

INTERNATIONAL CONFERENCE



# REMOTELY PILOTED AIRCRAFT SYSTEMS CIVIL OPERATIONS

VENUE, LOCATION & DATE

Royal Military Academy 8 Hobbema straat Brussels, Belgium 2 & 3 Dec. 2015



**ORGANIZED BY** 

BLYENBURGH & CO FRANCE



IN COOPERATION WITH

ROYAL MILITARY ACADEMY, BELGIUM UNDER THE AUSPICES OF

UVS International 86, rue Michel Ange 75016 Paris, France tel.: 33-1-46.51.88.65 fax: 33-1-46.51.05.22 info@uvs-international.org www.uvs-international.org

WITHIN THE FRAMEWORK OF UVS INTERNATIONAL'S



# THE EUROPEAN CIVIL RPAS OPERATORS' FORUM Announcing the Way Forward



IN COORDINATION WITH





CONSEIL POUR LES DRONES CIVILS

DRONE-RULES.EU CONSORTIUM

RPAS CivOps 2015 - The European Civil RPAS Operators Forum - Brussels, Belgium - 2 & 3 December 2015 UVS International - 86 rue Michel Ange - Bât. 2 - 2<sup>nd</sup> Floor - 75016 Paris, France - Tel.: 33-1-46.51.88.65 - Fax: 33-1-46.51.05.22 pvb@uvs-international.org - www.rpas-civops.org - www.uvs-international.org - www.uvs-info.com - Issue Date: 151120 - Page: 1/13

DAY 1 - WEDNESDAY 2 DECEMBER 2015			
Session 1	RPAS Operations		
09.00-09.15	<b>Overview of the Current Regulatory Situation</b> Peter van Blyenburgh Blyenburgh & Co, France ( <i>"Drone-Rules.eu"</i>		
09.15-09.30	Consortium member) French Civil Drone Council: A Tool for Developing the Drone Industry & Market Carine Donzel-Defigier		
09.30-09.45	DGAC, France ("Conseil du Drone Civil" member)         RPAS Operations in France - An Industry         Perspective         Jean-Eric Chevillot         Fédération Professionelle du Drone Civil (FPDC),		
09.45-10.00	France ("Conseil du Drone Civil" member) <b>RPAS Operations in Germany - A Legal</b> <b>Perspective</b> Dr Oliver Heinrich BHO Legal, Germany ("Drone-Rules.eu" Consortium member)		
10.00-10.15 10.15-11.00	<ul> <li>Interactive Panel Discussion</li> <li>Refreshment Break</li> </ul>		
Session 2	RPAS Operations		
11.00-11.15	RPAS in Agriculture: Now & Tomorrow Florent Mainfroy Airinov, France ( <i>"Conseil du Drone Civil" &amp; RAVT</i>		
11.15-11.30	The Connected Drone - How to Create Value from the Collected Data Hogne Fevang		
11.30-11.45	eSmart Systems, Norway <b>The Potential of RPAS for Railroads</b> Nicolas Pollet SNCF ( <i>national railroad operator</i> ), France		
11.45-12.00	Evaluating Options for Tomorrow's RPAS Applications Jacques Thomas Ministry of Economy, Industry & Digital Affairs, France ( <i>"Conseil du Drone Civil" member</i> )		
12.00-12.15 12.15-13.30	<ul> <li>Interactive Panel Discussion</li> <li>Lunch in the RMA Cafeteria</li> </ul>		
Session 3	<b>RPAS Regulation - The Way Forward</b>		
13.30-13.45	The Safe Use of RPAS in the European Sky Matthijs van Miltenburg European Parliament, Transport Commission Drones: The Proposed Way Forward		
	Koen de Vos European Commission DG Mobility & Transport (MOVF)		
14.00-14.15	Interim Conclusions of EASA's A-NPA 2015-10 Yves Morier European Aviation Safety Agency (EASA)		
14.15-14.30	RPAS for Civil Protection Alessandro Carrotta		
14.30-14.45	Civil Protection (ECHO) <b>RPAS Regulation - The French Approach</b> Col Laurent Barrilliet Ministry of Defence - DPID, France ( <i>"Conseil du</i> <i>Drone Civil" member</i> )		
14.45-15.05	Interactive Panel Discussion		

15.05-16.00 Session 4	<ul> <li>Refreshment Break</li> <li>RPAS Regulation - The Way Forward</li> </ul>
16.00-16.15	Drones & the European Aviation Package
	Koen de Vos European Commission DG Mobility & Transport (MOVE)
16.15-16.25	Questions & Answers
16.25-16.40	Insertion of Large Drones into European Airspace Vincent de Vroey Aerospace and Defence Industries Association of
16.40-16.55	Lurope JARUS & Industry Involvement Laurenzo Murzilli FOCA, Switzerland - on behalf of JARUS
16.55-17.10	Standards for Light RPAS - An Urgent Requirement André Clot EuroUSC, UK ( <i>"Drone-Rules.eu"</i> Consortium
17.10-17.25	member) Towards the Integration of RPAS into the Aviation System Alain Siebert
	Single European Sky ATM Research Joint Undertaking (SJU) (tbc)
17.25-17.45 17.45-19.00	<ul> <li>Interactive Panel Discussion</li> <li>Conference Cocktail in the RMA Mess</li> </ul>
DAY	2 - THURSDAY 3 DECEMBER 2015
Session 5	<b>RPAS-related Awareness Creation</b>
09.00-09.20	How «Product Harmonisation Legislation» & Market Surveillance Could Contribute to Drone Safety Jean-Pierre Lentz European Commission DG for Internal Market, Industry, Entrepreneurship & SMEs (GROWTH)
09.20-09.30	<b>«Drones-Rules.EU»: Purpose &amp; Objective</b> Philippe Carous SpaceTec Partners, Belgium ( <i>"Drone-Rules.eu"</i> Consortium member)
09.30-09.45	RPAS-related Insurance Jean Fournier
09.45-10.00	Global Aerospace, France ("Drone-Rules.eu" Consortium member) RPAS-related Privacy & Data Protection
	Anna Donovan Trilateral Research, UK ( <i>"Drone-Rules.eu"</i> <i>Consortium member</i> )
10.00-10.15 10.15-11.00	<ul> <li>Interactive Panel Discussion</li> <li>Refreshment Break</li> </ul>
Session 6	Solutions for the Safe Integration of RPAS
11.00-11.20	SKYBRIDGE - Bridging the Gap between Manned & Unmanned Aviation Marc Kegelaers
11.20-11.40	PSMD Project Justyna Zdanowska
11.40-12.00	<b>RPAS Autopilot Validation Tool (RAVT) Initiative</b> Peter van Blyenburgh UVS International
12.00-12.15 12.15-12.30	<ul> <li>Questions &amp; Answers</li> <li>Conclusions &amp; Announcements + Closure</li> </ul>

