High-level Workshop on Drone Incursion and Detection at and around Airports

3-4 October 2019
EUROCONTROL's Brussels Headquarters

Programme

Day 1 – 3 October 2019	
Morning session: Intrusion and surveillance, the big picture	
09:00	Registration
09:30	**Welcome and introduction** *Iacopo Prissinotti,* EUROCONTROL
09:40	**European Commission's contribution** *Koen De Vos/Hans Das,* DG MOVE/ DG HOME
10:00	**EASA counter drones (C-UAS) proposed action plan** *Alexandra Florin*, EASA
10:25	**Airport airspace protection - the threat of UAV in control zone (CTR)** *Czeslaw Romek,* CANSO
10:50	Coffee break
11:15	**Drone incursions at airports - the pilot's perspective** *Capt Otjan de Bruijn,* ECA
11:40	**The unique challenges of countering drones at airports: protecting our passengers, crews and aircraft. How will it be financed?** *Manfred Mohr,* IATA/A4E
12:05	**C-UAV military cooperation - civil/military synergies** *Dion Polman,* EDA
12:30-13:30	Lunch

Day 1 – 3 October 2019	
Afternoon session: Experience and technology	
13:30	**The Gatwick experience** *Damien Trower,* Gatwick Airport
13:55	**Drones at airports: opportunities and challenges** *Eugene Leeman,* ACI EUROPE
14:20	**Counter drones (C-UAS) detection, tracking and intent: a concise overview** *Gerald Poppinga,* NLR
14:45	Coffee break
15:10	**Securing airports: a convergence approach** *Jorge Munir,* INDRA
15:35	**The detection and classification of non-cooperative drones using holographic radar** *Tim Quilter,* Aveillant Ltd.
16:00	**Potential identification and contingency planning for rogue drones** *Jorge Chorniqué Sánchez,* AIRBUS
16:25	**Drones: state of play** *Jérôme Morandière,* ACI EUROPE
16:50	**Panel discussion - Q&A** *All*
17:30-18:30	Reception

Day 2 – 4 October 2019	
Morning session: Harmonisation and interoperability	
09:00	**Conclusions from previous day** *Jean-Marc Duflot,* EUROCONTROL
09:30	**ACI Drones Task Force ConOps** *Eugene Leeman,* ACI EUROPE
10:00	**ASTERIX: making the link** *Alexander Engel,* EUROCONTROL
10:30	Coffee break
11:00	**Enabling complete air situation awareness** *Jean-Marc Duflot,* EUROCONTROL
11:30	**An integrated way forward** *Johannes de Haan,* EUROCONTROL
12:00–13:00	**Final panel discussion and wrap-up**

Speaker biographies

Iacopo Prissinotti   EUROCONTROL

Iacopo is Director of the Network Management Directorate as from 1 July 2019.

He brings to this role over 30 years of experience in air traffic management and air navigation services, occupying a series of senior leadership roles in strategic, technical and operational roles.

Starting his career with the Italian military as a tower and approach controller, Iacopo joined ENAV, the Italian air navigation service provider, in 1988 as an air traffic controller. He then progressed through a series of managerial roles, heading Scenarios & Strategies, then International Activities, and finally leading the International Strategies division between 2011 and 2019.

During this time, he served on many key ATM governance boards, committees and steering boards, playing a leading role in the development of a series of key European aviation initiatives, including the creation of major multinational alliances in the form of the A6 Alliance and the SESAR Deployment Alliance.

Iacopo has a proven track record at bringing together institutions, organisations and stakeholders, and delivering large and complex system adaptations. During an important period of change, he has been tasked with driving the ambitious objectives of the EUROCONTROL Network Manager (NM), and will be steering its evolution to meet the new tasks conferred by the European Commission's decision to reappoint EUROCONTROL as the NM for the period 2020-2029, and with a strengthened mandate.

