



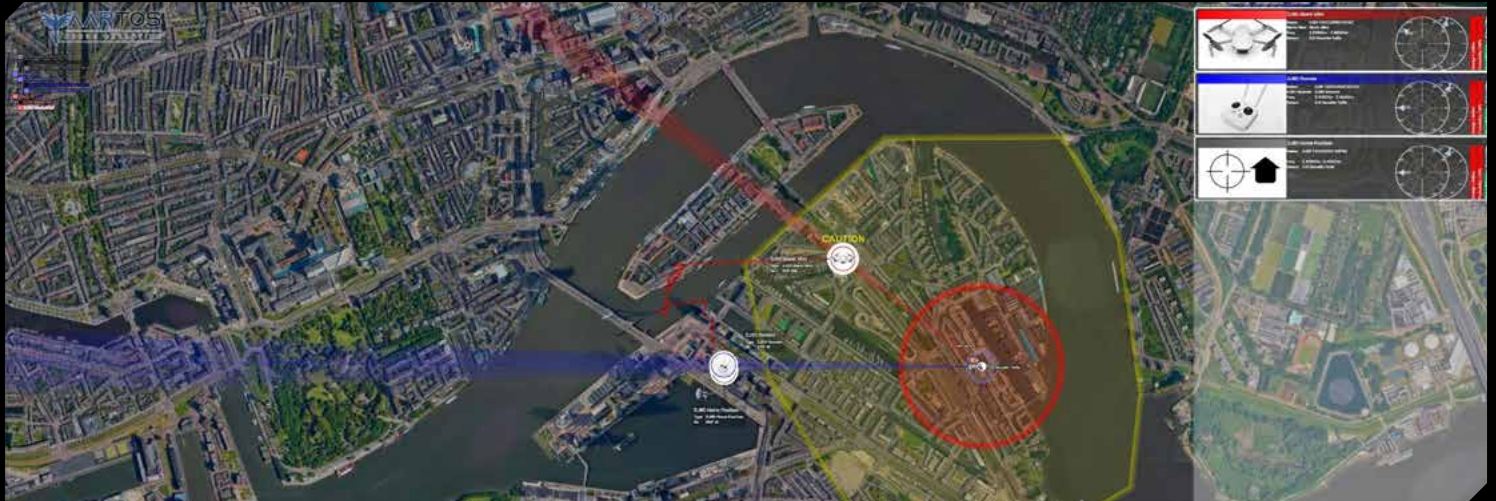
BROADBAND UAV DETECTION AND DIRECTION FINDING



 DETECT

 LOCALIZE

 COUNTER



DETECT

Detection range up to 5 km, expandable via grid system

- Real-time drone protocol decoding and RF signal detection
- Real-time RF frequency monitoring (400 MHz to 6 GHz)
- Portable and stationary variants
- Powerful software
- Made in Germany

LOCALIZE

locates drones, pilots and homepoints

- 16 sector antenna with a high tracking accuracy of 2° to 4°
- Detects and tracks pre-programmed drones with high accuracy
- 360° azimuth and full 180° elevation coverage
- Fully automatic mode possible
- Optional with radars and cameras

COUNTER

Optional jamming systems with up to 10 km jamming range

- 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
- Portable or stationary



Portable AARTOS™ DDS X7

- Command Center with two 4K high contrast monitors
- IsoLOG® 3D DF antenna with extendable tripod



Stationary AARTOS™ DDS X7

- Rack mounted hardware packed in a sturdy water-resistant case
- Truss mounted IsoLOG® 3D DF antenna





Portable or stationary

The highest-precision drone detection combined with an extremely large detection range. The AARTOS™ X7 comes with the IsoLOG® 3D DF tracking antenna array and a powerful analyzer unit (Command Center or 19" rack). Perfect for both single-system and multi-grid system setups.

Multi-Site solution

The multi-site solution consists of several antennas (IsoLOG® 3D DF) and analyzers (Outdoor Rack) that feed to a central monitoring PC which manages all systems simultaneously. The unique advantage of our multi-site solution lies in its ability to triangulate signals with very high accuracy.

