Ericsson ISAC System

Closing the low-altitude detection gap



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As the drone threat grows, so does the need to counter it.



Ericsson ISAC System transforms the mobile network into a new layer of situational awareness.

Small, low-cost drones have changed the security picture. Detecting and tracking small objects at low altitude across large areas remains a challenge. Existing sensing systems can provide effective coverage, but extending that coverage over wider areas can require significant additional infrastructure and complexity.

Ericsson Integrated Sensing and Communication (ISAC) System closes this low-altitude detection gap. It transforms mobile network infrastructure into a distributed sensing layer that analyzes radio signal reflections from objects to detect and track their movement, including those that are not connected to the network. By combining observations across multiple locations, the system provides 3D position and track data over wide areas to command and control, security and sensor fusion systems.

For critical assets like defense sites, borders and energy facilities, it's a scalable, resilient and cost-effective detection layer that complements existing sensor systems, enabling earlier detection and a faster response.



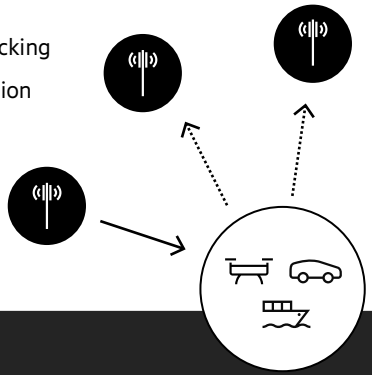
See more with multi-static sensing

Unlike traditional radar, which relies on a co-located transmitter and receiver, Ericsson ISAC System operates as a multi-static network, with signal transmission and reception distributed across multiple geographically separated nodes.

By combining these multiple viewpoints into one picture, the system sees the target from several angles at once, providing spatial diversity that can improve detection confidence, positioning, track continuity and coverage resilience.

Benefits of Ericsson ISAC System

- Detect micro drones over kilometer-scale distances
- High-confidence detection and tracking
- Precise 3D positioning
- Resilient coverage with reduced dependence on individual sites
- Continuous wide area tracking
- Scalable from site protection to nationwide coverage
- Efficient deployment on mobile network infrastructure

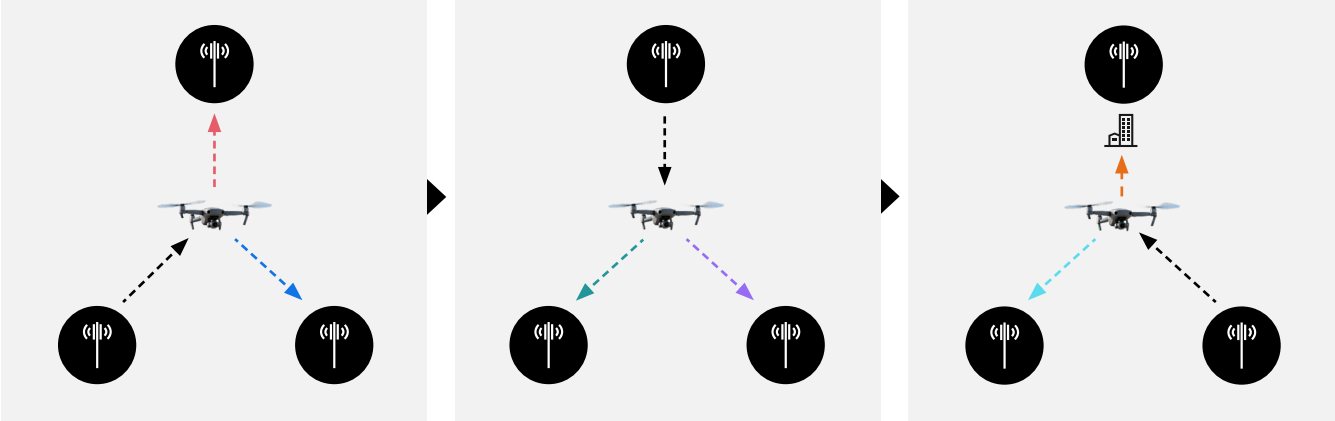


How it works

Signal reflection: A network site transmits a radio signal. The signal reflects off the drone and is picked up by one or more receiving sites. The network then analyzes the reflected signal to detect and locate the drone.