Koen De Vos   DG MOVE

Koen De Vos has been working for the European Commision in the field of aviation safety and environment since September 2009; and he currently works on drones. He joined the European Commission in 1993 to work on social and employment issues in the coal and steel industries and on social dialogue. He moved to the transport directorate-general in 2002 to join the Single European Sky (SES) team, working in the field of air traffic management to prepare the second SES package.

Koen studied law (1985) and economics (1987) at the University of Leuven, Belgium. He started his career at the centre for development studies of the University of Antwerp (1988-89) and at the higher institute for labour studies of the University of Leuven (1990-93).

Hans Das — DG HOME

Hans Das is Head of the Counter-Terrorism Unit within the European Commission's Directorate-General for Migration and Home Affairs (DG HOME). He has been with the unit since 2016.

Hans joined the European Commission in 2004. In May 2010, he was appointed Head of DG ECHO's Emergency Response Unit, where he coordinated the EU's response to various natural and man-made disasters. In March 2012, he was appointed Head of the Civil Protection Policy Unit, where he, among other things, led negotiations on European civil protection legislation and the Emergency Support Instrument.

Hans holds a Ph.D in Public International Law and started his career at Leuven University. From 1997 to 1999, he was Head of the Legal Department of the International Commission for Real Property Claims of Refugees and Displaced persons (CRPC), established by the Dayton Peace Agreement, in Bosnia and Herzegovina. He subsequently served as a consultant on post-war property restitution issues to the UN in Kosovo (1999-2000).

Alexandra Florin — EASA

Alexandra Florin has worked as EASA Drones Project Manager since September 2018. Before this, Alexandra worked 7 years in the EASA Certification Directorate and was already involved in drones in her quality of EASA Safety Expert and Senior Expert in Development Assurance. Since January 2019, Alexandra has been leading the EASA internal task force on C-UAS that developed the EASA C-UAS action plan which will be presented and discussed during the workshop.

Before joining EASA in 2011, Alexandra worked ten years for the French industry as System Architect of Engine Control and Monitoring Systems.

Czesław Romek — CANSO

Czeslaw is member of the CANSO UAS expert group. He served for twenty years in the law enforcement and armed forces. He is an operator and instructor in the field of tactical and operational use of UAV.

Czeslaw worked for 10 years for the Polish Air Navigation Services Agency (PANSA) as specialist in crisis management and UAV operations.

He is currently an UAV Specialist, working for the UAV Operation's Department at PANSA.

Captain Otjan de Bruijn   ECA

Captain Otjan de Bruijn is celebrating 29 years of working in the aviation industry. Currently he serves as a Captain on B777/B787 with KLM Royal Dutch Airlines.

Captain de Bruijn has represented pilots in many different positions, starting as a member of the VNV-Dutch ALPA and working his way to chairmanship position. He is currently serving as Vice-President for the European Cockpit Association (ECA) and Executive Vice-President Europe IFALPA.

His expertise in aviation, pilots work council committees and industrial section VNV for Dutch ALPA are based on over two decades of experience.

He graduated from NLS flight school in Maastricht in 1989.

Manfred Mohr   IATA/A4E

Manfred started his airline carrier 47 years ago as Technician and Engineer in the Lufthansa Technique and Training Department. He became the chief instructor for A340 and A330 EIS for the launching customer.

Manfred holds plenty of licenses for all Airbus aircraft and as a simulator instructor. Manfred took over the position of Deputy in the Administration of the Airbus Fleet Chief pilot, responsible for 1500 pilots. He was responsible for managing the A380 operation of Lufthansa and Lufthansa Technic across all training business segments. He was the first A380 Instructor of LAG and AI in XFW and TLS, as well as Group Leader of the Airbus A380 Policy & Specification Group.

Manfred was the Head of the SESAR Project and the Lufthansa Team (LH, Swiss, Austrian, Brussel Airlines and Lufthansa Cargo), and in this role, he was the representative of the Lufthansa German Airlines COO and Airspace User Speaker of European Airlines Members for IATA.

