AARTOS™

AARONIA

DRONE DETECTION

AARTOS™ DDS INTEGRATED SYSTEMS

DETECT LOCALIZE COUNTER

DETECT

- Integrable into almost any vehicle
- Detection range up to 40 km (consumer UAV) / 80 km (MIL UAV)
- Real-time drone protocol decoding and RF signal detection
- Real-time RF frequency monitoring (20 MHz to 6 GHz)
- Powerful software

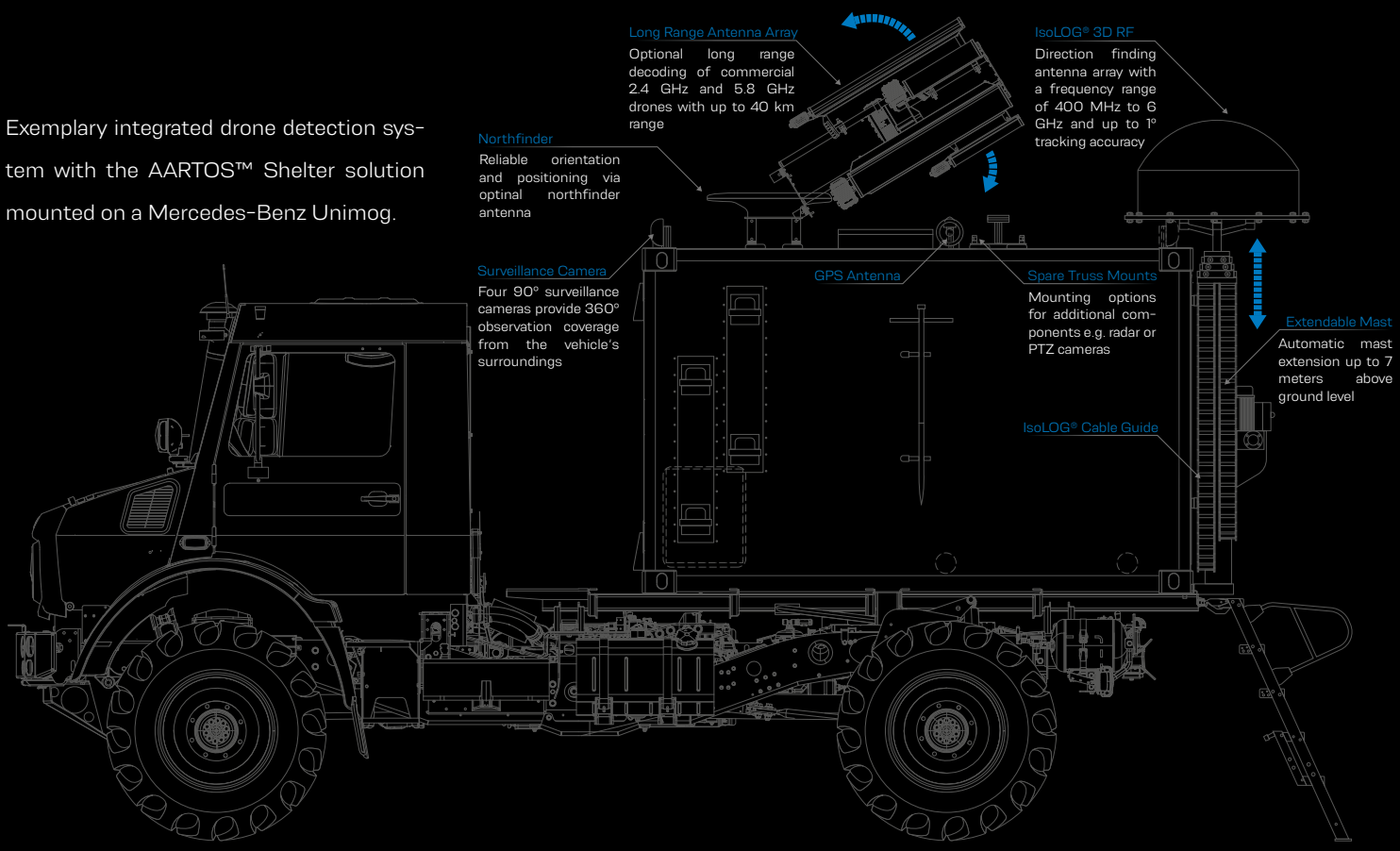
LOCALIZE

- Localizes drones, pilots and homepoints
- 16 sector antenna(s) with a high tracking accuracy of 1° to 3°
- Detects and tracks pre-programmed drones with high accuracy
- 360° azimuth and full 180° elevation coverage
- Radar and camera integration available

