AARTOS™

AARONIA

DRONE DETECTION

WORLD'S MOST SUCCESSFUL DRONE DEFENSE SYSTEM WITH HUNDREDS OF INSTALLATIONS WORLDWIDE!

DETECT   LOCALIZE   COUNTER

DETECT

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

- Real-time decoding of many drone protocols
- Real-time RF frequency monitoring and tracking (10 MHz to 8 GHz)
- Portable and stationary variants
- Powerful software
- Made in Germany

LOCALIZE

Precisely localizes drones, pilots and homepoints

- Detects and tracks pre-programmed drones with high accuracy
- 360° azimuth and full 180° elevation coverage
- Fully automatic mode possible
- Optional radar and cameras

COUNTER

Portable and stationary variants with up to 10 km jamming range

- Seamless frequency range, selectively from 400 MHz to 6 GHz
- IP65 weather protection, operating temperature -20°C to +60°C
- Portable or stationary
- 4 or 8 sector versions, customizable on demand

The most sophisticated C-UAS system to monitor, detect and defeat unwanted drones

Aaronia is introducing its latest drone detection system – the AARTOS™ DDS Generation 6. Designed to detect intruding drones, the system is based on real-time directional measurements of a drone's electromagnetic emissions (including its remote control). AARTOS™ DDS users receive accurate warnings and alerts about incoming drones.

Stationary AARTOS™ X2 Long Range securing an international airport

Drones – more than just a nuisance

Increasingly easy access to mini and micro UAVs makes them a growing potential threat to national and commercial security. Easy to produce, cheap to buy, simple to fly, and hard to detect, these drones are available commercially and non-commercially and are among the most quickly developing technological threats to military and civilian interests. In March 2015, a commercial drone reportedly alarmed the Secret Service when it got too close the President's golf resort. This is just one of countless similar situations, where a state-of-the-art drone detection system like AARTOS™ would have been vital.

Detection range

Our system's detection range far exceeds that of its targets. Under normal circumstances, the detection range is equal to (or longer than) the maximum distance between the operator and the drone, depending on the transmitter power of the drone and/or its operator. Taking into account factors such as drone type and topography, the range of the AARTOS™ DDS can reach up to 80 km.

Mobile AARTOS™ X7 with the IsoLOG® 3D direction finding antenna

Early detection

The AARTOS™ triggers an alarm as soon as an operator starts sending signals to a drone, even before it is actually airborne. Allowing countermeasures to be initiated before a potential threat even arises.

Ready for action when you need it

Aaronia's drone detection system can be used virtually anywhere. The AARTOS™ has proven itself in protection of borders, sports events or concerts, residential areas, government facilities as well as commercial or industrial sites such as nuclear plants. Available as a single-site or multiple-site solution, the system can be adjusted to the characteristics of the respective terrain to be monitored.

Mobile AARTOS™ X2 Long Range deployed at a correctional facility

Hardware

AARTOS™ is based on our IsoLOG® 3D DF antenna, real-time spectrum analyzers and a special software plug-in for the RTSA-Suite PRO software. Combining all these elements allows for 24/7 monitoring, recording, and uninterrupted data streaming. The system is also both compact and flexible, allowing it to be set up in virtually any environment it is needed.

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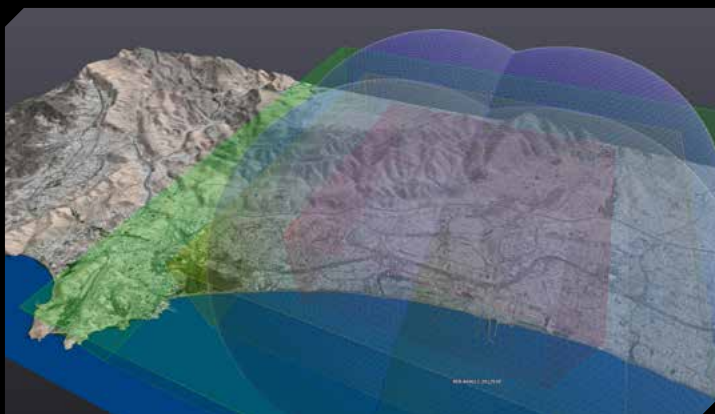
The topographic mode displays the surrounding terrain's surface, depicting hills, mountains, peaks and valleys.

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.

