ROHDE&SCHWARZ

Make ideas real

COUNTERING DRONES

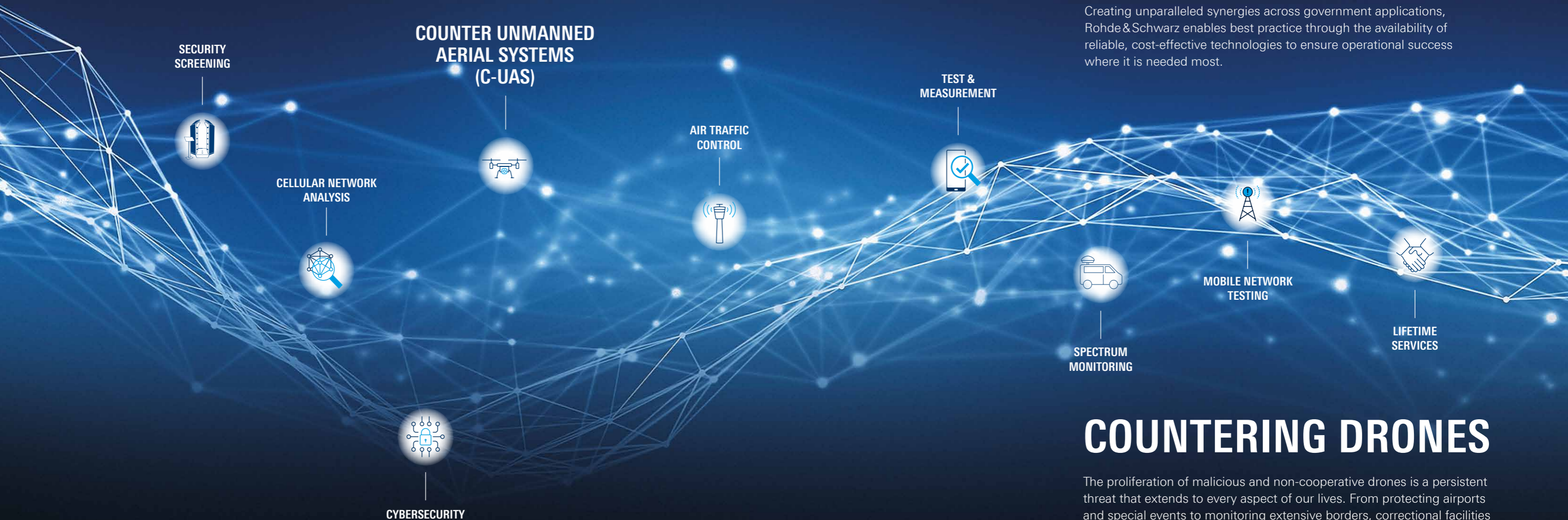Protection for law enforcement against drone threats

SYSTEM SOLUTION PARTNER

When it comes to integrating tomorrow's technology to respond to today's threats, Rohde & Schwarz is your partner of choice.

As a systems integrator and original equipment manufacturer of core components, our independent company delivers trusted, turnkey solutions for law enforcement supported by systems engineering, project implementation, and after-sales services.

Creating unparalleled synergies across government applications, Rohde & Schwarz enables best practice through the availability of reliable, cost-effective technologies to ensure operational success where it is needed most.

SECURITY SCREENING

COUNTER UNMANNED AERIAL SYSTEMS (C-UAS)

CELLULAR NETWORK ANALYSIS

AIR TRAFFIC CONTROL

TEST & MEASUREMENT

MOBILE NETWORK TESTING

LIFETIME SERVICES

SPECTRUM MONITORING

CYBERSECURITY

COUNTERING DRONES

The proliferation of malicious and non-cooperative drones is a persistent threat that extends to every aspect of our lives. From protecting airports and special events to monitoring extensive borders, correctional facilities and critical national infrastructure, law enforcement demands affordable and reliable counter-drone solutions.

Rohde & Schwarz is proud to offer our law enforcement customers a next-generation leap in counter-drone technology through the application of a cost-effective, system-of-systems approach, capable of autonomously detecting, classifying and neutralizing state-of-the-art threats.