COUNTER

- Optional jamming capabilities
- Up to 10 km range
- Seamless frequency range, selectively from 400 MHz to 6 GHz
- IP65 weather protection, operating temperature -20°C to +60°C
- 4 or 8 sector versions, customizable on demand

Exemplary integrated drone detection system with the AARTOS™ Shelter solution mounted on a Mercedes-Benz Unimog.



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. These additions provide a comprehensive approach to drone detection and mitigation, allowing for a more robust response to aerial threats.

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™ Self-Sustainable Shelter

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 shelter is available in two standardized sizes; The Zeppelin FM1 and FM2. They 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 two seats for two operators, four 4k monitors to provide a complete overview of the airspace, and the four cameras surrounding the shelter to monitor the environment in 360°.

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™ Fixed Site Installation

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.

The AARTOS™ X7 offers reliable drone detection within a 5 km radius with high tracking accuracy. In contrast, the AARTOS™ X9 extends its capabilities significantly, able to detect drones up to 80 km away, including military UAVs, and offers ultra-high tracking accuracy. Additionally, both systems offer the flexibility of being upgraded with radar or PTZ (Pan-Tilt-Zoom) camera systems, enhancing their surveillance and detection capabilities.

Integrated AARTOS™ X9 with long range antenna upgrade

	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	400 MHz to 6 GHz	400 MHz to 6 GHz (optionally 10 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
Typical Decoding Accuracy	2 - 3 m	2 - 3 m
Typical* Direction Finding Accuracy	2° to 4°	1° to 3°
Antenna Sectors	16	16
Multi Frequency Swarm Attack	Limited	Yes
Radar and PTZ Camera	Yes	Yes
Automatic Jamming Option	Yes	Yes

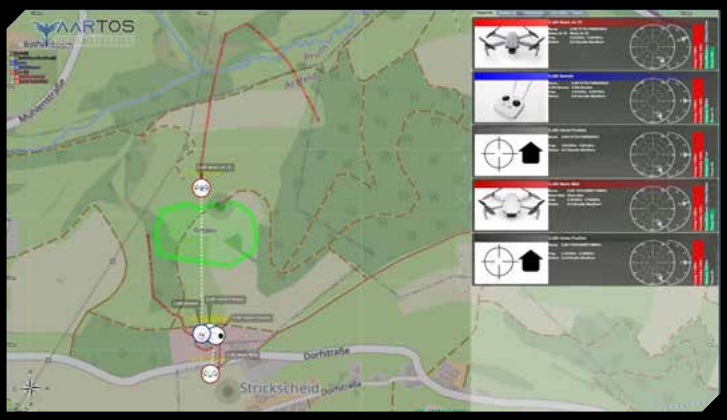
* Reference target at 2,4GHz (hovering drone), 1,5km distance (FCC)

Integrated AARTOS™ X9 detection range including long range upgrade

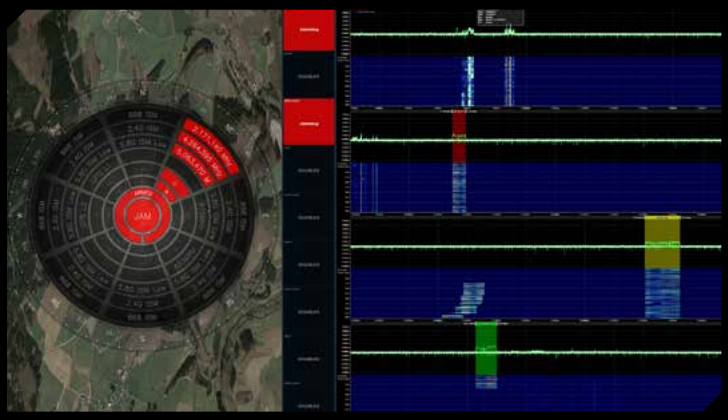
· Safe detection – no false alarms
Our system does not mistake UAVs for other flying objects such as birds, balloons or kites. Saving time and resources for real threats.

