EUROPEAN RPAS POLICY & REGULATORY FORUM
DAY 1 - MONDAY 23 JUNE 2014

13.15-13.30 Opening Speech
Siim Kallas, Vice President European Commission, Commissioner for Transport

Session 1 National Community Views - I
01 13.30-13.45 Austrian Experiences with the First National VLOS Regulation Implemented in 2014
Raoul Fortner, AAI - UAS WG, Austria
02 13.45-14.00 Activities & Legal Situation in Belgium
Koen Meuleman, BeUAS, Belgium
03 14.00-14.15 Operations in France & What Needs improving
Benjamin Benharrosh, FPDC, France
04 14.15-14.30 Operations in Germany: Current Status & The Way Forward
Bernhard von Bothmer, UAV-DACH, Germany
05 14.30-14.45 Operations in Italy - What Needs Improving
Paolo Marras, ASSORPAS, Italy
14.45-15.05 Panel Discussion
15.05-16.00 Refreshment Break

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Frits Müller, DARPAS, The Netherlands
07 16.15-16.30 RPAS Status in Norway - What Needs Improving
Dan Richard Isdahl-Engh, UAS Norway, Norway
08 16.30-16.45 Operations in Spain - What Needs Improving
Manuel Onate, AERPAS, Spain
09 16.45-17.00 Current Status in UK & What Needs Improving
Angus Benson-Blair, ARPAS, UK
10 17.00-17.15 Operations in Denmark - What Needs Improving
Christian Berg, UAS Denmark, Denmark
17.15-17.35 Panel Discussion
17.35-19.00 Drinks in the Bar of the Royal Military Academy

DAY 2 - TUESDAY 24 JUNE 2014

Session 3 European RPAS Roadmap - I
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Koen de Vos, European Commission - DG Mobility & Transport
Jean-Pierre Lentz, European Commission - DG Enterprise & Industry
12 09.00-09.15 From National Regulations to Common EU Rules on RPAS
Filippo Tomasello, European Aviation Safety Agency (EASA)
13 09.15-09.30 SESAR Demonstrations - RPAS Definition Phase
Denis Koehl [MajGen, FAF (rtd)], SESAR Joint Undertaking
14 09.30-09.45 ATM Integration - The EUROCONTROL Perspective
Mike Lissone, EUROCONTROL
15 09.45-10.00 JARUS - Views on the Future
Ron van de Leijgraaf, Ministry of Infrastructure & Environment, The Netherlands
(on behalf of JARUS)
10.00-10.15 Panel Discussion
10.15-11.00 Refreshment Break

Session 4 European RPAS Roadmap - II
16 11.00-11.15 The EDA.RPAS Programme
Jean-Youri Marty, European Defence Agency
17 11.15-11.30 A European RPAS Industry - Quo Vadis
Aimo Bünte, Airbus Defence & Space, Germany
(on behalf of the Aerospace & Defence Industries Association of Europe)
18 11.30-11.45 Predator Aircraft Status Report: Military & Civilian Missions
Chris Ames [RAdm, USN, (rtd)] , General Atomics Aeronautical Systems, USA
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Session 5 Regulatory Updates
Taro Kuusholma, Finnish Transport Safety Agency, Finland
20 13.45-14.00 French RPAS Regulation - Enforcement & Evolution
Fabien Guillotin, DGAC, France
21 14.00-14.15 The New Norwegian RPAS Regulation
Hege Aalstad, CAA, Norway
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Session 6 Privacy & Data Protection
22 14.30-14.45 French Data Protection Authority’s Overview & EU Art. 29 Working Group Update
Laurent Lim, CNIL (National Commission on Informatics & Liberty), France
23 14.45-15.00 What Other EU & Non-EU countries Are Doing on Privacy & Data Protection
Gabriel Voisin, Bird & Bird, UK
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24 16.00-16.15 What is a Qualified Entity & How Does it Function
André Clot, EuroUSC, UK
25 16.15-16.30 Regulatory Framework & RPAS Market Perspective in Italy
Damiano Taurino, DeepBlue, Italy
26 16.30-16.45 QEs Contribute to RPAS Insertion
Christian Janke, EASC, Germany
27 16.45-17.00 QEs Contribute to RPAS Insertion (in the Absence of Regulation)
Ron van de Leijgraaf, Ministry of Infrastructure & Environment
(on behalf of CAA-NL), The Netherlands
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28 09.00-09.15 Insurance for Growth
Jean Fournier, Global Aerospace, France
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29 09.15-09.30 RPAS Operator & Manufacturer Responsibility, Liability & Insurance - The Legal Perspective
Simon Phippard, Bird & Bird, UK
(on behalf of SG01 RLI)
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Session 12 Flight Crew Training & Qualification
44 09.00-09.15  Remote Pilot Training & European Coordination: A Necessity
               Thierry Renavand, Drones Center, France
45 09.15-09.30  From Planning, Flight to Post-Flight: Our Method to Minimise Hazards & User Errors
               While Delivering the Data Required
               Maarten Durie, Gatewaying, Belgium
46 09.30-09.45  Assessment of Flight Training Schools
               André Clot, EuroUSC, UK
               Peter Milner, Phoenix UAV Centre, UK
47 09.45-10.00  Global Vision of Safety for RPAS Operations
               Nina Claveria & Stéphane Mandon, Delta Drone, France
10.00-10.15  Panel Discussion
10.15-11.00  Refreshment Break

Session 13 Civil Operations - II
48 11.00-11.15  Investigation & Legal Implications of Recent Near Miss Collisions: Lessons Learned
               Dr Sofia Michaelides-Mateou & Chrystel Erotokritou, University of Central Lancashire, Cyprus
49 11.15-11.30  Update on Small RPAS Standards Development
               (on behalf of ASTM Committee F38, USA)
50 11.30-11.45  What Opportunities RPAS Bring to Agriculture
               Séverine Brisset, Trimble Agriculture, France
11.45-12.00  Panel Discussion
12.00-12.10  Conclusions & Conference Closing

6 Presentations by the EC & European Organizations
44 Presentations by RPAS Community Stakeholders

GEOGRAPHICAL REPRESENTATION
RPAS Community Stakeholders from 16 Countries
Austria  Belgium  Cyrpus  Denmark  Finland  France  Germany  Greece  Ireland  Italy  Netherlands  Norway  Qatar  Spain  UK  USA

STAKEHOLDER REPRESENTATION
SMEs/SMiS (18)  Producers  5
               (systems & sub-systems)
               RPAS Operators  6
               RPAS Producer/Operator  2
               Law Offices  2
               Insurance Companies  3
               Pilot Training Schools:
               - Independent Schools  2
               - RPAS Producer Managed  2
               Other Services  1
               Other Services  2
               Qualified Entities  2
               Other Services  1
Large Industry (3)  Producers  1
               Producer Association  1
National RPAS Associations & Working Groups  10
National Aviation Authorities  4
National Govermental Authority  1
EC-funded Study Consortia  3
Standards Organization  1
University  1
Abstract:

AAI / AAI-UAS-WG and the national UAS Community. The first Austrian UAS (VLOS) regulation (in force since 1st January 2014) and views on it in the European and international context. Experiences with this regulation and the CAA (Austrocontrol) up to now. Outlook towards the future.

Bio:

Born in Vienna in 1977, Raoul Fortner received his Master of Science (Magister) in Economics and Computer Science (Wirtschaftsinformatik) from the Vienna University of Technology (TU Wien). During his studies he already worked partly in the Public Sector as assistant of diverse MPs in the Austrian parliament and also specialised himself with his master thesis on (Software) Project Management (SWPM) and Requirements Engineering. Through his ERASMUS exchange year (2005-2006) in Toulouse (France) at the "École nationale supérieure de l’aéronautique et de l’espace" (then SUPAERO, meanwhile ISAE) he came in contact with the professional aeronautics industry and consequently was hired in 2008 by the AAI, where he is now responsible for the Business Development and Networking of the Austrian Aeronautics/Supply/Industry. In 2012 he founded within AAI the UAS-Working Group (AAI-UAS-WG), also open for external companies and researchers from Austria. Since then he is responsible for the professional support and networking of the Austrian UAS community, and is especially engaged in projects for civil UAS operations (e.g. «Austrian UcM») and UAS rulemaking.

Austrian Experiences With The First National VLOS Regulation Implemented in 2014

Raoul Fortner, AAI – UAS WG, Austria

Activities and Legal Situation in Belgium

Koen Meuleman, BeUAS, Belgium

Bio:

Koen Meuleman has a long career in operations and remote sensing and has been working for more than 10 years at VITO. He has a particular experience in hyperspectral remote sensing and is heading the APEX remote sensing team at VITO. Since 2 years, he coordinates all RPAS related activities at VITO and is currently heading the ESA-IAP Lumen project. He is also vice-president of Belgian Unmanned Aircraft System Association (BeUAS) and was closely involved in the discussion and preparations of the new Belgian Royal Decree.

Abstract:

BeUAS was founded on the 4th of July 2012 to help RPAS related companies finding their way in this complex environment. Today, BeUAS comprises 52 companies from different kind of industries in aviation. Manufacturers, operators, but also universities and insurance agencies are amongst the members. To highlight certain aspects in aviation, lectures are given on a regular base. This way the operators can fly safely and understand what is happening in the airspace around them. BeUAS also created working groups to tackle problems in the RPAS world and to advise regulators and agencies about the unmanned aviation sector. One of the major BeUAS targets was the creation of a solid and comprehensive legislation in Belgium. In the first part of 2014 we will see the results from our "behind the scene" work in the first complete legislation for RPAS in Belgium and the world. Since 2013, Viscount Frank De Winne became the godfather of our association. He is a Brigadier-General in the Belgian Air Component and ESA astronaut. He was the first ESA astronaut to command a space mission when he served as a commander of ISS Expedition 21. Frank De Winne serves currently as Head of the European Astronaut Centre of the ESA in Köln, Germany. Because of those steps taken, the press and other authorities started looking into the unmanned aviation world. BeUAS brings the sector in a positive light and will do in the future by being present at conferences, expositions and press related events.
03 14.00-14.15 Operations in France and What Needs Improving
Benjamin Benharrosh, FPDC, France

Bio: After graduating from the Polytechnique School in France, Benjamin Benharrosh worked for five years in the field of infrastructure construction and operation both for the governmental and the private sectors. He decided to create Delair-Tech in March 2011 with 3 other partners in order to provide a solution for industrial infrastructure monitoring and surveillance using RPAS. Since September 2012, the DT-18 is the only RPAS certified for Beyond Line of Sight (BLOS) flights in French civil airspace, and Delair-Tech is a major RPAS provider for industrial infrastructure monitoring and surveillance in France. Benjamin is also co-founder & member of the Board of the French National Federation of Civilian RPAS (FPDC).

Abstract: France is one of the first countries to have a clear regulation relative to the civilian use of RPAS. More than 500 companies operate RPAS in France thanks to this regulation and to the big companies that are leading large scale experimentation using this new technology for their needs. France has gone further than other countries by allowing BLOS flights which is a requirement for the big companies that operate long infrastructures that need to be monitored and supervised. An evolution of the national regulation is coming in the next few months, which should allow the French Industry to be among the world leaders in this sector.