X2
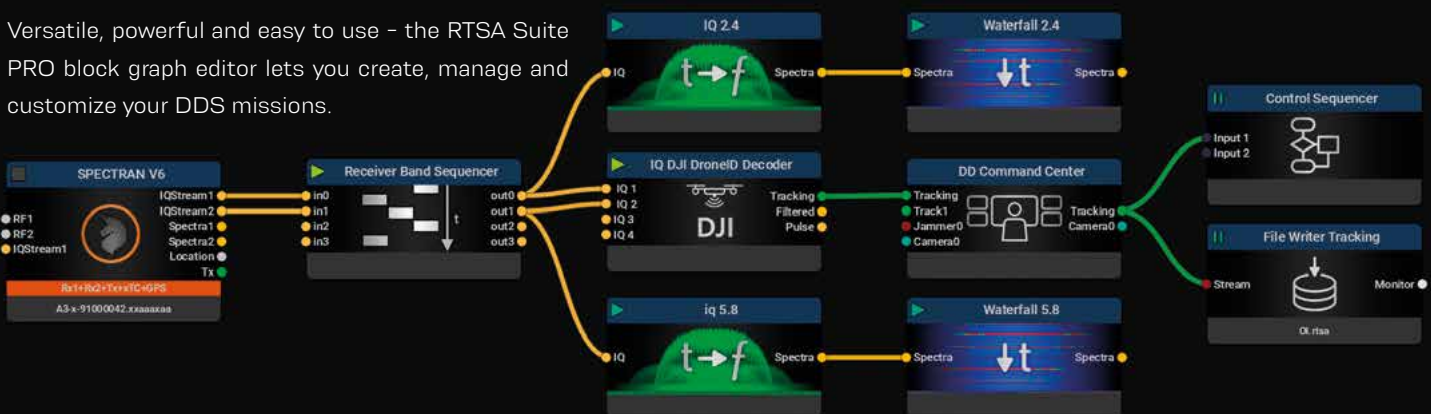
The portable and quick-to-use **AARTOS™ X2** is a **decoding system** that exactly shows the position of **DJI drones and drone pilots** and even their home position.
Alternatively, it is also available as a purely stationary system with a range of **up to 40km**.

X5

The **AARTOS™ DDS X5** base system consists of one spectrum analyzer (V6 MIL) and one IsoLOG 3D® DF antenna array with 8 sectors.
It is a **highly cost-effective** DDS solution that can be used to cover medium sized areas.

X7

The highest-precision drone detection combined with an extremely large detection range. **The AARTOS™ DDS X7** consists of a 16 sector IsoLOG® 3D DF antenna array and a spectrum analyzer (V6 Command Center or 19″ rack). Perfect for both **single-system and multi-grid system** setups.

X9

The **The AARTOS™ DDS X9** combines highest precision and **ultra-wide-band monitoring real-time detection** over multiple bands. It consists of an IsoLOG® 3D DF antenna array with 16 sectors and the Command Center or 19″ rack, perfect for **ultra-high-range drone detection** grids.

	X2	X5	X7	X9
Typical range (Consumer/DIY UAV's)	Standard: max. 5 km Long range: max. 40 km	1 km – 2 km	2 km – 5 km	Standard: max. 14 km Long range: max. 40 km
Typical range (Military UAV's)	-	-	-	max. 80 km
Usage	Mobile & stationary	Mobile	Mobile & stationary	Mobile & stationary
Frequency coverage	2.4 GHz + 5.8 GHz	700 MHz to 6 GHz	400 MHz to 6 GHz	400 MHz to 6 GHz (optionally 10 MHz to 8 GHz)
Detection type	Drone protocol decoding	Drone protocol decoding & RF signal detection	Drone protocol decoding & RF signal detection	Drone protocol decoding & RF signal detection
Tracking type	Drone GPS decoding	Drone GPS decoding & RF signal direction	Drone GPS decoding & RF signal direction	Drone GPS decoding & RF signal direction
Typical decoding accuracy	2 – 3 m	2 – 3 m	2 – 3 m	2 – 3 m
Typical direction finding accuracy	-	4° to 6°	2° to 4°	1° to 3°
Antenna Sectors	Omnidirectional	8	16	16
Multi frequency swarm attack	No	No	Limited	Yes
Scalable	No (Yes with stationary versions)	No	Yes	Yes
Recommended grid distance	-	-	2 km	3 km
Radar and PTZ Camera	No (Yes with stationary versions)	No	Yes	Yes
Automatic jamming option	No	No	Yes	Yes

* Line of sight / reference target at 2,4GHz (hovering drone), 1,5km distance (FCC)

Portable Laptop Analyzer

A cost-effective, rugged solution offering broad coverage of the 2.4 GHz and 5.8 GHz frequency bands. Experience unmatched portability, with an optional external power bank extending runtime to 10+ hours. Built for reliability in any environment, this SPECTRAN® V6 analyzer ensures seamless, user-friendly drone detection — compact, powerful, and ready for immediate deployment.

Suitable for X2

Portable MIL-grade Laptop Analyzer

For portable solutions, the SPECTRAN® V6 MIL ENTERPRISE is the system of choice. This rugged, military-grade laptop features a powerful Intel® Xeon® E-2176M processor as well as an integrated spectrum analyzer.
This model is perfect for rapid deployment in the field - all it takes to detect drones is to set up the IsoLOG® 3D DF antenna and connect it to the laptop.

Suitable for X2 X5

Portable Command Center Analyzer

The SPECTRAN® V6 Command Center was designed with the latest and most powerful hardware and can be configured to your personal requirements.

