

SR7 C-UAS

The proliferation of low-cost Unmanned Aerial Systems (UAS), capable of surveillance, electronic interference, and payload delivery, continues to pose a growing threat to critical infrastructure and fixed installations. This evolving landscape requires integrated Counter-UAS (C-UAS) solutions capable of persistent detection, accurate identification, and controlled mitigation.

Our SR7 C-UAS solution combines 4D radar surveillance, EO/IR visual identification, passive RF detection, and targeted RF mitigation, all unified through an advanced Command & Control (C2) platform. This multi-layered approach ensures reliable airspace awareness and effective response against both conventional and emerging drone threats.



Operational Capability

The system implements a layered detection-to-mitigation workflow:



1. Early Detection (RF Layer)

Passive RF sensors detect drone signals before take-off or during early flight phases, providing early warning and situational awareness.



2. Detection & Tracking (Radar Layer)

The radar performs continuous 4D tracking across wide coverage volumes. Typical performance includes:

- Tracking ranges up to around 12.5 km for larger UAS targets
- Reliable detection of small UAS at several kilometers depending on RCS
- High update rate (10 Hz) and precise angular accuracy (<math><0.5^\circ</math>)



3. Identification (EO/IR Layer)

Cueing from radar and RF sensors enables automatic slew-to-cue of EO/IR systems:

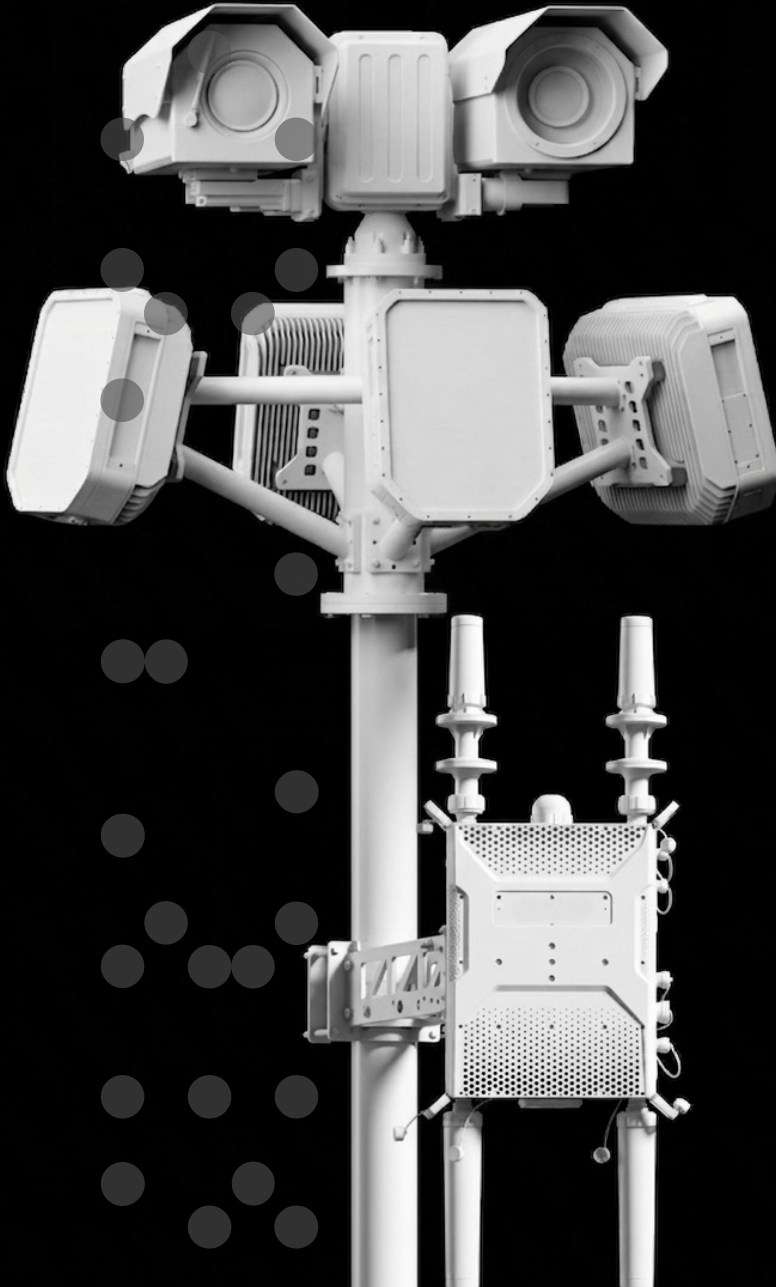
- Thermal imaging ensures 24/7 detection capability
- Daylight CCTV provides high-confidence visual confirmation and classification



4. Mitigation

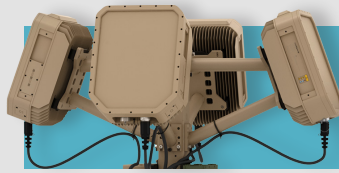
Once a threat is confirmed, the system enables:

- Protocol-aware takeover or disruption of drone communications
- Controlled landing or return-to-home scenarios (when supported)
- Minimized collateral impact through targeted RF engagement

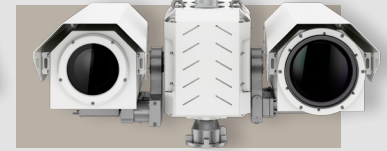


System Architecture

The system is built around a modular, scalable architecture integrating four core subsystems, all connected through the C2 to deliver a unified and coherent operational picture.



Radar
Provides wide-area detection and high-precision tracking, with sub-degree accuracy and the ability to track over 1,000 objects simultaneously.



