



# UVS International

## PROMOTING INTERNATIONAL COORDINATION & COOPERATION

By Peter van Blyenburgh, President

UVS International is a non-profit association registered with the Chamber of Commerce in The Hague, The Netherlands and operates out of offices in Paris, France. It represents manufacturers of unmanned vehicle systems (UVS), and manufacturers of sub-systems and critical components for UVS and associated equipment, as well as companies supplying services with or for UVS. In this context, UVS should be understood as re-useable and expendable unmanned air, ground and naval vehicle systems, as well as non-reuseable unmanned air, ground and naval target systems.

UVS International currently (May 2009) has 260 corporate, academic and institutional members in 35 countries & 10 international organizations on 5 continents, namely:

Argentina	Australia	Austria	Belgium
Botswana	Brazil	Canada	China
Czech Rep.	Denmark	Finland	France
Germany	Greece	Hungary	India
Indonesia	Israel	Italy	Japan
Luxembourg	Netherlands	Norway	Portugal
Russian Fed.	Singapore	Slovenia	South Africa
South Korea	Spain	Sweden	Switzerland
Turkey	UK	USA	

The list of corporate members can be found in the directory at the end of this publication.

In general terms, UVS International's objectives are to:

- promote unmanned vehicle systems (UVS) and their future applications;
- provide the UVS community with a voice on a global level;
- provide a means to obtain international consensual views on topics of importance to the international UVS community;
- provide a channel for information exchange between industry, governmental authorities, civil aviation authorities, academia, civil & military R&D organizations, and ministries of defence;
- provide a forum to identify and examine business opportunities and areas of interest for the benefit of the international UAV community.

More specifically, UVS International endeavours to:

- promote the establishment of UAV system-related standards, airworthiness, certification & air traffic management (ATM) norms on national, pan-European and international levels, and to co-ordinate the various national efforts on a global level, in order to work towards an early harmonization of the diverse national approaches;
- instigate and co-ordinate international UVS promotional efforts (conferences, workshops, exhibitions);
- promote and instigate international industrial co-operation;
- co-ordinate relations with existing national, pan-European & international organizations for the benefit of the members and the entire UVS community;
- provide a forum for potential users to present their requirements;
- centralise UVS-related information & reference documents;
- keep members informed on international UVS developments;
- promote the future civil & commercial use of UVS systems;
- promote co-operation between industry and R&D organizations & academic institutions;
- promote awareness of unmanned aircraft systems with the

relevant stakeholders and the general public.

### Background & Milestones

UVS International originally started its activity as EURO UVS, which was instigated in June 1995, as an initiative to federate the European UVS industry. EURO UVS initially functioned as a loose federation of corporate entities without any official legal structure. Then in May 1998 it was incorporated in Paris, France as a French registered association. It rapidly became apparent that the French association structure and French law would not allow the association to develop in the desired direction and take on the activities it was aiming for, and it was decided to terminate the existence as a French registered association and found a new one with the same name in The Netherlands. EURO UVS was registered with the Chamber of Commerce in The Hague, The Netherlands in January 2000. The French registered association ceased to exist in May 2000.

Starting at its original inception, the association has endeavoured to have a significant number of honorary members; these honorary members are all representatives of national civil aviation authorities or serving military officers directly involved with unmanned systems. The intent of this category of members was to create an international network, which would permit the honorary members to contact each other and discuss UVS matters of mutual interest as association members, instead of having to go through official channels, thereby making the circulation of information much faster, and at the same time creating beneficial relationships. The list of the current honorary members can be found on [www.uvs-international.org](http://www.uvs-international.org).

Starting in 1999, the association started to instigate the formation of national UAS working groups consisting of industry, and in some cases government and military representatives, to deal with UAS-related airworthiness, certification and air traffic management issues on a national level, and to exchange information amongst each other.

This initiative resulted, directly or indirectly, in the formation of national associations:

- AVBS, Czech Rep.
- Korea UVS Association
- UAVS, UK
- UVS France
- Japan UAV Association
- UAS Norway
- UVS Canada

UAV DACH, a multi-national German language UAV Working Group (Austria + Germany + Netherlands + Switzerland), was instigated by UVS International in 2000 and is still very active.