Its two 4K depict all the information processed by the RTSA-Suite Pro software. Both its hardware and twin 24″ sunlight-readable displays make the Command Center the perfect stationary system.

Suitable for X1 X3

Portable Rugged 19" Rack

The SPECTRAN® V6 Rugged Rack is highly versatile and can be used as an indoor or outdoor analyzer, with multiple configurations for remote detection. Or, as part of an antenna-analyzer grid, allowing for coverage of large areas as well as the triangulation of drones and their operators.

The rack is waterproof, dustproof, remotely controllable and requires almost no maintenance.

Suitable for X1 X3

Stationary Cooled Outdoor 19" Rack

This IP65 Outdoor Rack is equipped with a double insulated housing plus efficient cooling modules to handle a temperature range from -30° to 60° Celsius.

A high-end sand filter enables it to withstand sand storms. The Outdoor Rack resists all environmental conditions and is the best choice for permanent outdoor installations of the AARTOS™ system.

Suitable for X1 X3

AARTOS™ System Integration

Any vehicle can be customized to match your unique requirements. For example, consider integrating a full drone detection system into a van with RF detection, long-range speakers, northfinder antenna, visual and thermal camera, GPS, air conditioning (and more).

Suitable for X1 X3

		Rod Antennas	Antenna Array	IsoLOG® 3D Direction Finding Antenna	
Compatible with	▶	X2	X2 X9	X5	X7 X9
Antenna Type	▶	Omnidirectional	Directional long range (4 sectors)	3D direction finding (8 sectors)	3D direction finding (16 sectors)
Frequency Range	▶	2.4 - 2.5 GHz 5.1 - 5.9 GHz	2.4 - 2.5 GHz 5.1 - 5.9 GHz	700 MHz to 6 GHz	400 MHz to 8 GHz
Typ. Tracking Accuracy	▶	2 - 3 m	2 - 3 m	4° - 6°	2° - 4° (X7) 1° - 3° (X9)
Operating Temprature	▶	-40 to +80° C	-20°C - +60°C	-30° to +60° C	-30° to +60° C
IP Rating	▶	IP65	IP65	IP65	IP65

Integrated AARTOS™ X9 with the IsoLOG® 3D direction finding antenna and the 40 km long range antenna upgrade.

Fully independent air-conditioned 2-seat operator shelter including four 4K screens, 360° surround view cameras and built-in northfinder.


Specifications as of 08.04.2024. Subject to modifications and errors.
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7

Handheld 4-Band Jammer

MJ40

The MJ40 is a potent and portable drone jamming system, featuring a 40W output power and an impressive 2 km range. Covering four frequency bands, it ensures adaptability to diverse unmanned aerial vehicles.

With a two-hour battery life, the device provides a reliable and portable solution for countering potential drone threats. Its standout feature is the highest coverage among commercial models, making it a valuable tool for security and defense applications.

Moreover, the device is customizable on demand, allowing users to tailor its specifications for specific operational needs, enhancing its flexibility and utility in various scenarios.
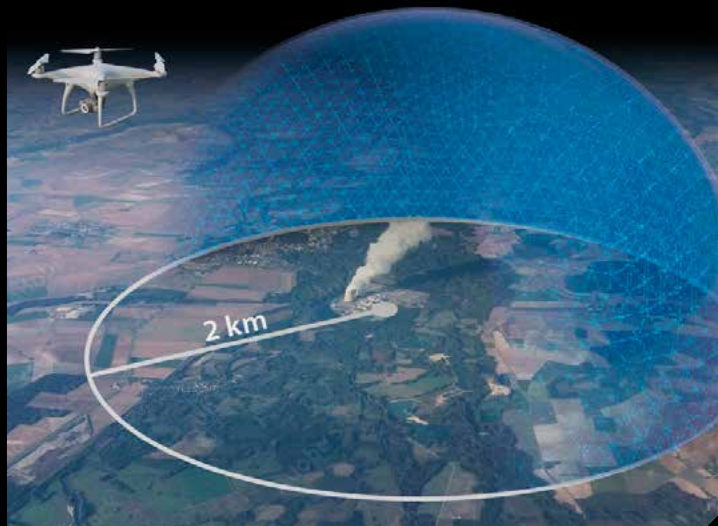
Compact 6-Band Jammer

MJ170

The MJ170 is a versatile countermeasure system offering flexible mounting options such as tripod, truss, or vehicle installations. Covering six customizable frequency bands, it provides a broad spectrum of interference capabilities tailored to diverse threats.

The device supports either an exchangeable battery for on-the-go operations or external power supply options for extended usage. Designed to withstand various weather conditions, the jammer ensures reliable performance in adverse environments, making it suitable for diverse outdoor settings.

This compact 6-band jammer stands as a comprehensive and adaptable solution for countering a wide range of potential threats.

