



**3<sup>rd</sup> ANNUAL  
INTERNATIONAL CONFERENCE**

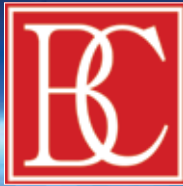


**REMOTELY  
PILOTED  
AIRCRAFT  
SYSTEMS**

**VENUE, LOCATION & DATE**

**Royal Military  
Academy  
8 Hobbema straat  
Brussels, Belgium  
2 - 4 Dec. 2014**

**ORGANIZED BY**



**BLYENBURGH & CO  
FRANCE**

**IN COOPERATION WITH**



**ROYAL MILITARY  
ACADEMY, BELGIUM**

**UNDER THE AUSPICES OF**

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**WITHIN THE FRAMEWORK OF**



**WITH THE  
COLLABORATION OF**



**CIVIL RPAS OPERATIONS FORUM  
+  
JARUS INFORMATION FORUM**

**IN COORDINATION WITH**



**International RPAS Coordination Council**



**Australia Austria Belgium Canada France Germany Italy Netherlands Norway**



**Romania Spain South Africa UK  
Botswana, Namibia**

## DAY 1 - TUESDAY 2 DECEMBER 2014

### Session 1 European RPAS Market Strategy

**Purpose** Going out from the EC Communication of April 2014 relative to drones and subsequent decisions & actions, inform on the current status of the EU RPAS Roadmap and the projected way forward.

00 13.15-13.30 **Conference Opening Speech**  
Margus Rahuoja, Director Aviation, European Commission Directorate General Mobility & Transport

01 13.30-13.50 **EU RPAS development strategy**  
Koen de Vos, European Commission DG MOVE, EU

02 13.50-14.10 **SESAR 2020 RPAS Definition Phase - Results & Way Forward**  
Denis Koehl, SESAR Joint Undertaking, EU

03 14.10-14.30 **RPAS-EASA Update**  
Yves Morier, European Aviation Safety Agency, EU

04 14.30-14.50 **European RPAS Market - Implementation & logistics**  
Mike Lissone, EUROCONTROL, Belgium

14.50-15.15 ♦ **Interactive Panel Discussion**

**Objective** In interaction with the audience by means of moderated questions & answers make sure that the EC market strategy and its planned implementation & relevant implications are fully understood by all.  
Moderator: Brooks Tigner, SecurityEurope, Belgium

15.15-16.00 **Refreshment Break**

### Session 2 RPAS Community Messages To The EC

**Purpose** Permit these communities to express what they see as the priorities that have to be addressed on the European Union level.

05 16.00-16.05 **Austria** - Christoph Sulzbachner, AAI-UAS WG

06 16.05-16.10 **Spain** - Laura Samsó, AERPPAS

07 16.10-16.15 **United Kingdom** - Angus Benson-Blair, ARPAS

08 16.15-16.20 **Italy** - Michele Fazio, ASSORPAS, Italy

09 16.20-16.25 **Belgium** - Koen Meulemans, BeUAS

10 16.25-16.30 **The Netherlands** - Frits Müller, DARPAS

11 16.30-16.35 **France** - Anne-Marie Haute, FPDC

12 16.35-16.40 **Germany** - Uwe Nortmann, UAV-DACH

13 16.40-16.45 **Denmark** - Christian Scheel Struwe, UAS Denmark

14 16.45-16.50 **Norway** - Dan Richard Isdahl-Eng, UAS Norway

15 16.50-17.05 **RPAS for National Mapping & Cadastral Agencies**  
Dr Fabio Remondino, European Spatial Data Research Group (EuroSDR)

17.05-17.30 ♦ **Interactive Panel Discussion**

**Objective** Agree on a consensual list of priorities that will be submitted to the European Commission.  
Moderator: Brooks Tigner, SecurityEurope, Belgium

17.30-19.00 **Conference Cocktail in the RMA Mess**

## DAY 2 - WEDNESDAY 3 DECEMBER 2014

### Session 3 ATM Integration of RPAS

**Purpose** Present the current status relative to Detect & Avoid studies, their conclusions & relevant practical demonstrations.

16 08.40-08.55 **D&A findings from the MIDCAS project**  
Johan Pellebergs, Saab, Sweden (on behalf of the MIDCAS Consortium)

17 08.55-09.10 **ASTRAEA - The findings so far**  
Lambert Dopping-Hepenstal, ASTRAEA, UK

18 09.10-09.25 **An ANSP perspective on ATM integration**  
Beat Baumgartner, skyguide, Switzerland

19 09.25-09.40 **RPAS and risks to helicopters**

Max Scheck, German Airline Pilots Association, Germany

09.40-10.00 ♦ **Interactive Panel Discussion**

**Objective** Evaluate the relevance of D&A for very low level (VLL) RPAS BLOS operations and to come up with suggestions on the way forward.  
Moderator: Mike Lissone, EUROCONTROL, Belgium

10.00-10.45 **Refreshment Break**

### Session 4 Privacy & Data Protection + Responsibility, Liability & Insurance + Public Acceptance + Education

**Purpose** After a short opening word by Jean-Pierre Lentz, EC DG ENTR, inform the audience on these critical topics and their impact on commercial RPAS operations.

20 10.45-10.55 **Findings & conclusions of the EC-funded study on RPAS-related privacy & data protection**  
Paul de Hert, Free University of Brussels, Belgium (in coordination with Trilateral Research & Consulting, Ireland)

21 10.55-11.05 **Experimental & demonstration flights of the HERO VTOL RPAS under IT-CAA permit to fly and application within the framework of the SESAR/INSURE project**  
Vincenzo Mirra, Sistemi Dinamici, Italy

22 11.05-11.15 **RPAS Insurance: The next steps**  
Jean Fournier, Global Aerospace, France

23 11.15-11.25 **Public acceptance of civil drones**  
Philip Boucher, EC Joint Research Centre (JRC), Italy

24 11.25-11.35 **Education before regulation**  
Nick Davis, 3iC, UK

11.35-12.00 ♦ **Interactive Panel Discussion**

**Objective** Endeavour to evaluate what is required on a national, European & international level, the financial impact on RPAS operators, and suggest a possible way forward.  
Moderator: Peter van Blyenburgh, UVS International

12.00-13.30 **Lunch in the RMA Cafeteria**

### JARUS Information Forum - 2 Sessions

**Purpose** Inform on the changes that have taken place in JARUS (Joint Authorities for Rulemaking on Unmanned Systems) - See [www.jarus-rpas.org](http://www.jarus-rpas.org) Explain the group's objectives, work methodology, tools, deliverables, internal & external consultation, interfaces with standards organizations & industry (small & large). Make the RPAS community aware of the key roles that JARUS will be playing on European & international levels and explain why it is crucial for industry (small & large) to contribute to its work, with what & how. Motivate interested national aviation authorities to join JARUS.

### Session 5 JARUS - Introduction

25 13.30-13.45 **High level overview of JARUS**  
Chris Swider, FAA, USA - JARUS Co-chairman (in coordination with Eric Sivel, EASA, EU - JARUS Chairman)

26 13.45-14.00 **Introduction to the JARUS Secretariat**  
Mike Lissone, EUROCONTROL, Belgium - JARUS Secretary General, JARUS Secretariat

### JARUS - Activities 1

27 14.00-14.15 **JARUS WG1 - Operational and Personnel Requirements Group (OPS/Personnel)**  
Julia Sanchez, JARUS Secretariat (on behalf of Benny Davidor, CAA, Israel - WG1 Leader)

28 14.15-14.30 WG1 defines requirements for access to airspace, RPAS operations, remote pilot licensing & training.  
**JARUS WG2 - Organisations Approval**  
Taro Kuusiholma, Finnish Transport Agency, Finland (WG2 Leader)

WG2 defines design, production, and continuing airworthiness of RPAS, RPAS operators, Communication (COM) Service Providers.

29 14.30-14.45 **JARUS WG3 - Airworthiness**  
Vladimir Shibaev, TsAGI, Russian Fed. (WG3 Co-Leader with Markus Farner, FOCA, Switzerland)  
WG3 draws up proposals for rotary wing Light Unmanned Rotorcraft System (CS-LURS); Fixed wing, Light Unmanned Aero plane System (CS-LUAS); Very Light UAS (VL UAS); Airships, free/ tethered balloons.

14.45-15.05 **Questions & Answers**  
Moderator: Peter van Blyenburgh, UVS International

15.05-16.00 **Refreshment Break**

### Session 6 JARUS - Activities 2

30 16.00-16.15 **JARUS WG4 - Detect & Avoid (D&A)**  
Ron van de Leijgraaf, Ministry of Infrastructure and the Environment, The Netherlands - on behalf of Hans Bohlin, FMV, Sweden - WG4 Leader  
WG4 defines appropriate performance provisions (operational and technical) and functions for:

- RPAS Detect & Avoid (D&A) systems, compensating for the absence of the human pilot on board;
- Establish safety objectives for the risk of collisions in the total aviation system.

31 16.15-16.30 **WG5 - Command, Control & Communication (C3)**  
Dominique Colin, EUROCONTROL, Belgium - WG6 Leader  
WG5 establishes performance provisions (operational and technical) for C3 systems.

32 16.30-16.45 **JARUS WG6 - UAS System Safety (AMC UAS.1309)**  
Lorenzo Murzilli, FOCA, Switzerland (on behalf of David Haddon, EASA, EU - WG6 Leader)  
● WG6 defines top level RPAS airworthiness, system safety objectives & guidance material (known as AMC UAS.1309).  
● WG6 establishes RPAS recommendations & conclusions on RPAS failure classifications in terms of severity definition and probability requirements.