· Early detection
The AARTOS™ Drone Detector 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™ DDS 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 DDS systems are deployed, triangulation can then determine the exact position.

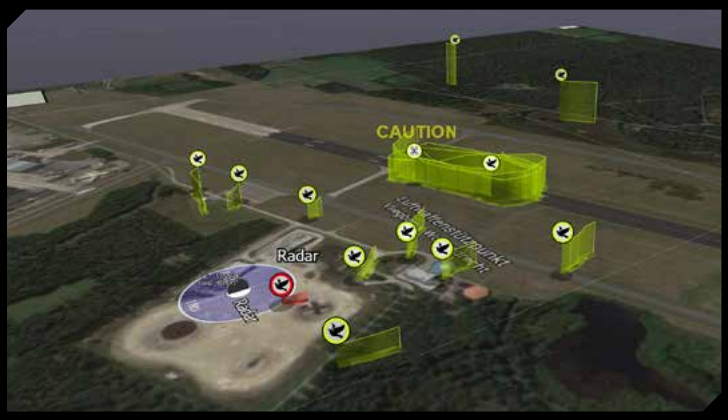


A top-down 2D perspective is the most commonly used visualization technique in drone detection. The 3D view expands our capabilities by adding the drone's altitude information.



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

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

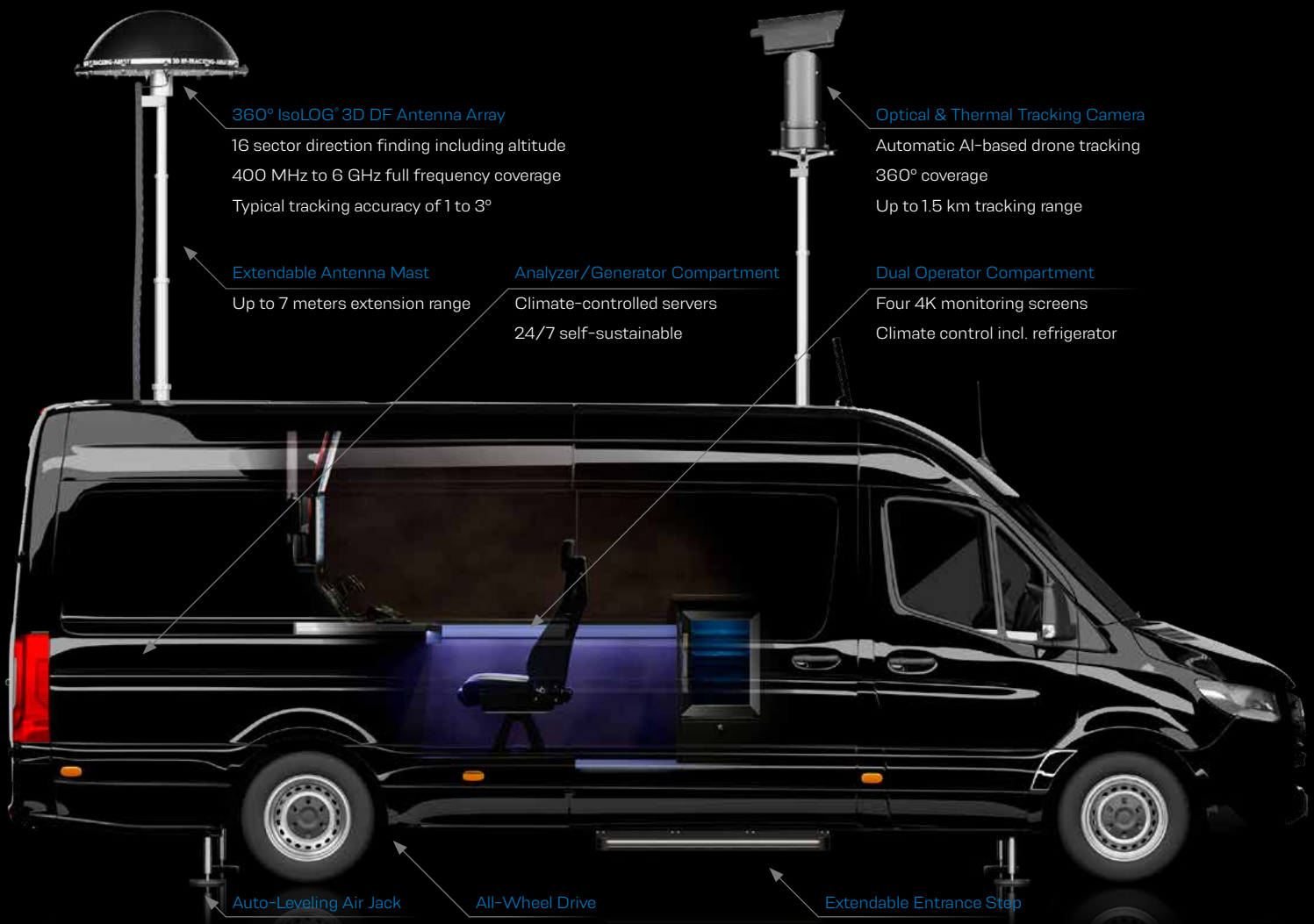


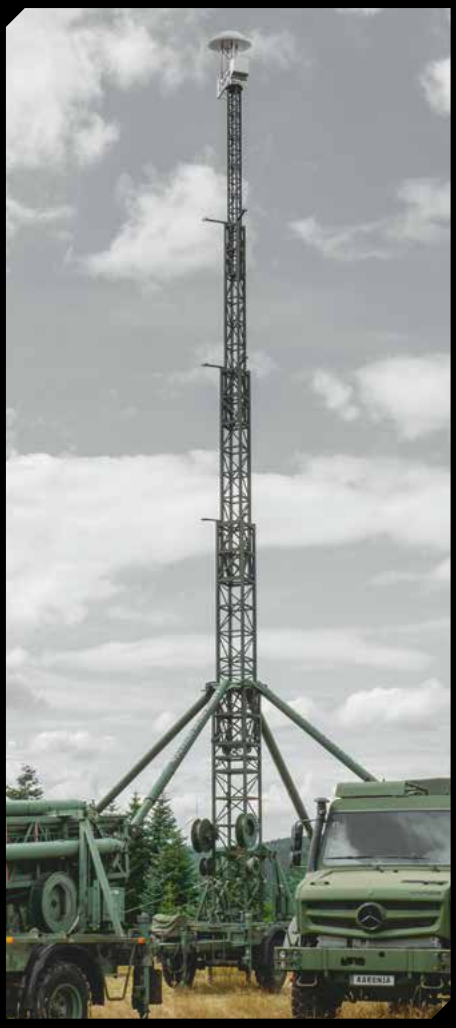
Using an (optional) sophisticated radar system, the AARTOS™ DDS can automatically determine and display the exact position, flight direction, altitude, speed and classification of an inbound drone.

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.

A covert surveillance 4x4 pickup vehicle is equipped with the AARTOS™ System and a concealed IsoLOG® 3D RF Antenna Array. This setup includes optional jamming capabilities and features a single operator station located on the back seat, designed for stealth and efficiency.

An all-terrain vehicle solution, self-sustaining and equipped with the AARTOS™ shelter integration, features the IsoLOG® 3D RF 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.





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.

