AARTOS™

AARONIA

C-UAS & EW SOLUTIONS

INTEGRATED C-UAS & EW SYSTEMS

DETECT LOCATE COUNTER

DETECT

Detection range up to 40 km (consumer UAV) / 80 km (MIL UAV)

- Integrable into almost any vehicle
- Real-time drone protocol decoding and RF signal detection
- Real-time RF frequency monitoring and tracking (up to 20 MHz to 8 GHz)
- Portable and stationary variants
- Powerful software
- Made in Germany

LOCATE

Locates drones, pilots and homepoints up to 8 GHz

- 16 sector antenna with a high tracking accuracy of 1° to 3°
- Detects and tracks pre-programmed drones with high accuracy
- 360° azimuth with full hemispheric reception (elevation)
- Fully automatic mode possible
- Optional with radars and cameras

COUNTER

Optional jamming systems with up to 10 km jamming range

- Optional jamming capabilities
- Full integration into the AARTOS™ Drone Detection System
- Seamless frequency range, selectively from 400 MHz to 6 GHz
- IP65 weather protection, operating temperature -20°C to +60°C

AARTOS™ Vehicle Integration

The AARTOS™ Drone Detection System offers a compact and modular design to be seamlessly integrated into a variety of vehicles, including vans, transporters, SUVs, and military vehicles, making it a versatile solution for different operational needs. Next to the RF detection units the system can be equipped with optional radar, visual and thermal cameras and jamming systems.

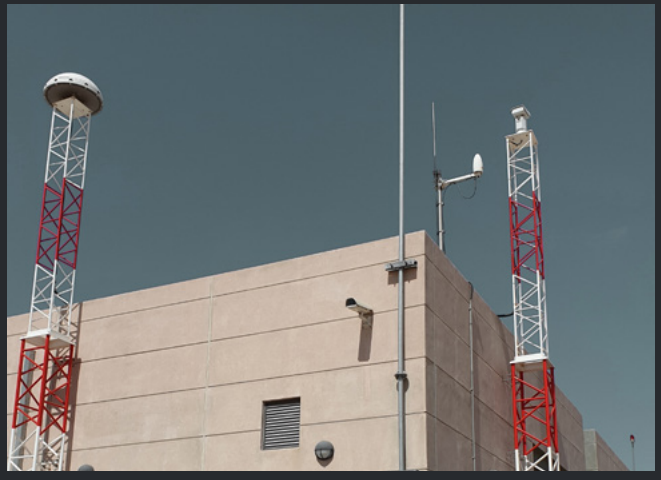
Furthermore, the system boasts a remarkably fast deployment time. It can be set up and operational in under 5 minutes, making it an ideal solution for situations requiring rapid response and deployment.

AARTOS™ Trailer Masts

When it comes to setup and deployment times, the AARTOS™ Mobile Trailer Masts raise the bar. What makes the masts particularly stand out is their tremendous precision, absolute reliability, and high maneuverability (even in rough terrain).

Developed at the highest quality standards, AARTOS™ masts guarantee consistent data flow in the most unforgiving environments and weather conditions.

Vehicle or trailer-mounted antenna support is most commonly used by military defense forces, emergency management agencies and telecom providers.



AARTOS™ Self-Sustainable Shelters

The AARTOS™ drone detection shelter sets a new benchmark in mobile and off-grid drone detection. Both scalable and easy to operate, it can be set up and deployed in no-time.

The AARTOS™ Drone Detection shelters are easy to handle and deploy on any Unimog or other suitable means of transport. The shelter can be used as a command center, and also as a self-sufficient, remote controllable, contained system. The cabin has space for 2-4 operatators, each using 2 4k monitors to provide a complete overview of the airspace.

AARTOS™ Fixed Site Installations

The AARTOS™ Drone Detection System, designed for fixed site installations, features a scalable and modular design that allows for easy integration.

It offers the capability for multi-site deployment, enhancing detection range and accuracy. The system can be equipped with optional radar, visual and thermal cameras and jamming systems.

It also supports remote control or can operate in a fully automatic mode, providing flexibility in surveillance and security operations.