At Lufthansa, Manfred was Senior Advisor and Referent for Aircraft Datalink (Air and Ground), ETS (CO_2 Emissions) and the Fuel Efficiency Programme.

In 2014 Manfred was appointed Assistant Director SESAR by the International Air Transport Association and has been for the past three years the Point of contact within IATA Europe for all RPAS/UAV duties, as Member of the EASA Regulation Team and the Technical Advisory Committee (TAC) of EUROCAE.

He is also the ATM Acting Manager between the FAA, SDM and SJU. He is leading as Technical Manager the IATA Subject Matter Expert and Consulting Team for SESAR 2020.

Dion Polman   EDA

Dion Polman has been working at the European Defence Agency (EDA) as Project Officer Aviation since October 2016. He is responsible for all topics related to Air Superiority, including Counter-UAV.

Dion started his military career in 1996 as naval aviator piloting the P3C for The Netherlands Royal Navy. After the P3 was decommissioned a short taste of civilian life as an airline pilot resulted in a swift return to military life becoming the commanding officer of the coastguard unit in The Netherlands Royal Air Force operating two Dornier 228 aircraft. In 2011 Dion was assigned to The Netherlands Defence Staff and within the Directorate of Plans he initiated and developed the Multinational MRTT project for which the Netherlands became the lead nation.

Damien Trower   Gatwick Airport

Damien joined the Gatwick team in February 2018 as the Head of Airport Security. Prior to joining Gatwick he served for 20 years in the military as an Army Officer and Pilot. He has wide experience of National Security operations and finished his career as an Assistant Attaché within the British embassy in Washington DC. He is now responsible for leading Gatwick's security operations, serving as a Silver commander in crisis, and acting as lead for Counter UAS policy and procurement.

Damien has a BSc (hons) in Marine Biology from the University of Wales, a MSc in Defence Technology from Cranfield University, and a MA in Defence and Security Studies from Kings College London. Damien is also a Chartered Fellow of the CMI.

Eugene Leemans   ACI EUROPE

Eugène Leeman joined ACI EUROPE in February 2018, taking up the role of Liaison Officer to EUROCONTROL (European ATC Network Manager). In this capacity, he will continue to intensify collaboration between airports and the Network Manager.

Prior to joining ACI EUROPE, Eugène held a number of roles within Royal Schiphol Group and Aéroports de Paris, securing an array of achievements in optimisation of airport operations, implementation of EASA regulations and adoption of A-CDM.

Eugène holds a Bachelor of Maritime Operations from the Maritime Academy in Amsterdam. Before he ventured into aviation industry, he had spent 10 years working as Merchant Navy Officer, sailing worldwide with different ship types and companies.

A Dutch national, Eugène speaks fluent English, and has a working knowledge of French and German. In his spare time, he is a General Aviation Pilot with more than 1,000 hours' experience. When not taking to the skies, he enjoys regatta-sailing, windsurfing, photography and travel.

Gerald Poppinga   NLR

Gerald Poppinga is the NLR Programme Manager for the Netherlands C-UAS programme in support of the Dutch Ministry of Defense and the Dutch Ministry of Justice and Security.

Jorge Munir El Malek Vazquez   INDRA

Jorge Munir El Malek Vazquez is a Telecommunication Engineer specialised in Communications-Signal Processing and Telematics at the University of Vigo (Spain), with a Master Degree in Signal Processing based Applications in Communications from the University of Vigo (2010), and an Executive MBA (2016) from ESADE Business School (Madrid, Spain).

His career has been strongly linked to R&D and Innovation applied to Defense and Security, Aerospace and Broadcast sectors. Jorge Munir is specialised in mobile and satellite communications and technologies for Unmanned Platforms, focused on payloads as well as Detection and Counter UAS systems. In recent years, he directed the Advanced Communications department at the Galician Research and Development Center in Advanced Telecommunications (Vigo, Spain) where he also served as Head of Innovation focused on technology portfolio management and promotion of new products. He joined Indra in 2018 and he is currently a member of the Security Business Unit at Indra Defense & Security as Head of Counter UAS Solutions, contributing to Indra's firm commitment.