04 14.15-14.30 Operations in Germany: Current Status & The way Forward
Bernhard von Bothmer, UAV DACH, Germany

Bio: Bernhard von Bothmer [LtCol, Germany Army (rtd)] is married and has 2 daughters and 5 grandchildren. After finishing high school, he joined the GE Army in the maintenance corps in 1965. He studied mechanic engineering and electronics and graduated in. His work on drones / RPAS started in 1973 - dealing with the maintenance support of the CL-89 and later in the 80s contributed to introduce the CL-289 into the service of the German Army. In 1992 he was appointed to the German Ministry of Defence – Army branch. He was responsible for the preface activities of Army programs concerning surveillance, reconnaissance, exploitation and electronic warfare systems / means. In October 1997, he joined the Armament branch for Research and Development (R&D) of RPAS programmemes of the German Armed Forces at the Ministry of Defence in Bonn. Since October 2000 he is the chairman of the German speaking UAV DACH association.

Abstract: The presentation supplies an organizational and activity update, an overview of the German regulatory basis & its current implementation practice; and the way forward

05 14.30-14.45 Operations in Italy – What Needs Improving
Paolo Marras, ASSORPAS, Italy

Bio: Paolo Marras is President of ASSORPAS, the Italian Light RPAS association, which was born with the aim to give a unique voice to the whole Light RPAS market sector in Italy versus relevant institutions, primarily the Italian CAA ENAC. He was heavily involved with the creation of the association and now coordinates the ASSORPAS Board of Directors. He is a member of the UVS International Board of Directors. Since 2007, he is co-founder, president and chief technical officer of Aermatica, a leading company in RPAS civil market, the only one company in Italy that has obtained a Permit to fly for Remotely Piloted Aircraft in Non Segregated Airspace. He led the ANTEOS RPAS design and certification process in Aermatica. He began his professional experience in a little software embedded company, taking part in interesting short projects in different applicative sectors. He then decided to face a new professional challenge, beginning an experience in a start-up company becoming co-owner of it in 2003, taking part in projects in the aero-space sector as software engineer, then creating and leading an ASI (Italian Spatial Agency) financed project related to the development of autonomous and intelligent mobile robots. Later on, as Team Leader, he was involved in many international projects in the aerospace and telecommunication fields, and then as R&D Manager he guided the design and setup of the competence management department of the company at its sites in Italy.

Abstract: An introduction of ASSORPAS, the Italian Light RPAS association: its members and its activities. The Italian RPAS state-of-the-art, regulation just in force & market: a detailed snapshot of the regulations and outcome in Italy, considering the present RPAS Italian Market and Operations on the field situation. ASSORPAS’ national and international strategy for the RPAS future.
Session 2  National Community Views - II

06 16.00-16.15  Operations in The Netherlands: What needs Improving  Frits Müller [LtCol (rtd)], DARPAS, The Netherlands

Bio: Frits Müller graduated from the Netherlands Royal Military Academy initially as an Artillery Officer in 1981. Main jobs within the Army: Battery Commanding Officer, G3 Plans and Policy (NLD) Army corps, Technical Intelligence at MOD level. From 1998 until his 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 he received the certificate «Safety Management Systems» from the Southern Californian Safety Institute. In this last period before retirement, he also worked for the Military Aviation Authority and was a member of the planning group implementation Military Avation Requirements within the Netherlands forces. At this moment he has his own consultancy company (FMCoRPAS) and is a member of the DARPAS administration team.

Abstract: This presentation will indicate the quantity of members represented, the categories in which they fall, the association’s structure, and will give an overview of the activities deployed by DARPAS over the last 12 months. The presentation will highlight the current regulatory situation in the Netherlands and the related problems (flying under an exemption regulation), the educational & information disseminating activities undertaken for its members, potential end-users, the general public, politicians and the press. The creation of text/demo site(s) will also be covered.


Bio: Dan Richard Isdahl-Engh is a former insurance underwriter and serial entrepreneur in the insurance services sector with special risk. Now working with AnsuR Technologies on RPAS Visual Communication tools, he is also the test pilot of Microdrones MD4-200/1000 systems in AnsuR Birdeye and a very passionate RPAS pilot. Mr. Isdahl-Engh is the payload systems technician for SURMON witch is demonstrating the technical, regulatory and commercial feasibility of using remotely piloted aircraft in geophysical survey work and in oil pipeline-monitoring. In addition, Mr. Isdahl-Engh is now serving as the new CEO of UAS Norway to fulfill the need for a professionalized growing organisation. Leisure activities also include RPAS piloting and aerial simulations.

Abstract: Presentation of the number of members represented & quantified in the following categories: large industry or SMES/SMIs; and then for each of these indicating quantity of manufacturers (RPAS), manufacturers (RPAS sub-systems), operators, research orgs., academia. Presentation of the current national regulatory situation [types of operations authorised - (VLOS, BLOS & operational flight parameters), number of authorized operators, pilots & RPAS; number of RPAS manufacturers]. Description of non-standard/exceptional/test RPAS flights facilitated by the national CAA. The following will be listed: a) The current civil RPAS operations/applications in our country (and the relevant RPAS MTOM), b) The potential civil RPAS operations in our country. To be explained: 1) Are flights over urban areas allowed (on an exemption basis)? 2) CAA approval of remote pilot training (theoretical & practical) & qualification available in our country. 3) Overview of how many of our members that participate in national or EC-funded study projects. 4) Overview of third party liability insurance criteria in Norway. Description of the current situation regarding illegal RPAS operations in Norway, and UAS Norway’s stand on this and what is being done about it will be given.

08 16.30-16.45  Operations in Spain – What Needs Improving  Manuel Onate, AERPAS, Spain

Bio: Manuel Oñate (49) is a Civil Engineer graduated from the Universidad Politécnica of Madrid in Spain. He has over 14 years of experience in Private Equity, working for funds managed by first rate international investment firms such as TCR (New York) and N M Rothschild & Sons (London). Since 1999 he is the owner and CEO of Mandor Consultoría, an independent corporate finance and strategic consultant firm participating in several early stage or business development projects in various sectors, usually involving highly technological products. Since 2010 he is acting as Business Development Manager of Unmanned Solutions, a leading RPAS manufacturer located in Madrid. Currently he is acting as President of AERPAS, the Spanish national RPAS trade association.

Abstract: Spain does not yet have regulation in place for the operation of RPAS although the Spanish CAA, AESA, is about to finalize the first draft of the legislation. AERPAS has been collaborating with the regulatory process since May 2013 and is currently working with AESA in the definition of an interim procedure until the regulation is passed into law sometime during 2015.
09 16.45-17.00 The Current Status in UK & What Needs Improving
Angus Benson-Blair, ARPAS, UK

Bio: Angus Benson-Blair is ARPAS UK’s European Legislation representative. Angus has been flying remote air systems since 2010 and moved into the industry full time in early 2012 as the managing director of an operating company, BB Stratus Ltd having spent 18 years as an officer in the British Army.

Abstract: The UK has had regulation in place for RPAS since 2002. This regulation has been instrumental in allowing the birth of a new industry. However, the numbers of operators in the UK are not accelerating as quickly as in other regulated European countries. What regulation changes are required therefore, to increase the uptake in operators whilst maintaining public safety.

10 17.00-17.15 Operations in Denmark – What Needs Improving
Christian Berg, UAS Denmark, Denmark

Bio: Christian Berg is the managing director of Hans Christian Andersen Airport in Denmark and is leading the effort of turning it into a test center for the benefit of European RPAS development. He has a vast experience in business development, sales and marketing within aviation from Scandinavian Airlines, Swedavia and Air Greenland. His last position before joining Hans Christian Andersen Airport was Head of Sales & Board member of NATA (North Atlantic Tourism Association), Air Greenland. Christian has a Bachelors Degree in Economics from Copenhagen Business School, 1992.

Abstract: RPAS operations (VLOS) are generally legal in Denmark under the model aircraft regulation, also for commercial purposes. Exemptions are issued to an increasing number of professional operators that need further operational possibilities - flying closer to roads, inhabited areas etc. An intra governmental committee is working on advice for future legislation. The latest tendencies in legislation and related matters such as operator qualifications will be presented. The market has started taking off in Denmark and lately more and more public and national organizations have started using or exploring civil use of RPAS. A national technology review, ordered by the Danish Parliament, exploring the potential of RPAS applications was finalised in May 2014 and will be presented together with expectations for near future consequences, as will the most prominent examples of Danish research activities, e.g. within agriculture and arctic research. UAS Denmark (est. 2013) now counts 45 members - consisting of universities, operators, industry and users. The network has established working groups in the fields of: 1) regulation development; 2) agriculture application development. UAS Test Center Denmark situated at Hans Christian Andersen Airport received its official CAA approval in April 2013 and also opened a new business park with office space etc. The first tenants moved in during spring 2014. The development of the test center will be briefly presented.

17.15-17.35 Panel Discussion
17.35-19.00 Drinks in the Bar of the Royal Military Academy

DAY 2 - TUESDAY 24 JUNE 2014

Session 3 European RPAS Roadmap - I
11 08.45-09.00 The European RPAS Roadmap
Jean-Pierre Lentz, EC DG Enterprise & Industry
Koen de Vos, EC DG Mobility & Transport

Bio 1: 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.

Bio 2: Koen De Vos (Belgian, born March 21, 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 where
Abstract:

This presentation will provide an overview of the European Commission’s European RPAS Roadmap Initiative, which concerns the incremental integration of RPAS into the European air traffic system from 2016. It will outline the motivation of DG Enterprise & Industry & DG Mobility & Transport to commission it, present the roadmap and its objectives from an industry & regulatory perspective and the EC’s acceptance of it, explain the projected way forward and the relevant timelines.

Bio: Denis Koehl [MajGen, French Air Force (rtd)] joined the French Air Force in 1969 and graduated with honours in aeronautical engineering in 1974. Now Lieutenant Colonel of the reserve, he was flight test engineer in IAF, until 1994, involved in the multi-national Tornado programme. During this period he had flight experiences, including on military prototypes. Subsequently in ENAV, the major Italian Air Navigation Service Provider (ANSP), he was manager for R&D and for modernisation projects for Air Traffic Management (ATM), including new radar sites and modernisation of automation in Area Control Centres. Since 1991 he is professor at University ‘Parthenope’ in Naples. Member of the ICAO Special Committee on Future Air Navigation Systems (FANS) since 1987, he was rapporteur for development of the standards for data link (VDL Mode 2). Then he chaired the ADS Panel and the Mobile Communications Panel for about 5 years. He joined EUROCONTROL in 2000 as manager for Northern Europe, to harmonise the medium term ATM enhancement plans in the involved States. In 2005 he joined the European Commission, working on accident investigation, data collection and extension of the competences of the European Aviation Safety Agency (EASA) to ATM, ANS and aerodromes. Since 2007 he is rulemaking official in EASA responsible for a number of projects, spanning from airworthiness, to flight operations, preparation of the ICAO 37th Assembly in 2010, phasing out of halon for environmental reasons, communication services via satellite, electronic flight bag, etc. He was focal point in EASA for RPAS, so designated in different ICAO groups, including the Study Group on UAS, where he was elected co-chair in 2012. In JARUS he is rapporteur, since 2013 of WG2 developing requirements for organizations (JARUS-ORG), including RPAS manufacturers, operators and schools for remote pilots. His full time service in EASA terminates on 31 January 2015.

