



COUNTERING DRONES

The World's
First International
Summit on Countering
Civilian Drones

Main Conference:
7th-8th December 2016

Regulatory & Legal Framework
Pre-Conference Focus Day:
6th December 2016

Cophthorne Tara, London, UK

Developing strategic solutions to counter the threat of drones

Join the inaugural Countering Drones conference to:

- Effectively measure and prepare for the risk posed by drones by receiving exclusive security briefings from leading international experts
- Make an informed assessment of different types of counter-drone technologies and identify which system is best for your unique circumstances
- Influence future policy by contributing to high-level discussions with policymakers, insurers and legal practitioners
- Ensure that your organisation is aware of current developments in national security strategy, regulations and aviation legislation by hearing from senior policymakers from the UK, Europe and US
- Benefit from legal and insurance policy guidance to better protect your organisation from drone-related incidents

2016 Speakers Include:



Don Head, Commissioner, **Correctional Service of Canada**



Detective Chief Inspector Colin Smith, Counter Terror Advisor, **UK Home Office**



John Miller, Deputy Commissioner, Intelligence and Counter-Terrorism, **New York Police Department**



Tim Johnson, Policy Director, **UK Civil Aviation Authority**



Major Peter Brander, Chief of the International Security Police & Charge de Mission, Geneva Police & Department of Security and Economy (DSE), **Government of Switzerland**



Mr Mark Espenat, R&D Project Manager, Defence Research and Development, **Canada's Centre for Security Science**



Julien Sabéné, Secretary General for Defence & National Security, **Government of France**



Dvir Rubinshtein, Aviation Security Operation Center Manager, Security Division, **State of Israel**



Rony Dresselaers, Director Security & Transport, **Federal Agency of Nuclear Control (FANC) Belgium (Tentative)**



Anh Duong, Program Executive Officer, Unmanned Aerial Systems, **U.S. Department of Homeland Security Science & Technology (Tentative)**



Christian Leininger, Vice President Safety & Security, **Berlin Airports Corporation**



Assistant Chief Ethel McGuire, Assistant Police Chief for Homeland Security and Intelligence, **Los Angeles World Airports**



Earl Lawrence, Director, Unmanned Aircraft System Integration Office, **FAA**



Szabó István, Deputy Director Security, **Budapest Airport**



Elina Millere, International Affairs Coordinator, **Civil Aviation Agency of Latvia**



Alfred Vlasek, Safety Manager, **Austro Control**

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FEATURED EXHIBITORS

Welcome

Dear Colleagues,

The unprecedented proliferation of small civilian drone use presents governments, aviation authorities and industry with a myriad of legal, safety and security challenges.

Perhaps the most difficult challenge for policymakers is ensuring that ensure that innovation in drone technology and its range of benefits for society and commerce is balanced with a robust regulatory framework and an appreciation of the potential nefarious applications.

For security professionals in both civil and commercial sectors, the safety and security risks that civilian drones pose are becoming a greater strategic priority. Sensitive sites such as airports, oil and nuclear facilities, borders, prisons, and stadiums are all vulnerable to hostile or accidental intrusion by small drones and require careful security planning and preparation for such an incident. Yet while this diverse community of sectors may differ in their approach to-and assessment of such risks, they are united by a common sense of urgency and uncertainty.

We are therefore delighted to invite you to join the inaugural Countering Drones conference – the first international event of its kind to establish a network of industries, policymakers, security, intelligence and counter-terror professionals. Address this emerging threat and source solutions to safeguard national security and critical infrastructure for the future.

This three day programme of forward thinking, solution-driven presentations, panels and case studies will reflect the diversity of the challenges this network faces as well as the broad spectrum of perspectives and approaches to drone legislation and counter-drone system employment.

We welcome you to be a part of driving these solutions forward, and look forward to meeting you in December.

Yours,



Hannah Croft
Conference Director
Countering Drones 2016

Full list of speakers



Don Head, Commissioner, **Correctional Service of Canada**



Detective Chief Inspector Colin Smith, Counter Terror Advisor, **UK Home Office**



John Miller, Deputy Commissioner, Intelligence and Counter-Terrorism, **New York Police Department**



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Mark Espenant, R&D Project Manager, Defence Research and Development, **Canada's Centre for Security Science**



Major Peter Brander, Department of Security and Economy, **Swiss Government**



Rony Dresselaers, Director Security & Transport, **Federal Agency of Nuclear Control (FANC) Belgium (Tentative)**



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Eliina Millere, International Affairs Coordinator, **Civil Aviation Agency of Latvia**