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### **PRESENTING ORGANISATIONS & AFFILIATION**

#### **Airinov, France**

- RPAS operator specialised in agricultural applications
- Member of "Conseil pour les Drones Civils"
- Member of RAVT Cooperation Group

#### Aerospace & Defence Industries Association of Europe (ASD) Pan-European trade association

- Member of ICAO RPAS Panel
- Member of European RPAS Roadmap Implementation Coordination Group
- Member of the JARUS Stakeholder Consultation Body

#### **BHO Legal, Germany**

- High technology law experts
- Member of "Drone-Rules.EU" consortium

#### Blyenburgh & Co, France

- Strategic RPAS consultancy & publishers & patent search
- Member of "Drone-Rules.EU" consortium

#### Conseil du Drone Civil (Civil Drone Council), France National public/private initiative

#### Direction générale de l'aviation civile (DGAC), France

National aviation authority

- Member of "Conseil pour les Drones Civils"
- Member of ICAO RPAS Panel
- Member of JARUS

#### **Dron House, Poland**

High tech development company

#### Drone-Rules.EU Consortium, Europe

Consortium co-funded by the Executive Agency for Small & Medium-sized Enterprises (EASME) of EC (COSME programme)

### eSmart Systems, Norway

Energy management company

### European Aviation Safety Agency (EASA)

 Member of European RPAS Roadmap Implementation Coordination Group

#### European Commission:

- Directorate General Humanitarian Aid & Civil Protection (ECHO)
- Directorate General for Internal Market, Industry, Entrepreneurship & Small & Medium-sized Enterprises (GROWTH)
  - Member of European RPAS Roadmap Implementation Coordination Group
- Directorate General Mobility & Transport (MOVE) (2x)
  - Member of European RPAS Roadmap Implementation Coordination Group

#### **European Parliament - Transport Commission**

## European Unmanned Systems Centre (EuroUSC), UK

Qualified entity

## Member of "Drone-Rules.EU" consortium

#### Federal Office of Civil Aviation (FOCA), Switzerland National aviation authority

- Member of ICAO RPAS Panel
- Member of ICAO RPAS
- Member of JARUS

## Fédération Professionnelle du Drone Civil, France

National RPAS association

- Member of "Conseil pour les Drones Civils"
- Member of UVS International's RPAS International Coordination Council

#### **Global Aerospace, France**

### Aviation insurers

Member of "Drone-Rules.EU" consortium

## Joint Authorities for Rulemaking on Unmanned Systems (JARUS)

A group of representatives of national aviation authorities (40 countries) and regional aviation authorities (EASA & EUROCONTROL) working on proposals for harmonised regulations for RPAS.

 Member of European RPAS Roadmap Implementation Coordination Group

#### Ministry of Defence - DPID, France

Member of "Conseil pour les Drones Civils"

Ministry of Economy, Industry & Digital Affairs, France

### Member of "Conseil pour les Drones Civils"

#### **RAVT** Cooperation Group

Non-funded industry cooperation group consisting of 20 companies from 12 countries, initiated by UVS International, which has as objective to lay the foundation for the development of a RPAS autopilot validation tool.

## Single European Sky ATM Research Joint Undertaking (SESAR JU)

European public/private partnership that manages the the development phase of the Single European Sky ATM Research programme.

 Member of European RPAS Roadmap Implementation Coordination Group

#### SNCF, France

- National railroad operator
- Member of "Conseil pour les Drones Civils"

#### SpaceTec Partners, Belgium

- Programme management company
- Member of "Drone-Rules.EU" consortium

#### **Trilateral Research, UK**

- Experts in data protection & privacy
- Member of "Drone-Rules.EU" consortium

#### UniFly, Belgium

- Aviation software development company
- Member of "Drone-Rules.EU" consortium
- Member of RAVT Cooperation Group

#### **UVS International**

International RPAS association federating 24 national RPAS associations in 22 countries & representing over 2700 corporate members in 44 countries.

- Initiator of the RAVT Initiative
- Member of ICAO RPAS Panel
- Member of European RPAS Roadmap Implementation Coordination Group
- Member of the JARUS Stakeholder Consultation Body

#### **SPECIAL FOCUS ON FRANCE**

France is currently the country with the largest amount of certificated RPAS operators in the world. A special focus will be put on explaining how this growth was made possible, as well as how the country's political establishment, ministries, governmental agencies, industry federations, competence clusters and research organisations have teamed up to form the «Conseil pour les drones civils» and make the RPAS market not only sustainable, but to also prepare for the future and maintain its growth. 6 members of the «Conseil pour les drones civils» are presenting at RPAS CivOps 2015.