ENSURING EARLY WARNING

Nowhere is safe from the threat of malicious non-cooperative drones. They must be detected as early as possible to ensure decision-makers have maximum time to respond to threats and avoid potentially disastrous consequences.
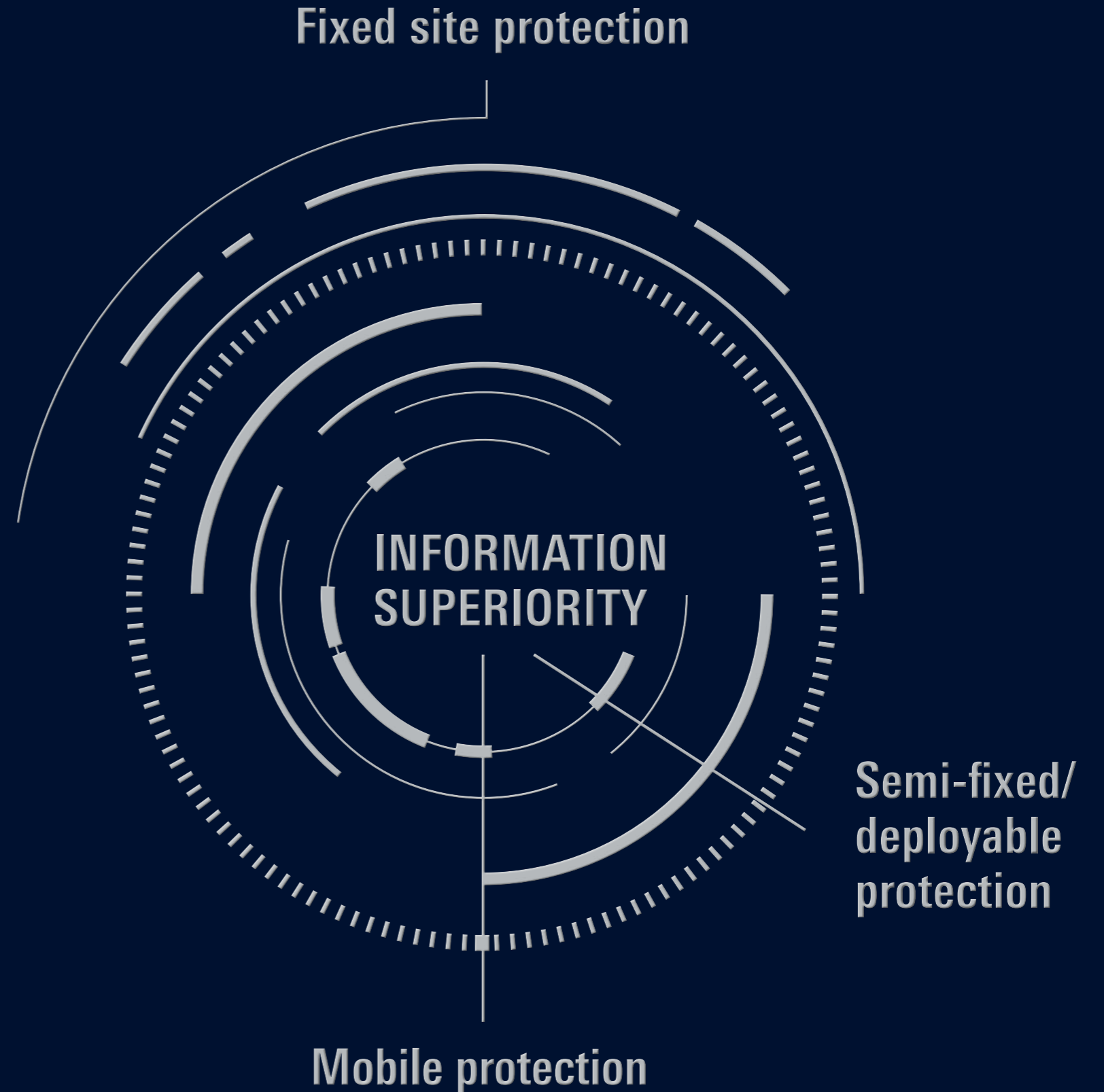
Instead, law enforcement requires a system-of-systems approach to countering drones, allowing them to select and deploy the system best suited to their specific operational requirements at any given moment.