Nathan Wall, Airside Safety Lead, **Cork Airport**



Daniel Van Duzer, Chief of Policy and Implementation, **Moran Office of Maritime and Port Security (MOMPS)**



John Hanslip, Senior Vice President, Aviation & Aerospace Practice, **Marsh**



Alfred Vlasek, Safety Manager, **Austro Control**



David Greene, Senior Partner, Commercial Litigation, **Edwin Coe LLP**



Simon Phippard, Counsel, **Bird & Bird**



Andrew Lacher, Unmanned and Autonomous Systems Research Strategist, **The MITRE Corporation**



James Johnstone, Account Manager, Aerospace, **Willis Towers Watson**



Professor Dr Werner Wiesbeck, Distinguished Scientist, **Karlsruhe Institute of Technology**



Focus Day Chair:
Arthur Flieger, Owner and Partner, **Flieger Law LLP**



Main Conference Chair:
Roger Cumming, Director, **Fenley Martel Ltd**

Who Should Attend Countering Drones



Airports, sea ports, borders and railways



National space agencies and major industrial complexes



Civil Aviation Authorities and Air Traffic Management



Critical infrastructure including nuclear power stations, grids and utilities



Counter-terror agencies, law enforcement and emergency services



Public buildings, embassies and consulates



Prisons



International organisations including the UN, NATO and WTO



Government buildings, military bases and sensitive installations



Sporting arenas and major venues event venues



Major broadcasters, film and television studios



Facilities with high public traffic

Key questions the Countering Drones conference will answer:

- What are the recent developments in drone and counter-drone technology and how is this technology impacting the security of key commercial and civil facilities?
- What are the pros and cons of different counter-drone systems and which nations or sectors are currently employing or planning to employ such systems?
- How vulnerable is critical national infrastructure, attacks by civilian drones? What are the current safeguards to protect against this and how can we measure this risk?
- What kind of counter-drone solutions should commercial organisations employ, if any, and what might be the legal implications of their use?
- How does industry plan to solve these challenges for government and commercial industry – from detection to disruption?



15+
Different nations



25+
Speakers



7
Expert panel discussions

Free Industry Resources

You can access a variety of free resources such as whitepapers, articles, news, podcasts and presentations online at www.counterindrones.com/mediacenter

www.counterindrones.com

Pre-Conference Focus Day: Navigating Risk: The Regulatory And Legal Framework In The Counter-Drone Space

The proliferation of inexpensive but remarkably capable drones presents governments and security professionals charged with protecting critical national infrastructure with not just a highly dangerous security threat but also a myriad of regulatory and legislative uncertainties.

Airports, prisons, public buildings, oil and gas companies, power stations—even film studios and car manufacturers—want to know how to protect their assets from malicious or unintended intrusion from drones. However, a lack of clarity on what measures they can lawfully take to counter this threat without falling foul of current regulation means that employment of counter-drone systems has only so far been permitted on restricted grounds. Meanwhile, policymakers are seeking solutions that are realistic, safe and adaptable to ongoing developments in drone technology.

This Focus Day will gather senior policymakers, legal experts, insurance and risk practitioners, and industry professionals to address variances in regulation and its impact in practice, as well as consider methods to measure and mitigate against the risk of drone accidents and attacks.

Following the conference, Defence IQ will aim to produce a report, **A Flightpath for the Employment of Counter-Drone Technology**, which will provide a summary of the discussions with recommendations for industry who are considering adopting counter-drone systems. Subject matter experts and conference attendees with relevant expertise will have an opportunity to contribute to the project, which we hope will stimulate ongoing discussions within the global counter-drone community.

In particular, the Focus Day will address the following questions:

- **What are the regulatory obstacles** that stand in the way of the development and employment of different types of counter drone solutions? What measures are appropriate and in what contexts?
- Should drone manufacturers be regulated to ensure their drones work on a specific set of frequencies so that jamming them when necessary **does not interfere with communications or radio and TV reception?**
- Should governments make it mandatory for drone manufacturers to integrate a kind of radio transponder aboard that continually **broadcasts its identity, GPS location and unique registration?**
- **What kind of legislation is needed** to provide legal cover to organisations in absolute need of deploying counter drone solutions? What kinds of solutions/technologies should be allowed?
- **Accidents will happen;** can registered drone-owners sue an organisation responsible for destroying their drone? What are the implications should the damaged drone cause an accident?
- Should facilities deemed to be a **high public safety risk from a drone attack**, such as airports, be legally obliged to deploy counter-drone solutions and thereby minimise their public liability?