Due to its ability to combine a high number of receivers, the multi-site solution is best suited for the protection of very large areas such as industrial plants, stadiums and government buildings.

3D drone position finding

Our patented 3D RF Tracking Antenna IsoLOG® 3D DF is the first and only DF antenna also offering the elevation and altitude of any RF source.

This makes it the perfect choice for tracking flying transmitters e.g. drones or airplanes. In addition the IsoLOG® 3D DF offers the by far fastest tracking speed on the market of down to 8µs per sector. This offers a unique real time monitoring/tracking feature for many RF transmitters.





• **Safe detection**

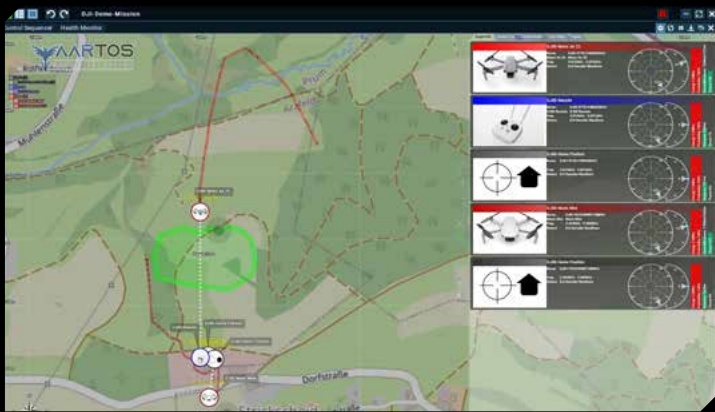
Our system does not mistake UAVs for other flying objects such as birds, balloons or kites. Saving time and resources for real threats.

• **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.

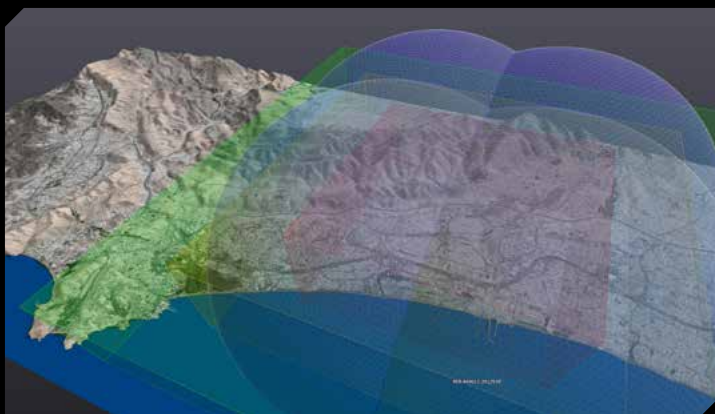
• **Tracking the drone operator**

Since the AARTOS™ 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 program is easy to understand and navigate due to its similarity to common satellite-image-based map solutions.

The 3D view expands our capabilities by adding the drone's altitude information (this requires multiple drone detection systems), and making it easier to evaluate distances between different objects on the map.



The topographic mode displays the surrounding terrain's surface, depicting hills, mountains, peaks and valleys.

Combined with our 3D, man-made structures system building system, the topographic view creates the most accurate representation of the surrounding area: AARTOS™ is also able to integrate 3D models of complex areas (e.g. cities, airports, etc.) into its 3D view, improving usability for end users.

Versatile, powerful and easy to use - the RTSA Suite PRO block graph editor lets you create, manage and customize your DDS missions.





Technical Specifications

The highest-precision drone detection combined with an extremely large detection range. **The AARTOS™ X7** consists of a 16 sector IsoLOG® 3D DF antenna array and powerful analyzer unit (Command Center or 19" rack). Perfect for **single-system and multi-grid system** setups.

Spectrum Analyzer Specifications

The **AARTOS™ X7** features a total of 2 real-time spectrum analyzers with a total instantaneous IQ capture bandwidth of 320 MHz and a frequency range of 10 MHz to 6 GHz capable of scanning 6 GHz in less than 1 millisecond, equaling an astonishing speed of 2 THz per second.