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Fixed Bands Sector Jammers
FJ SERIES

By extending the AARTOS™ DDS to include our "FJ series" stationary jammer with a jamming range of up to 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 360W 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.

Programmable Smart Sector Jammer
SJ SERIES

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	FJ³⁶⁰	MJ¹⁷⁰	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 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 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

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9

Optical & thermal 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 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
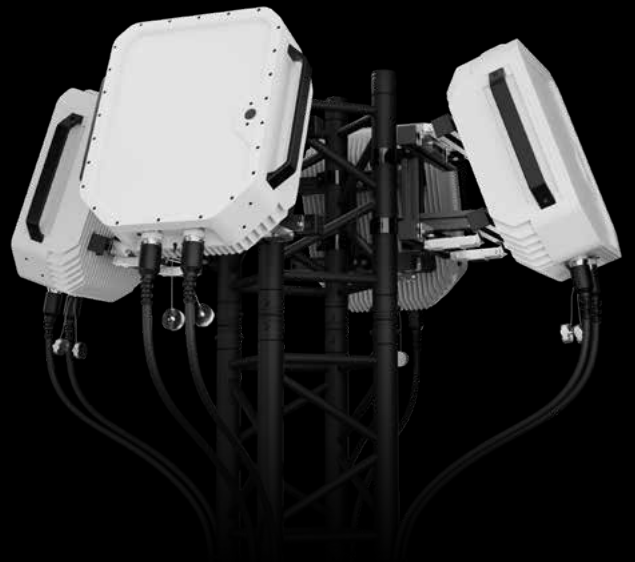
## Fully integrated modular radar capabilities

RD SERIES

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.

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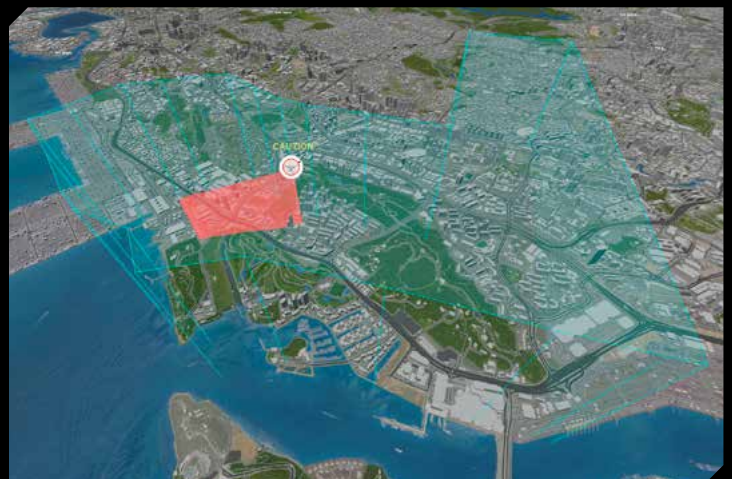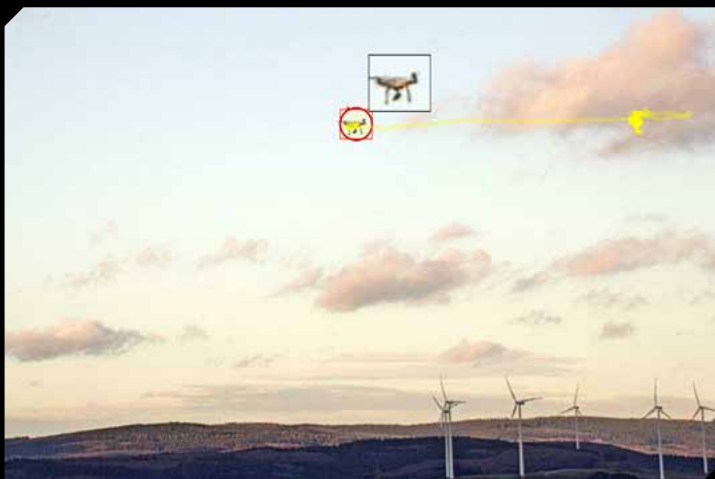
AARTOS™ DDS shelter solutions

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 perfect surveillance and drone detection solution for: Events (concerts, parades, sport events etc.), industrial plants, borders or open spaces, airports, correctional facilities or military camps.

The AARTOS™ drone detection shelter is available in two standardized sizes; The Zeppelin FM1 and The Zeppelin 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™ DDS integrated vehicle solutions

Any vehicle can be customized to match your unique requirements. AARTOS™ is integrable into a van, pickup or offroad vehicle including RF detection, long-range speakers, northfinder antenna, visual and thermal camera, GPS, air conditioning and fully independant power supply.

There are many ways to equip a vehicle for use against drones. In addition, for practical purposes, it is advisable in most cases to include a few more features.
For example, an integrated radio station can be very useful to stay in contact with your field team.

To contact a drone pilot or others in case of an emergency or to transmit warnings, it is possible to integrate an AARTOS™ Long Range Speaker into your system. With this 360° speaker system, you can broadcast audio at a distance of up to 2 km.