HOMELAND SECURITY

Counter-drone solutions remain a critical capability for law enforcement in support of national security. Solutions must keep pace with current developments while adapting quickly to critical situations.

They must support a wide range of use cases to include scenarios such as protecting airports and special events or preventing malicious activities at correctional facilities and across national borders.

Each use case demands very different operating parameters for counter-drone technologies, meaning that solutions must be flexible, modular, rapidly deployable, easy to use and cost effective.

Fixed site protection

INFORMATION SUPERIORITY

Semi-fixed/ deployable protection

Mobile protection

USE CASE 1:
FIXED SITE PROTECTION

Counter-drone solutions enable law enforcement to protect fixed sites, preventing misuse of drones at airports, government buildings and correctional facilities.

Systems must secure a pre-defined area of interest and be capable of differentiating between malicious and cooperative drones and other objects in crowded environments.

Upon detection, threats must be rapidly classified and tracked to give decision-makers as much time as possible to react and deploy the most appropriate countermeasures.

Additional requirements include minimizing collateral damage in urban environments and the capability to geolocate the position of drone pilots so law enforcement can prevent further attacks.

REQUIREMENTS:

► Early detection of drones (including swarms) and pilots
► Extended range and 360-degree coverage
► Capability to detect manually piloted and automatic drones
► Non-kinetic countermeasures (human-in-the-loop)
► Integration into a common operating picture
► Report/evidence recording
► Open architecture to support layered defense
► System security, reliability and robustness

USE CASE 2: SEMI-FIXED/DEPLOYABLE PROTECTION

Law enforcement can use deployable counter-drone solutions to support a range of use cases including border surveillance operations and protection of special events.

Solutions must be rapidly deployable and easy to set up and take down, enabling law enforcement to quickly respond to emerging situations, even in remote or urban environments.

For border surveillance, counter-drone solutions must be capable of monitoring extended ranges and integrating with layered intelligence-gathering networks.

At special events, solutions must be capable of operating in dense urban surroundings, while retaining their capacity to detect and identify threats in crowded electromagnetic environments.

REQUIREMENTS:

▶ Early detection of drones (including swarms) and pilots
▶ Extended range and wide field of view
▶ 3D/4D detection and classification
▶ Reduced SWaP
▶ Easily transportable
▶ Integratable into layered surveillance networks
▶ Report/evidence recording
▶ System security, reliability and robustness

USE CASE 3: ON-THE-MOVE

Counter-drone solutions must also be capable of supporting law enforcement on-the-move, particularly to track the pilots.

Solutions not only provide increased levels of situation awareness, they also detect, identify and help neutralize malicious and non-cooperative drones even in congested, remote or austere environments. To identify pilots using remote control, solutions must also be capable of tracking during pursuit.

Solutions must have a small enough form factor to be easily transportable and can be mounted in vehicles. They also have to be easy to set up and operate and be capable of supporting convoy protection.

Counter-drone solutions must also be able to differentiate between friendly drones and malicious and non-cooperative threats while minimizing collateral damage, particularly in urban environments.

REQUIREMENTS:

► Early detection of drones (including swarms) and pilots
► Mission flexibility
► 3D/4D detection and classification
► Reduced SWaP
► Easily transportable and deployable
► Common operating picture
► Report/evidence recording
► System security, reliability and robustness

ROHDE & SCHWARZ ARDRONIS FAMILY:

ARDRONIS is a family of counter-drone solutions specifically designed to support the operational requirements of law enforcement with a system-of-systems approach that provides customers the capability to detect, identify, locate, track, verify and counter malicious and non-cooperative drones in line with their unique user requirements.

