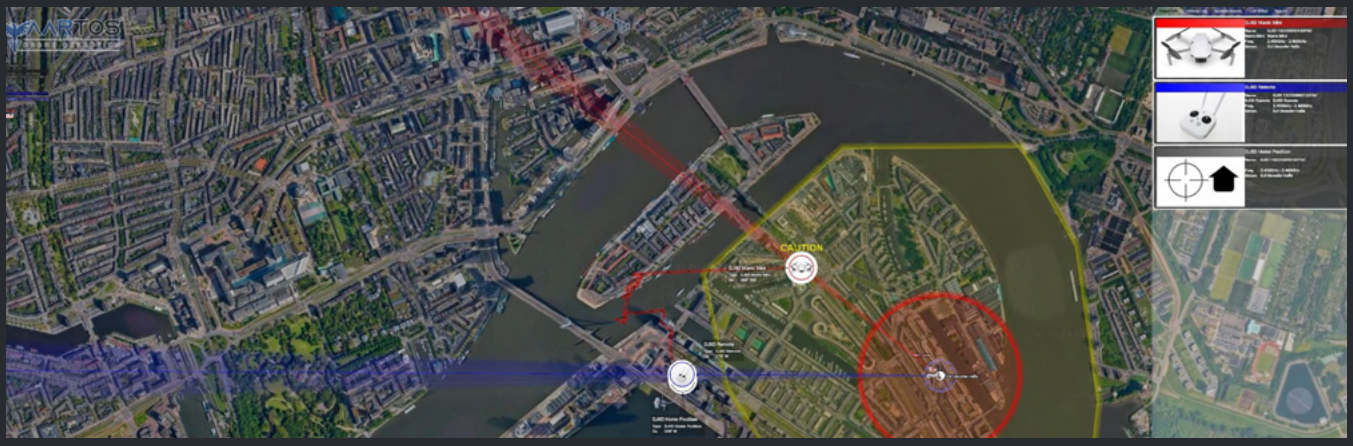
AARTOS™

AARONIA

C-UAS & EW SOLUTIONS X1

BROADBAND UAV DETECTION AND DIRECTION FINDING

DETECT LOCATE 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 and tracking (700 MHz to 6 GHz)
- Portable and stationary variants
- Powerful software
- Made in Germany

LOCATE

Precisely locates drones, pilots and homepoints

- 8 sector antenna with a high tracking accuracy of 4° to 6°
- 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

- 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

X7 Portable

- Command Center with two 4K high contrast monitors
- IsoLOG® FOX DF 80 antenna array

X7 Stationary

- Rack mounted hardware packed in a sturdy water-resistant case
- IsoLOG® FOX DF 80 antenna array

Portable or stationary

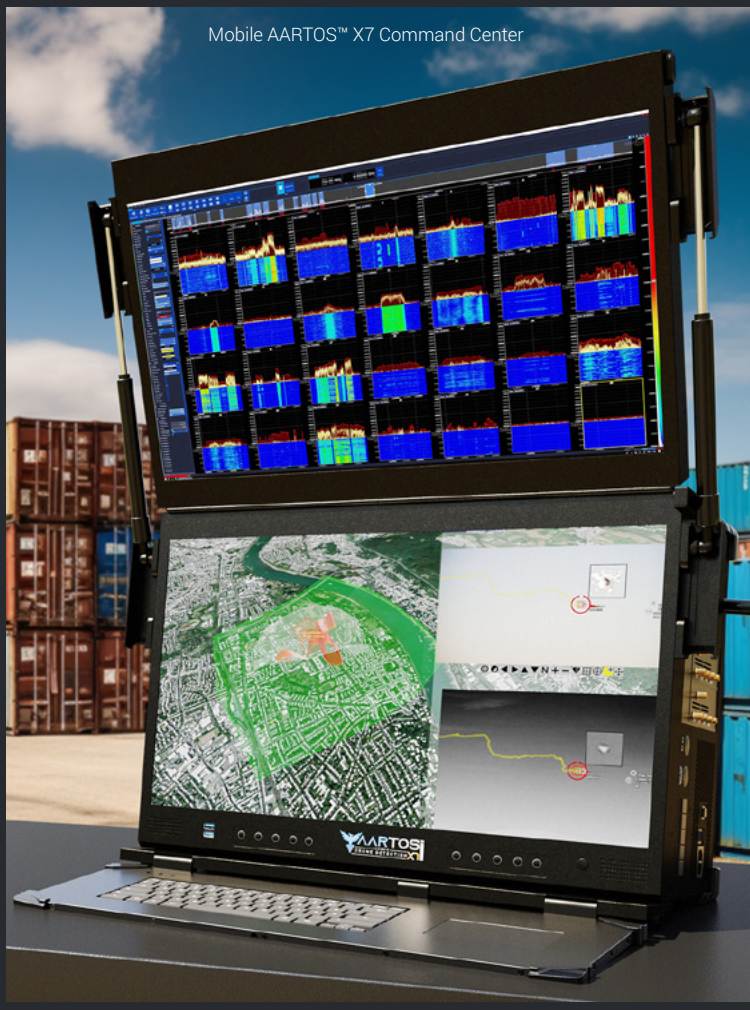
The highest-precision drone detection combined with an extremely large detection range. The AARTOS™ X7 comes with the IsoLOG® FOX DF 80 tracking antenna array and a powerful analyzer unit (Command Center or 19" rack). Perfect for both single-system and multi-grid system setups.

