

Multiple GNSS

In-built system mitigation features

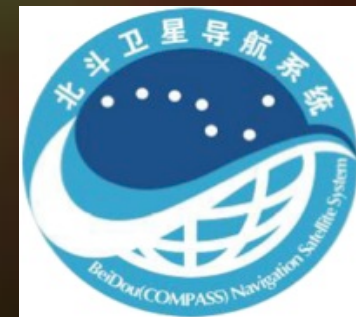
Multiple satellite systems reduce critical infrastructure vulnerability through less dependence on one system

More satellites improve signal availability and performance

New systems offer new signals and services

Multiple frequencies compensate for errors caused by ionospheric delay

Access to additional satellites will reduce the impact of scintillation and improve service continuity



Multiple GNSS Operational mitigation measures



Focus on enhancing GNSS competence in certain sectors



Need for user awareness of GNSS dependence and continuity of service requirements



Sector-based risk analyses as a basis for implementing appropriate mitigation measures in order to protect critical infrastructure and safeguard critical societal functions

Develop a national concept for the protection of GNSS signals and infrastructure

Mitigation for safety-critical GNSS applications



Flight safety and air traffic control functions are maintained by using redundant onboard equipment and ground based infrastructure



Maritime safety is ensured by back-up onboard navigation equipment with relevant procedures in combination with shore-based aids to navigation



Environmental and operational safety of oil drilling operations is maintained by multiple local reference systems



Reliance on COSPAS-SARSAT satellites combined with onboard navigation equipment and ground based infrastructure



Use of emergency network for fleet management and reliance on in-vehicle maps and local knowledge for navigation



Use of Stratum 1 NTP servers and local atomic clocks for precise timing and synchronisation in ICT and digital broadcasting networks