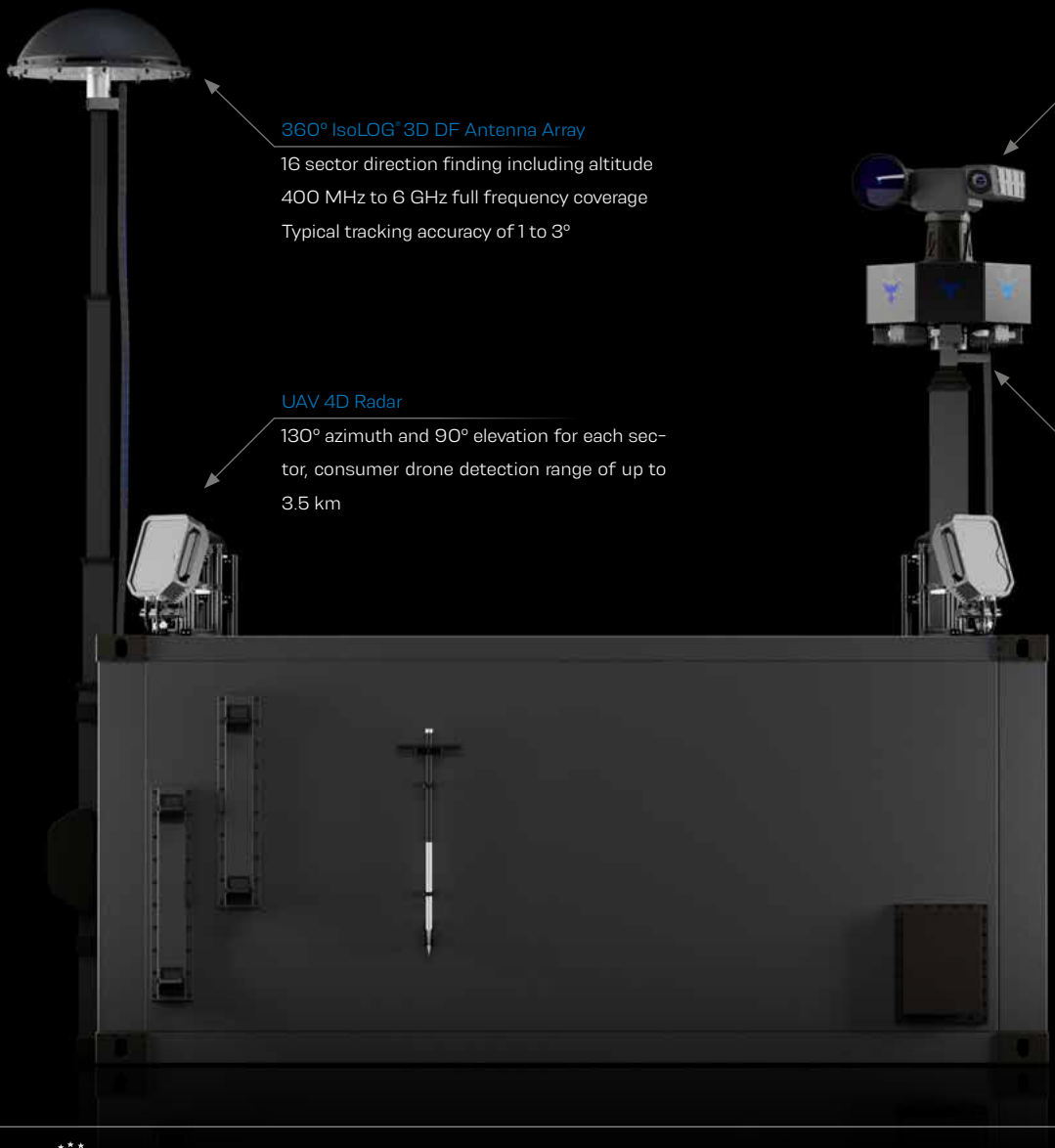
360° IsoLOG® 3D DF Antenna Array
16 sector direction finding including altitude
400 MHz to 6 GHz full frequency coverage
Typical tracking accuracy of 1 to 3°