33 16.45-17.00 **JARUS WG7 - Categorization & Work Plan Products**  
Steve George, FAA, USA - WG7 Leader

### JARUS - Activities & Cooperation with Industry

34 17.00-17.15 **JARUS Activities in the context of the European RPAS Roadmap & Support to ICAO RPAS Panel + Cooperation with Industry**  
Mike Lissone, JARUS Secretariat - Secretary General

17.15-17.35 **Questions & Answers**  
Moderator: Peter van Blyenburgh, UVS International

17.35-19.00 **Conference Cocktail in the RMA Mess**

## DAY 3 - THURSDAY 4 DECEMBER 2014

### Session 7 RPAS Manufacturer Opinions

**Purpose** Permit manufacturers to give their views on the RPAS industry, its maturity, the safety of their current RPAS, the technologies employed, the barriers to market entry, the current unharmonized regulatory situation (re: RPAS, pilots, operators,

manufacturers, RPAS operations, pilot schools, insurance) on national, European & international levels, the impact this has on their R&D activities, production & market development.

35 08.30-08.45 **Accessibility, performance, affordability - Implications for RPAS users and regulators**  
Michael Perry, DJI Innovations, China

36 08.45-09.00 **How to guarantee the safety of operations with RPAS**  
Baptiste Tripard, SenseFly, Switzerland

37 09.00-09.15 **Safe bird control operations with Robirds at Schiphol airport**  
Nico Nijenhuis, Clear Flight Solutions, The Netherlands

38 09.15-09.30 **Challenges for geospatial RPAS**  
Peter Cosyn & André Jadot, Trimble, Belgium

39 09.30-09.45 **RPAS integration & The Road ahead**  
Lucas van Oostrum, Aerialtronics, The Netherlands

09.45-10.00 **◆ Panel Discussion**

**Objective** Agree on a consensual list of priorities that will be submitted to the European Commission.  
Moderator: Peter van Blyenburgh, UVS International

10.00-10.45 **Refreshment Break**

### Session 8 RPAS Operational Matters & Standards

**Purpose** Supply the audience with an update regarding ongoing efforts in relevant areas.

40 10.45-11.00 **SESAR RPAS demonstration projects - Initial findings**  
Célia Alves Rodrigues, SESAR Joint Undertaking, Belgium

41 11.00-11.15 **Congested area operations - LUASS-AW - A proportionate airworthiness requirement**  
André Clot, EuroUSC, UK

42 11.15-11.30 **Proposal for a European RPAS certification initiative**  
René Knorr, ESG, Germany

43 11.30-11.45 **EUROCAE WG73 & WG93 deliverables**  
Anna von Groote, EUROCAE, France

11.45-12.00 **Questions & Answers**  
Moderator: Peter van Blyenburgh, UVS International

12.00-12.15 **Conclusions & Announcements + Closure**

### With the Participation of

European Commission  
- Directorate General Mobility & Transport (MOVE)  
- Directorate General Enterprise & Industry (ENTR)  
European Commission Joint Research Centre (EC JRC)  
European Aviation Safety Agency (EASA)  
SESAR Joint Undertaking (SJU)  
EUROCONTROL  
Joint Authorities for Rulemaking on Unmanned Systems (JARUS)  
Federal Aviation Administration (FAA), USA  
Finnish Transport Agency, Finland  
Federal Office of Civil Aviation (FOCA), Switzerland  
skyguide, Switzerland  
TsAGI, Russian Federation  
National RPAS Associations (10)  
National RPAS Working Group (1)

### 43 Speakers From 17 Countries

Austria	Belgium	China	Denmark
Finland	France	Germany	Ireland
Italy	Netherlands	Norway	Russian Fed.
Spain	Sweden	Switzerland	United Kingdom
		United States of America	



**Session 1 European RPAS Market Strategy**

**Purpose** Going out from the EC Communication of April 2014 relative to drones, and subsequent decisions & actions, inform the audience on the current status of the RPAS Roadmap and the projected way forward.

**00 13.15-13.30 Conference Opening Speech**

**Margus Rahuoja, Director Aviation, European Commission Directorate General Mobility & Transport**

Starting on 1 November 2014 Mr Rahuoja is Director «Aviation and International Transport Affairs» at The European Commission's Directorate-General for Mobility and Transport. He was previously Head of Cabinet of EC Vice-President Siim Kallas, responsible for Transport, having held the role of Senior Advisor for the same department in addition to relations with the Council and the Presidency, between 2010 and 2013. Prior to this he was a Member of the Cabinet of Siim Kallas in the Administration, Audit and Anti-Fraud division, responsible for Administration issues, (2004 to 2010). Before that he was Minister Counsellor, Deputy Permanent Representative, Permanent Representation of Estonia to the EU (2003 to 2004) and Deputy Head of Mission, Co-Secretary of the Accession Conference, Mission of Estonia to the EU (1999 to 2003). He previously worked in government departments within Estonia - Head of Unit, European Integration Department, Ministry of Foreign Affairs of Estonia (1998 to 1999); Desk officer (EU), Political Department, Ministry of Foreign Affairs of Estonia (1996 to 1998). He began his professional career as a Lecturer, Tallinn University of Educational Sciences, Estonia (1992 to 1996). His qualifications include Post Graduate Studies (Exec MA), International and European Relations, Amsterdam School of International Relations, University of Amsterdam (1995 to 1996); Post Graduate Studies, International and European Relations, Estonian School of Diplomacy (1994 to 1996); and Degree in public administration specialised on culture work and stage management, Tallinn University of Educational Sciences (1992).



**01 13.30-13.50 EU RPAS Development Strategy**

**Koen de Vos, European Commission DG MOVE, EU**

**Bio Data**

Koen de Vos (Belgian, 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 assumed responsibilities in the field of aviation safety and environment.



**Abstract**

Subsequent to the Communication of the European Commission concerning RPAS to the European Parliament and Council earlier this year, which was made within the framework of the European RPAS Roadmap relative to the incremental integration of RPAS into the European air traffic system from 2016, DG Mobility & Transport will explain its views on the European RPAS Market Strategy.

**02 13.50-14.10 European RPAS Definition Phase - Results & Way forward**

**Denis Koehl, SESAR Joint Undertaking, EU**

**Bio Data**

Denis joined the French AF as fighter pilot in 1976. In 1987, he is detached to serve within the Navy and obtained all Navy fighter pilot qualifications, and performed seven tours including operations on board aircraft carriers. In 1990, Denis was given command of a Fighter squadron and performed two operational detachments (Gulf War & Africa). Promoted in 1993, Denis was assigned at the 12th Fighter Wing level. During this assignment, he participated in several operational detachments in the Balkans and in Saudi Arabia. In September 1997, he entered the Joint War College in Paris. The following year, he was posted as Assistant Chief for Air Operations of the Air Operations Command and took the post of Assistant Chief of Staff "Policy". In 2000, Denis is assigned to the MOD as chief of the "Yugoslavia" Crisis Cell made responsible for all French military operations conducted in the Balkans. He was posted as Commander of Orange Air base in 2002 and from June to September 2003, he was detached in Uganda in charge of the Combined Joint Support Base for the EU operation "Artémis". In 2004, he receives an assignment as Chief of Staff to the Air Forces Command and was promoted to Flag Officer in Oct. 2005. In Sept. 2007 he was posted to NATO in Lisbon as French Representative to Commander. Promoted to Major General in 2009, Denis ended this military career and joined SESAR Joint Undertaking in Brussels in May 2010, as Senior Advisor to the Executive Director for Military Affairs. Denis has a total of 4000 flying hours including 206 war missions and 99 landings on aircraft carriers. He is "Commandeur" in the National Merit Order & Officer in the Legion of Honour and his awards include serial War and Combattent Crosses for Overseas operations.



**Abstract**

Established by the European Commission in 2012, the European RPAS Steering Group (ERSG) has recognized a need to identify, plan, coordinate, and subsequently monitor the activities necessary to achieve the safe integration of RPAS into a non-segregated ATM environment. Given that the full integration of RPAS

into the European ATM System is vital and that the mission of SESAR is to create the new generation of ATM systems and operations, RPAS will need to be incorporated into future SESAR solutions. Against this background, the European Commission decided to launch a SESAR RPAS Definition Phase, extending SESAR's mandate to consider civil RPAS integration issues based on the European RPAS roadmap. The objective is to refine the definition of the essential R&D activities that will enable civil RPAS integration in the European aviation system in the context of the SES initiative, and to validate the Roadmap's contents and assess costs. SESAR's work will identify the global ATM interoperability and harmonization requirements and enablers to meet performance targets. An essential outcome will be a R&D and validation programme, including planning, costs and priorities, as required by the identified ATM requirements and enablers, supported by a high-level implementation timeline. This essential result will be achieved through a detailed RPAS R&D Programme complemented by the necessary validation activities to be performed in the context of the SESAR 2020 Programme. This achievement will also provide a significant contribution to the European ATM Master Plan during the 2015 update. Furthermore, it should be noted that the development of these essential R&D activities is undertaken in full coordination with the requirements for manned aviation, as described in the European ATM Master Plan, which is already linked to the ICAO Global Plan and the Aviation System Block Upgrades, while seeking to exploit early opportunities for quick wins.

**03 14.10-14.30 RPAS-EASA Update**

**Yves Morier, European Aviation Safety Agency, EU (in coordination with Eric Sivel, Innovation & Research Programme Manager and Stefan Ronig, RPAS, VLA, LSA, Balloon, Airship Section Manager)**



Bio Data

- Graduated from ENAC as an Air transport Engineer (1975-1978)
- Military service (1978-1979)
- French CAA (1979-1991)
- Joint Aviation Authorities (1991-2004)
- EASA (2004-now). Present post: Head of Department General Aviation & RPAS in the Certification Directorate.

Abstract

This presentation will explain EASA activities and plans, as well as the EASA approach to the regulatory framework for RPAS.

**04 14.30-14.50 European RPAS Market - Implementation & logistics**

**Mike Lissone, EUROCONTROL, Belgium**



Bio Data

Mike Lissone is the RPAS ATM Integration manager for EUROCONTROL. He has been the main contributor in the development of the RPAS R&D roadmap. Seconded by EUROCONTROL to JARUS, he is the JARUS General Secretary and as such heads up the JARUS Secretariat. He is actively involved in the ICAO RPAS Panel and other international initiatives developing standards and regulation to enable RPAS integration.