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#### DAY 1 - WEDNESDAY 2 DECEMBER 2015

#### Session 1 **RPAS Operations**

#### 09.00-09.15 **Market Structure & Current Regulatory Situation** Peter van Blyenburgh **Blyenburgh & Co, France**

("Drone-Rules.eu" Consortium member)

Peter van Blijenburgh, a Dutch national, was born in The Netherlands (1948) and resides in Paris, France (since 1976). He is the CEO of Blyenburgh & Co, a French strategic consultancy company & publisher. Mr. Van Blijenburgh is the founder of EuroUVS (1997), which became



UVS International in 2000. He is currently in his 9th two year mandate as president of UVS International (www.uvs-international.org), a non-profit association registered in The Netherlands and operating out of offices in Paris, France, which represents more than 2700 companies & organizations involved with RPAS/drones in 44 countries. He has instigated the creation of 14 national RPAS/

drone associations, and has been the instigator of and/or participant in multiple initiatives related to RPAS/drone regulations & standards. He is the founder of the International RPAS Coordination Council, which federates 25 associations in 23 countries [See note]. He is the editor of "RPAS: The Global Perspective", the well-respected annual RPAS/drone reference publication and is also the creator of www.rpas-regulations.com, the world's only web site dedicated to RPAS/drone regulations, which monitors 267 countries & overseas territories, as well as www.uvs-info.com (a generic RPAS/drone information source), and a data base of internationally registered patents relative to RPAS/drones (at system & sub-system level) and the architect of the related promotional web site (www.uas-patents.org).

Mr. Van Blijenburgh has been implicated with RPAS/drones since 1987 and has supplied advisory services to corporate & governmental entities in Europe, the Middle East, and Far East & USA. He is a member of the ICAO RPAS Panel, European RPAS Steering Group, the EC's RPAS Roadmap Implementation Coordination Group, EASA's Safety Standards Consultative Committee, JARUS' Stakeholder Consultation Body, the European Commission-funded "Drone-Rules.EU" consortium, as well as various corporate & academic advisory committees.

Abstract

Bio Data

This presentation will explain the problems and obstacles relevant to the integration of RPA (remotely piloted aircraft) into non-segregated airspace and into very low level airspace (< 500 ft.). It will highlight the actions taken by the European Commission and its agencies relative to RPAS (remotely piloted aircraft systems).

An overview of the regulatory situation in Europe, and the rest of the world, will be given, as well as the organization of the RPAS industrial community (manufacturers, operators & other service suppliers), what "aerial operations" are, what "aerial work/specialized operations" are, and the various sub-categories that exist in "aerial work/specialized operations".

#### 09.15-09.30 French Civilian Drone Council : A Tool for Developing the Drone **Industry and Market Carine Donzel-Defigier DGAC**, France

("Conseil du Drone Civil" member)

After a degree in engineering, I joined the French Civil aviation authority Bio Data (DGAC, direction générale de l'aviation civile) as deputy head of the french air carriers and public intervention office, tasked with economic



regulation and oversight of French aircarriers and the implementing of the French public service obligation (PSO) programme. I then joined the Airworthiness and Operations

department where I headed the international activities monitoring and operational quality office for four years. This office participate in elaborating and implementing the safety oversight policy of French aircarriers and is responsible for elaborating and implementing the ramp inspection programme in France, both on French and foreign aircarriers (technical inspection of aircraft during turn-around). As of september, I joined the aeronautic department as deputy head. This department is in charge of defining and putting into effect the aeronautical research and development support policy and of the secretariat of the Civilian Drones Council.

A dynamic drone market emerged rather quickly in France, thanks to a drone regulation dating back to april Abstract 2012, allowing professional use of drones under some restrictions. Now, more than 1900 drone operators exist in our country. The Civilian Drones Council was created in early 2015 in order to structure the drone industry in France, maintain links between its various actors and help to develop the drone market. The Council, which first plenary was held last June, gather drone manufacturers, drone operators, state representatives, clusters, equipment manufacturers and big drone clients. It consists of an executive committee, and three technical committee : «Operations, uses and regulation», «technologies and safety» and «drone industry support and promotion». The latter deals with export matters, privacy rights, financing, insurance, societal acceptance of drones. The «technologies and safety» committee elaborates the technological roadmap of the Council and proposes reasearch projects in accordance to the roadmap. The «operations, uses and regulations» committee has to identify the various operational and regulatory barriers to the full use or operation of drones and propose adequate actions to remove these barriers.



research funding. Prior to working as an attorney, Oliver was a project manager for the European Satellite Navigation System Galileo at the German Aerospace Centre (Deutsches

Zentrum für Luft- und Raumfahrt e.V.). Oliver is a member of the extended board of UAV DACH, member of the association's air law expert group and head of its legal work group.

- Abstract The presentation provides an overview of the current legal situation for operating RPAS in Germany and its practical implications for the user community. Explicit rules on RPAS were introduced into German federal air law as late as 2012. Due to the structure of the German administration, these rules are implemented by local administrations within the sixteen federal states ('Bundesländer'). While this is already a high number, depending on the structure of a state, there may even be different administrations responsible for different administrative districts. The specific rules for RPAS apply only, if the RPAS is not used for sport or leisure activities; for other use cases the rules for model aircraft apply. If used for other than sport or leisure activities, the operation of RPAS in Germany always requires an official permission, granted by the local administrations. The underlying rules are very wide, and open for individual conditions, interpretation and discretion by the administrative district, for which the initial permission was provided, additional authorisation and transfer of permission is necessary, sometimes creating extra fees. Accordingly, the situation in Germany is highly complex. A good understanding is however essential for devising use cases relevant for business models.
- 10.00-10.15 Interactive Panel Discussion

#### Session 2 RPAS Operations

### 11.00-11.15 RPAS for Agriculture: Now & Tomorrow Florent Mainfroy

Airinov, France (*"Conseil du Drone Civil" member*) Bio Data Florent is the CEO and co-founder of AIRINOV, a startup providing product and services for an intensive and

sustainable agriculture through an expertise in sensors and drones regarding crop monitoring. Engineer in Computer Science and Geographic Information Systems, specialised in image processing, Florent runs this company, which was awarded in 2010 by the French Ministry of Education and Research during the French National Start-up Competition. 25 employees gather their scientific and management knowledge to acquire data with agronomic models

AIRI



conceived by Airinov, based on lab crop analysis. This complete expertise and solid experience lets AIRINOV being considered as the pioneer in precision agriculture.