### 1<sup>st</sup> Increase of Voting Rights

In December 2002, the General Assembly decided to extend voting rights to include corporate members with their registered headquarters and principal place of operations in an ECAC country, namely: Albania, Armenia, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Rep., Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Rep. of Moldova, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Slovak Rep., Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and such other countries as the

association's Board of Directors could unanimously agree on.

### **Name + Statute Change & 2<sup>nd</sup> Increase of Voting Rights**

In early December 2003, the EURO UVS General Assembly decided by unanimous vote to modify its statute by granting voting rights to all corporate members, irrespective of the country in which they are established and where they deploy their principal activities, and to change its name to UVS International, in order to better reflect the association's global character and outreach. As not all members with voting rights were present at the General Assembly, it was decided to inform all members with voting rights and permit them to cast their vote by email. The deadline of this email ballot was on January 16, 2004, and all votes cast, but one, were in favour of the proposed statute amendment.

In February 2004, EURO UVS changed its name to UVS International and the association's new statute was approved by the Board of Directors. The new statute now permits the corporate member representatives from all countries (except those on the United Nations and/or the European Union blacklist) to submit their candidacy for a position on the association's Board of Directors. The association's Statute can be found at [www.uvs-international.org](http://www.uvs-international.org)

### **Organization & Management**

As already indicated, UVS International is a Dutch legal entity registered in The Hague, The Netherlands. However, most of its activities are deployed from offices in Paris, France, which are put at its disposal by the French registered company Blyenburgh & Co. This company has been contractually entrusted by the UVS International Board of Directors with the day-to-day management of the association. Blyenburgh & Co has also been entrusted with the responsibility of creating and maintaining the association's web site and organising all UVS International conferences & exhibitions, symposiums and workshops, which are all organized without any financial risk to UVS International, or its members.

### **The Board of Directors**

The members of the Board of Directors are elected by the association's General Assembly for a two year term.

In January 2006, the General Assembly voted to increase the number of Board of Director members. In February 2008, the UVS General Assembly, followed by an Extra Ordinary General Assembly in April 2008, voted to again increase the number of Board of Director members and to modify the association's statute in order to make this possible.

Board of Director observer status can be granted by the Board of Directors to a deserving individual. Observers do not have voting rights on Board of Director matters, but participate in all board deliberations. The transition from Observer to full board member is decided by the General Assembly.

The current composition of the UVS International Board of Directors is indicated on following page.

### **International Coordination Council**

In March 2008, the UVS International Board of Directors decided to establish the International Coordination Council (ICC). The ICC is an advisory group without a legal structure, which functions as a working group. The following types of organizations are eligible to join the ICC: national associations, national centres of excellence, national & multi-national working groups, national competence centres, European technology platforms.

- National associations;
- National centres of excellence;
- National & multi-national working groups;

- National competence centres;
- European technology platforms.

The general goals of the ICC, which should be seen within the framework of UVS International's Global Access Initiative, are:

- Contribute to increasing international awareness of UAS-related matters;
- Give national and multi-national working groups the possibility to make their voice heard globally;
- Increase the dual-directional flow of information in all fields between all ICC members;
- Be instrumental to organize and supply national inputs to international working groups, or other UAS-related international efforts (see below).

The scope and activities of the ICC are the following:

- ICC members supply, on a voluntary basis, the UVS International Board of Directors with:
  - Recommendations on policy to be followed and/or actions to be taken by UVS International;
  - Recommendations on new activities to be initiated by UVS International;
  - Information for dissemination to the international UVS community.
- ICC members receive from UVS International:
  - Information for dissemination to its members;
  - Support to organize national conferences, symposiums, workshops, etc;
  - Support to internationally promote national events;
  - The UVS News Flash and are allowed to redistribute it to their organization's members;
  - A special section in the UVS News Flash for announcements by their organization;
  - The possibility to supply technical and opinion papers for insertion in the UVS News Flash and/or UVScope (international technical informative electronic magazine which will be launched in the near future);
  - Hard copies of annual UAS Yearbook (for distribution to their organization's members) & electronic copy of this publication for posting on their organization's web site and/or intranet.

Two of the basic objectives of the ICC are to:

- Bring the international UAS community together without any organization dominating the other, and increases the flow of information to all;
- Promote international coordination, cooperation & understanding.

One of the drivers to create the ICC was to put up a structure that would permit the international light UAS community to contribute in a significant way to the ongoing standards work concerning Light UAS (<150 kg) in EUROCAE WG73 SG4. The start-up of the ICC was coordinated with the Joint Authorities for Rulemaking on Unmanned Systems (JARUS)(see feature article on JARUS in this publication).