How will you benefit from this Focus Day?

- Position your organisation as a **leading voice in the counter-drone policy and security space**
- **Source exclusive** insight from policymakers in national security, transport and R&D on drone and counter-drone legislation, liability and employment
- **Get high-level expertise** from legal practitioners specialising in drone and counter-drone regulations who can clarify the particular issues that your sector might be uncertain about

About your Focus Day Leader

Arthur Fliieger is a drones and aviation legislation specialist. He is Founder and Partner of Fliieger Law Offices, one of the few law firms in Europe to provide legal and financial advice to independent aircraft operators and related industries, or other industries using aircraft for logistic purposes. Arthur is also Secretary General of the International Military & Civil Aviation Association, and brings to the conference unrivalled expertise and understanding in the complexities of drone legislation and regulation.

Pre-Conference Focus Day: 6th December 2016

08:30 REGISTRATION & COFFEE

09:30 CHAIRMAN'S OPENING REMARKS



Arthur Flieger, Partner and Owner, **Flieger Law**

09:45 **A PRAGMATIC RESPONSE TO CIVILIAN DRONES: BALANCING REGULATIONS WITH COUNTER-DRONE CAPABILITY**

- An overview of French UAV regulatory frameworks for both civil and commercial drones
- How effective is regulation in minimising accidents, particularly involving hobbyists? Is awareness and training sufficient?
- Risk-based analysis of drones in the French national airspace
- Strategies for the short and long-term to counter the threat of hostile drones
- What role should international aviation legislation play in developing drone legislation?



Julien Sabéné, Secretary General for Defence & National Security, **Government of France**

10:15 **"Can we just shoot them down?" - Countering UAVs in Canada**

- Evolving regulatory environment in Canada, including privacy considerations and countermeasure limitations.
- Implementation of new Transport Canada rules governing pilot licencing, commercial use, and drone registration.
- Threat considerations – what do we need to think about in designing a counter-drone capability, and how does it depend on the scenario?
- Canadian counter-drone trials – how we evaluated detection, electronic countermeasure, and physical countermeasure systems for VIP and critical infrastructure protection.
- Results of the trials – what worked, and what did not, including current recommendations.
- Development of a standard test protocol and assessment capability for new counter-drone technologies.
- The benefits of collaboration – sharing information with CAST and DHS



Mark Espenant, R&D Project Manager, Defence Research and Development, **Canada's Centre for Security Science**

10:45 COFFEE AND NETWORKING

11:15 **EXPERT PANEL DISCUSSION: NAVIGATING INSURANCE AND LEGAL UNCERTAINTIES SURROUNDING DRONES**

- What criterion is being used to develop risk assessments and insure against drone accidents?
- Are statistics originating from manned aerial vehicles effective and realistic for developing drone insurance?
- How will insurers and risk managers generate frameworks around counter-drone employment?
- Balancing high probability accidents with low probability, high consequence incidents involving critical national infrastructure and public safety
- Legal sticking points for civil and commercial bodies that are vulnerable to drone accidents or attacks, or that want to employ countermeasures to combat drones

Panellists:



- James Johnstone, Account Manager, Aerospace, **Willis Towers Watson**
- Simon Phippard, Of Counsel, **Bird & Bird**
- John Hanslip, Senior Vice President, Aviation & Aerospace Practice, **Marsh**
- David Greene, Senior Partner, Commercial Litigation, **Edwin Coe LLP**

12:05 **GENERATING A COUNTER-DRONE REGULATORY FRAMEWORK FOR THE FUTURE**

- Given the anticipated boom in counter-drone technology, how should policymakers, legal practitioners and insurers respond to the employment of these systems? What are the potential risks?
- What systems are appropriate for what contexts? Should industry register to use counter-drone systems?
- Should organisations most at risk from a drone attack have appropriate insurance to cover liability for injury or death as the result of an accidental or malicious drone incident?
- Should facilities deemed to be a high public safety risk from a drone attack, such as airports, be legally obliged to deploy counter-drone solutions and thereby minimise their public liability?