System Comparison

The AARTOS™ X7 is high precision direction finding system combined with a large detection range.

The AARTOS™ X7 consists of a 8 sector IsoLOG® Fox DF 80 antenna array and three spectrum analyzers (Command Center or 19" rack). Perfect for both single-system and multi-grid system set-ups.

The AARTOS™ X9 combines highest precision and ultra-wideband monitoring real-time detection over multiple frequency bands.

It consists of an IsoLOG® DF 160-UA antenna array with 16 sectors and the Command Center or 19" rack, perfect for ultra-high-range drone detection grids.

	X7	X9
Typical range (Consumer/DIY UAV's)	2 km - 5 km	Standard: max. 14 km Long range: max. 40 km
Typical range (Military UAV's)	-	max. 80 km
Frequency coverage	700 MHz to 6 GHz	400 MHz to 6 GHz (optionally 20 MHz to 8 GHz)
Detection type	Drone protocol decoding & RF signal detection	Drone protocol decoding & RF signal detection
Tracking type	Drone GPS decoding & RF signal direction	Drone GPS decoding & RF signal direction
Supported decoding	DJI OcuSync 1-4, DJI WiFi, MAVLink, ADS-B	DJI OcuSync 1-4, DJI WiFi, MAVLink, ADS-B
Typical decoding accuracy	2 - 3 m	2 - 3 m
Typical direction finding accuracy	4° to 6°	1° to 3°
Antenna Sectors	8	16
Multi frequency swarm attack	Limited	Yes
Radar and PTZ Camera	Yes	Yes
Automatic jamming option	Yes	Yes

* Reference target at 2,4GHz with line of sight (hovering drone), 1,5km distance (FCC)

Safe detection

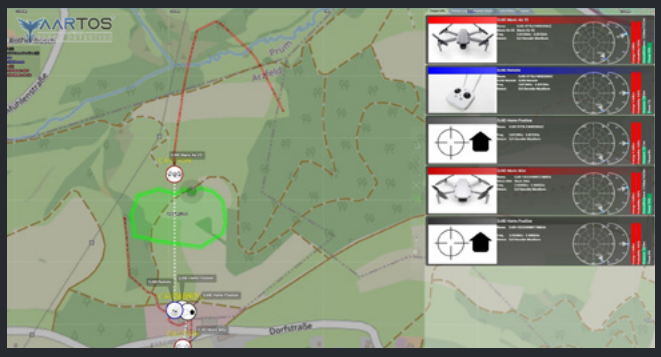
Our system does not mistake UAVs for other flying objects such as birds, balloons or kites. Saving time and resources for real threats.

Early detection

The AARTOS™ Drone Detection System triggers an alarm as soon as a remote control sends its first signal, even before the actual drone is airborne. Allowing countermeasures to be launched at an early stage.

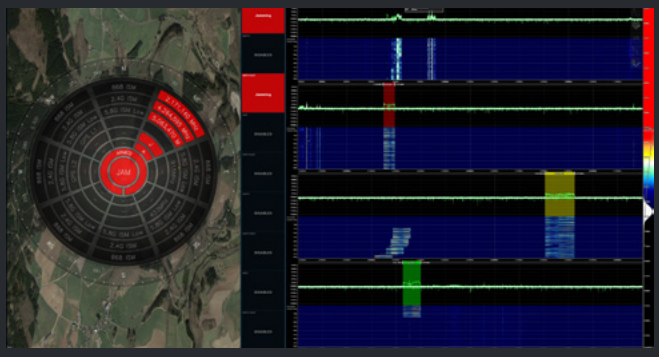
Tracking the drone operator

Since the AARTOS™ detects both the drone (from downlink signals) and its corresponding remote control, the movement of both can be tracked in real-time. If two or more systems are deployed, triangulation can then determine the exact position.