Multi site solution

The multi-site solution consists of several antennas (IsoLOG® 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.

Multi site solution

Our IsoLOG® FOX DF 80 antenna is a compact, lightweight, and cost-effective solution for reliable RF tracking. Engineered for fast, accurate directional detection, it is ideal for tracking moving RF sources such as drones and other transmitters.
With rapid sector-switching speeds down to 8µs, the IsoLOG® DF provides near real-time monitoring, ensuring efficient tracking of RF signals.



Mobile AARTOS™ X7 Command Center

Stationary AARTOS™ X7 multi-site coverage
with recommended grid distance and max. detection range

Safe detection

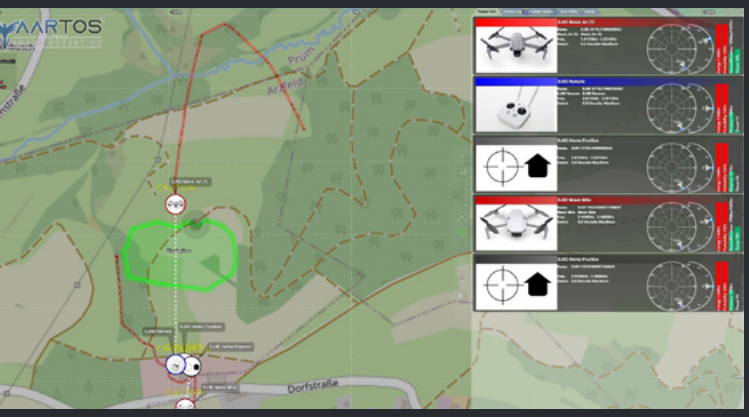
Our system does not mistake UAVs for other flying objects such as birds, balloons or kites. Saving time and resources for real threats.

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.

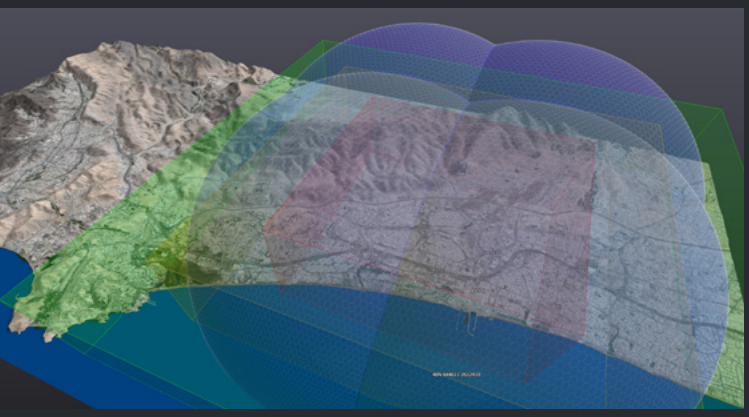
Tracking the drone operator

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.



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.