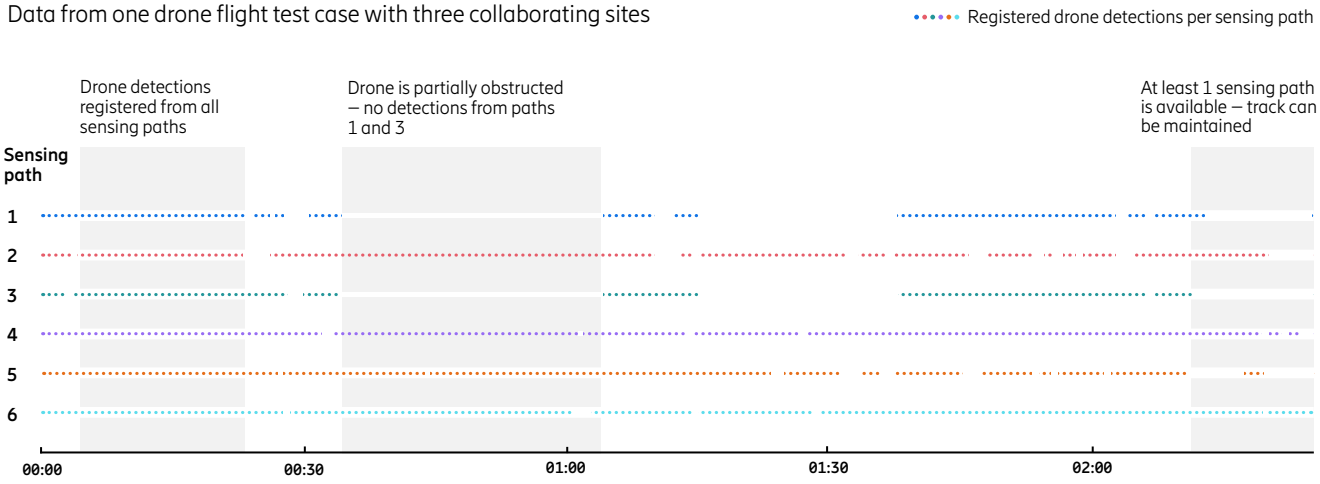
Multiple perspectives: Sites take turns transmitting and receiving. Several sites working together create multiple sensing paths: transmitting site → drone → receiving site. In the illustration, each color represents one sensing path.

Track continuity: As the drone moves, some sensing paths may become blocked. Other available paths can help the system keep tracking the drone.



High track continuity for challenging scenarios

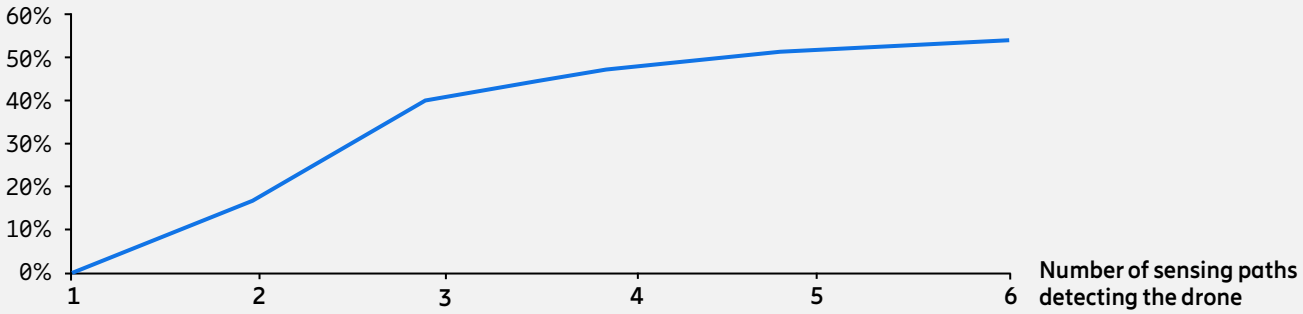
Detections per sensing path
Data from one drone flight test case with three collaborating sites