Panellists:



- Julien Sabéné, Secretary General for Defence & National Security, **Government of France**
- Simon Phippard, Of Counsel, **Bird & Bird**



- John Hanslip, Senior Vice President, Aviation & Aerospace Practice, **Mars**



- Mark Espenant, R&D Project Manager, Defence Research and Development, **Canada's Centre for Security Science**

13:00 CHAIRMAN'S CLOSING REMARKS AND END OF FOCUS DAY

Main Conference Day One:

7th December 2016

08:00 REGISTRATION & COFFEE

09:00 **CHAIRMAN'S OPENING REMARKS**
Roger Cumming, Director, **Fenley Martel Ltd**

THE CIVIL DRONE THREAT: BALANCING RISK AND MANAGING THREAT

09:10 **HOST NATION OPENING PRESENTATION: NATIONAL RISK STRATEGY FOR MANAGING THE DRONE THREAT AND ONGOING SYSTEMS TRIALS**



Detective Chief Inspector Colin Smith, Counter Terror Police Advisor, **UK Home Office**

10:00 **ADDING COUNTER UAV CAPABILITIES TO EXISTING INNER TIER GBAD SYSTEMS**

- Inherent capabilities of current systems
- Novel challenges by UAV's of the Low Slow and Small category
- A toolbox of capabilities for all targets and missions
- How to improve currently fielded VSHORAD systems



Fabian Ochsner, Vice President Marketing & Portfolio Management, **Rheinmetall Defence**

10:30 **A SWISS GOVERNMENT BRIEFING: COUNTER-UAV R&D, POLICY AND SECURITY PLANNING IN SWISS POLICING AND SECURITY**

- Strategic overview of the Swiss Government's approach to and R&D of counter-UAV: risks, policies, security awareness and industry collaboration so far
- European cooperation on counter-UAV
- Policing experiences with counter-UAV and the challenges in securing high-profile events like Davos



Major Peter Brander, Department of Security and Economy, **Swiss Government** & Chief of the International Security Police (PSI), **Geneva Police**

11:00 MORNING COFFEE AND NETWORKING

AIRPORT, AVIATION AND AIR TRAFFIC RESPONSES TO UNMANNED AERIAL INTRUSION

11:30 **THE MYTHS AND REALITIES OF TODAY'S C-UAS MARKET. A VIEW FROM THE PERSPECTIVE OF REAL CUSTOMERS**

- What expectations do customers place on providers, and do they match the realistic threats or available C-UAS capabilities?
- What threats are being experienced by customers?
- How do customers and prospects view C-UAS in light of regulatory guidelines that have generally been in place to support a non-drone world?
- How can industry help customers achieve their C-UAS goals at acceptable risk?



Daniel Magy - CEO & Founder, **Diametrex**

11:50 **FRAMING THE FUTURE OF AVIATION: THE LEGAL & REGULATORY ENVIRONMENT ON THE USE OF DRONES IN EUROPE**

- An overview of the Riga Declaration on Remotely Piloted Aircraft and the framework of European legislation under review
- How effective is current legislation? How is policy developing towards counter-drone employment in the aviation sector?
- Regional cooperation to mitigate the security threat of civilian drones
- Assessing risk of drone-enabled terrorist attacks on European airports
- Investment into counter-drone systems for airports, air traffic control and aviation bodies – new radar defence systems, tracking and destroy technology

Panelists:



Tim Johnson, Policy Director, **Civil Aviation Authority UK**



Nathan Wall, Airside Safety Lead, **Cork Airport**



Elina Millere, International Affairs Coordinator, **Civil Aviation Agency of Latvia**



Arthur Flieger, Partner and Owner, **Flieger Law**

12:40 **HOLDING THE FORT: AIRPORT SECURITY PERSPECTIVES ON THE DRONE THREAT TO SAFETY, PROCEDURES AND TECHNOLOGY AND FINDING SOLUTIONS FOR THE FUTURE**

- How should airport security respond to and prepare for the safety and security threat of civil or commercial drones?
- How much of a priority is the risk at this stage? Will it take a serious incident to spark investment into countermeasures?
- Is counter-drone technology the most viable solution? What kind of system would be most appropriate for an airport context?
- Airport vulnerability to terrorist attacks from small drones – working with Counter Terror officials
- How will counter-drone technology be integrated into existing security infrastructure?