The final report produced by the Interim Working Group on Light UAS (IWHLUAS), instigated & lead by UVS International, was supplied to EUROCAE WG73 during its plenary meeting at Eurocontrol headquarters in Brussels on 14 February 2008. These recommendations stated that the required work packages defined by EUROCAE WG73's Sub-Group on Light UAS should be dealt with on a national basis in the national language by national associations or working groups. These national associations, or working groups, are then to produce national opinion papers in English, and submit these national opinion papers to EUROCAE WG73's Sub-Group 4 on Light UAS, where the required harmonization will then take place.

2009  
 UVS International  
 Board of Directors



Peter van Blyenburgh  
 Blyenburgh & Co, France  
 President  
 (2<sup>nd</sup> year - 6<sup>th</sup> mandate)



Jean Caron  
 EADS DS, France  
 Treasurer  
 (2<sup>nd</sup> year - 4<sup>th</sup> mandate)



Nick Miller  
 Thales Aerospace, UK  
 Secretary  
 (1<sup>st</sup> year - 3<sup>rd</sup> mandate)



Patrice Chenière  
 Sagem DS, France  
 (2<sup>nd</sup> year - 2<sup>nd</sup> mandate)



Ole Vidar Homleid  
 Robot Aviation, Norway  
 (1<sup>st</sup> year - 1<sup>st</sup> mandate)



Ian Glenn  
 ING Engineering, Canada  
 (2<sup>nd</sup> year - 1<sup>st</sup> mandate)



Richard Kennedy  
 Boeing R&T Europe, Spain  
 (2<sup>nd</sup> year - 2<sup>nd</sup> mandate)



David Kershaw  
 BAE Systems, UK  
 (2<sup>nd</sup> year - 1<sup>st</sup> mandate)



Alexander Koldaev  
 Irkut Corporation, Russia  
 (2<sup>nd</sup> year - 1<sup>st</sup> mandate)



Manfred Lehnigk  
 Diehl BGT Defence, Germany  
 (2<sup>nd</sup> year - 1<sup>st</sup> mandate)



Steve May  
 General Atomics AS, USA  
 (2<sup>nd</sup> year - 1<sup>st</sup> mandate)



Patrick Barrier (Observer)  
 ATE, South Africa  
 (1<sup>st</sup> year - 1<sup>st</sup> mandate)



Itai Toren  
 Elbit Systems, Israel  
 (2<sup>nd</sup> year - 1<sup>st</sup> mandate)



Robert Veenhuizen  
 CybAero, Sweden  
 (2<sup>nd</sup> year - 1<sup>st</sup> manadate)



John Walker  
 The Padina Group, USA  
 (2<sup>nd</sup> year - 2<sup>nd</sup> mandate)

## UVScope

A limited number of representatives of each of the ICC members supplying the inputs will then be active members of EUROCAE WG73 SG4 on Light UAS and meet at Eurocontrol headquarters to endeavour to harmonize the received inputs, and work towards a consensually agreed document.

This solution will make it possible for the small & medium-sized companies, which form the mainstay of the Light UAS industry, to actively participate with their expertise, in their native language, and without having to spend time & money to attend all the working meetings in Brussels.

The current ICC members are:

- European Air Sports Assn.           Graham Lynn
- Korea UVS, South Korea   William Park
- PLATINO, Spain                       Manuel Mulero
- RCAPA, USA                           Patrick Egan
- UAS Norway, Norway               Ole Vidar Homleid
- UATAR WG27, Australia   James Mellor
- UAV DACH, Germany           Bernhard von Bothmer
- UAVS, UK                               John Moreland
- UVS Canada, Canada           Eric Edwards
- UVS France, France               Christophe Gyr

### Organization of Conferences & Workshops

Conferences, either with or without associated exhibitions, and workshops are an important activity for the association. Most conferences organized by UVS International are technical and non-commercial and strive to bring the international unmanned systems community together.

The annual UAS conference in Paris has without any doubt become not only the largest UAS-related conference in the world, but also the prime international forum focussing on UAS-related standards, airworthiness, certification and air traffic management issues. It is the only event of its kind where UAS policy is discussed. The excellent relations that UVS International maintains with a large number of European and non-European Ministries of Defence, national civil aviation authorities, EASA, European Defence Agency, Eurocontrol, FAA, ICAO, JAA, NATO and numerous stakeholder groups make it possible to have significant regulatory authority, government and military participation at these events.