5G, 4G or satellite antennas can be installed for a fast and secure internet connection. A built-in northfinder can provide high precision position data (GPS, Galileo, GLONASS, QZSS, SOG, COG and ROT) with a heading accuracy of 0.4°, three-axis speed monitoring, and immunity to interference.

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11

AARTOS™ protects meeting of Kim Jong-un and Donald Trump

We are proud to have provided our AI-based drone detection system AARTOS™ for the protection of the North Korea–United States summit held in Singapore.
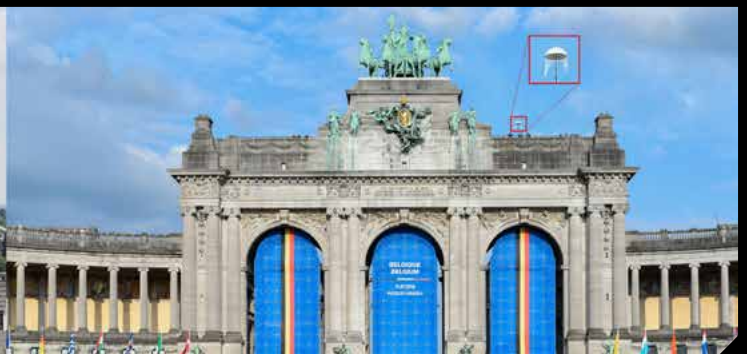
AARTOS™ protects Nato Summit

Aaronia's AARTOS™ drone detection system was the sole RF-based counter-UAV solution protecting the NATO Summit in Brussels.

Heathrow International Airport

Heathrow International Airport in the UK also uses the AARTOS™ DDS, including our 3D model feature to monitor the entire airport area (including buildings, bridges, towers, etc.).

ASEAN International Airports

AARTOS™ X9 installed: ASEAN international airports use the powerful AARTOS™ Drone Detection System.

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AARTOS™ protects G20 Summit

AARONIA successfully protected the famed conference from illegal and unwanted drones with the AARTOS™ drone detection system.

Muscat International Airport

Oman Airports has approved Aaronia's AARTOS™ DDS in cooperation with R & N Khimji LLC as the appropriate solution for drone detection at Muscat International Airport.

Map of installations worldwide:

ICELAND · CANADA · USA · MEXICO · TRINIDAD & TOBAGO · ECUADOR · UK · FRANCE · SPAIN · GERMANY · AUSTRIA · CZECHIA · CROATIA · SERBIA · GREECE · MALTA · MOROCCO · ALGERIA · POLAND · UKRAINE · ESTONIA · LATVIA · LITHUANIA · GEORGIA · TURKMENISTAN · LEBANON · JORDAN · SAUDI ARABIA · QATAR · UNITED ARAB EMIRATES · OMAN · NIGERIA · EQUATORIAL GUINEA · KENYA · RWANDA · INDIA · JAPAN · SOUTH KOREA · TAIWAN · THAILAND · MALAYSIA · SINGAPORE · INDONESIA · AUSTRALIA

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13

I. Performance

How large is the system's detection range?

The AARTOS™ Drone Detection System features a virtually unlimited detection range, equal to (or larger than) the maximum distance between the operator and the drone (depending on the transmission power of the drone and/or its operator). The latest AARTOS™ DDS V6 can handle a DJI Phantom 4 FCC drone from a range of 40 km or more. The specific range depends on factors such as drone type and topography.

How quickly can a drone be detected?

Detecting a drone may take the system between 10 μs to 500 ms, depending on factors such as the complexity of the specific AARTOS™ system in use, the number of IsoLOG® 3D DF antenna arrays, etc.

In general, a drone can be detected as soon as its operator establishes a radio link (i.e. the drone and/or the remote control are switched on). The process of pairing, radio linking, then take-off and climb usually takes between 30 seconds and five minutes, depending on the drone model (our reference being the DJI Mavic Pro). This allows the AARTOS™ DDS unique early-warning capabilities by detecting the drone even before it takes off. Optical, acoustic or radar-based drone detection solutions do not have the ability to perform this kind of early-warning detection.

Can the AARTOS™ DDS locate the drone operator?

Yes, the AARTOS™ DDS can locate the drone operator, and can track the operator's movements even if drone and operator are operating at different frequencies or bands.

What detection mechanisms are being used?

The AARTOS™ DDS uses real-time RF signal detection plus a combination of AI-based smart pattern triggers, protocol decoding and neural network scans.

Can the system detect the altitude of the drone as well?

Absolutely – this is a unique feature of the AARTOS™ DDS! With two or more antennas, the DDS can detect the drone's altitude; a single system will already show the azimuth.

Is it possible to measure the distance to the drone?

Yes, only two systems are needed to accurately measure the distance of the drone – most competing drone detection systems require at least three antennas for this. For best results, however, we recommend using three or more systems.

