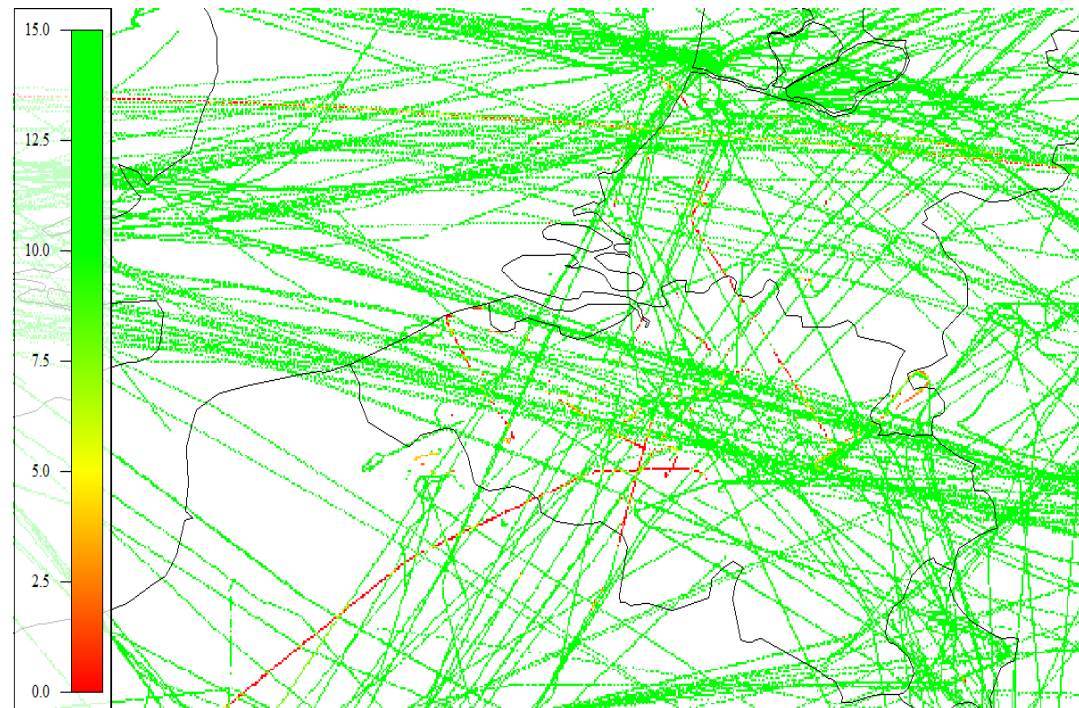
This picture matches EVAIR Pilot Reports and has been “stable” since 2018!

Observations from a Recent RFI Case

- End March 2021, 40W Anti-Paparazzi Drone Jammer on a Private Yacht
 - Jammer accidentally turned on by maintenance personnel, Southwest NL
 - Impacting air traffic in Netherlands, Belgium, France and MUAC for a few hours
- Core European airspace with climbing and descending traffic from some major airports
 - Info on affected flights **could be quite critical**, while large majority of flights **sees no impact**



ADS-B Gaps: 93 aircraft impacted,
Multiple aircraft per sector



ADS-B PIC, All Flights during event

Status and Plans

- GNSS RFI is unfortunately the most relevant operational problem today
 - Pilot reporting through EVAIR
 - A number of safety issues are being followed up and discussed with EASA and aircraft manufacturers
 - Aircraft manufacturers issuing detailed guidance to operator on GNSS RFI Impact
 - Post-OPS analysis using additional sources (e.g. ADS-B, Airbus) to confirm RFI
 - Ground-based monitoring can help but has very limited visibility of aircraft impact
 - GNSS RFI normally at the level of “operational nuisance”
 - Want to implement near real-time monitoring to detect if and when it becomes safety relevant
 - Part of mitigation is detection and geolocation of RFI Source
- Best place to detect GNSS RFI is at the aircraft GNSS receiver
 - Can be done today using ADS-B but requires interpretation
 - Normally not an issue for aircraft or ATC unless combined with some other CNS issue
- Developing Future Capabilities
 - Near Real Time “GNSS Weather” Monitor for ANSP System Monitoring and Control (SMC) and aircraft operators using NM B2B interface?