Abstract

The presentation will provide an overview of RPAS integration to date and the impact it has on manned aviation. It highlights the short comings of the airspace users perception of rules of the air and see and avoid. Most RPAS operators also lack aviation background and have limited or no ATM knowledge. These ingredients are a recipe for problems ahead as the number of companies and illegal operations grow exponentially. We need a new look at how we conduct low level operations and find a acceptable solutions for all airspace users including GA. The presentation will show some examples how to address this issue.

**14.50-15.15 ♦ Interactive Panel Discussion**

Objective

In interaction with the audience by means of moderated questions & answers make sure that the EC market strategy and its planned implementation & relevant implications are fully understood by all.  
Moderator: Brooks Tigner, SecurityEurope, Belgium

**15.15-16.00 Refreshment Break**

**Session 2 RPAS Community Messages To The EC**

Purpose

Permit the communities of these countries to express what they see as the priorities that have to be addressed on the European Union level.

Abstract

Each community will give a concise overview of the national RPAS situation (manufacturers, operators, pilots, flight schools, types of operations be flown, regulatory status, illegal flights) and the priorities identified by the national RPAS that should be dealt with by the European Commission within the framework of the European RPAS Market Strategy Implementation.

**05 16.00-16.05 AUSTRIA - Christoph Sulzbacher, AAI-UAS WG, Austria**

Bio Data

Christoph Sulzbachner received his MSc degrees in 2006 and 2008. The focus of his university education was on hardware and software development for real-time systems and information management in general. He joined the Austrian Institute of Technology (AIT) in 2008. Since 2012 he is certified as PMP. In 2013, he became vice-chair R&D in the Austrian UAS working group and he is also engaged in BVLOS research projects. He has experience in middle to large-scale projects as he manages national and European-funded projects.



**06 16.05-16.10 SPAIN - Laura Samsó, AERPPAS, Spain**

Bio Data

Since 2013, Ms. Samsó has served as Senior Project Engineer & Technical Manager for Earth Observation in the SSW Division of Elecnor Deimos Satellite Systems; recently she was assigned the role of Assistant to the Corporate Director to develop a new business area. Ms. Samsó led and contributed to GNC systems for an RPA project and previously served as Systems Engineer & Technical Support Coordinator at Indra Espacio Barcelona. During her successful 4.5-year tenure, she worked on international and national projects pertaining to GNSS—rail, RPAS, and fleet vehicle control. In this role, she worked with diverse organizations, such as ESA, INTA, and CDTI. Before that experience, she worked as Research Assistant at the Institute of Geomatics with GNSS, INS and imaging systems for civilian & military clients. Ms. Samsó's career combines both nonprofit & for-profit positions, and much of her expertise in project management, leadership, and communication can be attributed to her practical experience. For instance, she served as Board Director of the PMI Barcelona Chapter, MENA Assistant Manager of Outreach for the PMI Aerospace & Defense CoP, and volunteered to improve awareness of aviation culture for the SAE. In addition, since 2003, Ms. Samsó Pericón has thrived as a Board member, Project Manager, and Program Coordinator for the FEEC and FEDME. She earned an MSc in Aerospace Science and Technology from UPC and a BSc in Telecommunications Engineering (Electronics) from La Salle University. She is currently pursuing PMP certification. She has delivered presentations at AUVSI North America and also contributes to current policy regarding implementation of RPAS in European and American airspace. She is a member of UVS International, AUVSI, COITT, ASPRS, EUROCAE WG-93, RTCA SC-228, AESA RPA WGs and UPC and La Salle Alumni.



**07 16.10-16.15 UK - Angus Benson-Blair, ARPAS, UK**

Bio Data

Angus Benson-Blair is ARPAS UK's European Legislation representative. Angus has been involved with RPAS since 2010 and during that time has built up over 1000 hours flying various types of aircraft. Currently he operates RPAS in the 10-20 kg MTOM sector and has worked throughout the media and broadcast industry from small local TV to national stations and feature films. He has also been heavily involved with building and developing systems and also regularly conducts training courses. This gives Angus a broad background within the industry - an invaluable asset when dealing with the various authorities and agencies which influence and affect the industry's legislative environment.



**08 16.15-16.20 ITALY - Michele Fazio, ASSORPAS, Italy**

Bio Data

Michele Fazio, 30 years old, Bachelor Degree in Mechanical Engineering got at Politecnico di Bari and Master Degree in Aeronautical Engineering got at University del Salento with a thesis in Numerical Fluid Dynamics in collaboration with the Ecole Nationale Supérieure des Arts et Métiers de Paris, where he lived for 6 months. He has previously worked for ATR (Avions de Transport Regional) in Toulouse where he has developed his knowledge on planning engineering & logistics on the new ATR-600 project and for International Aviation Supply S.r.l. in Brindisi, a company specialized in the design & development of RPAS for military applications. For a year and a half he worked for Blackshape S.p.a. in Monopoli BA, following all the activities related to the certification of the BS-100 aircraft considering CS.VLA, CS.LSA, DPR-133 (Italy), LTF-UL (Germany) and LAMAC (Canada). He is board member of ASSORPAS, the Italian association of RPAS producers and operators, and managing director and founder of Skyline, a company in southern Italy specialized in design & development of RPAS for civil & military applications (limited to takeoff weight of less than 25 kg). In Apulian region he has got important awards like the 1st Prize in Principi Attivi 2012 competition and 1st Prize in Start Cup Puglia 2013 competition – Agrifood Cleantech Sector. He has developed a partnership with ACT Industries LLC localized in Dubai (UAE) for the Middle East and Asia market.





- 09 16.20-16.25 BELGIUM - Koen Meulemans, BeUAS, Belgium**  
 Bio Data Koen Meuleman works at the Remote Sensing department of the Flemish Institute for Technological Research where he's in charge of coordinating all RPAS activities. Further he has a background in hyperspectral remote sensing. Since 2012, he is active as a board member of the Belgian RPAS association BeUAS and was elected president of the association earlier in July this year.
- 10 16.25-16.30 NETHERLANDS - Frits Müller, DARPAS, The Netherlands**  
 Bio Data Graduated at the Netherlands Royal Military Academy initially as an Artillery Officer in 1981. Main jobs within the Army: Battery Commanding Officer, G3 Plans and Policy 1(NLD) Army Corps, Technical Intelligence at MOD level. From 1998 until retirement he worked within the Remotely Piloted Aircraft Systems department of the Netherlands Army. First as the founder father of the 107 Aerial Systems Battery, later on as special staff officer RPAS for the Army Commander. In 2005, I received the certificate «Safety Management Systems» from the Southern Californian Safety Institute. In this last period before retirement I also worked for the Military Aviation Authority and I was a member of the planning group implementation Military Aviation Requirements within the Netherlands forces. He is the owner & CEO of FMCoRPAS (a consultancy form) and a member of the DARPAS Board of Directors.
- 11 16.30-16.35 FRANCE - Anne-Marie Haute, FPDC, France**  
 Bio Data Born in 1972, Anne-Marie Haute obtained a PhD in archeology (University Paris 1 Sorbonne) and subsequently found a job at the Cité des Sciences et de l'Industrie. Thereafter she launched herself into business creation development. Over the last 20 years, she has created 4 companies. She is currently president of Pilgrim Technology®, a company specialised in industrial inspection for the international oil & gas community, and president of EagleView®, a manufacturer and operator of civil RPAS with commercial activities in France and internationally, and member of the Fédération Professionnelle du Drone Civil and UVS International.
- 12 16.35-16.40 GERMANY - Uwe Nortmann, UAV-DACH, Germany**  
 Bio Data After having left military service as technical officer (helicopters) and after achieving the degree of an aeronautical engineer in parallel to a commercial pilot license Uwe Nortmann entered his professional life at Dornier GmbH in 1978. UN gained 10 years of engineering experience and flight test experience in the Alpha Jet Program. Then after passing an internal 2 years Program Managers course he joined the Program Do 328 Team being responsible for supplier contracting and contract performance for the Do328 pressurized fuselage construction. In 1996, short before clearance sale of Dornier Aviation, he joined the company EUROBRIDGE as project leader of the Dornier Foldable Bridge System for the German Army. From 1998 through 2002 Uwe lead EUROBRIDGE as president and CEO. Thereafter until closure of the bridge business he acted as Program Manager mobile Bridges of EADS. From 2008 until his retirement in early 2014 Uwe Nortmann was leading the Dornier Target Systems operations at EADS. Since 2010 he is engaged in UAVDACH e..V and the EUROCAE working groups 73 and 93, especially concerning FCL. He is honorary member of UAVDACH since 2013 and appointed as head of the new UAVDACH administration.
- 13 16.40-16.45 DENMARK - Christian Scheel Struwe, UAS Denmark, Denmark**  
 Bio Data Christian S. Struwe has been working in European Aviation with RPAS related issues since 2010. Mr Struwe has actively contributed to the work of the ULTRA consortium as well as with development of the RPAS community in Denmark. Further Mr Struwe has worked for the European Commission with the implementation of the Single European Sky initiative. Christian Struwe holds a masters degree in European Union studies from the University of Leiden.
- 14 16.45-16.50 NORWAY - Dan Richard Isdahl-Eng, UAS Norway, Norway**  
 Bio Data A former Navy submariner with RC hobby and aviation as hobby, Dan Richard Is is a serial entrepreneur from the insurance industry. Working in his daytime job with special solutions toward the insurance industry and with remotely piloted aircraft systems. He is also co-founder and part-owner of Ansurance - the vertical AnsuR Technologies set up for serving the insurance market with their ASIGN solution. He is a passionate UAS pilot and technician, and the executive director of UAS Norway.