What does "ALL-BAND MONITORING" mean?

Traditional RF-based drone detection solutions only monitor specific bands (e.g. WiFi 2,4/5,8GHz or ISM 433/868MHz) because this is where most commercial drones have operated in the past, however, the threat landscape is changing. The latest commercial and custom drones can connect at any (mostly illegal) frequencies. Driving us to develop our unique, all-band-monitoring, receiver and ultra-wide-band tracking antenna.

The AARTOS™ DDS is able to monitor the entire frequency spectrum (e.g. 100MHz - 6GHz) hundreds of times per second. Whatever frequency the drone operator might use, we will be able to detect and track it. A completely unique feature on the current market.

I. Performance

What kind of coverage does the system provide?

The system's 3D DF antenna provides 360° dome coverage (360° azimuth and full 90° elevation). This feature is unique on the market, and can be adjusted to specific needs as needed.

Does the AARTOS™ DDS depend on a line of sight?

Although the fastest detection is reached within line of sight, the system does not require it. The AARTOS™ DDS relies on RF signals, which by their nature can be traced regardless of obstructions like buildings, trees, or people. If the signal is strong enough, the system's detection range is virtually unlimited.

Are there limitations to the detection and tracking altittude and/or elevation with respect to the sensor(s)?

Since the system can be equipped with an unlimited number of sensors forming a network covering larger and larger areas, there are no inherent limitations in terms of altitude or elevation. All systems can be linked to a single monitoring center with remote-control capabilities for each individual system. Each single system covers a radius of 360°, including the airspace above the sensor (i.e. 360° dome coverage).

If a drone's frequency range is unknown – how does the AARTOS™ DDS detect it?

The latest AARTOS™ systems offer an extremely fast scan mode with a sweep speed above 1THz/s. Allowing the system to monitor its complete frequency range (eg. 100MHz - 6GHz) hundreds of times per second.

The AARTOS™ X9 system offers an even faster sweep reaching up to 48THz/s, by stitching multiple receivers together.

Does the AARTOS™ DDS support 24/7 surveillance?

Yes, the AARTOS™ DDS has a 24/7 recording mode. The system is able to continuously monitor and record the entire real-time spectrum, as long as there is enough internal/external storage space (HDD/SSD). In the context of a criminal investigation, this information would serve as valuable evidence.

Can the AARTOS™ DDS be switched to an event-recording mode?

Yes, the AARTOS™ DDS can be set to its SmartEvent Recording Mode, which automatically filters out and deletes useless data to minimize the amount written to the internal/ external storage devices (HDD/SSD).

Can the AARTOS™ DDS detect 3G, 4G or even 5G Drones?

Yes, the latest AARTOS™ DDS can detect any flying RF transmitter at any frequency - even flying cellphones!

Can the AARTOS™ DDS be disguised or camouflaged?

Yes, in fact the system can be covered very easily without impacting its detection capabilities. The antenna can be covered with any material, such as camouflage netting, as long as the material is RF non-reflective (not made of metal).

When mounted on a vehicle, the AARTOS™ DDS can hardly be distinguished from a common TV or satellite antenna. This is yet another advantage of the AARTOS™ DDS system over optical, acoustic or radar-based drone detection systems.

I. Performance

Does the AARTOS™ DDS work at night?

Yes, the AARTOS™ DDS works around the clock, day and night. The availability of daylight is not a limiting factor to the system.

II. Triggers & Identification

Can the AARTOS™ DDS distinguish a drone signal from common WiFi or other RF signals?

Yes, our system uses intelligent AI-based pattern classification, enabling it to distinguish precisely between signal types.

How does the AARTOS™ DDS distinguish between different drone models or signals?

We use a sophisticated method that begins with recording drone emission patterns. These patterns are saved in our Smart Trigger Pattern Database (STPD), which is constantly being maintained and expanded (optional upgrades are available via service contracts). For professional use, users can also add their own custom pattern recordings to their database through the system's teach-in function.

Is it possible to prevent friendly drones from triggering the alarm?

Yes, the system is adaptable. You can use the teach-in function to "teach" the AARTOS™ DDS which drones are friendly, allowing it to distinguish friendly drones from actual threats (black- and whitelist).

Could commercial planes, birds or other airborne objects cause the system to trigger a false alarm?

Absolutely not! The AARTOS™ DDS has been specifically designed to distinguish, on a sophisticated level, between drones and other airborne objects, minimizing the likelihood of false alarms.

When the AARTOS™ DDS detects a drone and triggers an alarm, can it provide any information on the location of the drone or the operator? How accurate is this information?

The AARTOS™ DDS can detect both drones and operators. However, the extent and accuracy of this information depends on the number of systems and antennas in use. A single AARTOS™ DDS can provide the direction and azimuth for a drone signal. Its accuracy depends on the type of IsoLOG® used, our IsoLOG® 3D DF 160 antenna offers up to 1° sector accuracy, meeting ITU class A – the highest class. As with all antennas, accuracy also depends on its specific environment (height, reflecting objects, etc..).