Since its inception, UVS International has organized or contributed to the organization of a significant number of conferences and workshops in Europe, Africa, Asia, Australia, and North America.

### Speaking Engagements

Within the framework of its Global Access Initiative, UVS International representatives give numerous presentations all over the world. A list of the presentations given by UVS International in 2006, 2007, 2008 and the first five months of 2009 can be found in the article in this publication on the Global Access Initiative.

### UVS International News Flashes

Starting in January 2005, UVS International initiated a news flash service for its members. By means of this service, UVS International supplies information (articles, press releases, etc) on unmanned vehicle systems (air, ground, naval) by email to its members once every two weeks.

This service has now been extended to also include all government representatives (civil & military), as well as representatives of national civil aviation authorities, international regulatory authorities, air navigation service providers, international organizations, the diplomatic corps and academia that figure in the UVS International database.

In 2009, Blyenburgh & Co will start the publishing of a quarterly technically informative electronic magazine called UVScope. This publication will contain first-time articles (no re-publications) from various sources on ongoing developments and technical matters pertaining to unmanned aircraft, ground & naval vehicle systems (at system & sub-system levels), their current & future use, as well as relevant regulatory issues. Each issue will also feature company profiles and technical papers proposed by international academia.

The initial circulation will be approximately 10.000 in 68 countries. This publication will be supplied free-of-charge to all the persons in the UVS International database.

Persons desiring to receive UVScope are advised to log on to [www.uvs-international.org](http://www.uvs-international.org) or [www.uvs-info.com](http://www.uvs-info.com). They will subsequently automatically receive UVScope. For information on the advertising opportunities in the highly targeted UVScope, contact UVS International or Blyenburgh & Co.

UVScope will also be available on-line on [www.uvs-info.com](http://www.uvs-info.com)

### World's Largest Generic UVS Web Site

In 2006, the [www.uav-info.com](http://www.uav-info.com) web site address was changed to [www.uvs-info.com](http://www.uvs-info.com). This generic web site, developed by Blyenburgh & Co for the benefit of UVS International and the international UVS community in general, has two distinct sections: unmanned aircraft systems (UAS) & unmanned ground vehicle (UGV) systems.

Amongst other things, the UAVS section contains the complete 2003, 2004, 2005, 2006, 2007, 2008 & 2009 editions of the UAS yearbooks, photo reports of UAS deployments, probably the world's largest on-line UAS photo library, UAS specifications (that can be added to on-line by all UAS producers), a review of unmanned vehicle system-related R&D projects, UAS-related terms & definitions and abbreviations, the world's largest collection of international UAS-related regulatory documents, manufacturer's UAS brochures & datasheets (>700), and probably the world's largest collection of UAS-related links.

The UGV Section contains more than 300 technical specification forms from 140 companies in 27 countries, a UGV photo and datasheet library, a similar R&D project review section as in the UAV Section, generic UGV documents (studies, national roadmaps, programme overviews) and UGV system brochures. This web site also features:

- unmanned vehicles system-related brochures (systems & sub-systems) (air, ground, naval) provided by the association's corporate members, and non-members;
- downloadable & printable UAS and UGV posters;
- web links to the web sites of all UVS International corporate members, national civil aviation authorities, international regulatory authorities, aviation stakeholders, and partner organizations.

### Special Web Site Feature for Academia & Researchers

The R&D project review section on [www.uvs-info.com](http://www.uvs-info.com) has been specifically created to permit academia and research organizations in all countries to publish their past and ongoing UVS-related research on-line, using a standardized format. All submitted and accepted research project definitions with all contact details are posted alphabetically by country & submitting entity, as well as by submitting entity & country. The posted research projects are searchable by 18 key words.

The objective is to make it possible for the research organizations to find out what their international counterparts have already done, or are currently undertaking, with the goal to avoid needless duplication of effort and wasting scarce resources. This system

will also permit the research organizations to search for teaming partners, and should be of interest to industry.

### The UCARE Programme

The international UCARE (UAVs: Concerted Actions for Required REgulations) Programme was initiated with the objective to create the basis of an organization to develop recommendations with the aim to facilitate the establishment of rules and regulations allowing the introduction of military and civil/commercial UAS into civil managed airspace, regardless of borders.