Tim Quilter — Aveillant Ltd.

Tim is a surveillance domain expert with more than 25 year experience in emerging surveillance technologies and is the engineering manager at Aveillant Ltd. In this role he leads the development of the Holographic Radar - an innovative software defined non-cooperative surveillance sensor. Current development is focussed on addressing the evolving threat of unauthorised drone incursion into controlled airspace and in supporting the safe integration of authorised drones into U-space. Tim also chairs EUROCAE WG-103 who are developing a technical specification for independent non-cooperative surveillance systems. Prior to his current work in Holographic Radar, Tim was responsible for the development and transition into service of some of the first of type Wide Area Multilateration and ADS-B ground surveillance systems.

Jorge Chorniqué Sánchez — AIRBUS

Jorge Chorniqué Sánchez has over 15-year experience in Airbus, working since 2019 on Airbus UTM strategy and technology. He has been developing the UAS / UAM strategy for Airbus Helicopters for the last years before joining the Airbus UTM team, including the analysis and recommendations on the impact of ATM and its evolution into existing and new products (inc. drones, eVTOL, etc.) and markets. Prior to his experience in the strategy area, Jorge developed a career as Telecommunication Engineer in Airbus, focused on UAS and military communication and C4ISR systems.

Jérôme Morandière — ACI EUROPE

Jérôme Morandière joined ACI EUROPE in September 2016, taking on the role of Aviation Security Coordinator, at a time when security issues were among the foremost not just for the air transport sector, but for the wider society as a whole.
In this role, he works closely with the Head of Aviation Security, David Ryder. In August 2017, Jérôme was appointed Aviation Security Manager.

Jérôme has a Degree in Civil Engineering from INSA and is currently pursuing an Advanced Masters in Airport Management at the French Civil Aviation University (ENAC). Previously, he spent 8 years working as a Civil Engineer on various large infrastructure projects, for Bouygues Construction and VINCI construction.

Jean-Marc Duflot   EUROCONTROL

Jean-Marc Duflot is an automation engineer who started his career in 1984 in an important industrial group producing Aviation systems. After five years of software engineering at the French Administration of Civil Aviation, Jean-Marc got involved in a European study programme on the future of ATM, and then joined EUROCONTROL as a founding member of ARTAS. Ten years ago Jean-Marc started the surveillance services, supporting the deployment of harmonised surveillance chain components.

Johannes de Haan   EUROCONTROL

Johannes has been active in ATC/ATM since 1991, and started in ATC as integration and project manager in the Netherlands.

Since 2005 Johannes has been working for EUROCONTROL in the surveillance, security and safety related areas. He is member of the NATO-EUROCONTROL ATM Security Coordination Group (NEASCOG) including membership of the NEASCOG Drone Security Task Force and the Advisory Council for Aviation Research in Europe (ACARE) Working Group 4: Safety and Security.

Johannes is Course manager for Cyber Security for Operational Staff at the EUROCONTROL Training Institute in Luxembourg and the PODIUM security work package leader.

Alexander Engel   EUROCONTROL

Alex started his career in 1980 with the German Air Force as Military Air Traffic Controller. In 1991 he was Regional German Air Force Liaison Officer at the Maastricht UAC. Alex joined EUROCONTROL in 1996 as the Team Leader of the RADNET Implementation Team, dealing amongst others with the support of RMCDE and its users. Alex moved at Headquarters in 2005 to work on surveillance data distribution matters. For a few years now, he has been working in the standardisation Unit as ASTERIX Manager responsible for the coordinated evolution of ASTERIX. He has also been supporting EUROCAE in the development of aviation standards.