Abstract:

More than 10 years ago Australia and UK published the first rules in the world for civil RPAS operations. Both rules exempted small RPAS for airworthiness certification and formal pilot license, being instead ‘operations centric’ and so legally identifying the civil RPAS operator with its responsibilities and privileges. Today several EU member States and few others around the world have promulgated regulations focusing on civil operations of RPAS. The details of such rules are different and unfortunately not harmonized, which is detrimental to the free movement of goods, persons and services in the internal EU market and in the global one. However there is already a common denominator across these ‘operations centric’ regulations: (a) the responsibilities of the operator which include submitting a safety assessment, but also security management, insurance, as well as privacy and data protection; (b) the focus on VLOS operations below 500 ft AGL, which is currently the civil market segment experiencing an exponential growth; (c) the ‘proportionality’ principle which means ‘light touch’ rules for light RPAS (e.g. less than 25 kg), outside of populated areas; (d) some States, to alleviate the burden on the authority, delegate some tasks to qualified entities. The number of legally authorized civil RPAS operators, the majority of which is in Europe and Japan, is approaching 4,000 and still growing. The European Commission has announced the intention to extend the mandate of EASA to civil RPAS below 150 kg, which will lead to ‘common rules’, beneficial for uniform safety and for the internal market. EASA will however maintain the principle of ‘proportionality’ and add the principle of ‘proximity’ (i.e. certificates and approvals, where required, issued mainly at national level).

Bio: Filippo Tomasello was cadet in the Academy of the Italian Air Force (IAF) in 1969 and graduated with honours in aeronautical engineering in 1974. Now Lieutenant Colonel of the reserve. He was flight test engineer in IAF until 1994, involved in the multi-national Tornado programme. During this period he had flight experiences, including on military prototypes. Subsequently in ENAV, the major Italian Air Navigation Service Provider (ANSP), he was manager for R&D and for modernisation projects for Air Traffic Management (ATM), including new radar sites and modernisation of automation in Area Control Centres. Since 1991 he is professor at University ‘Parthenope’ in Naples. Member of the ICAO Special Committee on Future Air Navigation Systems (FANS) since 1987, he was rapporteur for development of the standards for data link (VDL Mode 2). Then he chaired the ADS Panel and the Mobile Communications Panel for about 5 years. He joined EUROCONTROL in 2000 as manager for Northern Europe, to harmonise the medium term ATM enhancement plans in the involved States. In 2005 he joined the European Commission, working on accident investigation, data collection and extension of the competences of the European Aviation Safety Agency (EASA) to ATM, ANS and aerodromes. Since 2007 he is rulemaking official in EASA responsible for a number of projects, spanning from airworthiness, to flight operations, preparation of the ICAO 37th Assembly in 2010, phasing out of halon for environmental reasons, communication services via satellite, electronic flight bag, etc. He was focal point in EASA for RPAS, so designated in different ICAO groups, including the Study Group on UAS, where he was elected co-chair in 2012. In JARUS he is rapporteur, since 2013 of WG2 developing requirements for organizations (JARUS-ORG), including RPAS manufacturers, operators and schools for remote pilots. His full time service in EASA terminates on 31 January 2015.

Abstract:

This presentation will provide an overview of the European Commission’s European RPAS Roadmap Initiative, which concerns the incremental integration of RPAS into the European air traffic system from 2016. It will outline the motivation of DG Enterprise & Industry & DG Mobility & Transport to commission it, present the roadmap and its objectives from an industry & regulatory perspective and the EC’s acceptance of it, explain the projected way forward and the relevant timelines.

Bio: Denis Koehl [MajGen, French Air Force (rtd)] joined the French Air Force as a 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 400 skydive operations.
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 recognised 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, in February 2013, the SESAR Joint Undertaking (SJU) launched a call for proposals in order to select and co-finance a series of projects offering SESAR integrated RPAS demonstration activities. As a result of the call, 09 out of 22 RPAS Demonstration Projects were selected, with a co-financing of EUR 4.2 million. At the end of 2013, the SJU took the initiative to launch a “Definition Phase of the RPAS insertion into the European Aviation System in the context of the Single European Sky initiative”, which relies on the implementation of the R&D activities described in the European RPAS roadmap, and the validation of its contents & overall costs. An essential result shall be a detailed RPAS R&D Programme complemented by the necessary validation activities to be performed in the context of the SESAR 2020 Programme. SESAR is working with other regions as well as ICAO. Under the Memorandum of Cooperation between the EU and the USA, SJU is also building areas of cooperation with the FAA for NextGen and is fully involving our service & supply industrial partners.

14 09.30-09.45
ATM Integration - The Eurocontrol Perspective
Mike Lissone, Eurocontrol

Bio: Mike Lissone is the UAS ATM Integration manager for EUROCONTROL. He has been the main contributor in the development of the RPAS R&D roadmap and is actively involved in the ICAO UASSG and other international initiatives developing standards and regulation to enable RPAS integration.

Abstract: EUROCONTROL has been pro-active in the integration of RPAS, leading to several studies and support to international entities like ICAO, EC, EASA and many others. Due to the unique civil-military composition it is unique placed to drive RPAS ATM integration from both sides. This presentation will provide an overview of EUROCONTROL work to date covering the support to ICAO, EASA, JARUS and EUROCAE. The presentation will go further to describe the workshops that have been held to support the member states. Special attention will be given to the impact to ATM regarding the operations below 500 feet. The presentation will show innovative results in where through the use of a web based application RPAS operators are able to «file + a flight notification that is to be approved by the CAA and subsequently receive appropriate aeronautical information.

15 09.45-10.00
JARUS - Views of the Future
Ron van de Leijgraaf, Ministry of Infrastructure & Environment, The Netherlands (on behalf of JARUS – Joint Authorities for Rulemaking on Unmanned Systems)

Bio: In 2007 Ron started to work on regulation for unmanned aircraft 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 UAS 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. This group will cooperate with the EUROCAE WG73 and WG93, by providing draft regulation to this group for consultation with industry and stakeholders. Ron is a member of EUROCAE Working Group 73 and chairman of EUROCAE Working Group 93. Furthermore, he is the member on behalf of The Netherlands of the ICAO UAS Study Group. 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: With the recent publication of the European Commission Communication with the call for tough standards for civil drones, the role that JARUS is playing in Europe will change. This change does not concern the planned work that the participants within JARUS have agreed to undertake. But it will change the status of the JARUS deliverables from proposals to discuss within other standardisation bodies to proposals for harmonised regulations to national aviation authorities for their consideration to adapt. The presentation will focus on these changes within JARUS and on the planned deliverables for the upcoming period.

10.00-10.15  Panel Discussion
10.15-11.00  Refreshment Break
Session 4 European RPAS Roadmap - II

16 11.00-11.15 The European Defence Agency RPAS Programme
Jean-Youri Marty, European Defence Agency

Bio: Jean-Youri Marty is deputy Director Capability, Armament and Technology at the European Defence Agency that he joined in September 2013. He was previously assistant Director at the department of industrial affairs in the French Armament Procurement Agency (DGA). From 2008 to 2011 he was a counselor for armament matters to the French Ambassador to the Political and Security Committee of the European Union. Prior to this position, he served in the French Ministry of Defence in technical and management positions on several armament programmes in the aeronautics and space fields. He graduated as a military engineer in 1993.

Abstract: The presentation will present the objective of the EDA RPAS Programme, the different on-going activities covered by this programme, the way they are structured and the expected added value for the EDA Member States.

17 11.15-11.30 A European RPAS industry - Quo Vadis
Aimo Bülte, Airbus Defence & Space, Germany
(on behalf of the Aerospace & Defence Industries Association of Europe)

Bio: Dr. Aimo Bülte is Head of Research & Technology at Airbus Defense & Space, Germany. Since 2010, Dr. Aimo Bülte is Vice President in Airbus Defense & Space and heads the Research & Technology division. In this position, he is responsible for the global technology portfolio, including the co-ordination of all self-funded R&D activities and respective intellectual properties rights and the management of all processes, methods & tools (PMT) for the development process. Dr. Aimo Bülte is currently chairman of the ASD Aircraft Sectorial Management Group and a member of the Advisory Board for the Research Airport Braunschweig. Prior to Airbus, he was an Associate Partner in McKinsey & Company, where his primary field of work was the Aerospace & Defense industry sector. He started his consulting work in 2001. He holds a PhD in Astroparticle Physics from the nuclear research centre CERN (Geneva, Switzerland). He was born in 1972 in Berlin, Germany.

Abstract: European aircraft today successfully serve a whole variety of airborne missions: passenger transport, cargo, airborne surveillance, forest fire protection, urban & maritime security, and also national defence. For a decade, the European aerospace industry has built various small-scale unmanned systems and launched several research demonstrator programmes, substantially self-funded, to keep in line with the global competition relative to this disruptive technology trend. The boarder here between Defence and Civil Aviation could not be better described than by the word «dual use». Joining forces to further develop and operationally master RPAS will be a must to stay on par with the global aviation and aerospace markets. If there was not one major challenge: Air Traffic Insertion. Regulations and safety requirements are the last hurdles to take. And they are huge. It requires all European stakeholders to co-operate. And when we say all, we truly mean all. If Europe is to find a solution for RPAS Air Traffic Insertion BVLOS by the end of 2018 - an extremely challenging deadline but also a required one from our point of view – this can only be achieved if all European partners eagerly contribute, while being orchestrated by a strong central governance. The European aerospace industry, which is speaking with one voice here via the ASD, strongly encourages the European Commission to continue along this path. Together with a powerful EASA, that we clearly see as the regulatory home base for the European skies, our goal to reach the 2018 milestone is achievable, and as such supports the continuation of a competitive and technologically advanced European industrial aerospace base. Industry is ready to fully and jointly contribute to the success of RPAS insertion. We believe that once the market is ignited, competition will ensure a technologically advanced product portfolio that will rival the global competition. Unmanned flying will be the future of aviation! Europe is to decide now, if it wants to keep an independent access to those technologies … and in doing so, it will be in a strong position to provide world class competitive air solutions to the global markets for the wealth of our European population.