Increasing the number of IsoLOG® antennas can improve the accuracy of the system as well. If two or more antennas are being operated, signal triangulation can be used. This enables users to locate the exact position and altitude of the drone and/or its operator. A single antenna can only register the direction and azimuth of the signal.

MADE IN GERMANY

II. Triggers & Identification

Is the system able to detect several drones at once?

Yes, the system can detect multiple drones or drone swarms at once – regardless of brand, type frequency/frequencies or direction.

III. Countermeasures

Do you have any products that can prevent a drone from entering a facility's airspace?

Yes, we offer various so-called countermeasure solutions (CMS), such as jammers, to keep drones out of a restricted airspace. Both stationary and mobile solutions are available such as our mobile handheld jammer and automatic stationary sector jammers.

Are the countermeasure solutions integrated into the main system?

Yes, the stationary CMS can be integrated seamlessly into the AARTOS™ DDS system.

Since the mobile handheld CMS is entirely manual, it is not available as an integrated solution.

Does the stationary CMS require an operator to be present?

Once set up correctly, a stationary CMS does not require an operator. All our stationary CMS can be controlled manually, semi-automatically or in fully-automated mode – tailored specifically to users' needs.

Once detected, how long does it take to disable a drone?

From the time a drone has been spotted by the AARTOS™ DDS, it takes between 1-2 seconds to block the control signal and video link. These figures apply to the stationary and the mobile CMS versions as well.

What is the shutdown range of the countermeasure solutions?

Depending on the specific model, the stationary CMS has a range of up to 12 km (7 miles).

The mobile CMS has a shutdown range of 1-2 km (1 mile), while still being able to block the systems of targets further away.

IV. Installation & Infrastructure

Does the AARTOS™ DDS have any infrastructure requirements?

Specific requirements depend on the system. Our portable systems are powered by an independent battery while our other systems require an external power supply. Systems that rely on multiple remote units need a power supply as well as Ethernet cable connections.

We also offer versions that are GSM-based, which use 24GHz airFiber links or satellite link-ups, and do not require an Ethernet cable connection.

Provided that power, equipment, and crew are already on-site, how long would it take to set up an AARTOS™ system?

Our mobile AARTOS™ DDS X2 can be ready to use within 30 seconds.

Our bigger systems (the X5, X7 and X9), a trained crew of two people can set up a single system in about 3 to 5 minutes.

IV. Installation & Infrastructure

How long are the expected downtimes for software upgrades?

Software upgrades (e.g. for the drone database, new software features, and device firmware) generally take around 10 to 20 minutes. The system does not require any further downtime.

Does the AARTOS™ DDS always need to be manned?

No, in fact, once the initial setup is completed, the system can work fully automated. DDS operation can also be switched at any time to semi-automated or completely manual mode.

Is it possible to integrate the AARTOS™ DDS into existing surveillance systems?

Yes, the AARTOS™ DDS system includes an application programming interface (API), allowing the user to integrate it into any existing surveillance software and hardware systems.

How long does it take to train a new system operator?

The training necessary to operate the AARTOS™ DDS can be completed within a few days at our training campus in Germany. Please contact mail@aaronia.de for further details regarding our training.

Is there a recommendation at which height the antennas should be installed for best results?

The antenna should be installed at a minimum height of 3 meters above the ground. The general rule of thumb is: the higher the antenna, the more accurate the results and the longer the range.

Can the AARTOS™ DDS be protected against lightning?

Yes, a standard lightning rod can be installed and does not influence the AARTOS™ Drone Detection System's performance.

In terms of mobile use, is the AARTOS™ DDS limited to certain vehicle types?

Not at all. Thanks to its durability, the AARTOS™ DDS can be mounted on many types of mobile vehicles: It can be installed on cars, trucks, vans, even on yachts. All parts of the IsoLOG® 3D DF antenna are resistant to salt water in addition to its weather and splash resistance with full IP65 certification. Coastal and marine environments do not limit the system's performance.

Does the AARTOS™ DDS emit any radiation that may interfere with the operation of e.g. airports or communication infrastructure?

No, the AARTOS™ DDS does not emit any radiation which could interfere with such an infrastructure. The DDS is an entirely passive system.

In what temperature range can the system be used?

The IsoLOG® 3D DF antenna supports an operating temperature range of -40° C to +80° C.

Our real-time spectrum analyzer (SPECTRAN® V6) supports operating temperatures of -20° C to +60° C.

V. Sales, Service, Demos

Who may need an AARTOS™ DDS?

When it comes to drone detection, the term 'target group' becomes ambiguous – drones pose a potential threat to commercial, public and private causes alike. Making our drone detection system beneficial to a variety of customer groups: like companies in the automotive and chemical industries, critical infrastructures such as nuclear power plants, correctional facilities, governments, and operators of airports, stadiums and concerts.