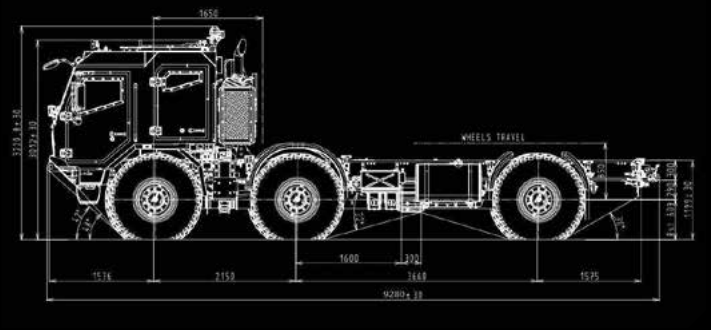
Extendable To 25 Meters
Operational wind speeds of up to 108 km/h
Electric extension and retraction

All-Terrain Trailer
Maximum gradient of ± 10°
16 minutes deployment time

The AARTOS™ Drone Detection Shelter represents a new standard in portable and self-sufficient drone detection. It's designed to be scalable, easy to operate, and quick to deploy. This shelter offers advanced RF drone detection with state-of-the-art analysis and immediate alarm forwarding. It also supports optional additions like radar, and optical and thermal PTZ cameras. Available in two standard sizes,

The Zeppelin FM1 and he Zeppelin FM2, these shelters are manageable and can be transported via Unimog or similar vehicles. Versatile for both mobile and stationary use, manned or remote operation, the AARTOS™ Drone Detection shelter serves as an effective solution for professional airspace monitoring to identify and intercept unauthorized drones.





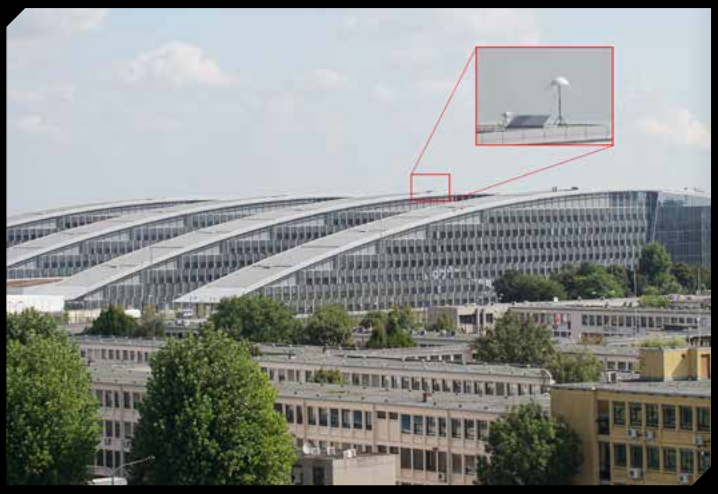
Introducing the AARTOS Drone Detection All-Terrain Mobile Mast Solution — an advanced system designed for effective drone detection in challenging environments. Equipped with the integrated AARTOS X9 drone detection system, it offers reliable performance with an extendable electrical mast that reaches up to 25 meters for long-range detection. Powered by a generator, it supports continuous 24/7 operation, ensuring consistent coverage. The solution also includes a dedicated, air-conditioned operator compartment, providing comfort and efficiency for your team. The AARTOS Drone Detection All-Terrain Mobile Mast Solution can optionally be integrated on the armored Tatra 6x6 chassis, offering enhanced protection and mobility in demanding conditions.

All-Terrain Solution
Highly mobile 4x4 MAN truck chassis built for continuous all-terrain use.

Complete hardware integration
Air-conditioned operator department with two dedicated workstations