18 11.30-11.45 Predator Aircraft Series Status Report: Military & Civilian Missions
Christopher C. Ames [RAdm U.S. Navy (Ret)], General Atomics Aeronautical Systems, Inc., USA

Bio: Christopher C. Ames [Rear Admiral U.S. Navy (Ret)] - Director, International Strategic Development General Atomics Aeronautical Systems, Inc. (GA-ASI). As Director of International Strategic Development for GA-ASI, Chris Ames is responsible for promoting opportunities for the company’s full line of remotely piloted aircraft systems, radars, and electro-optic and related mission systems in U.S and international markets. Prior to joining the GA-ASI in 2006, Mr. Ames served in the U.S. Navy, retiring as a Rear Admiral. During his naval career, he commanded Expeditionary Strike Group 5, Task Force 58, Amphibious Group 3, the Bonhomme Richard Amphibious Ready Group, Amphibious Squadron 3, and the USS TARAWA (LHA 1). He led multiple deployments to the Arabian Gulf supporting Operations Desert Strike, Enduring Freedom, Iraqi Freedom, & Unified Assistance. A naval aviator, Mr. Ames also commanded Patrol Squadron 16 & piloted the P-3C Orion...
The deployment of NATO forces in Afghanistan has increased interest in ISTAR assets, particularly long endurance Remotely Piloted Aircraft Systems (RPAS) capable of carrying simultaneously mixed payloads and able to support NATO ground forces 24/7. Less known are the many civil uses already being accomplished by RPAS. The General Atomics Aeronautical Systems, Inc (GA-ASI) fleet of RPAS has now accumulated more than 2,700,000 flight hours; approximately 90% of them in actual operations. The GA-ASI family of RPAS will be briefly described regarding performance, capabilities, and future developments. In 1994, GA-ASI first flew the Predator for the U.S. Department of Defense. Since then, the Predator series of RPAS has expanded to include the MQ-1B (USAF) and RQ-1B (Italian Air Force) Predator, Predator XP (UAE), MQ-1C Gray Eagle (US Army), Predator B/MQ-9 (USAF, Royal Air Force, Italian Air Force, French Air Force, NASA, and US Department of Homeland Security), and Predator C Avenger. Emphasis will be placed on Predator B military and civil (maritime, disaster relief, specialized payloads) missions. Predator B’s multi-mission capabilities and future upgrades will be discussed. Predator B was operationally deployed in 2007. In addition to its use by the USAF as MQ-9 Reaper, other US government departments use Predator B to perform border reconnaissance, maritime surveillance, as well as disaster relief missions. NASA also uses its Predator B to carry specialized payloads. Procurement of Predator B/MQ-9 is being actively pursued by additional NATO nations. GA-ASI involvement with German companies will also be addressed.

Taro Kuusiholma, Finnish Transport Safety Agency, CAA Finland, Finland

Bio: Taro Kuusiholma is Special Adviser for Finnish Transport Safety Agency (CAA Finland) Regulation and Development department. He is Master of Laws (LL.M.) and doctoral student at the University of Helsinki, Faculty of Law. He is Plenary and WG member of JARUS (Joint Authorities for Rulemaking on Unmanned Systems) representing Finland, adviser in EASA P&M TAG, member of EUROCAE WG93, adviser for Norway in ICAO UASSG and Chairman for Finnish CAA RPAS Integration Working Group.

Abstract: In January 2014 Finnish Transport Safety Agency constituted a task force in order to formulate national RPAS Roadmap by the end of May 2014. The main objective of the Roadmap is to achieve and facilitate safe, swift and broad integration of RPAS into national airspace. At the same time the aim is inter alias to boost progressive development of competitive RPAS related (service) industry, promote RPAS entrepreneurship and create possibilities for future new kinds of consortia between different actors capable of facing global competition. According to the new Finnish transport policy the strategy is made together with public and private sector stake holders. The task force consists of representatives from five ministries, institutes and authorities, industry, ATM service provider, operators, national associations, academia and invited individuals. So far for example, due to the nature of collaborative process, multiple perspectives and subjects which are top priority from recent and future companies’ and operators’ point of view, have been identified and included. The Roadmap identifies - taking into account different time frames - the Finnish strategic vision, focused targets and actions that should be tackled in the areas of regulatory framework, research, education, governmental and private resources, enhanced co-operation and innovation. The RPAS Roadmap is based on jointly discussed and agreed common views on Finnish strengths like information technology cluster, good civil and military co-operation as well as relatively empty airspace and it’s potential for national and e.g. European R&D activities. There is no such thing as national excellence per se, so the Roadmap must take broader, even global view into consideration. It is quintessential to build up European and global networks and information exchange, increase researcher mobility and participation in international institutions and venues. Furthermore the necessity of active participation and involvement in international regulative work has been recognized.

20 13.45-14.00 French RPAS Regulation: Enforcement & Evolution
Fabien Guillotin, French Civil Aviation Authority (DGAC), France

Bio: Fabien Guillotin is a civil aeronautical engineer who graduated from the French National Civil Aviation School (ENAC) in 2012. He has since worked as a programme manager in air operations for the air operations and airworthiness rulemaking unit of the French Civil Aviation Authority (DGAC). He is the French representative in the ICAO UAS Study Group.

Abstract: With the simultaneous publication of two decrees in April 2012, RPAS aerial work operations were addressed for the first time by DGAC France regulation. As of today, more than 500 operational authorizations representing more than 800 RPAS have
been issued by the French authority. RPAS aerial work operations are dealt with on a routine basis when conducted in accordance with 4 predefined scenarios (VLOS/BVLOS over populated/non-populated areas) or on a case-by-case basis when falling outside of the scope of these scenarios. This dual approach has supported a rapid growth of the RPAS market while still allowing experimentation that could prove useful for setting future safety standards. The French RPAS regulation will be revised for the first time by the end of 2014, based on the knowledge gathered from recent experience and requests coming from RPAS operators and manufacturers. While the global structure and philosophy of the regulation will not be changed, amendments to existing predefined scenarios, improvements towards more efficient administrative processes and clarifications of terms and concepts will be made.

21 14.00-14.15  
**The New Norwegian RPAS Regulation**  
Hege Aalstad, CAA Norway (Luftfartstilsynet), Norway

Bio: Hege Aalstad graduated with a law degree from the University of Bergen in 1998. After working some years for a government agency and in private banking, she joined the Civil Aviation Authority in 2005. In the CAA she has had different positions and areas of responsibility, all within the Legal Department. Her main responsibility today is overseeing the CAA regulatory work. In addition to this, she manages some of the regulatory drafting groups, among these the drafting of the new RPAS regulation. She is one of the CAA experts on regulatory and EU/EEA matters, and is the CAA co-ordinator on these matters towards the Ministry of Transport and Communications. Hege has been registrar for the Norwegian Civil Aircraft Register since 2006.

Abstract: The Norwegian CAA has for some time considered how to regulate RPAS in Norway. We have concluded that we need to take a new approach to regulating this area, taking into account lessons learnt from other European countries and the future EU-regulation. In many ways Norway is ideal for the new RPAS industry, since we have perhaps more free airspace than many other European countries. In order to get the necessary regulation in place, we want to focus on small and medium size operations, where the practical application for RPAS lies today. When drafting the regulation it has been important for the CAA that the provisions are not more strict than necessary, at the same time maintaining safety both on the ground and in the air. In the presentation the CAA will present the main points in the current draft regulation for RPAS.

14.15-14.30 Panel Discussion

**Session 6  Privacy & Data Protection**

22 14.30-14.45  
**French Data Protection Authority’s Overview of RPAS Related Matters & EU Art. 29 Working Group Update**  
Laurent Lim, CNIL - National Commission on Informatics & Liberty, France

Bio: Laurent Lim holds degrees in Labour and Private Law from Paris II-Assas University. He has been working with the CNIL since 2002 as legal officer in the legal affairs department on data protection issues in the fields of employment, police & justice. Now a senior legal officer with the CNIL’s European and international affairs department, he is involved with the Organization for Economic Co-operation and Development (OECD), the Council of Europe, and the Article 29 working group, where he currently chairs the international data transfers working subgroup.

Abstract: As the use of RPAS for civilian purposes is developing, the French Directorate General of Civil Aviation (DGAC) adopted regulations governing their use in April 2012. Furthermore, as the use of RPAS might involve personal data processing through the collection and analysis of data captured by embarked video cameras or sensors, data protection regulations need to be taken into account. The French data protection authority (CNIL), released an article on the topic “Drones, Innovations, Privacy and Individual Freedoms” in its December 2013 newsletter, and gave some views on the issue, which might lead to future recommendations in this area. The «Article 29 Working Group», the group of European national data protection authorities created by the European directive 95/46 on personal data protection, will also look into the matter. *The views expressed in the presentation reflect the personal opinion of the author and they do not commit CNIL in any way.*

23 14.45-15.00  
**What Other EU & Non-EU Countries Are Doing on Privacy & Data Protection**  
Gabriel Voisin, Bird & Bird, UK

Bio: Gabriel is a French qualified lawyer working in London. His practice frequently involves counselling clients on various aspects of technology law, including drone issues. He is part of an EU UAS Legal, Regulatory & Commercial Interest Group to discuss and develop the relevant legal, regulatory and commercial issues. He is a regular contributor to a range of privacy and regulatory publications including IAPP, Expertises (French publication) and BNA’s Privacy & Security Law Report. Gabriel is a member of the
Abstract: In Europe, data protection implications surface when RPAS start capturing what is called personal data. CCTV regulations might also interplay when domestic laws regard video capture by Drones as equivalent to CCTV. This session aims to look at the different implications of the above legal framework across Europe and explain what this means for RPAS manufacturers and operators. Looking ahead, we will also provide insights about what could be the future privacy legal environment for the RPAS industry.

15.00-15.10 Panel Discussion
15.10-16.00 Refreshment Break

Session 7  Qualified Entities

24  16.00-16.15 What is a Qualified Entity & How Does It Function
André Clot, EuroUSC, UK

Bio: Andre J. Clot is a director of EuroUSC™ which was granted its Qualified Entity Status in 2009 under the EASA rules laid down in EC 216/2008 Article 13 and Annex V. Andre has a solid background in safety critical systems and had his initial introduction to aviation whilst at university gaining 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 started EuroUSC™. He is a Chartered Engineer and holds a Masters in Business Administration. He is a member of the Royal Aeronautical Society and former Chairman of its Unmanned Aircraft Systems Specialist Group. In Europe he is Vice Chairman of EUROCAE WG93 on Light Remotely Piloted Aircraft Systems (RPAS) and is the accountable manager in EuroUSC™ on Flight School, Manufacturer and Operator accreditation for UAS operations on behalf of many European National Aviation Authorities. He is also a non-executive member of the UVS International Board of Directors.

Abstract: In 2009 EuroUSC™ was granted Europe’s first Qualified Entity (QE) Status under the EASA rules laid down in EC 216/2008 Article 13 and Annex V for Remotely Piloted Aircraft System Assessments. Key to the success of this approach is the independence of the organisations that are granted QE status and the support they can provide in the assessment of Operators, Manufacturers and Flight Schools for the purpose of ensuring public safety. This requires QEs to have integrity equivalent to that of a regulator and equivalent competences in the areas QEs underwrite. There are various functions and assessments that QEs can undertake including Airworthiness, Air Traffic Management, Medical Assessments, Language Proficiency, Operations, Manufacturing and Flight Crew Licensing. EuroUSC™ both internally and through its Associates covers all these areas of activity utilising the benefits of a scheme operated over the last 6 years known as the Light UAS Scheme™ and which now operates in over 10 countries. The key to the success of a QE is to provide its customers with a solid and sustainable platform that can be accepted by all National Aviation Authorities. The aim is to maintain a harmonised approach in all the countries where it operates so companies and organisations can make the best use of their investment. One area where this is beginning to be extremely relevant is in the area of improving safety. For this reason EuroUSC™ carries out its own incident investigations and maintains one of the most up to date and relevant safety databases covering all the countries within which it operates and liaises directly with regulators and the insurance industry on best practice.