15 16.50-17.05 **RPAS for National Mapping & Cadastral Agencies**

**Fabio Remondino, European Spatial Data Research Group (EuroSDR)**



Bio Data

Dr. Fabio Remondino is the head of the 3D Optical Metrology (<http://3dom.fbk.eu>) research unit at the Bruno Kessler Foundation (<http://www.fbk.eu>), a research center located in Trento, Italy. He holds a PhD in Photogrammetry from ETH Zurich. His main research interests are in the field of reality-based 3D surveying, sensor and data integration, 3D mapping and 3D modeling. He is currently President of EuroSDR Commission I on Sensors, Primary Data Acquisition and Geo-referencing.

Abstract

Today some National Mapping and Cadastral Agencies (NMCA) have already used RPAS-based imagery for first experiments in mapping while many others are discussing on the future role of this technology within their agencies. No NMCA has already fully integrated RPAS into their production lines, for many reasons, primarily regulations and reliability of the platforms. EuroSDR follows the developments of RPAS since 2004 and is supporting NMCA with transfer of knowledge, experiences and expectations on the potential use of RPASs for mapping purposes. The presentation will discuss the use of RPAS for mapping and cadastral purposes, considering the non-harmonized regulations and the market potential.

17.05-17.30 **◆ Interactive Panel Discussion**

Objective

Agree on a consensual list of priorities that will be submitted to the European Commission.  
Moderator: Brooks Tigner, SecurityEurope, Belgium

17.30-19.00 **Conference Cocktail in the RMA Mess**

**DAY 2 - WEDNESDAY 3 DECEMBER 2014**

**Session 3 ATM Integration of RPAS**

Purpose

Present the current status relative to Detect & Avoid studies, their conclusions & relevant practical demonstrations.

16 08.40-08.55 **D&A findings from the MIDCAS project**

**Johan Pellebergs, Saab, Sweden (on behalf of the MIDCAS Consortium)**



Bio Data

1990-1997: Flight mechanics engineer working primarily with Gripen development and flight testing; 1998 – 1999: Saab Chief Engineer on the X-31 VECTOR program; 2000 – 2001: Project leader for Auto-GCAS (Automatic Ground Collision Avoidance System) development and integration on Gripen; 2001 - 2004: Saab Chief Engineer on the joint US/Swedish Auto-ACAS (Automatic Air Collision Avoidance System) program; 2004-2009: Manager for Aerodynamics and Flight Mechanics at Saab; 2009-today: Project leader for the European MIDCAS project.

Abstract

The MIDCAS project is working on supporting standardization for D&A, developing generic D&A functionality and a demonstrator D&A system. Evaluations are being performed in simulations as well as in flight tests and results are used to support standardization efforts and to mature the design in incremental steps. The focus of MIDCAS is RPA operating enroute according to IFR flight rules. Main functionalities included in the D&A design are: Situational Awareness (SA), Traffic Avoidance (TrA), and Collision Avoidance (CA). The use of these functionalities will be dependent on the operational scenario in terms of airspace class and intruder flight rules. Additionally the safety requirements are depending on intruder type, i.e. intruder being an airliner with very stringent safety requirements or a GA aircraft. During the project a number of important factors that need to be closely considered when designing a D&A system have been identified: a) Scenario geometry; b) RPA maneuvering performance; c) Handling of uncertainties, e.g. sensor uncertainties with respect to sensor type, own ship maneuvering prediction

17 08.55-09.10 **ASTRAEA - The findings so far**

**Lambert Dopping-Hepenstal, ASTRAEA, UK**



Bio Data

Lambert Dopping-Hepenstal is the Programme Director of the UK's research programme into the integration of civil unmanned aircraft into shared airspace, ASTRAEA. Until his retirement in 2013, he had worked for BAE Systems and its predecessor companies for 41 years, finally as Engineering Director Systems and Strategy for Military Aircraft & Information. He was a systems design engineer on Hawk, Sea Harrier and Harrier II and later managed the systems development function and the research programmes for British Aerospace's Military Aircraft Division. Following the formation of BAE Systems, he moved to the centre as corporate Technology Director. He was elected a Fellow of the Royal Academy of Engineering in 2007. He has been the ASTRAEA Programme Director since its beginning in 2006.

Abstract

ASTRAEA had its beginnings in 2004 during the Farnborough Airshow at a joint Department of Trade & Industry (DTI)/industry workshop. It was early days, and the UK Civil Aviation Authority (CAA) had just published CAP722, its guidance on UAS operations. There was a general consensus that there was an opportunity develop commercial



RPAS operations and that it required a joint industry/government programme to realize it, thus ASTRAEA was born. The programme commenced in 2006 and continues to the current day as ASTRAEA Phase 3A with the seven original partners: Airbus DS, AOS, BAE Systems, Cobham, QinetiQ, Rolls-Royce and Thales. The objective is the integration of RPAS of any size into shared airspace without restrictions or interventions. Over the last eight years the industrial partners, in conjunction with a number of SME subcontractors and universities, have made significant progress into capturing the systems requirements, developing and demonstrating the required technologies and understanding the regulatory framework to enable access to all classes of airspace. Key to this progress has been the collaborative effort between the ASTRAEA team and the UK CAA, leading to the Virtual Certification exercise that has helped to clarify all regulatory changes that will be required to accommodate RPAS. The presentation will summarize the findings to date, their maturity and the further stages necessary to achieve the ultimate objective. It will cover the work on Detect & Avoid, Communications, Autonomy & Decision Making and Human Factors and also an overview of the Virtual Certification process.

**18 09.10-09.25 An ANSP perspective on ATM integration  
Beat Baumgartner, skyguide, Switzerland**



Bio Data

Mr. Baumgartner was appointed head Airspace and Routes at Skyguide on 1 February 2014. He is a member of the Swiss Airspace Regulation Team (ART) as well as the Swiss National Airspace Management Advisory Committee (NAMAC), and other airspace or Air Traffic Management (ATM)-related working groups.

Mr. Baumgartner is a trained Air Traffic Controller (Tower and Approach Radar Control), holds an Air Transport Pilots License (ATPL) as well as a Degree in Business Administration (BSc HF). Since 2003, Mr. Baumgartner has been involved in various projects and changes to the ATM system as operational expert or change manager. From 2005 – 2011, Mr. Baumgartner served as a senior ATM policy and rulemaking officer at the Swiss Federal Office of Civil Aviation (FOCA), where he was, among other duties, chairman of the ART and NAMAC and the FOCA officer-in-charge for the integration of the Swiss Air Force «Ranger» UAS into the national airspace system. Mr. Baumgartner joined skyguide in 2011 as a senior airspace expert.

Abstract

This presentation will address the following points: a) Applicable international standards; b) Compliance with those standards by current operators; c) Outlook, d) Conclusions.

**19 09.25-09.40 RPAS and risks to helicopters  
Capt Max F. Scheck, German Airline Pilots Association, Germany**



Bio Data

Active Duty, US Air Force, trained paralegal, 1986-1990; Active Reserve US Air Force, 1990-2012; University Studies Geography/English & Economics, University of Trier, 1990-1992; ATPL-Training at the German Lufthansa Flight Academy, Bremen and Phoenix, Arizona, USA, 1992-1993; Various extended US Air Force Reserve tours; completed training as aircraft accident investigator, active participation in several aircraft accident investigation boards, 1994-2008; First Officer Boeing 737, Lufthansa, 1996-2001; Bachelor of Science, Professional Aeronautics, Embry Riddle Aeronautical University, 2001; First Officer Boeing 747, Lufthansa, 2001-2004; Senior First Officer Boeing 747, Lufthansa 2004-2008; Associate of Science, Paralegal, Community College of the Air Force, 2004; Senior IMA Paralegal, Headquarters US Air Forces in Europe, Ramstein Air Base, 2004-2010; Master of Aeronautical Science, Dual Specialization Safety & Management, Embry Riddle Aeronautical University, 2006; Trainer/Facilitator - Human Factors und Crew Resource Management, Lufthansa Flight Training, since 2007; Adjunct Instructor, Embry Riddle Aeronautical University, since 2007; Captain Airbus A320, Lufthansa since 2008; Senior IMA Paralegal, Headquarters US Air Force Legal Operations Agency (AFLOA), Joint Air Base Naval Facility, Andrews, MD, USA, 2010-2012; Vice Chairman Research Network Academic Pilot Training (Forschungsnetzwerk für Verkehrspilotenausbildung) (FHP) e.V., since 2013; Various publications in aviation, holder of the Legion of Merit of the US Armed Forces.

Abstract

There must be an added focus on the potential risks to low-flying helicopter traffic by “uncontrolled drones”. Small drones are literally flooding the airspace - prices are dropping rapidly – these drones can be purchased virtually anywhere by anyone, without any proof of airworthiness or operational competency and can then be operated in Germany outside controlled airspace up to 2500ft. The silhouette of these drones is generally small; making it difficult for the helicopter pilots to see-and-avoid them. Considering the severe damage caused by bird-strikes, one can only estimate the catastrophic potential a collision with a drone (weight up to 5 kg – compared to less than 1kg bird) might have. Germany averages more than 1 million helicopter movements below 500 ft per year. The German Air Line Pilots' Association (VC) and its Helicopter Working Group are very concerned that the ongoing proliferation of “uncontrolled drones” (in Germany alone there were 30000 small drones sold last year) poses a significant risk to low-flying helicopters. The VC sees an urgent need to raise overall awareness of the potential risks associated with the above.

**09.40-10.00 ♦ Interactive Panel Discussion**

Objective

Evaluate the relevance of D&A for very low level (VLL) RPAS BLOS operations and to come up with suggestions on the way forward.  
Moderator: Mike Lissone, EUROCONTROL, Belgium

**10.00-10.45 Refreshment Break**

## Session 4 Privacy & Data Protection + Responsibility, Liability & Insurance + Public Acceptance + Education

**Purpose** After a short opening word by Jean-Pierre Lentz, EC DG ENTR, inform the audience on these critical topics and their impact on commercial RPAS operations.

**Bio Data** 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 Research. Height years later, Jean-Pierre moved to DG Enterprise, where he worked on Intellectual Property and Space industrial policy. Since 2 years, Jean-Pierre is part of the team leading the work of the European Commission in the area of RPAS.