Moderator

Munish Khurana   EUROCONTROL

Munish is a customer focused, strategic thinker with entrepreneurial passion who has delivered mission critical technology solutions globally. He currently works for EUROCONTROL as a Senior Manager - Business Development in the Directorate European Civil-Military Aviation. In this role, he is responsible for developing U-space/UAM business with partners of EUROCONTROL. He represented EUROCONTROL in the establishment of European Network of U-space Demonstrators, in partnership with the European Commission, EASA and SESAR Joint Undertaking. The purpose of this network is to enable harmonisation of European U-space market by sharing lessons learned and best practices to de-risk U-space implementations, accelerate lead-time to market and provide guidelines to the regulators.

In his previous role, Munish defined and implemented customer centric strategy for an ANSP to enhance capacity, efficiency and safety of its operations. He has managed delivery of a programme of mission critical Air Traffic Management solutions for public and private sector organizations across Europe and the UAE.

EXHIBITORS

Altitude Angel

Altitude Angel is a global leader in UTM services. They provide drone traffic management control solutions, including integration to drone detection and counter UAS to provide single situational awareness and compliance services.

AP-FLYER sp. Z.o.o

AP-FLYER together with European partners, offers advanced solutions for business, industry, uniformed services, rescue and intervention services. It launches to the market modern products and advanced technologies in the field of IT, telecommunications, security and biometrics:

- AARONIA AG – drone detector system for monitoring, detecting and eliminating UAV.
- SUNIT – mobile terminals, vehicle monitoring systems (AVL) with the function of reading license plates (ANPR), video registration and speed measurement and industrial Command Support Systems, rescue, work of uniformed, medical and police services.
- DURABOOK – rugged notebook and tablets; Tactical Solutions Systems for military use.
- REINER – eID reader, certified BSI TR3119: category KAT-K and meeting the requirements of the Ministry of Interior and Administration.

42 Solutions B.V

42 Solutions is an SME based in Eindhoven the Netherlands. 42S has a solid service record in providing IT solutions for ATM safety and security. The "Crew of Forty-Two" has successfully implemented the Cooperative Airspace Initiative on behalf of the NATO-Russia Council and is currently implementing the Regional Airspace Security Program requirements for NCIA. The team has also been responsible for the design, development, deployment, integration and maintenance of EUROCONTROL's Civil-Military ATM Coordination Tool that has been deployed at many Air Forces throughout Europe. 42S provides solutions for safety critical applications and has provided a tailored version of their Merlin Operational Display to LVNL. 42S is currently finishing the development of an Integrated UAV Threat Mitigation system for airports with Rinicom from the UK.

The system aims to mitigate and limit the effects that UAVs may have on airport operations and save costs incurred by closure of airspaces and diversion of traffic. It does this by integrating the data from multiple drone sensors with ATM and UTM data and determining which detected drones pose a threat to the airport operation. This information is forwarded to ATC using standard ATC messages. An app giving the live location of drone threats is available for security forces on and around the airport.

Rinicom Limited

Rinicom is a Lancaster, UK based, SME specialising in providing state-of-the art solutions for law enforcement agencies, first responders and critical civilian infrastructure protection. Incorporated in 2002, Rinicom gained recognition as a leading-edge technology company providing bespoke telecommunications solutions. Rinicom's portfolio of new and innovative products includes a multi-network bonding system (NetAmp), a self-healing COFDM IP ad-hoc mesh radio (PodNode), various novel and unique video surveillance cameras, and more recently an optical drone detection, tracking, and classification system called SkyPatriot. In addition to a robust product base, we place a strong focus on R&D to maintain our competitive advantage and ensure continuous innovation. We listen to our customers and over the last 4 years worked closely with 10 law enforcement agencies throughout Europe to develop, test, and validate emergency and community focused software platforms and mobile applications to improve communication and collaboration, prevent crime, build trust, increase accountability and support large and small scale disasters.