EO/IR Sensors
Thermal camera for day/night detection and long-range classification.



Daylight CCTV
for high-resolution visual identification



Passive RF Detection
Enables early detection of drone communications, identification of control links, and geolocation support.

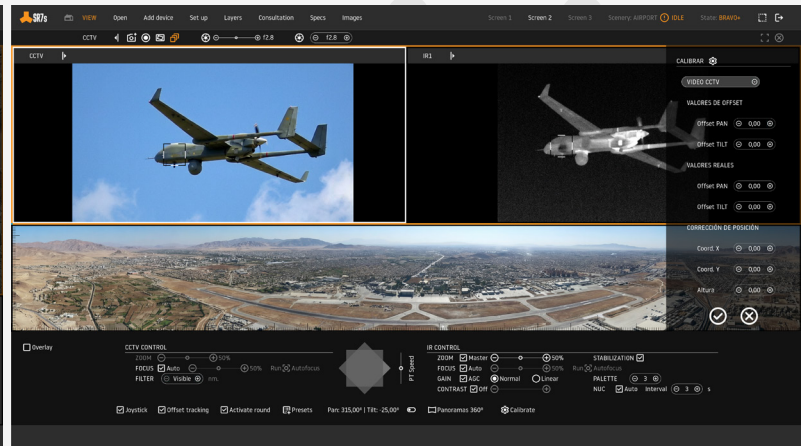
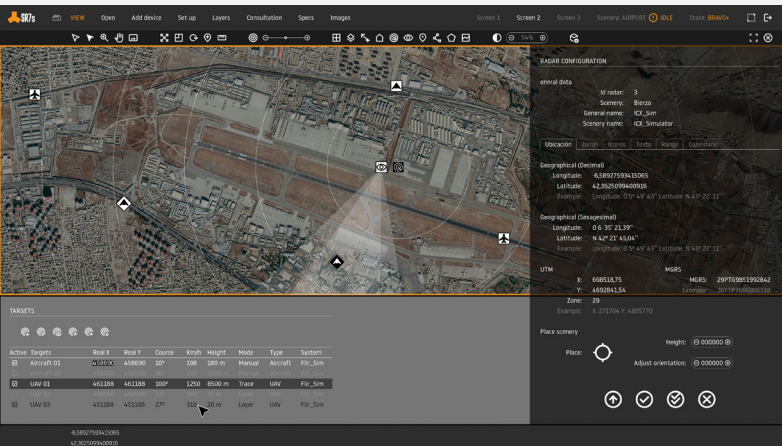


RF Mitigation
Provides non-kinetic neutralization through protocol-based takeover or disruption of UAS communication links, enabling controlled threat mitigation.

Command & Control (SR7s - C2)

Designed for efficient operation, the SR7s C2 platform serves as the operational core of the system, supporting reduced crew requirements while maintaining high situational awareness, providing:

- Real-time multi-sensor fusion (radar, RF, EO/IR)
- Single integrated air picture
- Automated threat detection and prioritization
- Operator decision support tools
- Sensor and effector tasking (slew-to-cue, mitigation control)
- Open architecture for integration with external systems



Deployment Flexibility

The solution is designed for fixed and semi-permanent deployments, with adaptable configurations including:



Mast-mounted or tripod-based sensors



Distributed sensor layouts for optimized coverage



Low observable footprint to reduce system vulnerability

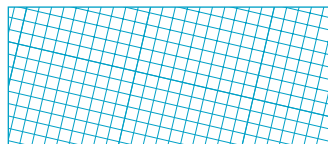


Other systems allow vehicle-mounted configurations.

Key Advantages



Multi-sensor fusion:
Radar, RF, and EO/IR correlation reduces false alarms



High-precision tracking:
Sub-degree accuracy with high update rates



Non-kinetic mitigation:
Controlled RF-based neutralization (EnforceAir2)



End-to-end C-UAS capability:
Detection, tracking, identification, and mitigation in a single system



Scalable and modular:
Adaptable to different site sizes and threat levels



All-weather, day/night operation:
Radar + thermal imaging ensure continuous coverage



Future-proof architecture:
Software-driven upgrades and extensibility

Main operational parameters

RADAR	
Band	Ku-band (15.4 – 16.6 GHz)
Spatial Coverage	130° Azimuth × 90° Elevation
Accuracy	< 0.5° Azimuth / < 0.5° Elevation
Track Update Rate	10 Hz
Max Tracks	> 1,000 objects
Detection Range (C-UAS)	Group 1: 3–5.3 km / Group 2: 5.3–7.2 km / Group 3: 7.2–12.5 km
RF DETECTION	
Frequencies	400 MHz – 6 GHz
Detection Range	6 km
Spatial Coverage	360°
Weight	20 kg
EO / IR SYSTEM	
Sensors	HD CMOS (Day) / 3rd Gen MWIR (IR)
Resolution	1920×1080 (Day) / 640×512 (IR)
Zoom	28× (Day) / 20× (IR)
Detection Range	14.3 km (Day) / 23.1 km (IR) - NATO Target 2.3×2.3 m
RF MITIGATION	
Frequencies	400 MHz – 6 GHz
Inhibition Ratio	5:1
Jamming Range (GNSS)	15 km
Jamming Range (C2 Links)	5 km

SYSTEM (C-UAS INTEGRATION)

Architecture	Multi-sensor (Radar + RF + EO/IR + Mitigation)
Coverage	360° (system-level)
Deployment	Fixed / Persistent
Control	Integrated under SR7s - C2 platform

SR7

SR7^{fire}

SR7^{security}

SR7^m

SR7: INTELLIGENCE FOR A CHANGING WORLD

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