Abstract Agriculture is presented in various market studies as the biggest economic sector for civil drone applications in the next five or ten years. Nowadays, a few companies provide imaging services to farmers using drones. AIRINOV and its network of drone operators has been mapping 30.000 ha in more than 2.000 flights in 2015 in France, and hope to reach 100.000 ha by the end of the year. These flights are carried out by licensed drone operators, train both theoretically and practically, and nearly 80% of the flights have required an agreement with one or more airdrome or helipad. A process that is acceptable for an established and specialized company. but could the current French regulatory framework be a good base for future operations over farms? What is the future of drone in agriculture? Different scenarios are plausible and could very well coexists. Licensed and well trained drone operators could very well expand their activities in agriculture in the next years. But some, or many, farmers could also buy their own RPAS as hardware prices decrease. Would every farmer who has bought a drone for less than 1.000 € follow a proper training, costing twice the price of the drone, just to fly over his own land? What are the actual risks and what should the future regulatory framework anticipate? This presentation will try to point out the risks of drones in agriculture and suggest ideas for a future regulatory framework that should anticipate the use of light RPAS by individual farmers, based on a four-year experience of drone operations in France.

#### 11.15-11.30 The Connected Drone - How to Create Value from the Collected Data Hogne Fevang eSmart Systems, Norway





management experience, where of the last 10 years working internationally in Europe, Asia,
 Africa and Latin America. He has a background in a wide range of industries from IT and
 telecommunications to biotechnology and agriculture.
 Abstract
 eSmart Systems is a Norwegian software company that delivers operational intelligence

Hogne Fevang is the Sales Director at eSmart Systems. He has 15 years of sales and

a consortium of technical partners eSmart Systems has initiated a project to do autonomous

inspections of power lines with the use of drones. The goal of the project is to connect available RPAS-technology with new operational intelligence technology to develop a system that integrate big data and real-time processing of sensor data from drones directly into utility companies' operations systems

## 11.30-11.45 The Potential of RPAS for Railroads Nicolas Pollet

Bio Data

**SNCF, France** ("Conseil du Drone Civil" member)

Bio Data Nicolas Pollet is an expert in engineering geology and rock mechanics with a PhD in characterization and analysis of rock massifs leading to definition and sizing of works, reinforcement or protection against rocky collapses. He has developed competence

in network maintenance and risk analysis as a tool for the French railway asset management policy regarding natural hazards, earthworks and hydraulics aspects. He is also involved in research projects: PhD thesis direction in terrestrial laser scanning and photogrammetry, PhD thesis direction in rock mass expertise, infrared thermal imaging. Now, Nicolas is the

lead of Drones for SNCF – French Railway Company – a team in charge of integration of RPAS into the railway system. The aim is to collect data to perform all the SNCF activities. The team is developing civil activities in engineering and data acquisition.

Abstract Railway network monitoring gives information for asset management. Aim is to characterize all the components to maintain a high level of performance and service (generally in the medium and long term), by optimizing investments (upgrade) and maintenance. General stakes and rules have to be preserved (inspection reliability of the works, security ...) : economic constraints, continuity of service (reliability, availability, maintainability) and impacts on countries (strategic networks, development of the territory...) even if there are very variable between the systems and inside those. As drones can capture data autonomously (automated machines, robots, helicopters...) without disturbing train traffic they can be considered as a new and efficient solution. This solution could be relevant if and only if, it is powerful ( quality, at least equivalent to what is carried out by other means, but preferentially better to invest under development), effective (objective results), efficient (results/resources/environmental impact) and profitable (complete economic model, direct and indirect costs, productivity gains) for the decision-making aid. Drone brings rich information, hitherto inaccessible, as a flexible tool which could complete airborne or satellite works. To ensure a full system coherence, it is essential to interface this new acquisition method with all existing measurement systems : infrastructure-based sensors and on-board measurement systems (monitoring trains, IRIS 320,...). By combining all kinds of data, asset manager obtains a widened vision of the network and all its components. This 4-D knowledge (spatial and temporal dimensions) makes it possible to lay out of an "instantaneous photography" of the network and to visualize and analyse field evolutions (digital model, digital memory, alive archive 3D...). To maximize value of data, it is from the beginning advisable to articulate the solution around vision of the system and of well-defined and controlled applications. The solution thus comprises an optimum between acquisition system (which kind of drone) sensor, data and data processing. Control of the full value chain makes it possible to gather the data with the objective of achieving a viable economic model.