25  16.15-16.30 Regulatory Framework and RPAS Market Perspective in Italy
Damiano Taurino, DeepBlue, Italy

Bio: Damiano Taurino holds a Master Degree in Computer Science from the University of Florence. His research interests include Computer Vision, Network, Systems and Data Security and Autonomous Vehicles. He has been working in Deep Blue since 2009, being involved as Information Technology expert in National and EU funded projects concerning RPAS. As responsible for the RPAS division of DeepBlue, he was actively involved in the ICONUS study launched by the SESAR Joint-Undertaking in 2012 for the definition of the operational concept for the introduction of RPAS in non-segregated airspace. Currently he is responsible for the validation activities of the RAID (RPAS ATM Integration Demonstration) project funded by the SESAR Joint-Undertaking.

Abstract: The recently published RPAS Regulation by ENAC (Italian Civil Aviation Authority) is a key enabler for the creation of a solid and competitive light RPAS market in Italy. The presentation aims at illustrating the different requirements in terms of certification, airworthiness, volumes and types of operations for two categories of vehicles: RPA with MTOM \( \geq 25 \) kg and with MTOM \( < 25 \) kg. The presentation will focus then on the potential benefits that the services of a Qualified Entity may provide to both the CAA and RPAS operators within such a regulatory framework.
Qualified Entities Contribute To RPAS Insertion
Christian Janke, European Aviation Security Center e.V., Germany

Bio: Christian Janke has been in military service for 14 years as a helicopter pilot and instructor for crew training in non-technical skills, Human Factors & Crew Resource Management. He holds a diploma in political science and is experienced in Public Affairs and Media Relations. His training and consulting background is Safety Management und Risk Assessment, furthermore he is an accredited trainer for Aviation Security/Air Cargo Security and Auditor for quality management (DIN EN ISO 9001). Christian Janke is currently a research engineer at the European Aviation Security Center (EASC) in Germany. His R&D focus is on technology impact assessment in context of legal frameworks, stakeholders and public opinion.

Abstract: EASC perspective on conformity evaluation and compliance monitoring - Sovereign acts conducted by qualified entities (entrusted bodies). Tasks of QE might be certification, licensing of personnel and operators, as well as documentation, flight planning and incident reporting for overall domestic civil RPAS use.

QEs Contribute to RPAS Insertion (in the Absence of Regulation)
Ron van de Leijgraaf, Ministry of Infrastructure & The Environment, The Netherlands [on behalf of Inspectie Leefomgeving & Transport (CA), The Netherlands]

Bio: In 2007 Ron started to work on regulation for unmanned aircraft 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 UAS 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. This group will cooperate with the EUROCAE WG73 and WG93, by providing draft regulation to this group for consultation with industry and stakeholders. Ron is a member of EUROCAE Working Group 73 and chairman of EUROCAE Working Group 93. Furthermore, he is the member on behalf of The Netherlands of the ICAO UAS Study Group. 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: CAA-NL checks the quality of RPAS, RPAS pilots and RPS operators before giving them an exemption for not having a CofA, license & ROC. CAA-NL is only in a position to judge the applicant, and not in a position to advise. It appears essential for almost all applicants that they are advised, trained & tested by a (qualified) entity, specialized in RPAS. CAA-NL agreed with EuroUSC and NLR on what the minimum safety level of an applicant must be. They advise CAA-NL on the status of an RPAS pilot, the operational manual of the RPAS operator, and the results of the design & construction assessment of the RPAS. CAA-NL remains responsible for the decision to grant an exemption. So despite the fact that a QE formally does not exist for national permits, they play an important role in the safety development of the light RPAS community.

Responsibility, Liability & Insurance

Insurance for Growth
Jean Fournier, Global Aerospace, France (on behalf of SG01 RLI)

Bio: 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, 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 EADS) 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 1 - 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 and claims expertise from
Abstract: Insurance for RPAS can be seen, as in many other activities, as a burden and a cost, or as a support for growth. Lack of harmonization between local regulation, lack of information on accidents, lack of structure for marginal situations do not only make life difficult for insurers: it is also a set of factors that are likely to slow down the growth of a promising sector. All interested parties agree that it is of utmost importance to make RPAS operations as safe as possible. Regulations can set the scene to achieve this goal, but if the regulators want to cover all cases, regulations become soon too heavy and act as a deterrent to the entities that want to develop economic activities. Insurance can help! Just set minimum requirements by means of European regulations, apply them to manufacturers and operators of RPAS, and let the insurance market do its job. Insurers will adapt must faster than regulators to follow a sector what evolves very quickly. Some measures will definitely facilitate the insurers’ life and make insurance more competitive as a consequence:
- Have a common regulation applicable to RPAS across all EU countries;
- Open the accident database to identify the risk factors and to improve safety;
- Set rules to indemnify third parties;
- Define the course of action to be followed should the entity responsible for damages not be identified, insured and/or solvent.

The presentation will address these points and propose precise actions that will facilitate RPAS insurance, and make RPAS operations safer.

Bio: Simon Phippard is Of Counsel in Bird & Bird’s Dispute Resolution Group, based in London. His practice has concentrated on the global aerospace industry for over twenty years. He has advised on contentious and non-contentious insurance and regulatory issues for airlines, airports, ATC operators, general aviation businesses, products manufacturers and aircraft and engine MROs. Simon focuses on contentious and regulatory business for the aerospace sector, bringing worldwide experience of litigation and arbitration over commercial and insurance disputes in the industry and arising from air accidents. In addition to 15 years in private practice in London, Amsterdam and New York, he has spent seven years with a major global power systems supplier where he acquired specialised knowledge in gas turbine systems and related supply contracts. This covered not only aerospace applications, but also power and propulsion systems in the marine, energy and oil and gas sectors. He has had significant international dealings: outside Europe much of his work has concentrated on the Middle East and South Asia. He has spoken at numerous conferences, is a lecturer on the Donau-Universitat Krems Aviation MBA programme and a former Honorary Legal Adviser to the United Kingdom Flight Safety Committee. In addition to his law degree, he holds a Certificate in Air and Space Law from University College London, and British and Australian pilot’s licences. He is a Fellow of the Royal Aeronautical Society.

Abstract: RPAS are subject to emerging and varied regulation on system integrity, operator qualification and access to airspace. Within Europe, as with manned aircraft, liability for surface damage or to third parties is subject to national law. Is there a case for standardisation at European or international level? Do existing requirements to hold liability insurance address the issue? Should third party liability be treated differently from liability within the supply chain? Is there anything about RPAS operations that requires different treatment from manned aircraft?

Bio: Robert James graduated from the University of Southampton in June 2008 and began working for Kiln in October of the same year. He joined Kiln’s largest Lloyds composite syndicate, syndicate 510, and specialised in the aviation class. Upon returning from a six month stint in Singapore with Kiln in 2011, his focus was on growing Kiln’s exposure to the RPAS industry. Since then, Kiln have joined numerous RPAS trade associations, have presented at Lloyds innovation marketing events across Europe and have been a key advocate for the importance of adequate insurance coverage for operators and manufacturers across the EU and rest of the world.

Abstract: Focus upon why adequate and specialist aviation insurance coverage is absolutely essential for all stakeholders involved in the operation and manufacture of all things RPAS. Topics covered will include the perils involved for operators/manufacturers and the potential liability such individuals/companies could potentially and unwittingly be exposing themselves to. The presentation will also focus on what the insurance industry could benefit from in terms of engaging with those involved in the RPAS arena and how
such collaboration could in the long run generate tailored coverage which addresses the concerns of the industry while enabling insurance premiums to remain at competitive levels for the buyer.

09.45-10.00  Panel Discussion
10.00-11.00  Refreshment Break

Session 9  Operations & Operation Manuals

31  11.00-11.15  Your Flight, Our Concern!
Jürgen Verstaen, FlightPlus, Belgium

Bio: Jürgen Verstaen began his military career in 2000 at the Royal School for NCO's in Campus Saffraanberg. He became an air traffic controller (ATC) and gained experience in the domain of Air Traffic Management (ATM). During his military career he expanded his knowledge and subsequently received several endorsements and certificates in ATM. In 2004 he became an area traffic controller and Traffic Director at ATCC "Belga Radar" (national military radar center) and he specializes in aviation law and assessments in the field of air traffic control. Following his drive to learn more of the aviation industry, he founded in 2012, together with his colleague Andres Van Swalm, Flight Plus. They consult companies in the manned and unmanned aviation sector. Flight Plus also specializes in obtaining permits to fly with Remote Piloted Aircraft Systems (RPAS) worldwide. In the same year, there company co-founded BeUAS, the Belgian Association for Unmanned Aircraft Systems. He was elected Vice-President (2012-2014) and he advises the association and regulators through working groups, in order to push forward the unmanned sector in Belgium. Beginning 2013, he was elected to the Board of Directors of UVS International and the International RPAS Coordination Council. Today, Flight Plus mainly works on obtaining flight permissions for Belgian RPAS operators and consulting them how to integrate their system into the existing airspace. Flight Plus became part of the LUMEN project (ESAVITO) as a consultant and scenario builder. For the last few years, their company worked together with the Belgian CAA and BeUAS to create the new Belgian Royal Decree for RPAS. Flight Plus is now entering a new phase and focuses on innovative solutions, Operator Manuals, Building a scenario for a tender can be very important to convince the creator of that specific tender. One of the larger projects in which Flight Plus is involved, is LUMEN - Light UAS in non-segregated airspace for Maritime and Environmental surveillance, under the flag of ESA and VITO. Since 2013, Flight Plus also focuses on innovative solutions for the RPAS sector. By doing this, we try to bring the RPAS sector to a higher level of safety and understanding the world of unmanned aviation.

Abstract: Flight Plus was founded in 2012 to support companies in acquiring flight permits for RPAS. During those two years, we fine tuned the request procedure for flight permits in Belgium. This helped us to go beyond the national borders and to start working worldwide. Flight Plus goes even further in helping RPAS operators. Building a scenario for a tender can be very important to convince the creator of that specific tender. One of the larger projects in which Flight Plus is involved, is LUMEN - Light UAS in non-segregated airspace for Maritime and Environmental surveillance, under the flag of ESA and VITO. Since 2013, Flight Plus also focuses on innovative solutions for the RPAS sector. By doing this, we try to bring the RPAS sector to a higher level of safety and understanding the world of unmanned aviation.

32  11.15-11.30  Commercial RPAS Operations - Operation Manuals, Pilot Certification & Post Graduate Training
Mark Sickling, Cyberhawk, UK

Bio: Mark is a former Royal Air Force Pilot with over 26 years experience and 4500 flying hours on Fast Jet and Unmanned Aircraft including over 1500 flying hours in combat. Mark maintains a keen interest in all aspects of aviation and maintains both Private and Commercial Pilots licenses. He has extensive experience with Unmanned Aircraft of all sizes ranging from the armed MQ-9 Reaper to micro rotary systems. Mark is a senior Flight Instructor and Examiner. Acting as the Chief Pilot at Cyberhawk Innovations, he currently leads Cyberhawk’s team of pilots and flight observers. Mark has an MSc in Aerospace Systems and a keen interest in the technical development of RPAS as well as the operational aspects and application of unmanned technology.