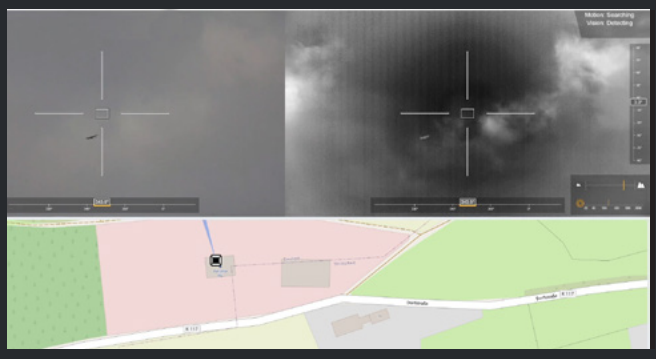
Map View

A top-down 2D perspective is the most commonly used visualization technique in drone detection. The 3D view expands our capabilities by adding the drone's altitude information.



Jammer Interface

Powerful jammer control: the smart jammer allows to adjust the jamming power, frequency, direction and bandwidth in real-time.



Camera Tracking and Classification

AARTOS™ features a fully integrated optical and thermal drone detection solution with automatic AI based drone tracking.

Radar Tracking and Classification

Using an sophisticated radar system, AARTOS™ can automatically determine and display the exact position, flight direction, altitude, speed and classification of an inbound drone.

4x4 Transporter

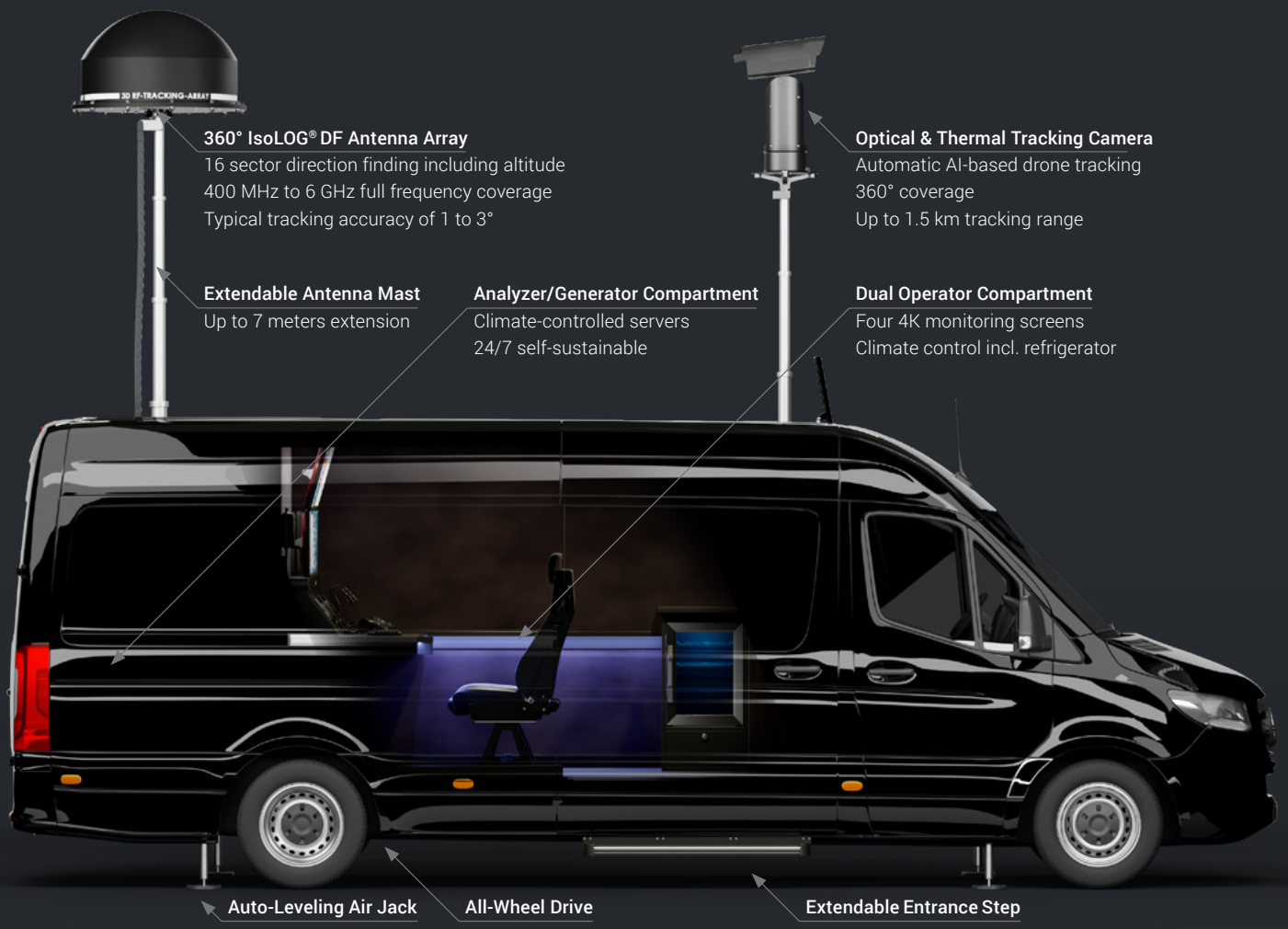
The AARTOS™ Drone Detection System is seamlessly integrated into a 4x4 Mercedes Sprinter, equipped with enhanced features such as an optical and thermal PTZ camera, a satellite uplink and a northfinder antenna. This setup includes a dual operator compartment with four 4K monitors and high-end hardware, providing a comprehensive surveillance and operation platform.