#### 11.45-12.00 **Evaluating Options for Tomorrow's RPAS Applications Jacques Thomas** Ministry of Economy, Industry & Digital Affairs, France

("Conseil du Drone Civil" member) Bio Data

Born on March 11th 1953 in Paris, Jacques Thomas spent 16 years as an officer in the French Air Force, studying and gualifying as an Engineer in 1974 (Salon de Provence), then further specialising as a telecommunications engineer in 1981 at the École nationale supérieure des télécommunications. His professional background in the defence and telecommunications sectors has focused on electronic communications and their application to military, civil and public networks, along with work on air-defense systems and networks. As a French Air Force Officer, he was



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successively in charge of the maintenance of a major processing centers and long-haul radars for the purpose of Air Defense; the preparation of the operational units during the transition to digital; and the deployment of a multiservice highly-secured telecommunications network for high government authorities (EMP hardening). Following Air force service, I spent 5 years in the defense telecom industry (LMT-RP, Alcatel Telspace, TH-CSF) as project engineer in charge of tenders and bids for defense telecommunications networks contracts, then 9 years in the telecoms sector (SFR, Cegetel-Longue Distance, Telecom Development) as engineer on WAN deployment and on B-to-B services, as an engineer in the business development sector. In 2002 he moved to the French Government with the Ministère de l'économie, des finances et de l'industrie, as a project manager in charge of telecom expenses and TIC performance analysis. Currently, his roles with the Defense Electronic Communications Commissioner centres on the security of the telecommunications and broadcast operators with a focus on major crisis situations and events. Many of these projects require an understanding of the requirements and expectations of the government departments and operators, and working to identify the best cost/effectiveness ratio for a targeted realistic technical and operational solution, followed by implementation of this solution in successive phases.

With the recent and conspicuous proliferation of the light RPA (Remotely Piloted Aircraft, commonly called a Abstract "drone" in France) the French government conducted studies on the issues and possible responses to the threat posed by "civil RPA". These studies were concluded in 2015. One conclusion reached was to better and more accurately regulate the ownership and usage of RPA. It is today commonly held that above a threshold of weight or size, an RPA and/or its user(s) must be pre-registered to allow for relevant information of an event involving an RPA to be obtained in (guasi) real time - specifically, is any particular RPA legally registered, or is the status unknown, and potentially representing a threat or foe. In constructing a regulatory framework for RPAS, several issues must be taken into account. This includes the ease of implementation of a system of registration or identification of RPAS, by the manufacturers. This should be done ideally without an additional cost to end users/ customers. The use of mobile telecommunications networks could potentially aid the tracking and identification of an RPA in flight, giving relevant information linked to the RPA itself and/or linked to its route. Application of the technologies related to the "Internet of Things" or network connected objects, could certainly also be of interest for this purpose. Obvious challenges lie in the fact that currently a consumer can purchase and use an RPA almost anywhere, and without restriction, in Europe as well as elsewhere. It is therefore of great importance to consider an European and global coordination of technical standards among manufacturers and regulatory bodies. There is much work to do on this front, and all cooperation is welcome to achieve such a common goal. What is clear however is that the rapid deployment of a technical and operational solution is paramount, acknowledging the fact that such a solution may be at least initially both basic and partial.

12.00-12.15 Interactive Panel Discussion

12.15-13.30 Lunch in the RMA Cafeteria

#### Session 3 **RPAS Regulation - The Way Forward**

13.30-13.45 The Safe Use of RPAS in the European Sky Matthijs van Miltenburg European Parliament, Transport Commission

Bio Data Matthijs van Miltenburg has been a Dutch Member of the European Parliament since 2014 for the Alliance of Liberals and Democrats for Europe (ALDE). He is member of the Committee on Regional Development (REGI) and the Committee on Transport and Tourism



**European Parliament** 



worked as project manager Foreign Investments. Before he was elected as Member of European Parliament Van Miltenburg was a member of the city council of Den Bosch for four years. Between 2007 and 2012 he was senior policy advisor International Affairs at the Province of Noord-Brabant, The Netherlands. From 1997 to 2001 Matthijs van Miltenburg worked for the Dutch ministry of Transport. Van Miltenburg has an educational background in international law.

Abstract In December the European Commission will present its proposal for legislation on the safe and sustainable integration of civil drones into European airspace as part of the aviation package. Prior to the presentation of the aviation package the European Parliament drafted its own initiative report on the safe use of remotely piloted aircraft systems (RPAS, commonly known as drones) in the field of civil aviation. Being the ALDE shadow rapporteur on this topic, Matthijs van Miltenburg will elaborate on the importance of European legislation for the civil use of drones, and the main opportunities and challenges as determined by the European Parliament.

#### 13.45-14.00 Drones: The Proposed Way Forward Koen de Vos European Commission DG Mobility & Transport (MOVE)

Bio Data Koen de Vos (Belgian, born on 21 March 1962) 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). He joined the services of the European Commission in



EASA

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 team, working in the field of air traffic management to prepare the second Single European Sky package. Since September 2009 he has assumed responsibilities in the field of aviation safety and environment where he is currently working on drones.

Abstract

### 14.00-14.15 Interim Conclusions of EASA's A-NPA 2015-10 Yves Morier

European Aviation Safety Agency (EASA)

Bio Data Yves Morier was born 1956, is married, and has two daughters. Graduated from the French Civil Avaition Academy (ENAC: ecole

nationale de l'aviation civile) in 1978 as an Air Transport Engineer. After his military service, he became deputy-head of regional office of the French Civil Aviation Authority (DGAC) from 1979 to 1985 and then joined the airworthiness, operations and licencing rulemaking office from 1985 to 1991. He was Regulations Director of the JAA between 1991 and 2004. He joined EASA in 2004 as Head of the Department product safety in the Rulemaking Directorate and moved to his present functions in 2010



 and moved to his present functions in 2010
 Abstract
 This presentation will expose conclusions that were drawn from the comments received on EASA's A-NPA 2015-10 and will give indications on the way ahead relative to Europe's future drone regulation.

#### 14.15-14.30 **RPAS for Civil Protection** Dr Alessandro Carrotta

European Commission DG Humanitarian Aid & Civil Protection (ECHO)

Bio Data Dr. Alessandro Carrotta holds an MSc in Engineering and a PhD in Operations Research. In the last ten years he has covered positions related to research and technology in the transport and defence sectors, both in public and private organisations. In 2015 he joined DG ECHO at

the European Commission where he is in charge, among others, of the file on innovative technologies for Civil Protection.»