Abstract: The development and proliferation of small RPAS continues relentlessly. A few thousand euros can allow anyone to join the RPAS revolution. However, the simple acquisition of RPAS is only a very small fraction of the production of a viable, reliable and safe UAS operation. The UK introduced a ‘light-touch’ regulatory framework for small RPAS operations at an early stage and this has lead to an extremely active small RPAS industry. Currently, there are more than 300 operators holding a ‘Permission for Aerial Work’ issued by the UK CAA. Most of these approved operators conform to the expected profile of one-man band or small-scale operators with one or two systems operated for aerial photography or filming missions. However, some operators have leveraged the capabilities of RPAS into novel business areas and seen great success leading to expansion into operations rivaling some small airlines in scale. These types of operations have outgrown the ‘light-touch’ approach. The guidance provided for a ‘light’ Operations Manual required by the UK CAA falls short of the requirements for effective risk Management in larger, more complex operations. Additionally, the level of training, experience and qualification required for a pilot flying elementary aerial photography is vastly different to one flying close visual inspection in a high risk, industrial environment. Cyberhawk work extensively with the Oil, Gas and Energy sectors to provide aerial inspection of high value assets such as flare stacks, chimneys, refinery plant and structures. The utilization of high resolution stills cameras, HD video, thermal video and radiometric infra-red imaging all capable of being carried by the Cyberhawk RPV coupled with highly experienced, well trained pilots and industry expert plant inspectors brings an unequaled inspection capability to our clients. Operating day-in day-out, Cyberhawk RPV have
Bio: Nick is both a founding partner and the current Training and Legislation Director at Sky-Futures. Nick studied Business with Languages (French & Italian) at the University of Manchester. After leaving University, Nick followed his passion for aviation and trained to become a commercial airline pilot. Directly after flight training Nick was recruited by British Airways and flew the Airbus A330 series for 6 years before moving to long-haul on the Boeing 747 the type he currently flies. Nick is passionate about the future for unmanned technology in commercial aviation. His manned experience and expertise has been instrumental in establishing a professional and safety focused commercial operation in the civil unmanned sector. Day to day at Sky-Futures, Nick is responsible for RPAS operator training, operations documentation and liaison with aviation authorities globally.

Abstract: Nick will present a history of the evolution of the Sky-Futures Operation Manual (OM) and highlight how important it is to write an original document that is ‘fit for purpose’. The OM should be the ‘blueprint’ for a company’s operations as well as showing proof of regulatory compliance and any other certifications a company may require for the clients and industries they service. Emphasis will be made that the OM should contain the ‘how to’ of an operation rather than repeat regulation verbatim. The presentation will highlight the JARUS OM template used for a significant re-write of Sky-Futures’ own manual. This will show how to best structure and organise an OM in a template that regulators will recognise and understand. Particular reference will be paid to general procedures, technical/manufacturer manual, operations specifics, in house training and servicing/maintenance. Nick will also point out the importance of a quality management system that interfaces with the OM to ensure a regular cycle of action, review and updates.

11.45-12.00 Panel Discussion
12.00-13.30 Lunch in the Cafeteria of the Royal Military Academy

Session 10  

34 13.30-13.45 Robotic Aircraft for Public Safety: DHS Small UAS Evaluation
Kirk Kloeppel, Modern Technology Solutions, Inc., USA

Bio: Kirk Kloeppel is a Programme Manager for Modern Technology Solutions, Incorporated supporting the Department of Homeland Security’s Science and Technology Directorate and the Department of the Navy. Based in the Washington DC area, he is responsible for providing technical, acquisition, and test expertise for unmanned aircraft systems, sensor, and electronic warfare and radar cross section development and testing. For the past four years, he has participated in small UAS testing, including the Robotic Aircraft for Public Safety and a demonstration for the Los Angeles County Sheriff’s and Fire Departments, operational testing of the Guardian UAS for Customs and Border Patrol, wide-area surveillance testing along the southwest border, and development of common range requirements for the next-generation electronic warfare test simulators. Mr. Kloeppel retired from the US Air Force in 2009 after a 25 year acquisition and engineering career. He has experience in the acquisition and testing of several cruise missiles including qualifying the Conventional Air-launched Cruise Missile prior to its use during Operation Desert Storm. While on the Air Staff, he oversaw the advancement of the Predator and Global Hawk UAS and the weaponization of the Predator platform. He led the Air Force Research Laboratory’s Directed Energy and Munitions Directorates during his last five years in service. He received his undergraduate degree from Texas A&M University in Aerospace Engineering in 1984 and a graduate degree in Aerospace Engineering from the University of Dayton. He is a graduate of Air Command and Staff College and Air War College receiving a graduate degree in Strategic Studies. He published a paper concerning the feasibility of micro-UAS in an intelligence, surveillance, and reconnaissance role. He is active in several aerospace and defense societies and is a member of Texas A&M’s Aerospace Engineering Advisory Board.

Abstract: This presentation will provide an update on the unique insights and operational lessons learned through the real time testing of small UAS (sUAS) on behalf of the Department of Homeland Security (DHS) as part of the Robotic Aircraft for Public Safety Programme. Established in 2012, this programme’s purpose is to advance the use of sUAS by public operators in a safe & efficient manner. Testing conducted included the analysis of potential hazards associated with operations in real time, scenario development & post testing hazard analysis. Information and key points of consideration in development of the system safety programme, test planning & evaluation criteria, test site location, and test execution will be provided to enable advancement of best practices in the unmanned aviation industry, with specific gains in the Public Use arena. Current programme status will be provided, as well as lessons learned such as programme reliability, ability to operate further than 1,500 feet from ground control stations, and lost link procedures for operations over congested or populated areas.
Bio:
George Eftychidis has a degree in Forestry and Environmental Management from the University of Thessaloniki, Greece. He is specialized in designing and developing ICT applications for risk analysis and disaster management. George Eftychidis has worked for more than twenty years in the private ICT sector and in 2008 he joined the Center for Security Studies of the Hellenic Ministry of Public Order and Citizen Protection. He has participated, managed and coordinated several national & European R&D projects in the field of risk analysis, environmental & disaster management, & homeland security. He currently manages KEMEA R&D projects covering emergency management, critical infrastructure protection & border control.

Abstract:
After the earthquakes in L’Aquila, Haiti and Japan, the European Commission confirmed that a large discrepancy exists between (robotic) technology which is developed in the laboratory and the use of such technology on the terrain for Search and Rescue (SAR) operations and crisis management. Thus, the European Commission’s Directorate-General for Enterprise and Industry decided to fund ICARUS, a Research project (global budget: 17.5M€) which aims to develop robotic tools, which can assist “human” crisis intervention teams. The introduction of unmanned Search and Rescue devices can offer a valuable tool to save human lives and to speed up the SAR process. ICARUS concentrates on the development of unmanned SAR technologies for detecting, locating and rescuing humans. There is a vast literature on research efforts towards the development of unmanned Search and Rescue tools. However this research effort stands in contrast to the practical reality in the field, where unmanned search and rescue tools have great difficulty finding their way to the end-users. The ICARUS project addresses these issues, aiming to bridge the gap between the Research community and end-users, by developing a toolbox of integrated components for unmanned Search and Rescue. This presentation will focus on the RPAS developments within ICARUS.

Bio:
Geert De Cubber was born on February 13, 1979 in Halle, Belgium. In 2001, he received the degree of Master in Engineering at the Vrije Universiteit Brussel (VUB), with as specialization Electro-Mechanical Engineering. He then obtained a PhD. for his research in the field of 3-dimensional reconstruction of natural scenes perceived by mobile robots. This PhD. and the associated research project were part of a joined research effort between the Vrije Universiteit Brussel and the Belgian Royal Military Academy (RMA). Within the group of Unmanned Vehicle Centre, Geert’s main task is to apply computer vision techniques to mobile robots, rendering these robots able to perceive, analyze, and – to some degree – understand their environment. More specifically, three-dimensional reconstruction and cognitive vision approaches are investigated with the aim to port the capabilities of the human eyesight to intelligent robots.

Abstract:
After the earthquakes in L’Aquila, Haiti and Japan, the European Commission confirmed that a large discrepancy exists between (robotic) technology which is developed in the laboratory and the use of such technology on the terrain for Search and Rescue (SAR) operations and crisis management. Thus, the European Commission’s Directorate-General for Enterprise and Industry decided to fund ICARUS, a Research project (global budget: 17.5M€) which aims to develop robotic tools, which can assist “human” crisis intervention teams. The introduction of unmanned Search and Rescue devices can offer a valuable tool to save human lives and to speed up the SAR process. ICARUS concentrates on the development of unmanned SAR technologies for detecting, locating and rescuing humans. There is a vast literature on research efforts towards the development of unmanned Search and Rescue tools. However this research effort stands in contrast to the practical reality in the field, where unmanned search and rescue tools have great difficulty finding their way to the end-users. The ICARUS project addresses these issues, aiming to bridge the gap between the Research community and end-users, by developing a toolbox of integrated components for unmanned Search and Rescue. This presentation will focus on the RPAS developments within ICARUS.

Bio:
Dr. Harald Skinnemoen is CEO of AnsuR Technologies and AnsuR BirdEye. He graduated 1985 (MSc) and 1994 (PhD) from the Norwegian University of Science and Technology. His background is in design and implementation of digital communications systems supporting voice, video and data, for satellite and terrestrial communications. He is previous Chief Scientist from Nera SatCom, a player heavily involved with Inmarsat. The company eventually ended with Cobham. However, in 2005, he founded AnsuR Technologies, with the aim of working with applications for mission-critical users needed robustness and reliability, but often working with very low bandwidth for communications of visual data that in turn could impact critical decisions for human or financial elements. In 2006, he invented and delivered the first version of a novel visual communications system dedicated...
to mission-critical operations. In 2007 was presented to UN, and since then AnsuR and UN have been collaborating. In 2010 he started BirdEye as a subsidiary of AnsuR Technologies, a company dedicated to RPAS, and purchased Scandicraft, a Norwegian RPAS company, and set up a partner agreement with a RPAS manufacturer. He initiated and led FP7 project GEO-PICTURES where RPAS also were used for search and rescue. Dr. Skinnemoen is a frequent speaker at conferences and events, reviewer and evaluator for the EU, and has written a number of technical papers.

Abstract:
Mission-critical operations include security, safety, crisis and disaster response and users include first responders, police, UN, civil protection and more. A common factor is the need to make the right decisions rapidly, and often on the basis of sufficient situational awareness and field observations. Communications bandwidth may be poor and unstable, and sometimes satellites are the only network working. This talk will start with presenting ASIGN from AnsuR as the mission-critical communications concept, where the decision-makers can obtain rapid access to high detailed visual content even using little network capacity, using an interactive, cognitive driven approach. Next we target the challenge of sending live visual data from RPAS, both in LOS and BLOS condition, and show the solutions that have need developed for this purpose, and show how the solution scales from simple smart phone implementations to larger RPAS with multiple cameras, ATC radio and satellite communications equipment.