Covert Operations Van

A RF surveillance van is equipped with the AARTOS™ System and a concealed IsoLOG® DF Antenna Array. This setup includes optional jamming capabilities and features a single operator station located on the back seat, designed for stealth and efficiency.

MIL-Spec Unimog

An all-terrain vehicle solution, self-sustaining and equipped with the AARTOS™ shelter integration, features the IsoLOG® DF antenna array and an optional upgrade for a 40 km long-range antenna. This model also includes a dual operator compartment, outfitted with four 4K monitors and advanced hardware for enhanced operational capabilities.



AARTOS™ Trailer Mast

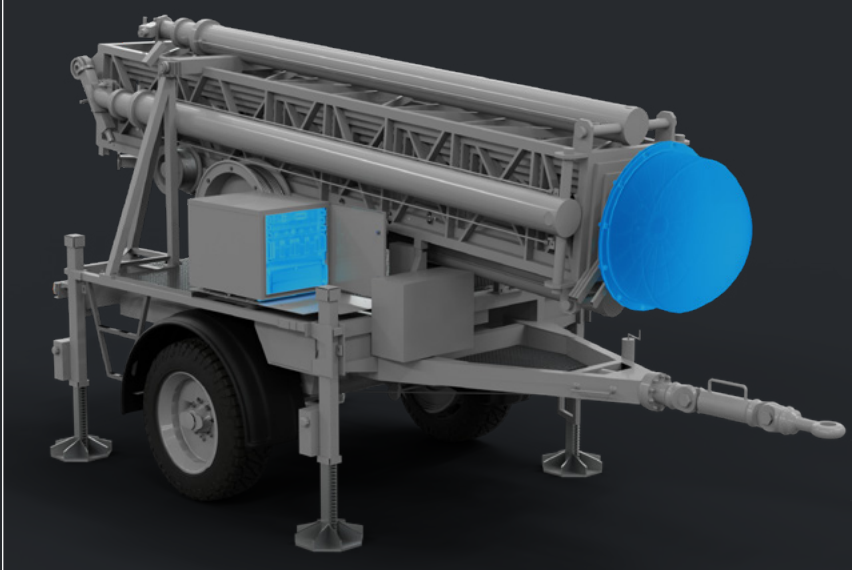
The AARTOS™ Trailer Mast is designed for rapid deployment and built with field-proven hardware to ensure reliable performance in demanding military operations. Fully off-road capable, this mast delivers exceptional precision and reliability, maintaining functionality even in rugged terrain.

Engineered to the highest quality standards, the mast ensures consistent data flow under harsh environmental and weather conditions. The 25-meter mast extension significantly enhances its effectiveness, making it an invaluable asset for detection and monitoring in hilly terrain or urban environments.

