

The Threat Associated with GNSS Vulnerability and UK Mitigation Strategy

Flight Phase	Nature of Threat		Mitigations
En-route (Polar/Oceanic)	Space Weather Low likelihood, Impact dependent upon environment		Alerts (Pre-Flight and Real Time Integrity Monitor) Other navigation solutions including IRS Separation Standards Failure mode – intermittent loss of tracking of signal through scintillation UK latitude (50° N a good place to be)
En-route (Domestic)	Space Weather Low likelihood, Impact dependent upon environment		Alerts (Pre-Flight and Real Time Integrity Monitor) Other navigation solutions including VOR & DME Radar Coverage Failure mode – intermittent loss of signal (No reports of malicious interference) Effective Spectrum Regulation and Enforcement (not so in other EU States)
Terminal Airspace (Below FL95)	Space Weather Low likelihood, Impact dependent upon environment	Radio Interference through malicious intent High Likelihood, Localised impact due to power intensities involved	As above for En-route (Domestic) + Higher redundancy of other systems e.g., COM, NAV and SURV
Approach Operations	Radio Interference through malicious intent High Likelihood, Localised impact due to power intensities involved		As above for Terminal Airspace (Below FL95) + Alternate Approach Procedures including ILS Spectrum Regulation and Enforcement more effective No UK plans for GBAS supporting LVPs

Note: All GNSS Applications today are specified at less than 100% Availability.