The basic strategy was to federate the international UAS community behind a common goal, and within a dedicated framework create the required basis for issuing recommendations for a consensual policy and competence standards.

There were two levels of participation: Participants & Contributors. Participants are representatives of corporate UVS International members, industry associations, and international organizations (Eurocontrol, FAA, JAA, NATO) that take on specific work tasks. The Participants were organized on a national or multi-national basis under a national co-ordinator. UCARE had Participants in Australia, Austria, Canada, France, Germany, Israel, Italy, Japan, The Netherlands, South Africa, Spain, Sweden, Switzerland, UK USA.

Contributors were representatives of non-corporate entities and international organizations (civil & military government organizations, Eurocontrol, FAA, JAA, NATO, national civil aviation authorities, government R&D organizations, universities) that contribute significantly by supplying documents and studies. UCARE had Contributors in Australia, Belgium, Canada, Finland, France, Japan, The Netherlands, South Africa, Sweden, Switzerland, UK, USA and NATO.

The UCARE document library has been migrated to [www.uvs-info.com](http://www.uvs-info.com), which now offers the world's largest publicly available library of documents & opinion papers relating to airworthiness, certification and air traffic management issues pertaining to unmanned aircraft systems.

### Joint JAA/Eurocontrol UAV Task Force

On April 3, 2002 the Joint Aviation Authorities (JAA) agreed to set up the Joint JAA/Eurocontrol UAV Task Force. The terms of reference of this Task Force, agreed on by the JAA Executive Board and Eurocontrol, were subsequently presented during the UCARE Symposium part of the UAV 2002 conference in Paris, France in June 2002.

The first meeting of the UAV Task Force took place at JAA headquarters in Hoofddorp, The Netherlands on October 9 and 10, 2002.

In accordance with the Terms of Reference, the «concept» approach proposed by JAA, addressed the design, manufacture and maintenance of UAS, the operations of UAS (in particular the approval of operators), the Rules of the Air and various security-related issues. The concept was to be based on:

- Identification of current & budding UAS technologies and their possible applications;
- Creation of UAS categories;
- Identification of a lower mass limit(s) for regulation at European level;
- Review of existing documents (draft standards, research studies);
- Consideration & evaluation of the use of a total system approach.

Particular attention was paid to operator qualification & approval, legal issues in relation to the ICAO Convention Art. 8, and terminology issues; the composition of the UAV Task Force was established in accordance with JAR-11 (JAA Regulatory & Related Procedures) and Eurocontrol's requirements for stakeholder

involvement. UVS International fulfilled the Task Force's secretariat function.

The joint JAA/Eurocontrol UAV Task Force, was the first initiative of its kind in the world. The Task Force's final report can be found on [www.uvs-info.com](http://www.uvs-info.com).

### EASA's A.NPA

On October 18, 2005 UVS International, in anticipation of the upcoming A.NPA, organized a presentation of the policy section of the A.NPA by Yves Morier, EASA to European industry and interested government representatives at the Belgian Aeronautical Museum in Brussels, Belgium. This meeting had as principal purpose to permit EASA to explain the background and intention of the A.NPA and to allow European industry representatives to request clarification of certain sections of the A.NPA text, which had been made available to all attendees several days prior to the meeting. The draft A.NPA had undergone internal EASA consultation and had also been supplied to FAA for commentary. EASA's A.NPA (Advance Notice of Prior Amendment) was published on November 7, 2005. The complete text of the A.NPA is posted on [www.uvs-info.com](http://www.uvs-info.com). The A.NPA can be seen as the follow-on to the widely applauded Joint JAA/Eurocontrol UAV Task Force's Final Report that came out in June 2004. The A.NPA concerns aircraft with a MTOW of more than 150 kg and addresses, amongst others, the following issues: the procedure for UAV system certification, type certification, selection of the manned airworthiness code reference, the tailoring of the reference manned airworthiness code, UAV system safety objectives & criteria, special conditions & interpretative material, continued airworthiness.

UVS International, with inputs from the Euro UAV ICB members, observers and corporate observers, supplied a federated European commentary to the A.NPA. UVS International also instigated a coordinated Canadian commentary to the A.NPA.