Dr. Patrick Philippe Meier is an internationally recognized thought-leader on the application of new technologies for humanitarian response. He has consulted extensively for numerous international organizations including the EC, OSCE, OECD, UN and World Bank. Currently, Dr. Meier serves as Director of Humanitarian Innovation at the Qatar Computing Research Institute (QCRI) where he develops & prototypes Next Generation Humanitarian Technologies in partnership with international humanitarian organizations. Prior to QCRI, Dr. Meier co-founded & co-directed Harvard University’s Programme on Crisis Mapping, and served as Director of Crisis Mapping at Ushahidi - one of the most innovative companies in the world. He is also the founder of the Humanitarian UAV Network: CrisisMappers - the premier global forum on humanitarian technology, and the Digital Humanitarian Network (DHN), which he co-founded with the UN. Dr. Meier holds a PhD from The Fletcher School of Law & Diplomacy, a Pre-Doctoral Fellowship from Stanford, and a Masters from Columbia University. In addition, he was a Research Fellow at the Peace Research Institute, Oslo (PRIO). He is also a Humanitarian Innovations Fellow at UNICEF & a Fellow at the Rockefeller Foundation. Dr. Meier is an accomplished speaker, having given talks at the White House, UN, World Bank, Google, Harvard & Stanford, and at major international conferences. Dr. Meier’s pioneering work has been widely featured in the international press. In 2010, Dr. Meier was publicly praised by President Bill Clinton for his pioneering digital humanitarian efforts. His influential blog iRevolution has received over 1.3 million hits and he is the author of the forthcoming book “Digital Humanitarian: How Big Data Changes Disaster Response” (2015).

Bio:

Small RPAS are already being used to support humanitarian relief operations and post-disaster recovery efforts around the world. In early 2010, an RPAS was used to carry out a rapid damage assessment of Port-au-Prince just days after a devastating earthquake struck the Haitian capital. In the years that followed, small RPAS have also enabled humanitarian organizations in Haiti to support census surveys and to identify areas of standing water where mosquitoes could thrive easily, for example. Following Typhoon Hayian in the Philippines (November 2013), several groups used small RPAS to carry out Search and Rescue operations and rapid assessments of infrastructure damage. These systems were also used to assess the extent of population displacement and to identify usable roads for the supply of humanitarian aid. In the post-disaster recovery phase (January-April 2014), small RPAS were used in partnership with humanitarian organizations to assess the reconstruction efforts, survey areas for the relocation of displaced populations and to carry out risk assessments in advance of the next Typhoon season. In sum, small RPAS are already supporting humanitarian efforts by augmenting situational awareness. This stands to improve humanitarian aid while saving donors funding by rendering relief operations more targeted and efficient. But as more humanitarian organizations turn to small RPAS for rapid disaster response and post-disaster recovery operations, the need for coordination, data sharing protocols and safety standards will become absolutely critical. In addition, as small RPAS become increasingly accessible to the general public, we can expect a surge in user-generated aerial imagery. While this new source of imagery will in some cases significantly augment the situational awareness of humanitarian organizations, the safety and privacy challenges that this poses are serious. Another challenge will be to make sense of the resulting overflow of non-comparable aerial imagery generated during disasters. While regulation is of course necessary, the right balance between regulation and innovation must be struck in order to facilitate the current use of small RPAS in humanitarian contexts. Over-regulation must not run counter to the Humanitarian Imperative. These challenges explain why the Humanitarian UAV Network exists. This rapidly growing network represents a forward-thinking community of humanitarian practitioners, senior policymakers, technology companies and RPAS experts.
Abstract: Delair-Tech RPAS are used to monitor the power line network in France. Their ability to fly beyond line of sight fully automatically and to map 100 km in one flight is key for the efficiency of this new technology for the industry. 2 main applications are done using Delair-Tech RPAS: vegetation monitoring and pylon inspection. By processing the images and analyzing the proximity of the vegetation to the power line, Delair-Tech RPAS are able to automatically detect where the vegetation needs to be cut around the power line network. The technology is about to be deployed over a large part of the network since the cost efficiency and the feasibility have been proven.

Bio: After graduating from the Polytechnique School in France, Benjamin Benharrosh worked for five years in the field of infrastructure construction and operation both for the governmental and the private sectors. He decided to create Delair-Tech in March 2011 with 3 other partners in order to provide a solution for industrial infrastructure monitoring and surveillance using RPAS. Since September 2012, the DT-18 is the only RPAS certified for Beyond Line of Sight (BLOS) flights in French civil airspace, and Delair-Tech is the major RPAS provider for industrial infrastructure monitoring and surveillance in France. Benjamin is also co-founder & member of the Board of the French National Federation of Civilian RPAS (FPDC).

Abstract: The HERO RPAS is a 150 Kg helicopter-based Light RPAS which represents the VTOL RPAS state-of-the-art for Sistemi Dinamici (SD). HERO has been fully designed and manufactured by SD under both civil and military user-cases requirements and it has also been developed and tested in conformity of the ENAC (IT-CAA) L-RPAS regulation. This allows the manufacturer to dispose an RPAS fully compliant with customer and airworthiness requirements, enabling the operators to cope with the different applications scenario with a flying system completely autonomous for preprogrammed mission from take-off to landing and incorporates multiple safety features which help to ensure a successful mission. The aim of this presentation is to show in which regulatory scenario HERO has been developed and which certification approach has been followed under the IT-CAA (ENAC) investigation process. Besides it will be presented the roadmap and the main objectives of a demonstrative case in which HERO will be operated by SD into a non-segregated airspace working into very close coordination with the ATC service provider with the objective to prove the safe RPAS integration within the air-traffic controlled airspace during different flight phases. This application will be conducted by SD with the HERO RPAS in the framework of the INSuRESESAR project.
Abstract: Precision farming is a new agricultural management style that optimises resources by doing the right thing at the right place in the right time. Satellite navigation is a major enabler for arable farming in Europe and with GNSS adoption rates above 50% in several EU countries, front runner farmers are looking ahead for the next innovation. Optimising inputs is a major concern for agriculture: Doing more with less; sustainable intensification. Not only as a means to cut costs but also a way to improve environmental stewardship. Timely crop status information is important to make decisions on where and when to apply irrigation, fertilisation or other crop care measures. The FP7 project FieldCopter developed applications for RPAs to provide farmers, agronomists and water managers with the right information to make the right crop care decisions. FieldCopter studied and developed an operational service for RPA based information products that are relevant to the agricultural sector. Although the project yielded relevant concepts in GNSS based autopilot and safety system and a smart business model, the role-out depends largely on regulations and their harmonisation across borders. In his presentation, Tamme will indicate how RPAs are indispensible for precision farming, providing farmers, agronomists and water managers with the right information to make the right crop care decisions. He will discuss how the service fills in the user requirements from farmers and other stakeholders. He will present results from the project and discuss the role-out path towards the next innovation. Precision farming is a critical tool also for RPAs guidance and airspace use.
Max Ruffo, Terabee, France

Bio: Max Ruffo holds a PhD in New Technology Implementation, which knowledge has been deeply used in the Aerospace sector while heading an R&D department for Boeing and working in projects with Rolls-Royce, BAE Systems, Messier-Dowty-Bugatti among others. He has been a world renowned name in the 3D-Printing Industry while in its infancy, pioneering some of the research fields and formulating strategies for the wider spread of the technology. In 2011, Max had the vision of the drone industry being the next big wave, and jumped on it creating the start-up Terabee, which first studied the market by acting as service provider to further become a technology company.

Abstract: Terabee started and got experience in field operations (as a service provider) using drones for mapping, videos, photos, 3D reconstructions, virtual tours, etc... while studying multi and hyperspectral imaging for agriculture and industrial inspections (ie power lines, highways, solar farms) pulling together consortium of experts in the cross-fields. In the last year Terabee took the opportunity of developing new technology in collaboration with CERN, aiming at smart indoor inspection systems able to safely and quickly navigate indoor environments of any kind. In 2013, we failed to develop a system in collaboration with a military technology company who stated that it was an easy task to reach – we failed. We then studied the market for sensors and understood why we failed – there is no existing technology good and fast enough. Based on the complex double task of anti-collision and self-localisation, Terabee started developing new ranging sensors based on time of flight technology, which will overtake the current commercial solution such as ultrasound, laser, stereo-vision and similar. This new technology allows precise range-finding at high update rates in only 20 g. Terabee is currently going to market with a flexible range-finding solution (perfect for anti-collision systems) and is aiming at launching to market fast 3D cameras within one year, thanks to our collaboration with CERN.

17.15-17.35 Panel Discussion
17.35-19.00 Drinks in the Bar of the Royal Military Academy

DAY 4 – THURSDAY 26 JUNE 2014

Session 12 Flight Crew Training & Qualification

Remote Pilot Training & European Corporation: A Necessity
Thierry Renavand, Drones-Center, France

Bio: Thierry Renavand has been a photographer for more than 20 years. 5 years ago he decided to become a RPA pilot to be able to propose aerial photography services to his clients. When the regulations arrived in 2012 in France, he passed the required exams in order to be able to continue his aerial photography activity. He now works with 3 multicopters (2 RPA with MTOM < 2 kg and 1 RPA with MTOM > 2 kg & < 25 kg) fully authorized by the French DGAC. In 2013, Arnaud Bazin, the founder of Drone Center asked him to assist him to create the first RPAS training center around Paris.

Abstract: Drones-Center is a professional RPAS pilot training center. We are conscious that such training programmes - and centers - need to be professionalised, regulated and standardised across Europe to ensure that the programmes are compliant with each sovereign State and European regulations. Review of the current state of affairs in France (regulations, training currently available); flight projects, progress and perspectives; Drones-Center’s market position and its 2 missions (Pilot School and Technical Center), as well as the objectives of these missions. The presentation will also highlight Drones-Center’s resources, its planning, and a partnerships proposal: Streamlining RAPS Training Programmes.

From Planning, Flight to Post-Flight: Our Method to Minimize Hazards & User Errors while Delivering the Data Required
Maarten Durie, Gatewing (Trimble), Belgium

Bio: Maarten Durie is product manager of Trimble’s unmanned aircraft solutions and holds a deep technical understanding of Gatewing X100 and Trimble UX5, along with an understanding of customers and their applications to this role. Maarten joined Gatewing in October 2011 as a Support Engineer and has been responsible for developing training curriculums, conducting pilot & instructor trainings and supporting end-users prior to taking up the product management role late 2013. Maarten holds Masters of Science degrees in both Electromechanical Engineering and Integrated Product Design.