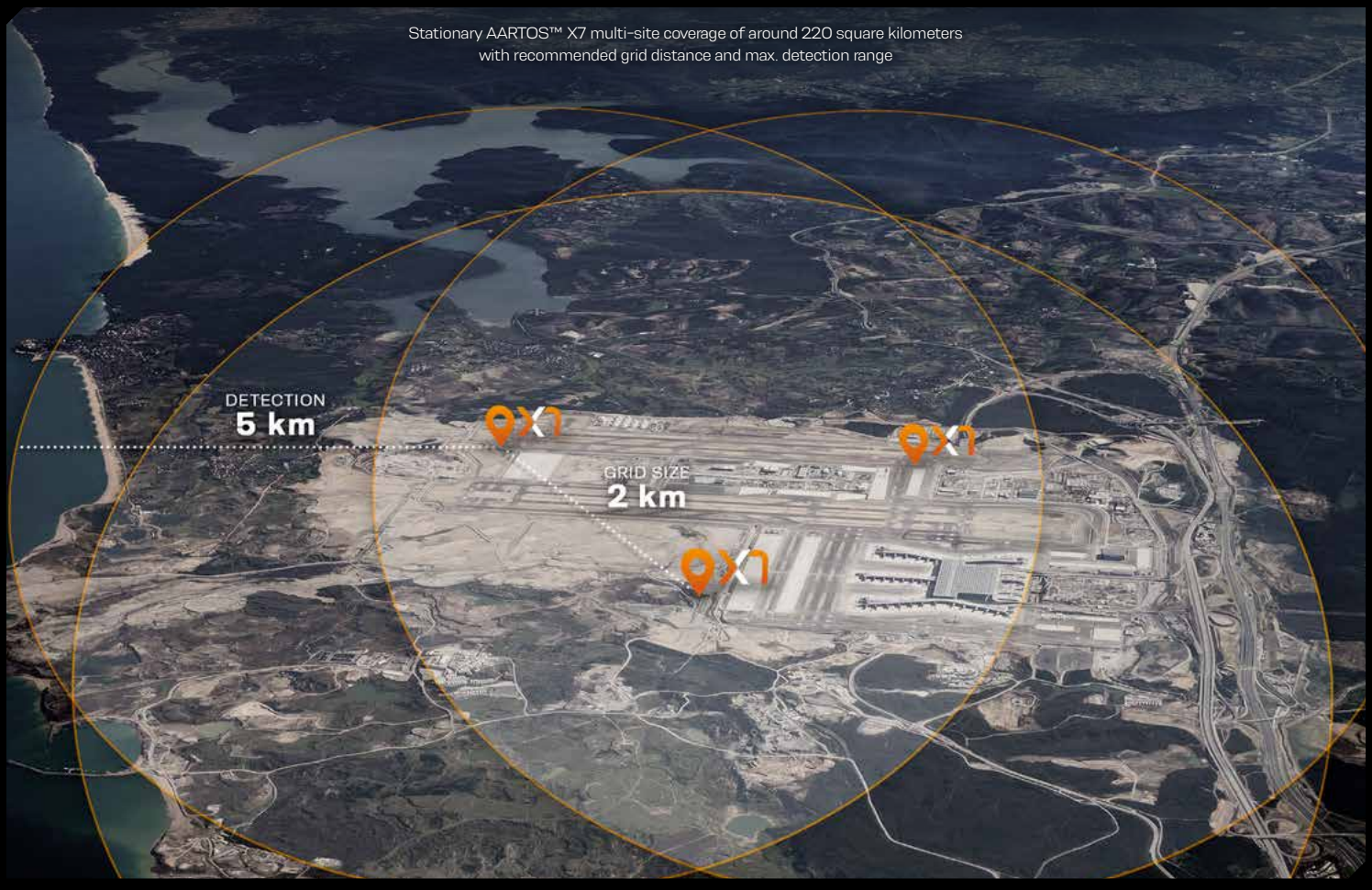
Extendable to 25 m
Operational wind speeds of up to 108 km/h with electric extension and retraction

360° IsoLOG® 3D DF Antenna Array
16 sector direction finding with 400 MHz to 6 GHz full frequency coverage and a typical tracking accuracy of 1 to 3°



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 capabilities. 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.

Stationary AARTOS™ X7 multi-site coverage of around 220 square kilometers
with recommended grid distance and max. detection range



FJ SERIES

Fixed Bands Sector Jammers

By extending the AARTOS™ DDS to include our "FJ series" stationary jammer with a jamming range of up to 8 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 1300W the jammer is capable of countering drones within the most common frequency bands (430 MHz, 1.6 GHz, 2.4 GHz and 5.8 GHz).

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.

SJ SERIES

Programmable Smart Sector Jammer

Our AARTOS™ DDS "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).

The AARTOS™ CMS (Countermeasure 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.