Panelists:



Assistant Police Chief Ethel McGuire, Assistant Chief of Airport Police, **Los Angeles World Airports**



Christian Leininger, Vice President Safety & Security, **Berlin Airports Corporation**



Szabó István, Deputy Director Security, **Budapest Airport**

13:30 LUNCH AND NETWORKING

14:30 **DETECT, DISRUPT, DEFEAT: THE FAA'S REGULATION OF DRONES AND COMMISSION OF ANTI-UAV DEFENCE SYSTEMS**

- Overview of recent near-accidents with civil drones in the USA and the challenges of regulating drones
- What are the regulatory obstacles that stand in the way of the development and employment of different types of counter drone solutions? What measures are appropriate and in what contexts?
- Preparations to test counter-drone technology in airport environments – capability requirements



Earl Lawrence, Director, Unmanned Aircraft System Integration Office, FAA

15:00 **CREATING A FRAMEWORK FOR ROBUST AIR TRAFFIC MANAGEMENT FOR DRONES**

- How should air traffic control systems adapt to the proliferation of drones in the civil air space? How might their capability requirements change over the next 5-10 years and how will they integrate drones into existing systems?
- Should commercial drones be equipped with IFF transponders?
- Could mobile phone networks be used as the backbone to receive IFF-type broadcasts from drones especially in dense urban settings?

Panellists:



Professor Dr Werner Wiesbeck, Karlsruhe Institute of Technology, University of Karlsruhe



Elina Millere, International Affairs Coordinator, Civil Aviation Agency of Latvia



Alfred Vlasek, Safety Manager, Austro Control

15:40 **GROUP ACTION LITIGATION: HOW VULNERABLE ARE AIRPORTS TO LITIGATION OVER A DRONE STRIKE LEADING TO AN AIR CRASH?**

- Could group action litigation reasonably be brought against an airport or civil aviation authority for failing to put in place technology to mitigate the threat from drones?
- Is a drone strike legally the same as a bird strike?
- Could other high security installations be similarly liable in the event of a terrorist strike with drones carrying explosives, like prisons, power stations, public buildings and the like?

Panellists:



David Greene, Senior Partner, Commercial Litigation, Edwin Coe LLP



John Hanslip, Senior Vice President, Aviation & Aerospace Practice, Marsh



Christian Leininger, Vice President Safety & Security, Berlin Airports Corporation



Simon Phippard, Of Counsel, Bird & Bird

16:20 AFTERNOON TEA AND NETWORKING

FACILITY PROTECTION AND COUNTER-DRONE STRATEGY

16:50 **SECURING THE PERIMETER: SAFEGUARDING CIVIL NUCLEAR SITES AGAINST DRONE ATTACK AND SURVEILLANCE**

- How might the proliferation of civilian drones impact nuclear security in Europe?
- Challenges for the civil nuclear sector to cooperate and share information on drone threats
- Considering counter-drone solutions to identify and destroy drone intruders into civil nuclear airspace: what systems are appropriate and most effective to ensure that sites are protected?
- Using drones for surveillance and information system disruption: what is the role of Information Security Officers in countering drones?



Rony Dresselaers, Director Security & Transport, Federal Agency of Nuclear Control (FANC) Belgium (Tentative)

17:20 **UK GOVERNMENT WORKING GROUP PANEL DISCUSSION**

This end-of-day panel will feature representation from the leading UK government working group that are currently leading trials with industry and making recommendations to government on investment into countering drones solutions.



17:50 **CHAIRMAN'S CLOSING REMARKS AND END OF CONFERENCE DAY ONE**



Main Conference Day Two:

8th December 2016

08:00 REGISTRATION & MORNING COFFEE

09:00 **CHAIRMAN'S OPENING REMARKS**
Roger Cumming, Director, **Fenley Martel Ltd**

09:10 **THE MENACE OF DRONES IN A PRISON ENVIRONMENT**

- Analysis of incidents involving criminal drone activity in and around prisons and the risk to the prison population
- Practical approaches to enhancing security and preventing drone-delivered contraband
- Counter-drone capability requirements for the future: what's realistic for the prison environment?
- Challenges for integrating counter-drone systems into existing security structures



Don Head, Commissioner, Correctional Service of Canada

09:50 **ENGAGING FUTURE THREATS: THE NYPD RESPONSE TO THE PROLIFERATION OF CIVILIAN DRONES**

- Overview on incidents involving civilian drones in the City of New York and the implications for NYPD counter-terror strategy
- Utilising intelligence on hostile drone operators
- Briefing on recent training drills and developing strategy to counter-drones
- Capability requirements for counter-drone technology in the future
- How will the proliferation of drones affect policing in New York?