Deloitte

Deloitte is one of the main professional services firms globally for aviation and transport clients, providing a broad range of services to companies across the aviation sector, including airports, airlines, ground handlers, air traffic controllers and Civil Aviation Authorities. Their team of professionals across the world bring fresh perspective to help you anticipate disruption, reimagine the possible, and fulfill your mission promise. Whether you are at the crossroads of AI and workforce transformation, cyber and IT modernisation or digital and people experience - Deloitte brings actionable insights to drive bold and lasting results.

Dedrone

Dedrone is the market and technology leader in airspace security. Dedrone's counter-drone platform combines hardware sensors and machine-learning software, providing early warning, classification of, and mitigation against all drone threats. The Dedrone system is used worldwide to protect industrial plants, airports, government buildings and other critical infrastructure installations against rogue drones.

Qinetiq

QinetiQ's OBSIDIAN provides an accurate 3D staring array micro-Doppler radar with an open command-and-control system to integrate best of breed third party secondary sensors, and effectors allowing users to accurately detect, identify and defeat all drones including small/micro drones.

QinetiQ is a leading science and engineering company operating primarily in the defence, security and critical infrastructure markets. We are an information, knowledge and technology based company with the breadth and depth of more than 6,000 people, including more than 3,000 scientists and engineers.

IDS INGEGNERIA DEI SISTEMI SpA

IDS, an high tech integrated solutions and services company, has been researching and developing complete unmanned systems for over ten years, including ground control stations (GCS), data communication links, and a range of unmanned aerial (UAV), ground (UGV) and underwater (UUV) vehicles. This research has been assisted by IDS's experience and expertise in helicopter and rotor design, aircraft avionics systems such as flight control systems and autopilots, antennas and aircraft design.

DJI

DJI is a global leader in developing and manufacturing civilian drones and aerial imaging technology for personal and professional use. The company is dedicated to making aerial photography and filmmaking equipment and platforms more accessible, reliable and easier to use for creators and innovators around the world. In this capacity DJI has taken a leadership role from the start in developing technology and introducing innovative solutions, including DJI's AeroScope system as the first widely available remote identification solution, to ensure drones are safely integrated into the airspace.

SABCA

Part of Dassault Group and soon celebrating its first century in aerospace, SABCA, a Belgian company, has within his group 1000 highly motivated employees mastering all skills from design, manufacturing, qualification and support. The SABCA group has four plants located in Belgium and Morocco.

SABCA activities are focused on four markets: Civil and Transport Aircraft, Space Launchers, Defence and Industry; through four Business Units: Integrated Assemblies (Large Metal & Composite parts Equipped Aerostructures); Actuation systems (Flight Controls Solutions); MRO&U (Sustainment Solutions Integrator) and Unmanned Autonomous Systems (Integrator for Safety Critical Missions).

Drone Think Do
Air Space Drone

They bring together cities, industry and citizens to improve urban life through more sustainable integrated solutions. It has also signed the "Manifesto of Intent", project welcomed by the European Commission welcoming European cities joining the Urban Air Mobility initiative, where together with other partners, will explore opportunities of UAM (Urban Air Mobility) in the field of emergency services for public safety.

Frequentis

Frequentis is an international supplier of communication and information solutions for control centres with safety-critical tasks. Fail-safe connectivity and user-friendly design are core elements of the company's solutions.

Frequentis solutions for drone detection and incident handling ensure efficient management of drone incidents across all stakeholders. Frequentis helps and supports in the definition of responsibilities, procedures, information and communication flows. The agreed procedures are integrated into Frequentis' cross agency incident handling and communication solution. Frequentis ATM-grade data fusion of cooperative drones (UTM), uncooperative drones (sensors and visual observations), air traffic and blue forces is tailored to the information needs of all stakeholders – airport authorities, law enforcement, air traffic control, military organisations and airlines.

Senhive

Since 2018 Senhive has expanded its product range with Sen-AIR: a C-UAS eco-system and system integrator.

Together with strategic partners such as Aaronia and ART, they are able to offer a multi-sensor solution to detect, classify and share UAV locations.