	SJ 240 SJ 800	FJ 360	MJ 170	MJ 40
	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 15 frequency bands.	The mobile 6-band jammer is based on the MJ-40 with extended range and output power including a remote control and customizable bands.	This handheld UAV jammer is a potent and portable drone jamming system with 2h battery life and customizable bands.
Typ. Range	4 km / 10 km	3 km	3-4 km	2 km
Antenna(s)	8 directional	2/4 directional	1 directional	1 directional
Sectors	8	2/4	1	1
Bands	All bands up to 6 GHz	Up to 15	6	4
Output Power	240W / 800W	180W / 360W	170W	40W

Specifications as of 08.04.2024. Subject to modifications and errors.

XCAM SERIES

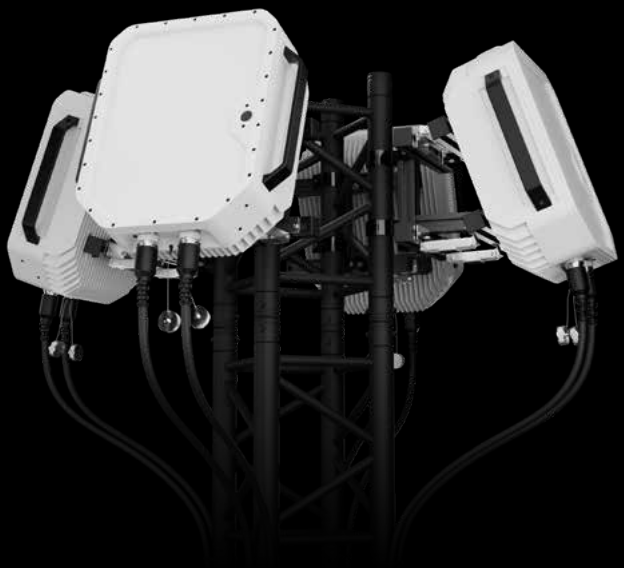
Optical & Thermal PTZ Cameras

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 the AARTOS™ DDS.

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



RD SERIES

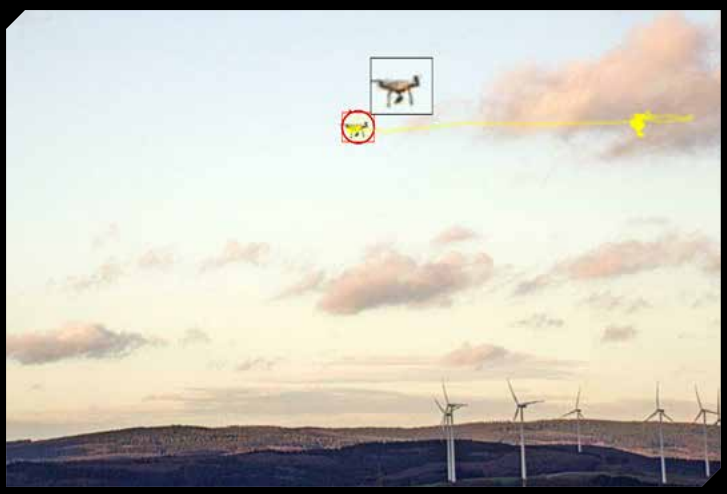
Fully Integrated Modular Radar Capabilities

Using an (optional) sophisticated radar system, the AARTOS™ DDS 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.

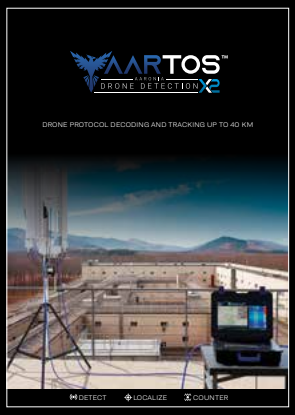
Complete Customization

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.



For detailed specifications of our products please visit
www.aartos-dds.com or use the dedicated QR-Code:

AARTOS™ Overview



AARTOS™ X2

AARTOS™ X5

AARTOS™ X7

AARTOS™ X9

AARTOS™ Counter UAV Systems

AARTOS™ System Integrations

AARTOS™ Zetros-XXL C-UAV Truck

AARTOS™ Catalog

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