### 20 10.45-10.55 Privacy and data protection issues relative to civil uses of RPAS Prof. Paul de Hert, Vrije Universiteit van Brussel, Belgium (in cooperation with Trilateral Research & Consulting, Ireland)

**Bio Data** Prof. Paul De Hert's work addresses problems in the area of privacy & technology, human rights and criminal law. Currently, Paul De Hert holds the chair of 'Criminal Law', 'International & European Criminal Law' and 'Historical introduction to eight major constitutional systems'. In the past he has held the chair of 'Human Rights', 'Legal theory' & 'Constitutional criminal law'. He is Director of the VUB-Research group on human rights (HUMR), Director of the Department of Interdisciplinary Studies of Law (Metajuridics) and core member of the Research group Law Science Technology & Society (LSTS).



**Abstract** This presentation will provide an overview of privacy & data protection issues relevant to RPAS in relation to the European legal framework. It will examine the concept of personal data in relation to typical civil RPAS operations and provide guidance as to what specific privacy & data protection issues civil RPAS manufacturers & operators should consider when designing or operating RPAS. In addition, it will outline the obligations the civil RPAS operators are subject to if and when they are collecting personal data during missions. It will explain how the RPAS industry should consider privacy & data protection issues through a framework of "risk", and identify specific ways in which the RPAS industry can meet their obligations, protect the rights of people who may be captured on film & ultimately strengthen the industry through responsible uses of RPAS.

### 21 10.55-11.05 Experimental & demonstration flights of the HERO VTOL RPAS under IT-CAA permit to fly and application within the framework of the SESAR/INSuRE project Vincenzo Mirra, Sistemi Dinamici, Italy

**Bio Data** Vincenzo Mirra is an aerospace engineer with more than 15 years of experience in aerospace Products Qualification & Certification, Quality, System Engineering and Program Management of aerospace projects, systems, operations & applications. He is currently Head of the Quality Management, Airworthiness & Certifications Department at Sistemi Dinamici S.p.A., an engineering company owned by AgustaWestland for programs and products innovation, which has developed and is operating a 150 kg Light rotarywing RPAS under the Italian CAA type investigation process. He is in charge of: a) Certification and approvals of aerospace organization (AS&D); b) RPAS Type Certification; c) Airworthiness for RPAS products; d) Liaison with National & European Aviation Authorities and Agency (CAA, EASA, EDA); e) Company's Representative in Public Association and Management Committee; f) Quality Management System certifications and improvements; g) Effective management of projects and resources; h) Innovative solutions for process/product deployment, certification, airworthiness and safety. Vincenzo Mirra is a member of the EUROCAE WG93 on Light Remotely Piloted Aircraft Systems Operations.



**Abstract** The RPAS HERO is a 150 kg helicopter Light RPAS, that has been fully designed and manufactured by SD under both civil and military user-cases requirements and has also been developed & tested in conformity of the ENAC (IT-CAA) L-RPAS regulation. This allows the manufacturer to dispose of an RPAS fully compliant with customer and airworthiness requirements, enabling operators to cope with the different applications scenario incorporating automatic capabilities and redundant safety features, which help to ensure a successful mission. This presentation will show the regulatory framework in which HERO has been developed and is currently operated for experimental flights and demonstration activities. Besides it will present an update of the demonstrative application of HERO in the framework of the INSuRE SESAR project where the RPAS will be operated by SD into a non-segregated airspace working in very close coordination with the ATC service provider. The main objective of this research programme is to prove the safe RPAS integration within the air-traffic controlled airspace during different flight phases. For this application, the implemented simulation scenario will be presented together with the plan of the simulation exercises to be performed in January 2015 in cooperation with ANS-CR (Czech Republic National Air Navigation Service Provider).



22 11.05-11.15 **RPAS Insurance: The next steps**

**Jean Fournier, Global Aerospace, France**



Bio Data

Jean Fournier is the Managing Director of the French branch of Global Aerospace. He joined Global Aerospace in April 2009 to open the French branch and to insure all classes of aerospace risks (airlines, airports, general aviation, manufacturers and space) as a leader on the French market. He is also in charge of innovation and new products for the entire Group. Prior to joining Global Aerospace, Jean has been for 19 years with Marsh, including 10 years as Head of the French Aviation and Space team and 3 years as Managing Director in charge of Innovation. In the early part of his professional life, he worked as Matra (now Airbus) on military and space programmes. He accomplished his military duties as a research engineer at ONERA (French Aerospace Research Centre). Jean is a graduate engineer from the ENS d'Arts et Metiers, and holds a Master degree from the University of Stanford (CA) as well as a DESS in Finance from the University Paris I - Sorbonne. He also obtained his pilot license when he was in the US. Global Aerospace is the world's leading aviation insurer and provides underwriting & claims expertise from its worldwide headquarters in London, UK. The Global Aerospace network includes six offices in the United States, two offices in Canada & three continental European offices located in Cologne, Germany, Paris, France and Zurich, Switzerland. Global Aerospace has been dedicated to the aerospace industry for over 85 years and underwrites insurance on behalf of some of the world's largest & most secure insurers & reinsurers.

Abstract

Let us first differentiate between light RPAS (below 25 kg) and large RPAS (above 150 kg). In the EU, all RPAS must be insured according to Regulation 785/2004 (with a 750 000 SDR, i.e. 885 000 EUR, minimum coverage). However, some believe that up to 50% of the light RPAS that are operated over the EU are not insured. Even light RPAS operated by good citizens may cause damages that are not covered by insurance. Aviation insurers that currently take care of all RPAS, propose very broad coverage... provided RPAS operators comply with the insurance pre-requisite (usage and pilot experience in particular). This raises multiple concerns for insurers, keeping in mind that they want to favour the growth of this sector:

- a) A compensation fund must be set up to indemnify the damages that will not be insured. The knowledgeable party in charge of the fund will go after whoever could be held liable to recover what would otherwise come out of the tax payer's pocket. The motor vehicle insurance community knows very well how to do this.
- b) An RPAS should be traceable back to its operator and via its distribution channel, to its manufacturer to better understand the accident factors, hence the need for a mandatory registration.
- c) Insurers need to get access to the accident data reported in accordance with Regulation (EC) No 1330/2007, which has to be amended accordingly. This might mean "sanitizing" the data made available, but it is paramount to build meaningful statistics on RPAS accident and reliability.

Conversely, most large RPAS are manufactured by large aerospace companies. They will be properly operated & insured. The insurers' goal in that case is to accumulate experience in order to learn more about failure management, starting in a segregated environment before moving to the non-segregated airspace.

23 11.15-11.25 **Public acceptance of civil drones**

**Philip Boucher, EC Joint Research Centre (JRC), Italy**



Bio Data

Philip Boucher is a sociologist, specializing in the relationship between emerging technologies and society, particularly controversial technologies such as biofuels and civil drones. He has worked on a number of case studies, and developed theoretical and methodological frameworks that help us to understand technology in society. His BSc, MSc and PhD were awarded from the University of Manchester, and he has completed postdoctoral fellowships at the Manchester Institute of Innovation Research and the Centre for Applied Bioethics. Currently, he is working at the European Commission's Joint Research Centre, researching social and ethical aspects of various emerging technologies to inform European policy initiatives.

Abstract

Concerns have been raised about public opposition to civil drones because of their association with military applications and some potentially controversial applications, such as policing and border control. Very little is understood about public reactions to the technology, and strategies to manage public acceptability to date have relied upon several untested assumptions. Here, I describe research undertaken at the Joint Research Centre on this subject during 2014. In particular, I describe the results of public engagement activities designed to explore public visions of civil drones. Recommendations are aligned with reference to the responsible research and innovation agenda.

24 11.25-11.35 **Education before regulation**

**Nick Davis, 3iC, UK**



Bio Data

Nicholas Davis is an accomplished fixed wing and rotary pilot of over 20 years, spending over 1000 hours low-level in various terrains and countries. An accomplished businessman in the aviation, maritime risk management and IT industries, since 2008 Nicholas's companies have generated more than \$100 million USD in revenue. During 2013 he turned his attention to RPAS systems and identifying the key drivers and barriers for growth. Nicholas is leading a highly qualified group of ex-military subject matter experts from the UK Royal Air Force Reaper squadron on training / corporate and industrial applications, he has further secured subject matter experts in design and airworthiness from a leading aircraft manufacturer that produces



**Abstract** both civil and military aircraft. Coupled with foreign government advice on education, regulation & integration of RPAS policies 3iC will be at the forefront of RPAS innovation and implementation.

The primary media attention and newspaper columns concentrate on events with small RPAS systems flying in areas that are prohibited or include an element of risk that is deemed unacceptable. This situation coupled with hysteria over terrorism and privacy creates an immediate negative perception and distracts from the incredible innovation and application that RPAS systems will bring to our lives over the next century. A few people spoil the capability innovation that RPAS can be used for and people with no awareness or understanding of how their really exciting flight with their new toy could become a major security incident or lead them to enforcement action on privacy laws is actually what needs to be addressed. We need to educate before we regulate, we need to make manufacturers of both airframes and avionics systems accountable for the products they are selling to ensure that the low level airspace from 30m to 120m is safe for the general public and the other airspace users. 3iC will be launching a world first exclusive at the UVS conference. 3iC is launching its FREE "Leisure User" online guidance course - this course consists of essential "does & don't's" on how to operate your new RPAS system to ensure you get maximum enjoyment from it without falling foul of regulations or privacy laws. It is a responsible way for all European governments to address a situation they cannot enforce or regulate. 3iC welcomes approaches from any country on adapting its online course for the benefit of the RPAS industry globally.