IsoLOG® 3D DF Antenna Specifications

The **tracking antenna** includes a high density, customizable array of 32 tracking-antennas. Each **IsoLOG® 3D DF** ships complete with a robust radome designed for the most hostile conditions and can be customized with RAL colors.

| | | |
|---|--|---|
| Typical range ▶ 2 km - 5 km | Analyzer units ▶ 2 | Frequency range ▶ 400 MHz to 6 GHz |
| Usage ▶ Mobile & stationary | Frequency range ▶ 10 MHz to 6 GHz | Coverage ▶ 360° |
| Frequency coverage ▶ 400 MHz to 6 GHz | Real-time bandwidth ▶ 2x160 MHz | Tracking speed ▶ Up to 8 microseconds (with real-time DF option) |
| Detection type ▶ Protocol decoding & RF Signal detection | POI ▶ 97 ns (FFT-based), 10 ns (direct I/Q-based) | Tracking accuracy ▶ Typically 2° to 4° |
| Tracking type ▶ GPS & RF signal triangulation | DANL (internal preamp on) ▶ Typ. -170 dBm/Hz | GPS receiver ▶ included |
| Antenna sectors ▶ 16 | Sweep speed ▶ 2x1 THz/s (2 THz/s) | Internal low-noise pre-amplifiers ▶ included |
| Typ. tracking accuracy* ▶ 2° to 4° | RF connectors ▶ 2x Rx SMA, 1x Rx N | Operating temperature ▶ -30° to +60° C (-22° to 140° F) |
| Multi frequency swarm attack ▶ Limited | Frequency reference accuracy ▶ 0,5 ppm | Storage temperature ▶ -40° to 70° C (-40° to 158° F) |
| Scalable ▶ Yes | RBW (resolution bw) ▶ 62 mHz to 57 MHz | Dimensions W x H x D ▶ 960 x 960 x 380 mm |
| Max. recommended grid distance ▶ 2 km | Attenuator range ▶ 50 dB / 70 dB (0,5 dB steps) | Weight ▶ approx. 25 kg |
| Radar and PTZ Camera ▶ Yes | ADC ▶ 4 x 2GSPS 16 Bit | Certificates ▶ IP65 (waterproof) |
| Automatic jamming option ▶ Yes | DAC ▶ 2 x 2GSPS 14-Bit | |

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



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.

SJ²⁴⁰ SJ⁸⁰⁰

Seamless frequency jamming from 400 MHz to 6 GHz with a 360° coverage and the highest range in our lineup.

FJ³⁶⁰

The stationary FJ series cover 360° with a range of up to 3 km and up to 15 frequency bands.

MJ¹⁷⁰

The mobile 6-band jammer is based on the MJ-40 with extended range and output power including a remote control and customizable bands.

MJ⁴⁰

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 | 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 |



XCAM SERIES

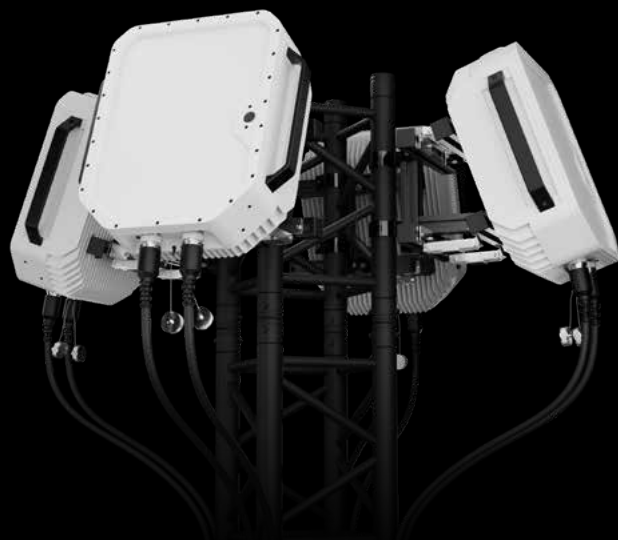
Optical & Thermal PTZ Cameras

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 x 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