### European UAV Industry Consultation Body

In anticipation of the publication of the final report of the Joint JAA/Eurocontrol UAV Task Force, UVS International instigated the formation of this Industry Consultation Body (ICB) in April 2004. The vision of the Euro UAV ICB was to have operators of qualified civil, commercial and military UAV systems able fly their UAS routinely, safely and reliably in non-segregated European airspace. The Euro UAV ICB gave itself the mission to be the European industrial focal point for all European authorities (civil & military, including NATO FINAS), and to take a pro-active European industry position concerning the development of recommendations relative to requirements and procedures that are necessary to make its vision reality. These recommendations were to encompass, but not limited to, requirements & procedures in the following categories:

- Airworthiness
- Safety & Security
- Maintenance
- CNS/ATM
- Legal Considerations
- System Certification
- Flying Operations
- Training
- Aerodrome Interface

The companies participating in the Euro UAV ICB agreed to federate their expertise & pool their resources in order to attain their objectives

The Euro UAV ICB was officially established in February 2005 and functioned as an independent entity with its own finances, and in accordance with the Statute of UVS International. The secretariat function was entrusted to UVS International.

In February 2007 the companies participating in the Euro UAV ICB concluded that, in order to take their initiative to the next stage, a more formal structure was required. Furthermore, they wanted to participate in a proposal to the European Defence Agency concerning a study contract. They decided to combine

their forces with those of several other companies, which were not participating in the Euro UAV ICB (Alenia Aeronautica, BAE Systems, EADS CASA), and to unite within a UAS working group under the banner of ASD (European Aerospace & Defence Manufacturers Association), of which all were a member. ASD and UVS International are currently engaged in discussions on how best to combine their complementary expertise for the benefit of the entire European UAS community.

### International Civil Aviation Organization

On June 27, 2005 the International Civil Aviation Organization (ICAO) issued a consultation with selected States and international organizations with regard to UAS and concerning:

- present and foreseen international civil UAS activities in civil airspace;
- procedures to obviate danger to civil aircraft posed by UAS systems operated as State aircraft; and
- States' procedures for the issuance of special operating authorizations for international civil UAV operations.

Furthermore, it was requested, in view of the limited resources at the disposal of ICAO, and in order to enable the Air Navigation Commission to determine an appropriate level of priority for UAS-related issues compared to other tasks on the work programme, to supply as much detail, copies of, or web links to, national regulations or guidance material.

UVS International was one of the two international organizations consulted, and formulated its reply in consultation with the Euro UAV ICB, and with inputs from Japan, New Zealand, South Africa. After receipt and evaluation of the replies, ICAO invited the representatives from the States who had replied and UVS International to participate in a exploratory meeting on UAS; this meeting took place at ICAO headquarters in Montreal, Canada in May 2006. At this meeting a small core group was formed to produce a guidance document for ICAO; UVS International was part of this core group.

Subsequently, a second meeting took place at the FAA facilities in Palm Coast, Florida, USA, where this core group presented their guidance document to ICAO. The guidance document was subsequently presented to the ICAO Council and the green light was given in October 2007 by the ICAO Council to start up an ICAO UAS Study Group (UASSG) (See separate article elsewhere in this publication). The ICAO UASSG had its first meeting at ICAO headquarters in April 2008 (See separate article on the ICAO UASSG).

UVS International is proud to have been invited to participate in and contribute to the ICAO UAS Study Group.

### External Relations

UVS International is internationally recognised by numerous government authorities (civil & military) and a significant number of other organizations as an impartial representative and advocate of the UAS industry.

The association currently maintains relations of various nature with the following stakeholder organizations:

- Air Navigation Services Providers in numerous countries;
- Air Traffic Control Association (ATCA), USA;
- American Institute of Aeronautics & Astronautics (AIAA), USA;
- ANFR (French National Frequency Agency);
- Association of Chief Police Officers (ACPO), UK;
- Australian Certified UAS Operators Association (ACUO);
- Australian Research Centre for Aerospace Automation (ARCAA), Australia;
- ASD - European Aerospace & Defence Manufacturers Ass.
- ASTM International, USA;
- ASTRAEA, UK;
- ATCA - Air Traffic Control Association, USA;
- AVBS-Unmanned Systems Manufacturers Association, Czech

Rep.;