**11.35-12.00** ◆ **Interactive Panel Discussion**

**Objective** Endeavour to evaluate what is required on a national, European & international level, the financial impact on RPAS operators, and suggest a possible way forward.  
Moderator: Peter van Blyenburgh, UVS International

**12.00-13.30** **Lunch in the RMA Cafeteria**

**JARUS Information Forum**

**Purpose** Inform the audience on the changes that have taken place in JARUS (Joint Authorities for Rulemaking on Unmanned Systems) - See [www.jarus-rpas.org](http://www.jarus-rpas.org). Explain the group's objectives, work methodology, tools, deliverables, internal & external consultation, interfaces with standards organizations & industry (small & large). Make the RPAS community aware of the key roles that JARUS will be playing on European & international levels and explain why it is crucial for industry (small & large) to contribute to its work, with what & how. Motivate interested national aviation authorities to join JARUS.



**Session 5** **JARUS - Introduction**

**25** **13.30-13.45** **High level overview of JARUS**

**Chris Swider, FAA, USA - JARUS Co-chairman (in coordination with Eric Sivel, EASA, EU - JARUS Chairman)**

**Bio Data** Christopher Swider is the Manager of the UAS Research and Development Section within the FAA UAS Integration Office. He is responsible for managing UAS research sponsored by the FAA's Aviation Safety line of business and for integrating UAS research from the FAA Air Traffic Organization and all government and industry partners to support UAS integration requirements in the U.S. National Airspace System. Chris has over 10 years of experience developing FAA operational and airworthiness approval standards, policies and procedures for emerging flight technologies, including flight systems for all-weather operations, RNP/RNAV, enhanced flight vision, and ADS-B and TCAS II surveillance. Chris also works on the development of international standards, policies and practices for UAS as both Vice-chairman of the Joint Authorities for Regulating Unmanned Systems and as an advisor to the U.S. Member of the ICAO RPAS Panel for detect and avoid. Chris supports the development of FAA concepts and plans for UAS in working groups that revise the FAA's UAS Civil Integration Roadmap and develop existing and emerging concepts of operation. Chris retired from U.S. Air Force active duty in 2003 with over 5000 flight hours in a variety of aircraft, piloting strategic nuclear deterrence missions, tests of space, missile & avionics systems, and operational airlift missions. Other Air Force experience included operational testing and evaluation of new aircraft, space and missile systems and the development of Air Force flight rules & instrument procedures for worldwide operations. Mr. Swider holds a Bachelor of Science in Electrical Engineering from the U.S. Air Force Academy, a Master of Science in Engineering Management from the University of Dayton, & a Master of Science in Operations Research from the U.S. Air Force Institute of Technology.



**Abstract** This presentation is an introduction to the Joint Authorities for Rulemaking on Unmanned Systems, including the recent efforts to refocus its purpose and structure to better serve the interests of an expanding group of national aviation authorities. The overview will highlight the increased interest in JARUS work efforts from EASA, FAA and other national authorities as well as the RPAS industry. It will address changes in the JARUS Terms of reference designed to improve how JARUS functions, how JARUS receives inputs to its work and the internal & external consultation processes to gain needed consensus on JARUS deliverables. These deliverables are intended to be shared not only with JARUS members, but also with ICAO and other aviation interests. The presentation will identify the current working groups & their areas of responsibility and conclude with a call for additional participation from existing members & new national authority participants.

**26 13.45-14.00 Introduction to the JARUS Secretariat**  
**Mike Lissone, EUROCONTROL, Belgium - JARUS Secretary General, JARUS Secretariat**



**Bio Data** Mike Lissone is the RPAS ATM Integration manager for EUROCONTROL. He has been the main contributor in the development of the RPAS R&D roadmap. Seconded by EUROCONTROL to JARUS, he is the JARUS General Secretary and as such heads up the JARUS Secretariat. He is actively involved in the ICAO RPAS Panel and other international initiatives developing standards and regulation to enable RPAS integration.

**Abstract** This presentation will introduce the JARUS Secretariat, its staff and the organizations which have seconded them, its role and critical functions, as well as current & future activities and its vision.

**JARUS - Activities 1**

**27 14.00-14.15 JARUS WG1 - Operational and Personnel Requirements Group (OPS/Personnel)**

**Julia Sanchez, EUROCONTROL, Belgium - JARUS Secretariat (on behalf of Benny Davidor, CAA, Israel - WG1 Leader)**



**Bio Data** WG1 defines requirements for access to airspace, RPAS operations, remote pilot licensing and training. Julia Sanchez has worked for different airlines in the past, 6 years for Iberia as public relations and then 6 years for Singapore Airlines in the Accounts Department dealing with the tickets and cargo. She was responsible for the BSP (Billing Settlement Plan) and CASS (Cargo Accounts Settlement System). She also had to prepare and monitor all documentation for the external financial tax audit. Julia joined EUROCONTROL in 2002, in Bretigny, France as support assistant to the Marketing and Information Management Unit and then as support to the Head of Support Business Management. In 2009, she moved to Brussels to work for the Deputy Director of the Cooperative Network Design directorate - CND CoE (Centre of Expertise) and the Head of Environment, where she have worked closely with the Emission Trading Scheme Support Facility for Aircraft Operators. She then decided to change and started working with Mike Lissone on the RPAS related issues in 2012.

**Abstract** This presentation will present JARUS WG1, its members, objectives & workplan (current, near & long term).

**28 14.15-14.30 JARUS WG2 - Organizations Approval**  
**Taro Kuusiholma, Finnish Transport Agency, Finland (WG2 Leader)**



**Bio Data** WG2 defines design, production, and continuing airworthiness of RPAS, RPAS operators, Communication (COM) Service Providers. Taro Kuusiholma is Special Adviser for Finnish Transport Safety Agency (CAA Finland) Regulation and Development department. He is Master of Laws (LL.M.). He is full member of JARUS representing Finland and member of WG2, WG3 and WG7. He is adviser in EASA P&M TAG, member of EUROCAE WG93, adviser for Norway in ICAO UASSG (2013-2014), Member of ICAO RPASP and ICAO Space Learning Group.

**Abstract** The proposed presentation focuses on the JARUS Working Group 2 (Organizations) and explains the workflow, the continuing development and the future long term work plan.

**29 14.30-14.45 JARUS WG3 - Airworthiness**  
**Vladimir Shibaev, TsAGI, Russian Fed. (WG3 Co-Leader with Markus Farnet, FOCA, Switzerland)**



**Bio Data** WG3 draws up proposals for rotary wing Light Unmanned Rotorcraft System (CS-LURS); Fixed wing, Light Unmanned Aero plane System (CS-LUAS); Very Light UAS (VL UAS); Airships, free/tethered balloons. Vladimir M. Shibaev (1951) Ph.D & Fellow of the RAeS, graduated from Moscow Institute for Physics and Technology (State University), Department of Aeromechanics and Aircraft. Post graduate education at the same University. In 1983 he was awarded his Ph.D. with the thesis: Stall and spin flight simulation of modern aircraft with fly-by-wire control system. As a lecturer he has given courses in flight dynamics and flight simulators at Moscow Aviation Institute (State University MAI) and at the test pilot school. In 1994 V. Shibaev was elected a Corresponding Member of the International Engineering Academy. From 1977 he has been a member of the Central Aerohydrodynamics Institute, where his research activity included: aircraft dynamics and flight simulation of flight at high angles of attack, stall and spin. He is expert at ISO and ICAO. V. Shibaev is the author of 17 patents and over 100 publications and proceedings in the mentioned subject areas, including RPAS certification. His current position is: Director of the Aviation Certification Centre (ACC) of the Central Aerohydrodynamics Institute (TsAGI) in Russia.

**Abstract** The purpose of the presentation is to provide an overview of the JARUS WG3, its work planning, the deliverables published and the way ahead.

**14.45-15.05 Questions & Answers**  
Moderator: Peter van Blyenburgh, UVS International

15.05-16.00 **Refreshment Break**

**Session 6 JARUS - Activities 2**



**30 16.00-16.15 WG4 - Detect & Avoid (D&A)**

**Ron van de Leijgraaf, Ministerie van Infrastructuur en Milieu, The Netherlands (on behalf of Hans Bohlin, FMV, Sweden - WG4 Leader)**

WG4 defines appropriate performance provisions (operational & technical) and functions for RPAS Detect & Avoid (D&A) systems, compensating for the absence of the human pilot on board; it also establishes safety objectives for the risk of collisions in the total aviation system.

**Bio Data** In 2007 Ron started to work on regulation for RPAS at the Dutch Civil Aviation Authorities. Since 2012 he works in the Aviation Safety department of the Ministry of Infrastructure and the Environment. His primary activity at the Ministry continues to be RPAS regulations. This means that he will continue his international activities regarding establishing the international harmonisation on airworthiness regulation with other national aviation authorities, EASA and EUROCONTROL. For this harmonisation, Ron created the authorities coordination group JARUS. Furthermore, he is the member on behalf of The Netherlands of the ICAO RPAS Panel. Ron graduated from the Technical University of Delft with a degree in Electrical Engineering and an avionics specialisation. Before joining the Dutch CAA, he worked, amongst others, at the Dutch National Aerospace Laboratory (NLR). Here he worked on the development of flight test instrumentation systems and research on navigation systems and avionics for future ATM applications.

**Abstract** The purpose of the presentation is to provide an overview of the JARUS WG4, its membership, work planning, and the way ahead.

**31 16.15-16.30 WG5 - Command, Control & Communication (C3)**

**Dominique Colin, EUROCONTROL, Belgium - WG6 Leader**

WG5 establishes performance provisions (operational and technical) for C3 systems.



**Bio Data** Retired Colonel from the French air force after 25 years of service, Mr Dominique Colin has an extensive and comprehensive knowledge and experience of the military aircraft operations, strategic planning, the joint procurement constraints and the airworthiness requirements for State aircraft. He graduated from the French Air force academy in 1987, from the Ecole Nationale Supérieure de l'Aéronautique et de l'Espace (ENSAE) in 1994, and was teaching aerodynamics and flight mechanics at the US Air force Academy from 1997 to 2000.