Military branches and security firms benefit from drone detection on a similar level, as do private individuals seeking to protect their homes and properties.

Is the AARTOS™ DDS future-proof?

The AARTOS™ DDS is under continuous development and is consistently updated. In addition, we offer service-level agreements (SLAs) which include regular updates and maintenance of the drone database, DDS software, firmware for our analyzers, and even the IsoLOG® 3D DF antennas and receivers.

How long will you keep the system in production and provide support for it?

We provide support for a minimum of 10 years for the AARTOS™ Drone Detection Systems.

Where can I see the AARTOS™ DDS in action?

We demonstrate the AARTOS™ DDS at various international trade shows and conventions, and cooperate with partners around the globe. Should you have further inquiries regarding demonstrations, please contact us at mail@aaronia.de.

Where is the AARTOS™ DDS being manufactured?

Both the hardware and the software of the AARTOS™ Drone Detection System are being developed and manufactured in Germany, in adherence to the highest quality standards.

What is the typical lead time?

The typical lead time for a single AARTOS™ DDS is around 1 to 3 months, depending on the complexity of the final configuration.
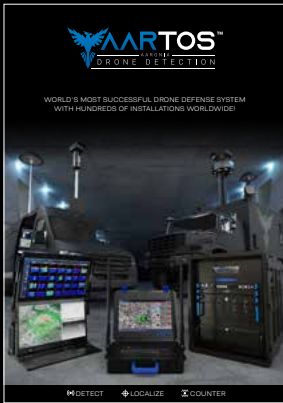
What is the cost of the AARTOS™ DDS?

For all information related to the AARTOS™ DDS and its price range, please feel free to contact us at mail@aaronia.de.
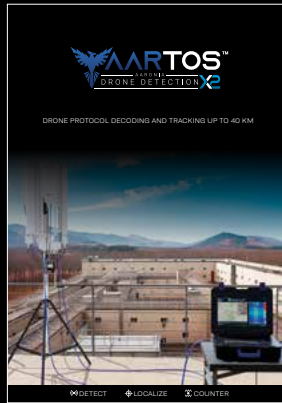
Does the AARTOS™ DDS have any export regulations?

In most cases, the AARTOS™ DDS has no restrictions with regard to export or import. For further clarification, please contact us at mail@aaronia.de.

Specifications as of 08.04.2024. Subject to modifications and errors.
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15

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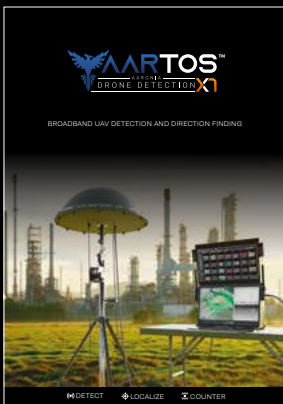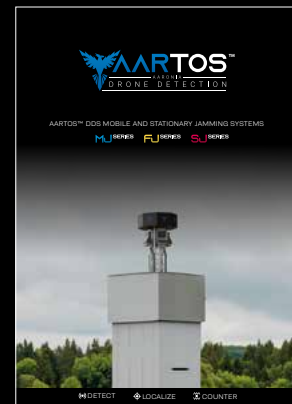www.aartos-dds.com or use the dedicated QR-Code:

AARTOS™ Overview

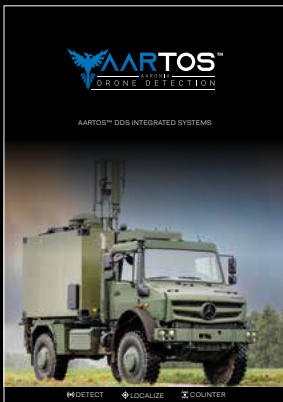WORLD'S MOST SUCCESSFUL DRONE DEFENSE SYSTEM
WITH HUNDREDS OF INSTALLATIONS WORLDWIDE!

DETECT   LOCALIZE   COUNTER

AARTOS™ X2

DRONE PROTOCOL DECODING AND TRACKING UP TO 40 KM

DETECT   LOCALIZE   COUNTER

AARTOS™ X5

BROADBAND UAV DETECTION AND DIRECTION FINDING

DETECT   LOCALIZE   COUNTER

AARTOS™ X7

BROADBAND UAV DETECTION AND DIRECTION FINDING

DETECT   LOCALIZE   COUNTER

AARTOS™ X9

EXTREME RANGE BROADBAND UAV
DETECTION AND DIRECTION FINDING

DETECT   LOCALIZE   COUNTER

AARTOS™ Counter UAV Systems

AARTOS™ DDS MOBILE AND STATIONARY JAMMING SYSTEMS

MJ SERIES   FU SERIES   SU SERIES

DETECT   LOCALIZE   COUNTER

AARTOS™ System Integrations

AARTOS™ DDS INTEGRATED SYSTEMS

DETECT   LOCALIZE   COUNTER

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