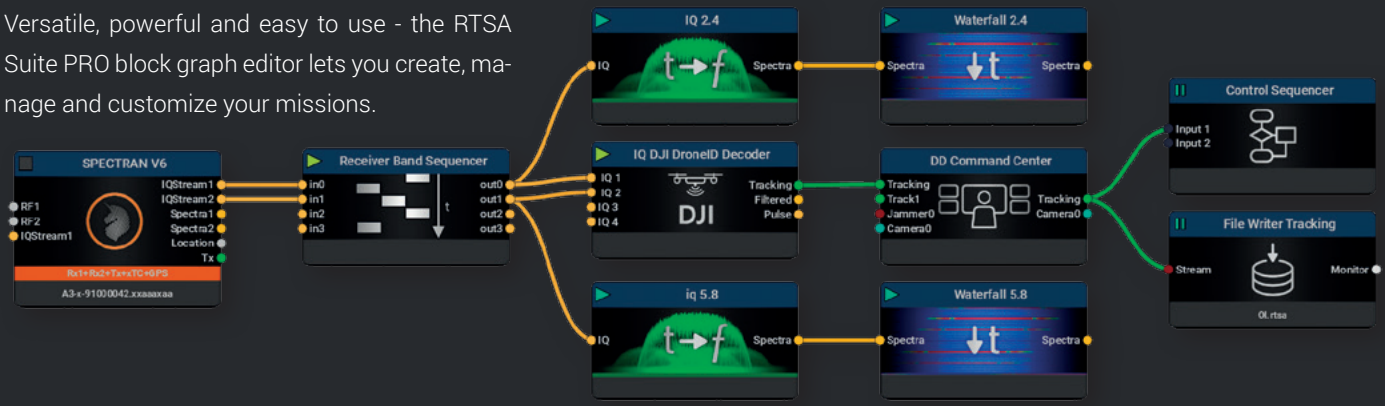
The 3D view expands our capabilities by adding the drone's altitude information (this requires multiple drone detection systems), and making it easier to evaluate distances between different objects on the map.



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 missions.



Technical Specifications

A 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 powerful analyzer unit (Command Center or 19" rack). Perfect for single-system and multi-grid system setups.

Typical range	2 km - 5 km
Usage	Mobile & stationary
Frequency coverage	700 MHz to 6 GHz
Detection type	Protocol decoding & RF Signal detection
Tracking type	GPS & RF signal triangulation
Antenna sectors	8
Typ. tracking accuracy*	4° to 6°
Multi frequency swarm attack	Limited
Scalable	Yes
Recommended grid distance	2 km
Radar and PTZ Camera	Yes
Automatic jamming option	Yes

Spectrum Analyzer Specifications

The AARTOS™ X7 features a total of 3 real-time spectrum analyzers with a total instantaneous IQ capture bandwidth of 480 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 3 THz per second.

Analyzer units	3
Frequency range	10 MHz to 6 GHz
Real-time bandwidth	3x 160 MHz
POI	97 ns (FFT), 10 ns (direct I/Q)
DANL (internal preamp on)	Typ. -170 dBm/Hz
Sweep speed	3x 1 THz/s (3 THz/s)
RF connectors	3x Rx SMA 1x Rx N
Frequency ref. accuracy	0,5 ppm
Resolution bandwidth	62 mHz to 57 MHz
Attenuator range	50 dB / 70 dB (0,5 dB steps)
ADC	6 x 2GSPS 16 Bit
DAC	3 x 2GSPS 14-Bit

IsoLOG® FOX DF 80 Specifications

The tracking antenna includes an array of 8 tracking antennas.
Each IsoLOG® FOX DF 80 ships complete with a robust radome designed for the most hostile conditions and can be customized with RAL colors.

Frequency range	700 MHz to 6 GHz
Coverage	360°
Sectors/ Antennas	8/8
Tracking speed	Up to 8µs (with ultra-fast DF option)
Tracking accuracy	Typically 4° to 6°
GPS receiver	included
Low-noise pre-amplifiers	included
Operating temperature	-30° to +60° C (-22° to 140° F)
Storage temperature	-40° to 70° C (-40° to 158° F)
Dimensions ø x H	ø600 x 380 mm
Weight	approx. 14 kg
Certificates	IP65 (waterproof)

