Genesys Insights – XAI for GNSS Interference Monitoring



The critical importance of Position, Navigation, and Timing (PNT) technology for private citizens and military operators alike cannot be overstated. The PNT signals used by the Global navigation satellite system (GNSS) enable precision-guided munitions for military operations, while also allowing everyday smartphone users to navigate with ease. However, the vulnerability of GNSS users to PNT manipulation and deception is a significant concern, as a disruption could result in billions of dollars in losses for the private and public sectors including land, sea, air operations as well as critical infrastructure. However, the effectiveness of traditional interference detection systems is limited by hardware capabilities or the machine's current inability to explain their decisions and actions to human users. Leveraging AI/ML for mapping satellite signal disruptions and contextualizing patterns of behaviour and detecting anomalies leveraging PNT kinematic data can help safe and secure navigation of critical assets.

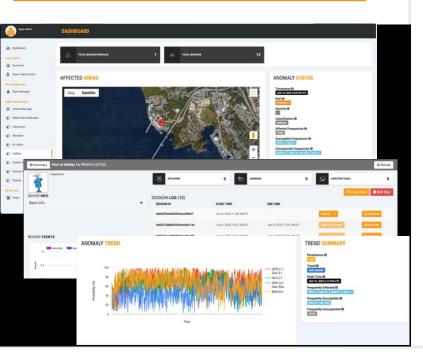
AI POWERED SITUATIONAL AWARENESS & BEHAVIOURAL INTELLIGENCE

GenesysInsights is a situational awareness and cybersecurity solution that leverages machine learning and artificial intelligence to analyze GNSS signals and remotely identify disruptions, detect malicious information such as jamming and spoofing helping secure government infrastructure and operations and enable cyber secure digital environments.

The GenesysInsight platform is based on Zighra's multi-sensory data fusion family of patents that leverages Explainable AI and deep machine analytics and learning capabilities to alert analysts and operators to potential jamming and spoofing events, techniques commonly used by adversarial actors to cover up activities or sabotage operations.

For human operators to understand, appropriately trust, and effectively manage AI powered machines, Zighra provides novel automated, real-time situational awareness and triage of behavioural compromise alerts using explainable AI/ML. This will dramatically increase analysts effectiveness and efficiency and dramatically reduce the risks and costs of attacks.

INTERFERENCE DETECTION THROUGH SENSOR FUSION ANALYTICS





KEY BENEFITS

- Continuous monitoring of GNSS signals to enable effective alerting and reporting of Position Navigation and Time (PNT) disruption.
- Reduce costs by eliminating the need to develop, build, and deploy expensive custom hardware, by leveraging PNT kinematics data that everyday devices generate.
- Visual explainable AI/ML interface that explains the rationale of why the system made specific decisions and insights into the models.
- Reduce analyst fatigue by reducing the false alerts and improved situational awareness for incident awareness and analysis.
- Ensure collected data can be processed, exploited, filtered, and disseminated to facilitate decision making process tactically, operationally, and strategically.