Abstract In recent years the use of RPAS has proved effective in improving capacities for data and imagery collection to support better decision making for response in the midst of emergencies and crisis, particularly in dangerous and life-threatening situation, when situation awareness from land is limited, or when operational conditions do not allow the deployment of any other systems. DG ECHO is committed to make use of the full potential of RPAS and is endeavouring to support the deployment of RPAS in the Union Civil Protection Mechanism (UCPM) missions. RPAS have been recently positively used in two UCPM response missions, and one Member States has recently expressed interest to offer a team equipped with RPAS to the European Emergency Response Capacity, posing urgent challenges to face for their use in UCPM response mission. ECHO and Member States will soon discuss: scenarios, needs, operational principles and procedures, interoperability requirements, regulatory and ethical challenges in disaster management.

#### 14.30-14.45 RPAS Regulation - The French Approach Col Laurent Barrilliet Ministry of Defence - DPID, France ("Conseil du Drone Civil" member)

Bio Data French Air Force Officer, ground base air defense specialist, after a intense operational phase during 20 years, with foreign operational deployements, Col Barrilliet was chief of the GBAD Office at Air forces command, deputy joint base of defense commander, and is now Head of threat analysis and expertise department at French MOD/DPID. Col Barrilliet is also head of the French RPAS working group N° 4, mandated by the FR Prime minister, in order to define new regulation to counter malicious RPAS.



MINISTÈRE DE LA DÉFENSE

Abstract Malicious UAS were flown above French highly sensitive sites, at the end of 2014. The analysis of this subject by the French cabinet, has shown that the current regulation is not adapted to this new challenge. The Prime

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Minister has decided to create working groups in order to define proposals for each of the following domains: a) Detection and neutralization capabilities; b) RPAS regulation improvement; c) Command and control procedures improvement. These proposals were published in October 2015, in a special report addressed to the Parliament. The French approach is based on two pillars:

- To regulate this new activities to assure safety;

- To regulate, in order to assure the growth of this new industry.

New technologies could be the key to achieve these ambitious objectives.

#### 14.45-15.05 • Interactive Panel Discussion

15.05-16.00 • Refreshment Break

#### Session 4 RPAS Regulation - The Way Forward

 16.00-16.15 Drones & the European Aviation Package Koen de Vos European Commission DG Mobility & Transport (MOVE)
 Bio Data Koen de Vos (Belgian, born on 21 March 1962) 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). He joined the services of 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 team, working in the field of air traffic management to prepare the second Single European Sky package. Since September 2009 he has assumed responsibilities in the field of aviation safety and environment where he is currently working on drones.

Abstract

#### 16.15-16.25 • Questions & Answers

16.25-16.40	The Insertion of Large Drones into European Airpace Vincent de Vroey Aerospace and Defence Industries Association of Europe
Bio Data	Vincent De Vroey is Director of Civil Aviation at the AeroSpace and Defence Industries Association of Europe (ASD). In this role, he is in charge of the management of the ASD Civil Aviation Business Unit and he represents ASD's members vis-à-vis the European and international civil aviation community. He is also representing the civil equipment manufacturers at the Board of the SESAR Joint Undertaking and the Provisional Council of EUROCONTROL. Vincent has extensive experience in the civil air transport industry: before joining ASD, he was General Manager Technical & Operations at the Association of European Airlines (AEA). In this role, he was also the Chairman of the European Aviation Safety Agency (EASA) Advisory Board from 2009 until 2014 and he represented the civil airspace users on the Board of the SESAR Joint Undertaking. Vincent De Vroey holds a Master of Science in Electronics and a Master of Science in Transport and Business Economics from the Free University of Brussels. He is Belgian/Flemish and speaks fluently Dutch English Erench. Italian and German
Abstract	This presentation will detail the manufacturers' position relative the insertion of large drones into European civil airspace.
16.40-16.55	JARUS & Industry Involvement Laurenzo Murzilli FOCA, Switzerland - on behalf of Joint Authorities on Rulemaking for Unmanned Systems (JARUS)
Bio Data	Lorenzo Murzilli is a graduated aerospace engineer, an innovator and a specialist in aviation, system safety and RPAS. After receiving his Master of Science in Aerospace Engineering in 2005 he worked on military projects as safety and reliability specialist. He then moved to Pilatus Aircraft Ltd. initially as R&M/Safety engineer and later as Safety Project Leader for the Pilatus PC-24. In 2011 he joined the Swiss Federal Office of Civil Aviation (FOCA) where he is now an accredited European Aviation Safety Agency (EASA) Project Certification Manager and Expert for Safety Assessment and Development Assurance, Powerplant and Fuel Installation as well as Hydro-mechanical Systems. Actively engaged in the certification, authorisation and rulemaking activities for RPAS, Lorenzo is the leader JARUS WG-6 «Safety & Risk» and a member of the Swiss FOCA RPAS Working Group, overseeing all critical RPAS operations in Switzerland. Always involved with High Reliability