Abstract: The Trimble UX5 is an RPAS solution for mapping and surveying. It is designed for mapping or surveying professionals without piloting skills and is being used in every continent for diverse asset mapping tasks. This presentation gives insight in how we guide our user throughout his mission and minimize both user
Assessment of Flight Training Schools
Andre Clot, EuroUSC, UK
Peter Milner, Phoenix UAV Centre, UK

Bio 1: Andre J. Clot is a director of EuroUSC™ which was granted its Qualified Entity Status in 2009 under the EASA rules laid down in EC 216/2008 Article 13 and Annex V. Andre has a solid background in safety critical systems and had his initial introduction to aviation whilst at university gaining 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 started EuroUSC™. He is a Chartered Engineer and holds a Masters in Business Administration. He is a member of the Royal Aeronautical Society and former Chairman of its Unmanned Aircraft Systems Specialist Group. In Europe he is Vice Chairman of EUROCAE WG93 on Light Remotely Piloted Aircraft Systems (RPAS) and is the accountable manager in EuroUSC™ on Flight School, Manufacturer and Operator accreditation for RPAS operations on behalf of many European National Aviation Authorities. He is also a non-executive member of the UVS International Board of Directors.

Bio 2: Peter Milner is the Managing Director of Phoenix UAV Centre, which in October 2010 became the first RPAS/UAS accredited flight school in Europe, specialising in flight training and technical services for all forms of rotary RPAS/UAS up to 20Kg. Also in 2010 Peter published the first and only RPAS/UAS specific Pilots Log Book of its kind in the world. Designed for all RPAS/UAS ranging from 0 to 150Kg, it covers all the major aircraft configurations including all rotary, fixed wing, Lighter than air and other aircraft. Four years on, it continues to sell worldwide. Peter is a consultant to the UK insurance industry dealing with both loss adjustment factors during the process of any RPAS/UAS insurance claims and other general RPAS/UAS policy related matters. He is a member of the ARPAS-UK (Association of Remotely Piloted Aircraft Systems UK) and responsible for all training related matters.

Abstract: In 2010 Phoenix UAV Centre became the first Accredited Flight School in Europe to deliver routine RPAS training acceptable to a National Aviation Authority (UK CAA) in the 0-20 kg category. The assessment process for the Flight School was the culmination of development work under the UK’s ASTRAEA programme and through work on the Hermes 450 at ParcAberporth by EuroUSC™. The challenge was to make a regime that was appropriate, proportionate and cost effective to an industry that was emerging within a recession and where investment to date has been surprisingly weak. By basing the Flight School on the Light UAS Scheme™, it is now possible to carry out Ground Theory Training, Flight Training and Flight Operations Examinations in three different countries, yet for EuroUSC™ to recommend the flight operation in yet a fourth country to gain the necessary Permission for Aerial Work. This milestone harmonisation achievement in 2013 meant that the economics of running a Flight School in Europe has now changed gear. Phoenix UAV Centre is the launch Flight School for the new International BNUC-S Online Theory course in line with developments within the EU Roadmap by EUROCAE. This allows Phoenix UAV Centre to extend its reach and service to its future and existing customers wherever they may be in a cost effective and scalable manner to meet the exponential growth of the RPAS industry.

Global Vision of Safety for RPAS Operations
Nina Claveria & Stéphane Mandon, Delta Drone, France

Bio 1: Nina joined Delta Drone in October 2011. She has been in charge of regulatory matters and system authorization. She is now in charge of key account management to coordinate development and customer applications.

Bio 2: Stéphane Mandon is currently the director of the Delta Drone RPAS schools in Lyon, Toulouse & Paris. He was graduated as a mechanical Engineer from INSA of Lyon in 1989. He started his career at the Liquid Air company designing pressure vessels for the space industry (Ariane 5). Then, he joined a major American mechanical equipment company in order to design mechanical safety protection systems. Certified as a 6 sigma Master Black Belt in 2009, he developed his expertise in project and risk management by coaching more than 30 project leaders. In 2010, he was in charge of building a technical training centre for more than 2000 employees.
Abstract: Safety will be the major differentiator and the biggest challenge for RPAS deployment in the future. Delta Drone has designed a global vision of minimizing safety risks for RPAS pilots and their environment. Risk mitigation is achieved by a combination of the following elements: a) Technology with a system which prevents the RPAS to take-off without authorization; b) Organization with dedicated experts in charge of regulation and safety protocols; c) Maintenance and prevention: We will be able to calculate the flight hours and, then provide repair actions accordingly; d) Training and safety behaviors: Safety is included in every training course and reinforced during all RPAS flights by wearing Individual protection equipment.

Session 13  Civil Operations - II

Investigation and Legal Implications of Recent Near Miss Collisions: Lessons to be Learnt
Dr Sofia Michaelides-Mateou & Chrystel Erotokritou, University of Central Lancashire, Cyprus

Bio 1: Sofia holds a Doctorate from the University of Middlesex, UK, a BA and a law degree (LLB) from the University of Witwatersrand, South Africa and has been a full time lecturer of law for over 20 years and a part time lecturer at Cranfield University, UK and the Emirates Aviation College. She is the author of the book “Air Law: A Practical Perspective” published by Sakkoulas, Greece and co-author of the book “Flying in the Face of Criminalisation: The Safety Implications for Prosecuting Aviation Professionals for Accidents”*, published by Ashgate, UK. Sofia has presented many papers in international aviation conferences and published articles on numerous aviation areas including unruly passengers, the liability of aviation professionals subsequent to a serious aviation accident or incident, protection of aviation safety data and just culture. Her latest article written together with her PhD Student, Chrystel Erotokritou is entitled ‘Flying into the Future with UAVs: The Jetstream 31 Flight’, and was published in the Journal of Air & Space Law, Issue 2, by Kluwer in April this year. She is an aviation-legal consultant who has participated in a number of aviation litigation cases and is an Associate Member of ISASI and a member of the Flight Safety Foundation & the Eurocontrol Just Culture group.

Bio 2: Chrystel Erotokritou is a PhD researcher and a Tutor in Law at the University of Central Lancashire in Cyprus. Her research focuses on the Legal Framework of Remotely Piloted Aircraft Systems: Liability Issues and Security Challenges. She holds a Bachelor of Laws from the University of Nicosia in Cyprus and an Advanced Master in Air and Space Law from Leiden University in the Netherlands. Upon graduation, Chrystel worked as a trainee within the Legal Department of the European Aviation Safety Agency. Chrystel recently published an article entitled «Flying into the Future with UAVs: The Jetstream 31 Flight» in the Journal of Air and Space Law (Kluwer International).

Abstract: There have been a number of recent incidents involving Remotely Piloted Aircraft Systems (RPAS) coming dangerously close to commercial passenger jets, such as: a helicopter drone coming within 200 feet of an Alitalia aircraft in March 2013; an unidentified airline approaching LaGuardia Airport in New York which flew about 500 feet above a small black drone in July 2013; a pilot of an RPAS who lost control resulting in the drone landing on a runway at Montpellier airport where a plane was taxiing in November 2013; and a US Airways CRJ-72 which was almost hit by a drone over Florida in March of this year. The investigation of such incidents has already become very challenging and has highlighted a number of legal complexities relating to RPAS accident and incident investigation and possible civil and criminal liability and accountability apportioned to the individuals involved. The paper will consider the technical investigation under Annex 13 as well as the national regulatory framework for the investigation of a serious incident or accident involving a commercial jet and a RPAS. Secondly, a number of cases will be presented in which remote pilots, when identified, have been charged and/or prosecuted for flying in a careless or reckless manner endangering the life or property of others. We conclude by raising a number of lessons that can be learnt which emanate from the current lacunas in the international legal framework and the need for a uniform, consistent and predictable legal environment which enhances safety and ensures a safe integration of drones into non-segregated airspace.

Update on Small RPAS Standards Development
Andy Thurling, AeroVironment, USA
(on behalf of ASTM Committee F38)

Bio: Andrew J. “Andy” Thurling is currently Chief Test Pilot at AeroVironment in Simi Valley, California. Originally from Rochester, New York, he graduated from MIT and was commissioned as an Air Force officer in June 1987. Over the next decade, Andy Thurling served in various positions as an F-15 fighter pilot, including Chief of Programming and Flight Commander, before being selected for Test Pilot School. Andy is a Distinguished Graduate of the Air Force Institute of Technology and the USAF Test Pilot School. He has held several positions as a test pilot including...
Abstract: In 2003, ASTM International established committee F38 on Unmanned Aircraft Systems (UAS). The purpose of the committee is to produce cost-effective, timely consensus standards that, when applied, will enhance the safe design, manufacture, maintenance, and operation of UAS. It is anticipated these standards can play a role in system certification and design, as the industry and regulatory guidance mature. Since 2003, the Committee F38 has produced more than a dozen industry consensus standards for UAS, some of which have been adopted by military organizations and commercial companies worldwide. In April 2010, ASTM and the U.S. Federal Aviation Administration (FAA) signed a Memorandum of Agreement (MOA) whereby ASTM F38 can “participate in, and help facilitate, the development of standards utilizing the ASTM voluntary consensus process.” The work under this MOA is in support of a pending new rule which will allow small UAS (sUAS) to routinely fly in U.S. civil airspace for compensation or hire. The presentation will first cover how F38 is organized and structured. It will then cover the current status of the standards that are being developed in support of the pending new U.S. sUAS rule as well as other country’s sUAS regulatory efforts. It will end with specifics on how interested entities in the international community can participate in the development of these standards.

Bio: Séverine Brisset graduated from AGROSUP Dijon in France and European Institute of Agricultural Equipment in 2007 with a master in Agronomy and Farming equipment. She worked in the export sales of heavy agricultural machineries before joining Trimble Agriculture in 2011 as a European Product Manager for precision farming, including the UX5 Aerial Imaging Solution for Agriculture. Trimble is a leading provider of advanced location-based solutions that maximize productivity and enhance profitability. The Company integrates its positioning expertise in GPS, laser, optical and inertial technologies with application software, wireless communications, and services to provide complete commercial solutions. Trimble serves a variety of industries including agriculture. With its complete range of precision agriculture products and solutions, Trimble Agriculture is committed to provide new innovations that simplify operations and increase the profitability of farms.

Abstract: Precision agriculture with GNNS geopositionned information has revolutionized traditional farming practices. Farmers who integrate precision agriculture into their farms can operate more efficiently and productively during every stage of their farming applications—all while optimizing inputs, reducing costs, and improving crop performance. As a practical example, a field will show different yield in different areas one year and one area in the field will give you a different yield over the years despite the same amount of fertilizers. This variability is expressed at two levels: spatial with difference in soil potential and timing with difference in weather conditions. The result of this is the variability across the field. Hence the agronomic and economic benefits to vary the application of inputs according to this potential and use the inputs in a more efficient way increase yield and/or reduce the application of products where it not necessary. Understand the variability to take advantage of it. RPAS and aerial imaging systems offer now additional benefits to the market where proximal crop sensors like GreenSeeker and remote sensors like satellite images have been traditionally used. The possibility to scan large areas and get key information in a very sensitive timing is key for the farmers and their decision making. The presentation will give an overview of the practical agricultural applications with RPAS and how this can be integrated into the precision farming cycle. Applications will be illustrated with the Trimble UX5 aerial imaging solution.

50 11.30-11.45 What Opportunities RPAS Bring to Agriculture
Séverine Brisset, Trimble, Europe

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11.45-12.00 Panel Discussion
12.00-12.10 Conclusions & Conference Closing
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Royal Military Academy
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Brussels, Belgium
23-26 June 2014

EUROPEAN RPAS POLICY & REGULATORY FORUM