AARTOS™ 6x6 Armored Tatra

The MIL-spec 6x6 Armored Tatra, equipped with a deployable mast, provides a versatile solution for advanced drone detection and electronic warfare. The mast, extendable to 25 meters, supports the IsoLOG® DF tracking array and optionally the EO/MWIR tracking camera, enhancing detection capabilities in hilly terrain and urban environments.

With STANAG 4569-certified protection against ballistics and mines, the platform ensures operational security for personnel and equipment even in high-threat areas. The vehicle's rugged off-road mobility and self-sustaining design make it ideal for challenging deployment scenarios.



Sensor Fusion	AARTOS™ X7 or X9
Sensors	IsoLOG® DF, optional EO/MWIR Camera or 4D UAV Radar
Effectors	Optional 360° Smart Jamming
GPS	External antenna
Power supply	Diesel Generator 400V/16A
Inclination	± 1.0° – ± 1.5°
Torsion	≤ 0.5°
Operational wind speed	Max. 90 – 108 km/h
Max. gradient	± 10°
Deployed height	25.100 mm

AARTOS™ Medium Size Shelter

The Medium Size AARTOS™ Shelter is a lightweight, highly portable solution designed for rapid deployment in dynamic environments. Equipped with a single extendable sensor mast, it provides advanced Direction Finding and Long Range Decoding capabilities.

Inside, two operator seats are supported by four 4K screens, ensuring a streamlined and efficient operational workflow. Its compact design makes it easy to transport, ideal for missions requiring mobility and adaptability.

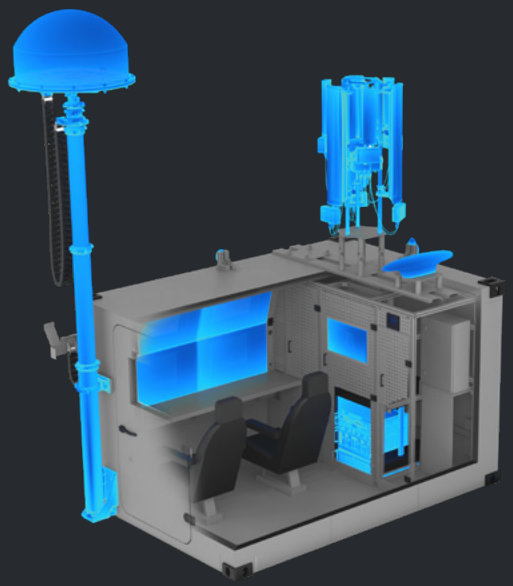
The shelter comes equipped with the AARTOS™ X7 or X9 sensor fusion unit and integrated climate control for optimal performance. This version is perfect for teams needing a tactical, portable solution for drone detection and monitoring.

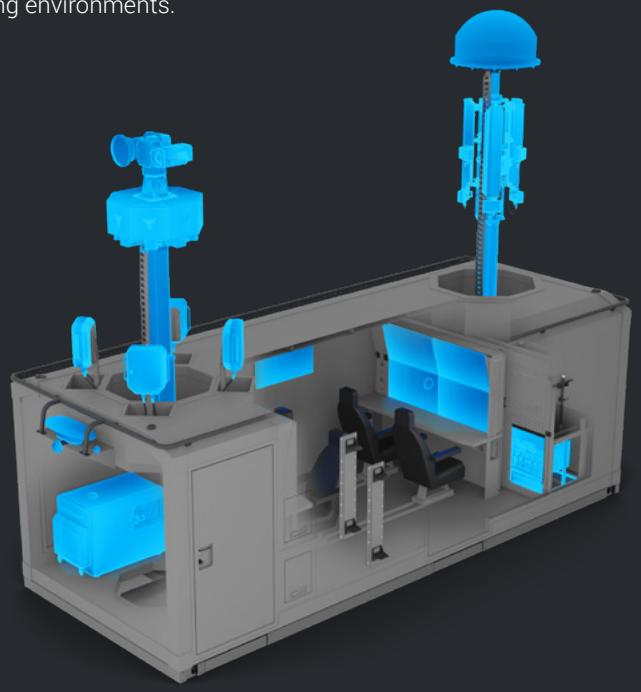
AARTOS™ XXL Size Shelter

The XXL size AARTOS™ Shelter is the ultimate solution for large-scale, high-intensity operations. Featuring two extendable sensor masts, it supports Direction Finding, Long Range Decoding, Radar, Camera Tracking, and Jamming.