Abstract	Organizations (HRO), Lorenzo is also an EUROCAE WG-63 member, working on development assurance and safety assessment industry standards for manned aviation. Guest lecturer at the Zürich University of Applied Sciences, Lorenzo has developed a striking capability to boost innovation in safety critical environments and enjoys exploring the intersection of safety and disruptive technologies that can advance the human race forward. The speaker will present the new strategy of JARUS in regards to industry involvement in the JARUS Working Groups.
16.55-17.10	Standards for Light RPAS - An Urgent Requirement
Bio Data	EuroUSC, UK ( <i>"Drone-Rules.eu" Consortium member</i> ) André J. Clot formed EuroUSC™ in 2003 whilst working as the rapporteur for the Safety and Security working group of the JAA/Eurocontrol UAV Task Force. In 2004 the task force's report became the basis for the newly formed European Aviation Safety Agency (EASA). In 1998 as the UAVS Association's first
Abstract	General Secretary, André led the industry input to the early development of United Kingdom RPAS regulation and the formulation of CAP 722. André is a former chairman of the Royal Aeronautical Society's UAS Specialist Group and former Vice Chairman of EUROCAE WG93 on Light RPAS, which has recently delivered its first report to the EU RPAS Roadmap. André is an advisor to Eurocontrol on the International Civil Aviation Organisation (ICAO) RPAS Panel working on the Airworthiness WG and the interactions with the Air Traffic Management WGs. The panel is formulating changes to the ICAO Annexes for International IFR RPAS operations. EuroUSC™ is a Qualified Entity compliant with EC 216/2008 ANNEX V and André is currently the Chairman of AVA, the association of Qualified Entities. EuroUSC™ now operates in over 10 countries supporting National Aviation Authorities on work which includes pilot qualification, airworthiness and operational assessments as well as incident investigations in the support of safe RPAS operations. André Clot is also a non-executive member of the UVS International Board of Directors. Global co-ordination and harmonization within the RPAS industry has been hampered by many different
	approaches being adopted by National Aviation Authorities. Within Europe and the United States this is beginning to change, but it will be a few years before tangible benefits appear. In the meantime, standards have begun to emerge from industry led standards organisations bodies and industry organisations to drive the market towards greater acceptance by regulators, insurers and the public whose safety is paramount. The residual risk currently for most safety assessments is still the airworthiness of the aircraft system and the competence of the pilots that operate them. This presentation highlights standards available today from EuroUSC <sup>™</sup> to address these issues.
17.10-17.25	Towards the Integration of RPAS in the Aviation System
Bio Data	Single European Sky ATM Research Joint Undertaking Alain Siebert is responsible for all economical and master planning aspects of the SESAR Joint Undertaking. In this position he is also responsible for corporate risk management, performance, SESAR demonstration activities and the relationship with EASA and civil airspace users. Prior to joining the SESAR Joint Undertaking Alain started his career as a Management Trainee at Air France and later joined SAS Group as Executive Assistant to the Chief Financial Officer. He was later promoted Manager for Strategic Development & Head of Fuel Conservation under the responsibility of the Chief Operating Officer. Alain holds a MSc in Management and was educated at the Toulouse Business School and the London School of Economics. The EU RPAS Roadmap, handed over by RPAS stakeholders to the European Commission in 2013, paves the way for the safe integration of RPAS into the non-segregated ATM environments in Europe. Since not all the key technologies required for RPAS to fly in non-segregated ATM environments are today mature and standardized,
17,25-17,45	<ul> <li>the need for Research and Development activities in SESAR was identified.</li> <li>Interactive Panel Discussion</li> </ul>
17.45-19.00	Conference Cocktail in the RMA Mess
	DAY 2 - THURSDAY 3 DECEMBER 2015
Session 5	Awareness Creation
09.00-09.20 Bio Data	How «Product Harmonisation Legislation» & Market Surveillance Could Contribute to Drone Safety Jean-Pierre Lentz European Commission DG for Internal Market, Industry, Entrepreneurship & SMEs (GROWTH) Jean-Pierre Lentz is civil engineer. He joined SABCA a Belgian aerospace company, where he first worked on space programmes for the European Space Agency. He led in particular the development of a European space suit. Subsequently, Jean-Pierre became assistant to the head of the company, supporting the cost reduction programme and the reorganisation of the company. He joined the European Commission in 1999 as project officer in the aeronautics unit of DG Besearch, Height years later, Ioan Pierre

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09.45-10.00	RPAS-related Privacy & Data Protection Issues
Bio Data Abstract	Anna Donovan Trilateral Research, UK ("Drone-Rules.eu" Consortium member) Anna is a Research Analyst with Trilateral Research, London. She is a member of the Data Science Team and specialises in legal and social impacts of current and emerging technologies and practices, specifically drone use and big data. She is currently involved in the EU funded Drone Rules.eu project. Anna previously practised as a lawyer in Sydney, Australia, and holds an international master of ICT Law from the University of Oslo, Norway. Awareness creation around the current and future privacy and data implications of civil RPAS use is vital to the sustainability of the industry. There is a lack of awareness amongst industry as to what are problematic practices and what are safe practices of civil RPAS use. This presentation will present specific scenarios of current practice and disect them for specific data protection, privacy and ethical issues that could be raised, and provide sepcific recommendations for industry about how RPAS can be used to reduce the data protection and privacy risks.
10.00-10.15 10.15-11.00	<ul> <li>Interactive Panel Discussion</li> <li>Refreshment Break</li> </ul>
Session 6	Solutions for the Safe Integration of RPAS
11.00-11.20 Bio Data	SKYBRIDGE - Bridging the Gap between Manned & Unmanned Aviation Marc Kegelaers UniFly, Belgium Marc Kegelaers holds a Master's degree in Electronic Engineering and Master's Degree in Business Administration. He also has an EASA CPL and is an experienced Flight Instructor. After a succesful international career as an entrepreneur in the Telecommunication Industry, Marc got involved in Aviation 15 years ago. The last 10 years, he served as the Chief Executive Officier and Accountable manager of BAFA – and made it the leading flightschool in Belgium. Marc
Abstract	got involved in unmanned aviation three years ago when he decided to start a Remote Pilot License training at BAFA. This is also the period when BAFA co-founded the BeUAS. Marc recently joined Unifly as shareholder and CEO. In addition, Marc is currently a boardmember of the Chamber of Commerce in Antwerp (VOKA) and serves as a boardmember of the VLOC (Flemish Aviation Training Center). The growing number of low flying drones are increasingly becoming a problem. They pose a rsik for manned aviation, are a nuisance when interfering with rescue missions and may represent a security risk. The existing Air Traffic Management systems were not designed to manage this large amounts of low flying targets, flown by people without an Aviation Background. Unifly have designed Skybridge: an open , scalable Drone Traffic Management Platform that serves the needs of the Drone operator, NASP, Rescue Services and Police Forces. From the ground up , it has been designed to interface to the existing ATM systems and with an intuitive user interface that puts Aviation information in the hands of non-aviation personnel.
11.20-11.40	The PSMD Drone Monitoring System Justyna Zdanowska
Bio Data	Dron House, Poland Justyna Zdanowska is the Project Manager of Polish System of Monitoring Drones in Dron House Joint Stock Company and the drone operator (VLOS). Ph.D. student at University Nova de Lisboa, in Portugal. Her Ph.D. project is related to Linguistics, in fields of Terminology, Lexicology and Lexicography. The investigation concerns the newly developed field of terminology and drones in legal systems of English-speaking countries and international institutions. She received Short Term Scientific Mission's grant at KU Leuven University in Antwerp where she was preparing mathedalomy related to her Ph.D. project
Abstract	Conceptual project 'System of Monitoring Drones' created by Dron House Joint Stock Company, is the result of cooperation between all participants of drone market in Poland – designers, manufacturers and drone operators who are determined to create solutions fulfilling requirements that are currently needed for controlling and monitoring Polish, European and world airspace in real time. Our company Dron House Joint Stock Company would like to present System of Monitoring Drones which main aim is to organize the airspace, guarantee control and safety for all airspace. Our output has already received recempendations from the Civil Avitation Avitation and the civil and