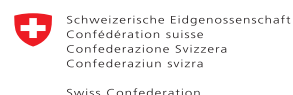
He served for 7 years in reconnaissance and fighter squadrons, developed the State aircraft airworthiness regulation in France and led in the European Defence Agency's (EDA) task force to harmonize military airworthiness regulation across the European countries. Dominique Colin is a RPAS senior expert in the civil military coordination Division of EUROCONTROL since 2009. He is today leading two technical RPAS working groups in JARUS and the ICAO RPAS Panel.

**Abstract** The purpose of this presentation is to provide an overview of the JARUS WG5, its membership, work planning, the deliverables published and the way ahead.

**32 16.30-16.45 WG6 - UAS System Safety (AMC UAS.1309)**

**Lorenzo Murzilli, FOCA, Switzerland (on behalf of David Haddon, EASA, EU - WG6 Leader)**

WG6 defines top level RPAS airworthiness, system safety objectives & guidance material (known as AMC UAS.1309). WG6 also establishes RPAS recommendations & conclusions on RPAS failure classifications in terms of severity definition & probability requirements.



**Bio Data** Lorenzo Murzilli is a graduated aerospace engineer, an innovator & 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, Power Plant and Fuel Installation as well as Hydro-mechanical Systems. Actively engaged in the certification, authorization and rulemaking activities for RPAS, Lorenzo is a core member of JARUS WG-6 as well as of the Swiss FOCA RPAS Working Group, overseeing all critical RPAS operations in Switzerland. Always involved with High Reliability Organizations (HRO), Lorenzo is also a 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 system safety & disruptive technologies that can advance the human race forward.

**Abstract** The speaker will present the JARUS WG-6, its membership, objectives, and scope of work. Lorenzo will provide an outline of the AMC RPAS.1309.



**33 16.45-17.00 WG7 - Categorization & Work Plan Products**

**Steve George, FAA, USA - WG7 Leader**



**Bio Data**

Stephen George is an Engineering Manager with the Federal Aviation Administration's (FAA), Unmanned Aircraft Integration Office, Airworthiness Section, at FAA Headquarters offices in Washington, DC, USA. Mr. George has held several appointments within the FAA, including Small Airplane Program Manager at the Denver Aircraft Certification Office and Senior Aerospace Engineer/Program Manager for Airborne Surveillance Avionics in the FAA's Avionic Systems Branch. He has been responsible for standards development and U.S. National policy for airborne surveillance technologies including the Traffic Alert and Collision Avoidance System (TCAS) and Automatic Dependent Surveillance-Broadcast (ADS-B) and served as the FAA's Designated Federal Official for RTCA Special Committee 147 for TCAS II and RTCA Special Committee 186 for ADS-B. Mr. George also served as Rapporteur of the Airworthiness Working Group for the International Civil Aviation Organization (ICAO) UAS Study group and Rapporteur of the Airborne Working Group of the ICAO Surveillance and Conflict Resolution Systems Panel (SCRSP) and Aeronautical Surveillance Panel (ASP), developing Standard Aerospace Recommended Practices (SARPS) and the ICAO Airborne Collision Avoidance System (ACAS) manual. Mr. George holds a Bachelor of Science in Aerospace Engineering from the University of Central Florida, an Aviation Safety Certification from the University of Southern California and is an instrument rated private pilot.

**Abstract**

RPAS vary widely in terms of size, complexity, performance and utility which diverge from traditional aircraft with human pilots and/or passengers located on the aircraft. Aviation Safety regulators in many Nation states, world-wide, are challenged with establishing methods and criteria for design, construction, production and operational approvals for these new and novel aircraft designs and integrating RPAS operations in all airspaces. It is envisioned that regulators should apply a risk-based approach to their role and involvement in RPAS approvals, considering potential for imposing harm to people and property on the ground and other users of the airspace. Considerations may include aircraft size, and/or total energy (kinetic, potential and fuel content), system complexity, complexity of operational concepts, operating environment (e.g. location, airspaces, altitudes, population density) in the context of the severity of consequences of hazards exposed to the public and their likelihood of occurrence. This presentation outline's a working proposal from JARUS WG-7 as a candidate classification schema and framework for performing these certifications.

**JARUS - Activities & Cooperation with Industry**

**34 17.00-17.15 JARUS Activities in the context of the European RPAS Roadmap & Support to ICAO RPAS Panel + Cooperation with Industry  
Mike Lissone, JARUS Secretariat - Secretary General**



**Bio Data**

Mike Lissone is the RPAS ATM Integration manager for EUROCONTROL. He has been the main contributor in the development of the RPAS R&D roadmap. Seconded by EUROCONTROL to JARUS, he is the JARUS General Secretary and as such heads up the JARUS Secretariat. He is also actively involved in the ICAO RPAS Panel and other international initiatives developing standards and regulation to enable RPAS integration.

**Abstract**

This presentation will supply information on JARUS activities within the framework of the European RPAS Roadmap, how JARUS supports the ICAO RPAS Panel, and how JARUS proposes to collaborate with industry (small, medium-sized & large)

**17.15-17.35 Questions & Answers**

Moderator: Peter van Blyenburgh, UVS International

**17.35-19.00 Conference Cocktail in the RMA Mess**

**DAY 3 - THURSDAY 4 DECEMBER 2014**

**Session 7 RPAS Manufacturer Opinions**

**Purpose:**

Permit manufacturers to give their views on the RPAS industry, its maturity, the safety of their current RPAS, the technologies employed, the barriers to market entry, the current non-harmonized regulatory situation (re: RPAS, pilots, operators, manufacturers, RPAS operations, pilot schools, insurance) on national, European & international levels, the impact this has on their R&D activities, production & market development.

**35 08.30-08.45 Accessibility, performance, affordability - Implications for RPAS users and regulators  
Michael Perry, DJI Innovations, China**



**Bio Data**

Michael Perry is Public Relations Manager of DJI and leads media relations, public affairs, and communication outreach for the company. He collaborates with industry partners across the globe to find new and innovative uses for DJI's technology in addition to supporting international regulators in developing their policies for small unmanned aerial systems (sUAS). Before joining DJI, Michael served as a communications strategist

at global public relations consultancies, advising Fortune 500 companies on corporate communications, media relations, public affairs, and thought leadership programs across North and South America, Europe and Asia. Michael received a Bachelor's degree in Government and Chinese Language from the University of Texas and has studied at East China Normal University and Nanjing University.

Abstract

The barriers to high performance RPAS have dropped significantly over the past several years, such that consumers can purchase aerial solutions for everything from aerial photography to effortless 3D mapping. Whereas these capabilities were previously only accessible to high end industries and governments, now platforms with these solutions built in are available off-the-shelf and ready to be used. What does this mean for the future of the industry and what are options for keeping the skies both safe and open for innovation?

**36 08.45-09.00 How to guarantee the safety of operations with RPAS?**

**Baptiste Tripard, SenseFly, Switzerland**



Bio Data

Baptiste is an engineer (Master of Science in Aeronautics and Space) and also holds a Master's degree in Entrepreneurship and Business Strategy. After a first experience in a French start-up that designs jet engines for very light aircraft, he joined SenseFly in order to manage the development of the company in North America. He is also in charge of the regulatory watch and represents SenseFly towards the different authorities and working groups worldwide.

Abstract

In order to allow a perennial integration of RPAS in the airspace, RPAS manufacturers need to guarantee the safety of the solutions they provide, and at least demonstrate an equivalent level of safety as for manned aircrafts. This presentation will focus on the safety features of our RPAS and related requirements in different countries of operations.

**37 09.00-09.15 Safe bird control operations with Robirds at Schiphol airport**

**Nico Nijenhuis, Clear Flight Solutions, The Netherlands**



Bio Data

Nico Nijenhuis, age 28, studied Applied Physics and Engineering Fluid Dynamics at the University of Twente. During his studies he fulfilled internships in Malawi, Africa, where he worked to improve the fuel efficiency of the tobacco curing process, at CERN in Geneva developing a concept for a future 5 Tesla detector magnet for the International Linear Collider, and at the Dutch National Aerospace Laboratory NLR creating a theoretical model for the aerodynamic Near Ground Effect and validating the theory with a test flight programme with the F-16 fighter jet. It was for his Master thesis that a Robird was put in his hands for the first time by his professor. Soon after he started talks with the developers of the Robird prototypes and together they founded Clear Flight Solutions. After the initial focus on further development of the technology, the focus has now shifted towards the first validation trials at customers in agriculture, waste management and aviation. In his spare time Nico is a fanatical sailor. He is part of a competition team in the traditional Dutch "skutsjesilen", and enjoys sailing on his own small boat together with his partner.

Abstract

Robirds are remotely piloted robotic birds of prey that fly using flapping wing flight only. The Robirds are so realistic in appearance and movement that other birds instinctively react as if confronted with real life predators. They can thus be used to highly effectively and lastingly chase birds in for instance agriculture, waste management, and in aviation. Operations of light remotely piloted aircraft in controlled airspace are relatively new. This presentation gives an outline of a bird control project at a major European airport, the safety procedures decided upon between the airport, company, and aviation authority, and the technology used to support safe operations of RPAS in a Controlled Traffic Region.

**38 09.15-09.30 Challenges for geospatial RPAS**

**Peter Cosyn & André Jadot, Trimble, Belgium**



Bio Data 1

Dr. Peter Cosyn is site-manager and director R&D of Gatewing, a Trimble company. He is a co-founder of the company. During his academic career, he obtained a Ph.D. in electro-mechanical engineering at Ghent University (Belgium) and worked as a postdoctoral researcher until 2008. His scientific contribution focused on micro air vehicle design, low Reynolds aerodynamics and computational fluid dynamics. He was an active member of the EUROCAE working group on small UAS.

Bio Data 2

Andre Jadot is a Master of Science in Chemical Engineering (KUL, Belgium) and has an MBA (Vlerick Management School, Belgium). He is director of Sales at Gatewing since 2011, in charge of the successful set-up of direct and indirect world-wide sales channel. He is a Former director at the Eurosense Group (from 1991 to 2010) and a Treasurer and Director of EARSC (European Association of Remote Sensing Companies).