John Miller, Deputy Commissioner of Intelligence and Counter-Terrorism, New York City Police Department

COUNTERING DRONES: AN INCREMENTAL TEST & EVALUATION-LED (T&E) APPROACH TO MATCH C-UAS SOLUTIONS TO CUSTOMER NEEDS

- Defining benchmarks for C-UAS systems based on metrics, T&E scenarios and an assessment of the roles of homeland and civil security customers.
- Specifying optimized requirements through user groups and value analysis
- Effectively addressing the "No-fly-no-buy" syndrome through Proof Of Concept (POC) demonstrators:
 - Clearly defining scenarios through an assessment of CONOPS and analysis of equipment performance
 - In-field POC T&E through integration of the Command & Control system with "best-fit" technologies
 - Loop back from experience
- Overview of projects being delivered both in Defense and Security domains: Update on the ANGELAS counter drones project funded by French government (SGDSN).
- Building a portfolio of sensors and effectors from Thales and SME partners best-suited to the customer's different employment scenarios.

Jean-Michel Negret, Product Line Manager, C4I and small Unmanned Aerial Systems, Thales Communications & Security

THALES

10:30 MORNING COFFEE BREAK

PUBLIC AND PRIVATE SECURITY PERSPECTIVES

11:00 **THE THREAT OF CIVILIAN DRONES TO AIRPORT SECURITY AND EMERGING SOLUTIONS TO COUNTER DRONE ATTACKS**

- How Los Angeles World Airports perceive and are preparing for the threat of drones
- What counter-drone systems are in place or are looking to be employed to safeguard against accidental or terrorist drone intrusion in and around airports?
- How effective is current legislation surrounding drones and counter-drone systems and how should policy develop to alleviate uncertainty or vulnerability to the threat?



Assistant Police Chief Ethel McGuire, Assistant Chief of Airport Police, Los Angeles World Airports

11:40 **EUROPEAN FOOTBALL: A CASE STUDY IN COUNTERING DRONES**

- A briefing on the threat of civil drones to public safety during sporting events
- Overview of counter-drone system used during the 2016 Euros and its effects
- Recommendations for future sporting events moving forward – particularly in upcoming championships
- Clarifying liability arrangements for drone incidents in and around stadium events
- Future requirements for stadia and football Federations to counter-drones from - regulation to advanced systems of detect and destroy

12:20 NETWORKING LUNCH

13:20 **THE U.S. DEPARTMENT FOR HOMELAND SECURITY PERSPECTIVE ON COMBATING SMALL DRONES**

- Strategic overview of the Department for Homeland Security's approach to countering small drones
- DHS perspectives on counter-drone system employment by government agencies and industry
- Briefing on ongoing research in DHS Science & Technology into counter-UAV technology – where will the technology be employed and what are the challenges?



Anh N. Duong, SES, Program Executive Officer, Unmanned Aerial Systems, Department of Homeland Security Science & Technology (Tentative)

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14:00 **COMBATING ILLICIT DRONE SMUGGLING AND SPYING AT SEA PORTS**

- Briefing on recent incidents involving the criminal use of drones for smuggling and surveillance at sea ports
- The challenges facing Security Officers to detect commercial drones and trace their operators – working with law enforcement and the military
- Assessing and preparing for the relative risk of drone smuggling – an emerging threat or just a rare incident?
- Counter-drone systems for coastal security – mobile and stationary technologies



Daniel van Duzer, Chief of Policy and Implementation, Moran Office of Maritime and Port Security (MOMPS)

14:40 **AFTERNOON TEA AND NETWORKING**

COUNTER-DRONE TECHNOLOGY IN PRACTICE

15:10 **ENCOURAGING INDUSTRY INVESTMENT: CREATING A LONG-TERM ROADMAP FOR COUNTER DRONE SOLUTIONS**

- Understanding the need for a long term roadmap for counter-drone solutions and recommendations for integrating systems into existing air traffic management and monitoring structures
- How solutions developed especially for drones can create opportunities in adjacent markets, e.g., VSHORAD systems
- Israeli aviation sector's employment of unmanned aerial vehicle detection, jamming and disruption systems – effectiveness and future roadmap for industry
- Future threats to the aviation transport network and the response to hostile drone attacks



Dvir Rubinshtein, Aviation Security Operation Center Manager, Security Division, State of Israel

15:50 **UNDERSTANDING COUNTER DRONE TECHNOLOGY AND THE PROS AND CONS OF DIFFERENT SYSTEMS FOR MILITARY, GOVERNMENT AND INDUSTRY ENTITIES**

- Kinetic and passive counter-drone solutions
- Sensors to detect and track drones – implications for law enforcement
- GPS jammers and scrambling technology – legal issues and the impact on alternate frequencies
- Integrating counter-drone solutions into existing security and surveillance systems: quick detection and communication with law enforcement
- Counter-drone solutions with data recording software for evidence in legal and liability proceedings
- Systems that differentiate through acoustics to enable sophisticated detection
- What systems are appropriate for different facilities, environments, and for governmental and commercial bodies?