It is equipped with four operator seats and eight 4K screens, ensuring seamless coordination and analysis during complex missions. An inbuilt generator and separate hardware compartment provide independent, uninterrupted operation and optimized equipment management.

With the AARTOS™ X7 or X9 sensor fusion unit and climate control, it is engineered for extended deployments in demanding environments.





AARTOS™ Fixed Site Integration

AARTOS™ Stationary Drone Detection installations, which can incorporate either the AARTOS™ X7 or X9 models, are adept at establishing freely scalable detection grids.

These systems are designed for extensive coverage: for instance, three X7 units can cover approximately 220 square kilometers, while three standard X9 units extend the coverage to over 1700 square kilometers. Key features of these installations include remote controllability and fully automatic modes, enhancing their usability and efficiency.

Additionally, they come equipped with fully integrated radar and camera systems, ensuring thorough surveillance and classification capabilities even against RF neutral UAVs.

These systems are customizable on demand to meet specific requirements. AARTOS™ installations have been implemented worldwide, serving crucial roles at international airports, military sites, and government facilities, where robust and expansive drone monitoring is essential.

Fixed Bands Sector Jammer

FJ SERIES

By extending the AARTOS™ X7 or X9 to include our "FJ series" stationary jammer with a jamming range of typically 3 km, it creates a system that can reliably and quickly locate and neutralize threats.

With its directional and omnidirectional antennas and a maximum output power of 390W the jammer is capable of countering drones within the most common frequency bands (GPS e.g. upper and lower L-band, 2.4 GHz, 5.2 GHz, 5.8 GHz, etc.).

As with all of our jammers, the interference created is extremely selective, in order to make sure other RF channels are not impaired. In addition, the jammer is directional, and will only jam signals in the direction of the incoming UAV.

Programmable Smart Sector Jammer

SJ SERIES

Our AARTOS™ "SJ series" programmable jammer delivers a gapless coverage from 400 MHz to 6 GHz with an effective jamming range of 10 km.

With its directional antennas it is able to cover all commercial and military drones up to 6 GHz and can counter them with a freely adjustable output power of 30W per sector (upgradable to 100W).

All AARTOS™ Jammer solutions can only be sold to entities with proper government approval for the deployment of jammers. For more information, contact us at mail@aaronia.de.

	SJ240 SJ800	FJ390	MJ40
	Seemless frequency jamming from 400 MHz to 6 GHz with a 360° coverage and the highest range in our lineup.	The stationary FJ series cover 360° with a range of up to 3 km and up to 7 frequency bands.	This handheld UAV jammer is a potent and portable drone jamming system with 2h battery life and customizable frequency bands.
Typ. Range	4 km / 10 km	3 km	2 km
Antenna(s)	8 directional	4 directional Up to 4 omnidirectional	1 directional
Sectors	8	4	1
Bands	All bands up to 6 GHz	Up to 7	4
Output Power	240W / 800W	390W	40W

EO/MWIR PTZ Cameras

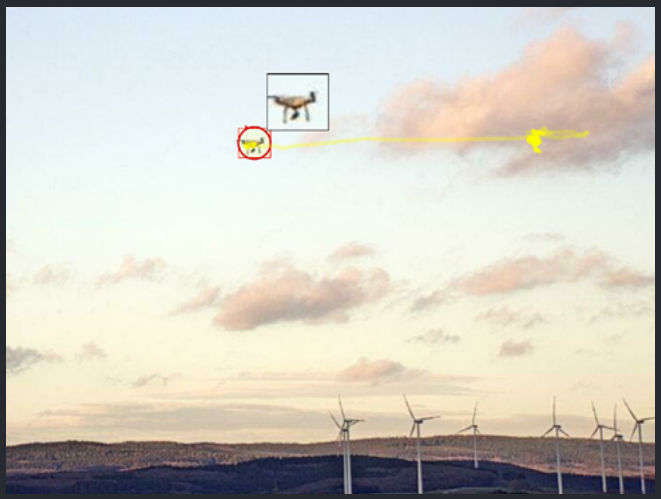
XCAM SERIES

Among the latest additions is the Visual Detection System, a fully integrated optical and thermal drone detection solution that is perfectly matched to the detection mechanisms of AARTOS™.