Abstract

Trimble manufactures and sells RPAS solutions for the geospatial professional community throughout an international distribution network. Our clients work in multiple sectors including construction, mining, agriculture, forestry and environmental monitoring. Our RPAS solutions give our customer actionable data that improves their processes, increases profitability and reduces risk. Nevertheless, challenges fragment the market and hinder growth, with adverse effects for RPAS manufacturers, RPAS service providers, RPAS users and society in general. The lack of an international, harmonized legal framework with rules optimized to the benefits for society is at the core of the problem. A diversity of national rules with an improper balance between restrictions and actual risks limits adoption. We will explain how this impacts our market today.





**39 09.30-09.45 RPAS integration and the road ahead**

**Lucas van Oostrum, Aerialtronics, The Netherlands**



**Bio Data**

Lucas' fascination for machines started when he wrote his first program on a Commodore 64 at the age of 11. In high school he took it to the next level when the computer modem was introduced. As a computer hacker he tested vulnerabilities in early computer networks. During his time at university Lucas started his first company PC James. It provided IT services by hiring out students to people and businesses. After PC James, he worked in product development, data centre security, social media and crowd funding. In the fast moving information society emerging technology has been the drive for Lucas' passion. This has been no different with Aerialtronics. As CEO from 2012 and CTO from 2014 Lucas and his team keep pushing the boundaries every day to define the future of unmanned aircraft systems.

**Abstract**

From its beginning Aerialtronics has been active in helping the small UAV industry to grow and has now taken the lead in forming a Small UAV Coalition in the European Union (EU). The Small UAV Coalition was formed by leading UAV operators, manufacturers, & service providers to remove regulatory barriers for the commercial, civil, & philanthropic use of small UAVs. Although the Small UAV Coalition's initial focus was on the process in the United States, it has recently broadened its scope to include the EU and in the future on an international level as well, as we understand that reciprocity between regulations will be critical to the industry's success. Moreover, upcoming trade agreements represent opportunities to catalyze adoption of this technology.

**09.45-10.00 ♦ Panel Discussion**

**Objective** Agree on a consensual list of priorities that will be submitted to the European Commission.  
**Moderator:** Peter van Blyenburgh, UVS International

**10.00-10.45 Refreshment Break**

**Session 8 RPAS Operational Matters & Standards**

**Purpose**

Supply the audience with an update regarding ongoing efforts in relevant areas.

**40 10.45-11.00 SESAR RPAS demonstration projects - Initial findings**

**Célia Alves Rodrigues, SESAR Joint Undertaking, Belgium**



**Bio Data**

Célia Alves Roderigues is the Environment Officer & Release Outcome Manager at the SESAR Joint Undertaking since March 2010. The mission of the SESAR Joint Undertaking is to develop a modernized air traffic management system for Europe. This future system will ensure the safety & fluidity of air transport over the next thirty years, will make flying more environmentally friendly & reduce the costs of air traffic management. Célia is the focal point for SESAR environmental aspects, working in the Development & Delivery Unit providing guidance to the different work packages and projects to ensure that the environmental objectives of the programme are achieved and monitoring & supporting dissemination of the SESAR Releases results (SESAR Solutions). She is also responsible for the programme management of the Atlantic Interoperability Initiative to Reduce Emissions (AIRE) and the RPAS demonstration activities. Previously Célia worked at ICAO, as an associate environmental Officer, and collaborated with the World Health Organization on the noise & health unit from 2002 to 2006.

**Abstract**

The presentation provides a survey of the current European Regulatory Situation on RPAS with respect to the goals & objectives of the EU Roadmap for the integration of civil RPAS into the EU Aviation System. It presents the authors view on the current stage of the Regulatory Work Plan which shows a still missing harmonized European rule set and the required underlying certification process to achieve a European Type Certificate (TC) for RPAS in the < 150 kg weight class. The result is that there are only a very limited or even no commercial inter-EU operations of light RPAS in VLOS. A potential way to quickly get out of this situation might be to start an exemplified certification process for a European RPAS TC on the basis of the regulatory framework CS-LURS. With this it should be possible to establish a harmonized EU-wide certification process which can be used as guideline for other European RPAS industries to implement EU RPAS Roadmap and allow RPAS industry & users to get access to civil airspace overall Europe. From this point of view a proposal for a European RPAS Certification Initiative (ERCI) will be presented which could lead to a European Commission triggered & financially supported R&D activity, e.g. within a "EU Market Acceleration Programme" for RPAS integration in EU aviation system.

**41 11.00-11.15 Congested area operations - LUASS-AW - A proportionate airworthiness requirement**

**André Clot, EuroUSC, UK**



**Bio Data**

André J. Clot is a director of EuroUSC™ and has a solid background in safety critical systems. He gained his initial introduction to computing whilst at university where he also gained his Private Pilots License before joining the RAF in 1979 as a pilot. Later he moved on to a career in safety critical systems in the defence and nuclear industry. In 1988 he joined the UK CAA later becoming the first Head of Engineering Strategy within the National Air Traffic Service (NATS) as an advocate of a systems approach to Air Traffic Operations and a member



of its research and development board. In 1998 he formed the UK UAS trade association (UAVS) and in 2003 formed EuroUSC™. He is a Chartered Engineer and holds a Masters in Business Administration. He is a member of the Royal Aeronautical Society & the current Chairman of its Unmanned Aircraft Systems Specialist Group. In addition he is Vice Chairman of the EUROCAE WG93 and is the accountable manager in EuroUSC™ that oversees remote pilot and systems assessment alongside organisation accreditation for RPAS operations within a national context.

**Abstract** The last year has seen a rapid maturing of the RPAS industry as the number and diversity of small RPAS operations has increased steadily. Although authorities in France and Germany have allowed such operations without any independent assessments of either pilots or aircraft, those Authorities with greater experience of RPAS incidents, such as the UK and the Netherlands prefer more oversight of operator competence. In the Netherlands in particular since January 2013, there has been a recognition that proportionate and appropriate airworthiness standards were required urgently to enable more sophisticated operations to be undertaken safely. In the United Kingdom increased operations in congested areas has meant that the UK CAA has had to adopt a more rigorous approach to the airworthiness of the aircraft in order to be in a position to approve suitable safety justification used in these types of operation. EuroUSC has responded to this challenge by developing the LUASS-AW, its airworthiness standard. This is tailored for Visual Line of Sight Operations based on hundreds of independent design and construction assessments undertaken in Belgium, Ireland, Malta, the Netherlands and the United Kingdom.

**42 11.15-11.30 Proposal for a European RPAS certification initiative**  
**René Knorr, ESG, Germany**



**Bio Data** René Knorr obtained his Diploma on Aeronautical Engineering in 1989. Subsequently, he became an engineer for Helicopter Flight Guidance & Control R&D at Eurocopter Deutschland. He has taught and been a research assistant at TU Berlin with a Ph.D. Thesis on «Model on Pilot Scanning Behaviour in automated cockpits». Mr Knorr was also R&T Coordinator for the Airbus A340 Full Flight Simulator at Zentrum für Flugsimulation at TU Berlin. Since 1999 he is manager for RPAS technology programmes and business development at ESG GmbH.

**Abstract** The presentation provides a survey of the current European Regulatory Situation on RPAS with respect to the goals and objectives of the EU Roadmap for the integration of civil RPAS into the EU Aviation System. It presents the authors view on the current stage of the Regulatory Work Plan which shows a still missing harmonized European rule set and the required underlying certification process to achieve a European Type Certificate (TC) for a RPAS in the < 150kg weight class. The result is that there are only a very limited or even no commercial inter-EU operations of light RPAS in VLOS until now. A potential way to quickly get out of this situation might be to start an exemplified certification process for a European RPAS TC on the basis of the regulatory framework CS-LURS. With this it should be possible to establish a harmonized EU-wide certification process which can be used as guideline for other European UAS industries to implement EU RPAS Roadmap and allows RPAS industry & user to get access to civil airspace overall Europe. From this point of view a proposal for a European RPAS Certification Initiative (ERCI) will be presented which could lead to a European Commission triggered and financially supported R&D activity, e.g. within a "EU Market Acceleration Programme" for RPAS integration in EU aviation system.

**43 11.30-11.45 EUROCAE WG73 & WG93 deliverables**  
**Anna von Groote, EUROCAE, France**



**Bio Data** Anna von Groote has joined the EUROCAE Secretariat as Technical Program Manager in 2011. Before joining EUROCAE, she worked at the European Committee for Standardization (CEN) since 2006, where she assumed responsibilities for the organization's work programme in different sectors. In her role as Programme Manager at CEN, she was responsible amongst others for the aerospace and air traffic management sector. Ms von Groote holds a Master's degree in European Studies from the Centre for European Integration Studies/University of Bonn, Germany.

**Abstract** EUROCAE has been active in the area of Remotely Piloted Aircraft Systems since 2007, and established two working groups, WG-73 'Unmanned Aircraft Systems (UAS)' and WG-93 'Light Remotely Piloted Aircraft Systems Operations'. These WGs were established to deliver standards and guidance material to ensure the safety and regularity of unmanned aircraft missions. The near-term approach to be adopted is to start with selected fundamental capabilities which, once specified and validated, would allow operation of RPAS with certain restrictions, thus establishing an initial baseline for future work. This will enable incremental access to airspace, based on defined safety considerations. This activity is closely coordinated between EUROCAE and our partner organisations at European and international level, in particular in light of the European Commission process 'A Regulatory Approach for the Integration of Civil RPAS into the European Aviation System' ('ERSG Road Map' for short). This presentation will cover the relevant EUROCAE activities in this area.

**11.45-12.00 Questions & Answers**

Moderator: Peter van Blyenburgh, UVS International

**12.00-12.15 Conclusions & Announcements + Closure**



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**REMOTELY  
PILOTED  
AIRCRAFT  
SYSTEMS**

**Royal Military Academy  
8 Hobbema straat  
Brussels, Belgium  
2 - 4 December 2014**

**CIVIL RPAS OPERATIONS FORUM  
+  
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**BLYENBURGH & CO  
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