Facilitator:

Andrew Lacher, Unmanned and Autonomous Systems Research Strategist, The MITRE Corporation

Panellists:

John Bremmer, Business Development, Robin Radar Systems BV

Fabian Ochsner, Vice President, Rheinmetall Air Defence

Jean-Michel Negret, Product Line Manager, C4I and small Unmanned Aerial Systems, Thales Communications & Security



Jean-Michel Negret, Product Line Manager, C4I and small Unmanned Aerial Systems, Thales Communications & Security

Daniel Magy - CEO & Founder, Diametrex

16:30 **THE MITRE CORPORATION COUNTERING UNAUTHORISED UAS CHALLENGE: A CASE STUDY IN EMERGING COUNTER-DRONE RESEARCH**

- Case study on MITRE's research challenge on counter-UAS technologies
- Emerging technologies on system capabilities such as identification and tracking
- Counter-UAS in contested urban environments – challenges and opportunities for research
- Which technologies suit which industries environments?



Andrew Lacher, Unmanned and Autonomous Systems Research Strategist, The MITRE Corporation

17:10 **CHAIRMAN'S CLOSING REMARKS AND END OF CONFERENCE**

Conference brought to you by:



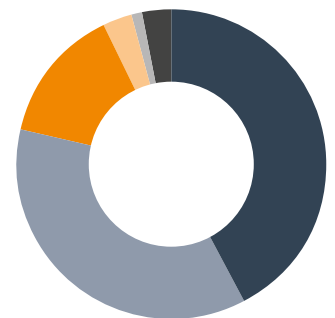
Website: www.defence-iq.com

Delivering quality content and events to enhance your knowledge and strengthen your networks Defence IQ provides over 100 technical and strategic events across Europe, Asia, the US and the Middle East every year, educating almost 5,000 high-level executives annually. Through our website, newsletter and conferences we seek to keep the industry in the know about the latest issues that affect your bottom line. Our members and delegates benefit from a culmination of 100% industry research and practical information and tools that solve critical everyday business problems.

Countering Drones Survey Results Preview

Generally speaking, and as regulations stand, do you believe drones in the civil air space are likely to be involved in the cause of a major security incident within the next 5 years?

- Almost certainly **42.45%**
- There is a strong likelihood **35.97%**
- There is a small likelihood **14.39%**
- It is generally unlikely **2.88%**
- It is highly unlikely **1.44%**
- Don't know / Can't answer **2.88%**



For the full results of the countering Drones survey and other industry resources please visit: www.counteringdrones.com/mediacenter



Maximise Your Involvement: Sponsorship and Exhibition Opportunities

Countering Drones will be attended by senior officials and decision-makers from industry, bringing together buyers and suppliers in one location.

Focused and high-level, the event will be an excellent platform to initiate new business relationships. With tailored networking, sponsors can achieve the face-to-face contact that overcrowded trade shows cannot deliver.

Exhibiting and Sponsorship options are extensive, and packages can be tailor-made to suit your individual company's needs. Most packages include complimentary entry passes, targeted marketing to industry officials and executives, and bespoke networking opportunities.

Other features of sponsorship include:

- Prominent exhibition space in the main conference networking area
- Participation in comprehensive pre-event marketing campaigns
- Tailored marketing strategies to suit your organisation's size, capabilities and individual requirement

For more information and to discuss the right opportunity, contact us on +44 (0)207 368 9300 or sponsorship@iqpc.co.uk

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Diametrex creates and offers unique C-UAS solutions for Government, Military and Commercial use. Unlike the competition, Diametrex's solutions manage the UAS challenge without collateral damage to property, wireless devices or networks. All our solutions are fully automated and designed to be used in either mobile or fixed configurations. The transition between configurations can be completed within a few minutes. Furthermore, the UF 1000 series requires no training, set up expertise or user management once turned on. The system passively monitors all communication frequencies around the protected area. Detection algorithms will compare all radio frequency activity to a set of drone signal profiles. When a match occurs between a detected communication signal, our solution can be tailored to report the detection, track the target, and engage the drone to prevent it entering a protected space. Diametrex's state of the art solutions have pioneered the C-UAS market, creating the only system available today which is cost effective, automated and designed to prevent collateral damage.

www.diametrex.com



Rheinmetall Defence's Air Defence and Radar Systems Division is headquartered in Switzerland with affiliates in Germany and Italy. The company is of the world's foremost makers of advanced short range air defence systems for land and naval applications and leads the global market in automatic gun-based air defence. As a unique system supplier of sensor systems, fire control technology, automatic air defence guns with Ahead airburst ammunition, integrated guided missiles and a full suite of command and control systems it can supply everything from a single source. In order to stay abreast with current and future missions, the company invests heavily in new technologies such as High Energy Lasers (HEL). Demonstrations of the advancements in recent years have proven to many customers that such weapons will be a major game changer and will allow to satisfy new requirements for air defenders on land and on water.