This option enables the user to spot detected drones, even from afar, and identify potentially dangerous payloads attached to the drone, such as explosives.

Automated AI tracking will continue even if a drone enters autonomous flying mode while it is being tracked by the Visual Detection System.

- Thermal and optical camera for 24/7 protection
- Sophisticated tracking and analysis AI
- Max. camera resolution of 1920 × 1080 px (full HD)
- Max. thermal module resolution of 1280 x 720 px
- Optical: 13 mm to 261.5 mm focal length
- Thermal: 72 mm to 900 mm focal length
- IP67-certified protection



4D UAV Radar

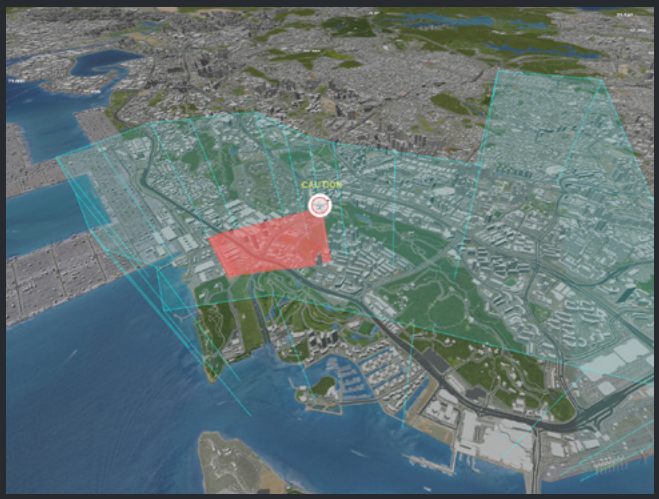
RD SERIES

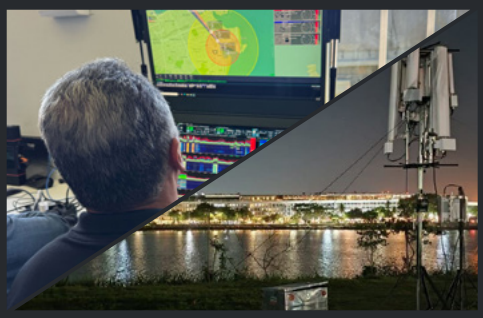
Using an (optional), sophisticated radar system, AARTOS™ can automatically determine and display the exact position, flight direction, altitude, speed and classification of an inbound drone. The trajectory of the flight can also be tracked in real-time as a 3D model.

The system distinguishes between birds, fixed-wing drones and propeller drones. When a UAV enters the designated no-fly zone, a multi-alarm can be configured.

Complete customization

The required equipment for AARTOS™ can be configured to match detailed customer requirements. End customers will receive hardware that is tailored to their specific needs, with all components chosen individually. This guarantees optimal drone detection performance in any given terrain or area.



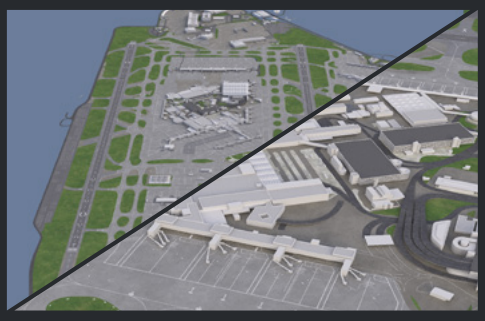


G20 Summit Brazil 2024 & Bali 2022

NATO Summit, Bruessels

North Korea / USA Summit, Singapore

Airpower 2024, Austria



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Formula 1 GP Red Bull Ring, Austria

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