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

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

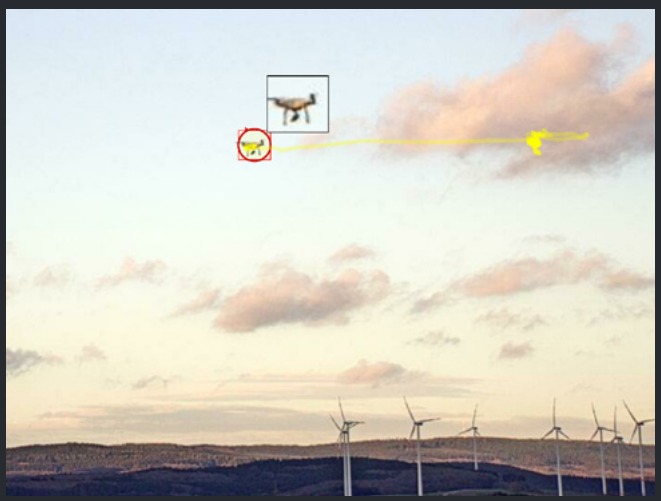
XCAM SERIES

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

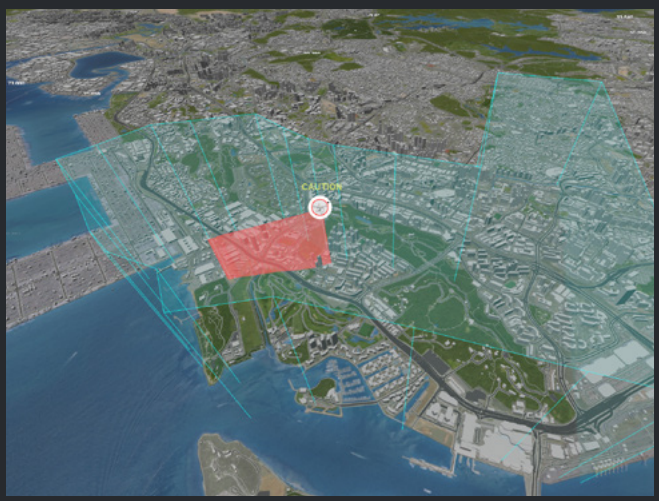
RD SERIES

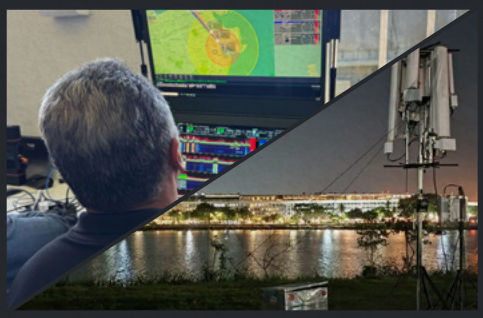
Using an (optional), sophisticated radar system, AARTOS™ can automatically determine and display the exact position, flight direction, altitude, speed and classification of an inbound drone. The trajectory of the flight can also be tracked in real-time as a 3D model.

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.

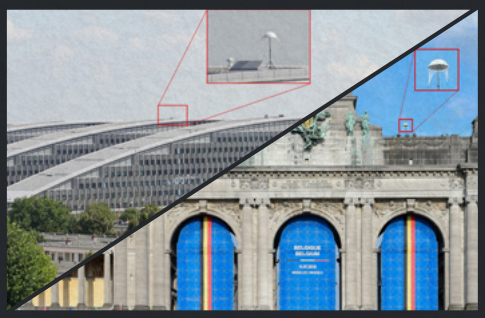
Complete customization

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.





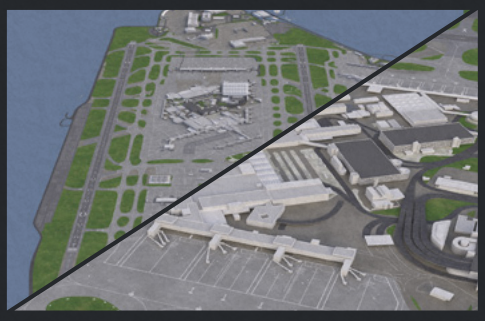
G20 Summit Brazil 2024 & Bali 2022



NATO Summit, Bruessels

North Korea / USA Summit, Singapore

Airpower 2024, Austria



Heathrow International Airport, UK

Formula 1 GP Red Bull Ring, Austria

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