The successful change of the old GBAD paradigm, to engage the platforms before weapon release, to now ordnance based GBAD engagements has been achieved using the latest available technologies. The use of GBAD systems in Military Operations Other Than War (MOOTW) another Rheinmetall Air Defence speciality, providing coherent command and control allowing to support such delicate missions in peace time environments. The protection of Forward Operating Bases against Rockets and Mortars is the latest addition in an impressive portfolio of inner tier ground based air defence products by successfully fielding the Skyshield C-RAM system with the German Air Force.

www.rheinmetall-defence.com



Thales is a global technology leader for the Aerospace, Transportation, Defence and Security markets. With 62,000 employees in 56 countries, Thales reported sales of €14 billion in 2015. With over 22,000 engineers and researchers, Thales has a unique capability to design and deploy equipment, systems and services to meet the most complex security requirements. Its exceptional international footprint allows it to work closely with its customers all over the world.

Thales solutions protect the four key domains considered vital to modern societies:

- Homelands (citizen security, identity management, ...) ,
- Cities,
- Critical infrastructures (oil and gas, nuclear power plants, airports, Government and sensitive sites, ...),
- Cyberspace.

www.thalesgroup.com

Featured Exhibitors:



Founded in 2010, RNC Avionics Ltd, based in Lancaster, specialises in operational and technical consulting in the area of aviation security with an emphasis on information and communication technologies. RNC Avionics specialise in operational and technical consulting in the area of aviation security with emphasis on information and communication technologies. RNC Avionics is an active member of EUROCAE WG-72 (Aeronautical Information Systems' Security), WG-73 (Unmanned Aircraft Systems) and WG-82 (Airport Data Link System).

www.rnc-avionics.com



Based within York University campus, Saher (UK) Ltd. is a company specialising in security research, technology innovation and consultancy. It has senior level expertise in operational policing and works with its partner companies to ensure that their innovative technologies not only meet current and anticipated operational threats but are also compatible with professional policing practice. Their bespoke service helps new products and services gain access to the security market both within the UK and globally.

www.saher-uk.com



Robin's latest product, ELVIRA®, is a purpose-built Drone Detection Radar, designed specifically to meet the challenge of detecting, classifying and tracking drones in all weather and in urban environments. ELVIRA® is capable of detecting multiple targets simultaneously, regardless of if they are actively controlled or being flown autonomously and is able to distinguish between drones and other moving objects like birds.

ELVIRA® is at TRL-9 having already been sold to multiple international customers and has been operational for VIP protection, for example at the G7 Summit in Bavaria.

ROBIN Radar Systems was spun out of the well-respected Dutch Research Institute for Applied Science (TNO) in mid 2010 and acquired all TNO bird radar intellectual property, hardware and software.

Leveraging its 30-year pedigree in bird radars from TNO, Robin Radar Systems develops and installs bird detection systems offering the best possible combination of range, resolution and clutter filtering, and since recently, leveraging our natural strengths in small airborne target acquisition, detecting, classifying and tracking drones.

www.robinradar.com



Rohde & Schwarz develops, produces and supplies devices and systems in the fields of test and measurement, broadcast and media, secure communications, cybersecurity, radiomonitoring and radiolocation. With more than 40 years of expertise in radio monitoring receivers, signal analysis, direction finding and electronic countermeasures Rohde & Schwarz developed a new system family that can be applied against drones.

The R&S@ARDRONIS automatic radio-controlled drone identification solution is the ideal approach for the demanding applications in drone monitoring and countermeasures. It meets the challenges of countering radio-controlled microdrones by intercepting the radiocommunications link to reliably detect and capture the direction of remote control operators. R&S@ARDRONIS recognizes and disrupts signals precisely without any impact on the neighboring communications environment.

R&S@ARDRONIS can significantly contribute to the safety of outdoor events, governmental facilities, and critical infrastructure or automatically alarms an airspace from the potential threat of active remote controlled microdrones.

www.rohde-schwarz.com

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