present System of Monitoring Drones which main aim is to organize the airspace, guarantee control and safety for all aircrafts in the airspace. Our system has already received recommendations from the Civil Aviation Authority of the Republic of Poland and other national institutions. Also, the system is patented, among other countries, in the United States (no.: WIPO47642) and in the whole European Union (no.: ZWW 002806976). The complete and implemented System of Monitoring Drones allows to arrange the airspace by creating and dividing special air corridors (air ways) and guarantees 100% of continuity of operations by dint of our algorithms, the idea of our system and our special application managing GSM, GPS networks for purposes of localizing drones in real time. Also, it permits all the airspace users to use UAS in a responsible way owing to the complete arrangement of the airspace where the security of the users is guaranteed by using spherical separation between drones and aircraft. It is ready to implement and ensures the continuity of activities by dint of the relability of the priority of emergency calls in GSM, GPS networks. Also, it allows to monitor controlled and uncontrolled areas, both in a professional and amateur drone operators' classes, as well as monitoring prohibited/ no-fly zones.

#### 11.40-12.00 The RPAS Autopilot Validiation Tool (RAVT) Initiative Peter van Blyenburgh

**UVS International & RAVT Cooperation Group** 

Peter van Blijenburgh, a Dutch national, was born in The Netherlands Bio Data (1948) and resides in Paris, France (since 1976). He is the CEO of Blyenburgh & Co, a French strategic consultancy company & publisher. Mr. Van Blijenburgh is the founder of EuroUVS (1997), which became UVS International in 2000. He is currently in his 9th two year mandate as president of UVS International (www.uvs-international.org), a non-profit association registered

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in The Netherlands and operating out of offices in Paris, France, which represents more than 2700 companies & organizations involved with RPAS/drones in 44 countries. He has instigated the creation of 14 national RPAS/drone associations, and has been the instigator of and/or participant in multiple initiatives related to RPAS/drone regulations & standards. He is the founder of the International RPAS Coordination Council, which federates 25 associations in 23 countries. He is the editor of "RPAS: The Global Perspective", the well-respected annual RPAS/drone reference publication and is also the creator of www.rpas-regulations.com, the world's only web site dedicated to RPAS/drone regulations, which monitors 267 countries & overseas territories, as well as www.uvsinfo.com (a generic RPAS/drone information source), and a data base of internationally registered patents relative to RPAS/drones (at system & sub-system level) and the architect of the related promotional web site (www.uaspatents.org). Mr. Van Blijenburgh has been implicated with RPAS/drones since 1987 and has supplied advisory services to corporate & governmental entities in Europe, the Middle East, and Far East & USA. He is a member of the ICAO RPAS Panel, European RPAS Steering Group, the EC's RPAS Roadmap Implementation Coordination Group, EASA's Safety Standards Consultative Committee, JARUS' Stakeholder Consultation Body, the European Commission-funded "Drone-Rules.EU" consortium, as well as various corporate & academic advisory committees. Abstract Subsequent to the conclusion of an exchange that took place during the RPAS 2015 conference in Brussels, Belgium in June 2015, which involved European Commission Directorate General for Internal Market, Industry, Entrepreneurship & SMEs (EC DG GROWTH), Single European Sky ATM Research Joint Undertaking (SESAR JU) & UVS International, UVS International initiated an activity specifically focused on autopilots for remotely piloted aircraft systems (RPAS). The RPAS Autopilot Validation Tool (RAVT) initiative is being coordinated with SESAR JU in Brussels, Belgium. The project has direct relevance to an activity that is being initiated by EC DG GROWTH, relative to the development of "product safety" standards (not aeronautical certification standards) specifically for small remotely piloted aircraft (RPA) with a MTOM <25 kg. In this context "product safety" standards should be understood as standards that are to be complied with in order to obtain the relevant C€ label of approval. This presentation will explain the RAVT initiative, its objective, and introduce the 20 participating companies.

#### 12 00-12 15 Questions & Answers 12.15-12.30

Conclusions & Announcements + Closure

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# REMOTELY PILOTED AIRCRAFT SYSTEMS CIVIL OPERATIONS

## THE EUROPEAN CIVIL RPAS OPERATORS FORUM

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**European Parliament** 

IN COOPERATION WITH

![](_page_13_Picture_6.jpeg)

IN COORDINATION WITH

WITHIN THE FRAMEWORK OF

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AN INITIATIVE BY UVS INTERNATIONAL

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