ARDRONIS DETECT

Providing accurate detection and classification of any type of drone, ARDRONIS Detect gives end users early warning of threats by recognizing RF signals even before takeoff. The solution is lightweight and easily deployable, making it an ideal solution for a wide range of use cases in law enforcement.

ARDRONIS LOCATE COMPACT

Suitable for large area detection of malicious and non-cooperative drones, ARDRONIS Locate Compact features a single-channel direction finder capable of locating analog and digital video downlinks. ARDRONIS Locate Compact is a rapidly deployable, cost-effective solution for law enforcement and is particularly well suited to protecting airports. ARDRONIS Locate Compact can be upgraded to detect FHSS and Wi-Fi enabled drones with the addition of ARDRONIS Wi-Fi.

ARDRONIS LOCATE ADVANCED

End users benefit from automatic detection and identification of radio-controlled drones. ARDRONIS Locate Advanced provides early warning and accurate classification of threats with predefined real-time notifications to selected individuals. This solution, which can locate and track FHSS signals, can geolocate drones and their ground control stations. ARDRONIS Locate Advanced can be upgraded with the optional ARDRONIS Wi-Fi upgrade to detect and identify Wi-Fi controlled drones.

ARDRONIS EFFECT

ARDRONIS Effect detects drones and, by analyzing the control link, intelligently generates targeted jamming signals to disrupt drone communications. It delivers powerful performance across a wide frequency range with high output power. ARDRONIS Effect can jam multiple bands simultaneously and make use of custom waveforms to effectively address evolving threats, thereby preventing unauthorized drones from entering protected areas.

ARDRONIS Wi-Fi

The ARDRONIS Wi-Fi is the perfect solution to detect, identify and mitigate Wi-Fi controlled drones and decode emitted identification data. With this functionality ARDRONIS Wi-Fi is a perfect upgrade for other sensors in the ARDRONIS family. The solution displays an approximate direction of the detected signal. ARDRONIS Wi-Fi identifies the drones by using information provided by their transmitted RemoteID. Depending on the national regulations, the Remote ID includes information such as its unique identifier, GNSS location, speed and altitude.

ARDRONIS PAN-TILT-CONTROL

The full range of ARDRONIS solutions can be upgraded with ARDRONIS Pan-Tilt Control, which enables automatic pan-tilt control of directional sensors to verify and counter drone threats.

ROHDE & SCHWARZ:
YOUR TRUSTED PARTNER

Counter-drone requirements are constantly evolving. As a trusted partner, Rohde & Schwarz provides law enforcement with unrivalled support throughout the entire lifecycle of our product line.

As an independent company, we are perfectly positioned to provide the highest levels of in-service support to assist law enforcement with the integration, maintenance and upgrade of counter-drone solutions.

Our support network extends across the world's time zones, enabling 24-hour support whenever it is required.

SERVICES & TRAINING

Although the ARDRONIS family of counter-drone solutions is designed for ease of use, Rohde & Schwarz remains committed to supporting the training requirements of law enforcement.

The company offers both on-site and off-site training programs that give our customers the knowledge they need to understand and problem-solve in their own work environments.

Rohde & Schwarz also supports customer defined training objectives through specialist and customized training programs that are tailor-made to match specific end user requirements.

Service at Rohde & Schwarz
You're in great hands
► Worldwide
► Local and personalized
► Customized and flexible
► Uncompromising quality
► Long-term dependability

Rohde & Schwarz

The Rohde & Schwarz technology group is among the trailblazers when it comes to paving the way for a safer and connected world with its leading solutions in test & measurement, technology systems and networks & cybersecurity. Founded 90 years ago, the group is a reliable partner for industry and government customers around the globe. The independent company is headquartered in Munich, Germany and has an extensive sales and service network with locations in more than 70 countries.

www.rohde-schwarz.com

Sustainable product design
► Environmental compatibility and eco-footprint
► Energy efficiency and low emissions
► Longevity and optimized total cost of ownership

Certified Quality Management	Certified Environmental Management
ISO 9001	ISO 14001

Rohde & Schwarz training
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Rohde & Schwarz customer support
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