Improved positioning accuracy

Relation between 3D positioning accuracy and available sensing paths
Average improvement across sample test cases with different flight paths and testing environments

Average positioning accuracy
Improvement relative 1 sensing path



ISAC use cases



Defense
Counter-UAS, base and force protection, border monitoring, and cueing of complementary sensors and response systems



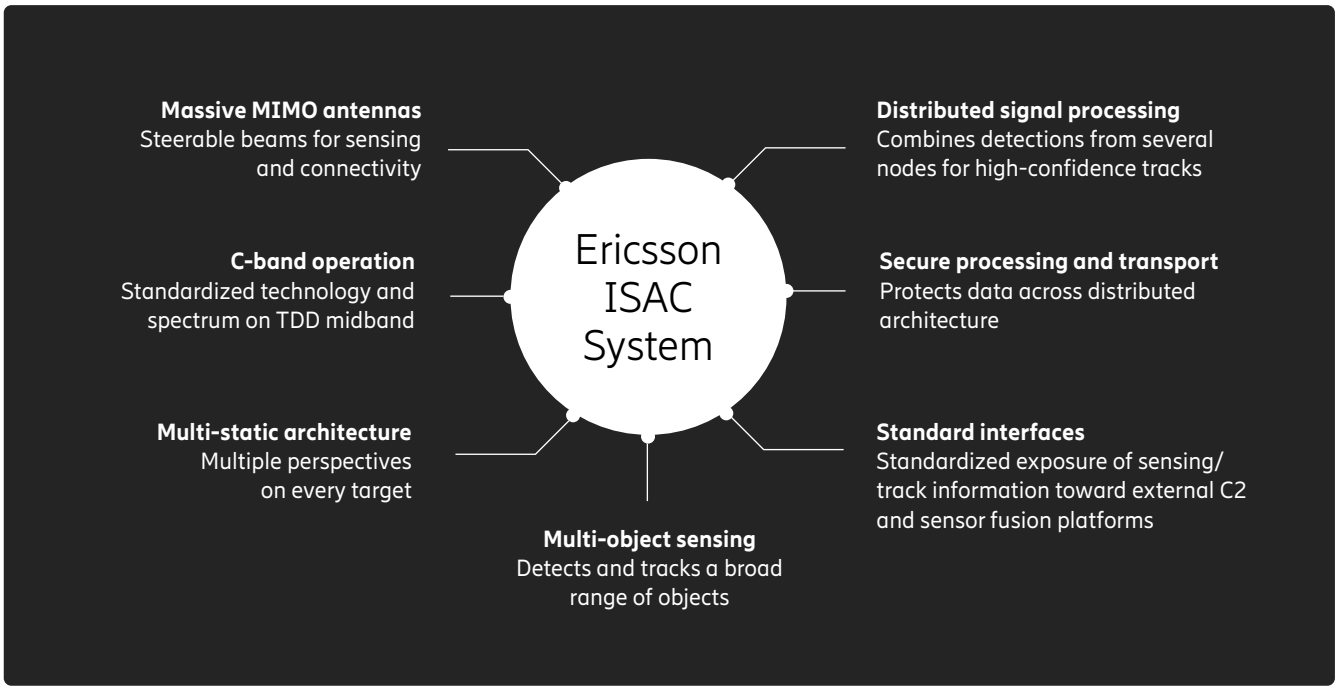
Public safety
Situational awareness for major events and high-activity areas



Critical infrastructure
Persistent surveillance at sensitive areas like airports, ports and energy sites



Multi-domain surveillance
Detection and tracking of airborne, ground and surface objects



Creating a future of communication and sensing

As technology evolves, sensing and communication will be further integrated, creating networks where awareness of the physical environment is a native capability alongside connectivity.

Building on Ericsson's leadership in radio networks, distributed computing and AI-powered signal processing, Ericsson ISAC System delivers operational value today while laying the foundation for tomorrow's sensing-native networks.



About Ericsson

Ericsson's high-performing networks provide connectivity for billions of people every day. For nearly 150 years, we've been pioneers in creating technology for communication. We offer mobile communication and connectivity solutions for service providers and enterprises. Together with our customers and partners, we make the digital world of tomorrow a reality.

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