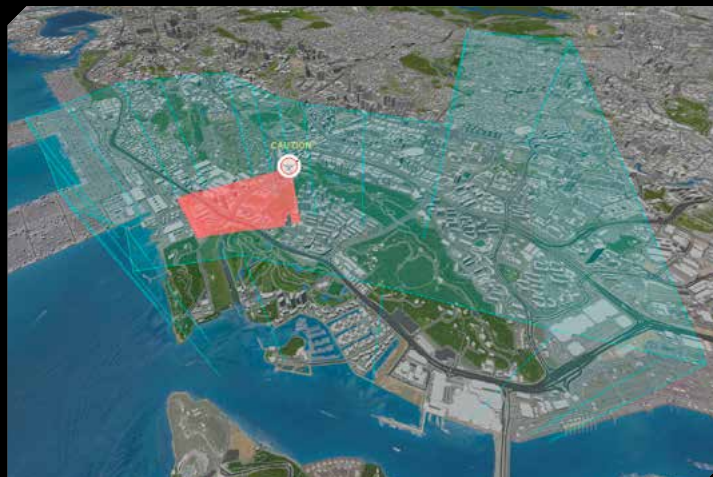
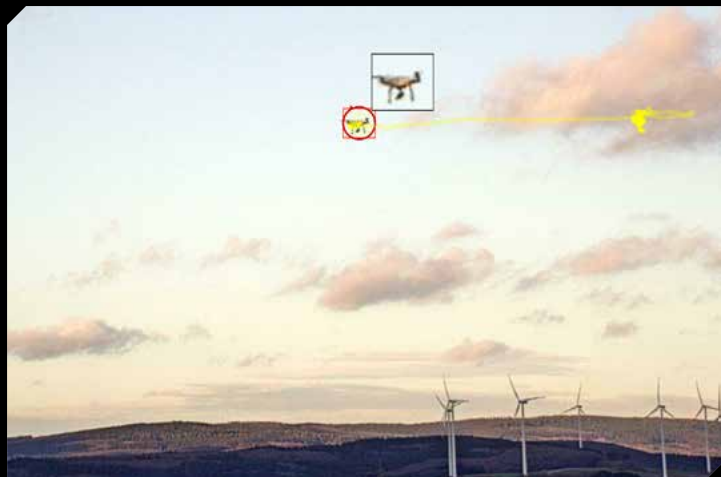
Fully Integrated Modular Radar Capabilities

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

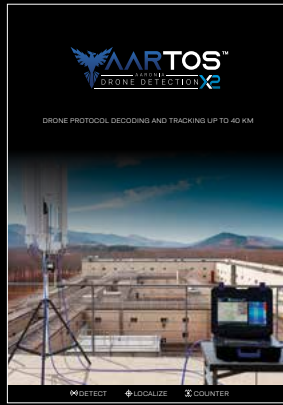
The required equipment for AARTOS™ can be configured to match detailed customer requirements. End customers will receive hardware that is tailored to their specific needs, with all components chosen individually. This guarantees optimal drone detection performance in any given terrain or area.



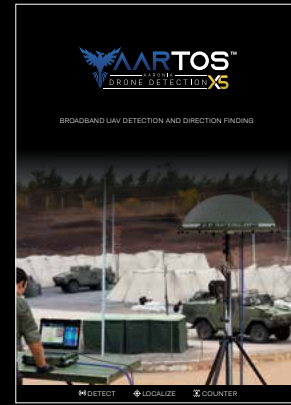
For detailed specifications of our products please visit www.aartos-dds.com or use the dedicated QR-Code:



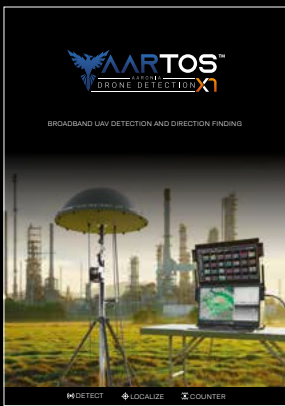
AARTOS™ Overview



AARTOS™ X2



AARTOS™ X5



AARTOS™ X7



AARTOS™ X9



AARTOS™ Counter UAV Systems



AARTOS™ System Integrations



AARTOS™ Catalog