- British Model Flying Association, UK;
- CANSO (Civil Air Navigation Services Organization);
- Civil aviation authorities in numerous countries;
- COGES (organizers of the Eurosatory exhibition);
- Conseil Général de l'Armement (CGArm), France;
- Council for Scientific & Industrial Research, S. Africa (CSIR);
- DFS, Germany;
- Europe Air Sports Association, The Netherlands;
- European Aviation Safety Agency (EASA);
- EUROCAE, France;
- European Cockpit Association (ECA);
- European Commission;
- European Defence Agency (EDA);
- European Group of Institutes of Navigation (EUGIN);
- European Micro UAS Competition;
- EUROCONTROL, Belgium;
- EUROCONTROL Experimental Centre, France;
- The European Institute, Washington, DC, USA;
- Eurosatory exhibition organizers, France;
- Federal Aviation Administration (FAA), USA;
- FRONTX, European Union Agency for Border Protection;
- Internat. Fed. of Air Traffic Controllers Ass. (IFATCA), Canada;
- Internat. Federation of Airline Pilots Associations (IFALPA);
- INTELI, Portugal;
- International Civil Aviation Organization (ICAO), Canada;
- Japan Aerospace Exploration Agency (JAXA), Japan;
- Japan UAV Association (JUAV), Japan;
- Joint Authorities for Rulemaking on Unmanned Systems;
- Korea Aerospace Research Institute, South Korea;
- Korea UVS, South Korea;
- Ministries of Defence & Ministries of Interior in many countries;
- NAMSA, Luxembourg;
- NASA Dryden Flight Research Center, USA;
- National Oceanic & Atmospheric Administration (NOAA), USA;
- NATO C3 Agency, The Netherlands;
- NATO FINAS;
- NATO Joint Air Power Competence Centre;
- NATO Joint Capability Group on UAV;
- NMSU-PSL-TAAC, USA;
- Norwegian Research Institute (NORUT);
- Pégase Regional Competence Centre, France;
- PLATINO, Spain;
- Remote Control Aerial Photography Association, USA;
- RTCA Special Committee 203, USA;
- SAE International, USA;
- SIAE (organizers of the Paris Air Show);
- UAS Norway, Norway;
- UATAR, Australia (national working group);
- UAV DACH (German-language working group), Germany;
- UAVS (UK trade association);
- Universities & academies in numerous countries;
- UVS Canada (Canadian national trade association);
- UVS France, France;
- Welsh Assembly Government, UK.

All these stakeholders receive the fortnightly UVS News Flash.

### USEP - European Inter-Governmental Initiative

In 2003 the Conseil Général de l'Armement (CGArm), a French Ministry of Defence think-tank reporting directly to the French Minister of Defence, mandated a study on the future of UAS, for intelligence & combat missions (UCAV) within the European military context. This study, designated «U(C)AV Systems» was finalised in 2004.

The follow-on to the aforementioned study, designated USEP (Unmanned Aircraft Systems for Security & Environmental-related Purposes), was instigated by the CGArm in September 2005 and concerns the potential use of UAS for security and

environmental-related, as well as various other civil (commercial & non-commercial) purposes in Europe.

The objective of the USEP initiative was, in co-ordination with the participating government authorities, and with non-competitive inputs from industry, to:

- Create, or increase, the awareness with national governmental entities (ministries & related agencies & departments) of the potential offered by UAS within the framework of their respective tasks;
- Form three working groups and co-ordinate a European drive to jointly identify, document and evaluate:

#### Operational Needs

- description of needs (scenarios, geographical coverage, timing, data precision);
- global European market assessment (over the coming 15 years);

#### Technical Issues

- synergy with defence UAS and equipment solutions;
- communication link bandwidth requirements and frequency allocation;
- R&T update, incl. deployment in non-segregated airspace;

#### Organization & Strategy

- equipment or service acquisition;
- relevant ongoing national activities and recommendations for the future (co-operation within nations and within Europe).
- Identify and evaluate, the necessary funding required to make it possible to use State and non-state owned UAS for purposes with societal benefits in European airspace.

UVS International was invited by CGArm to contribute to the USEP study and to help establish it as a transparent and federated pan-European initiative and act as the channel of communication and the symposium organizer. A report on the conclusions of the USEP study was featured in the 2007 UAS yearbook, and can also be found on [www.uvs-info.com](http://www.uvs-info.com).

### **EDA Study Contracts**

In July 2006, UVS International received a contract from the European Defence Agency (EDA) to conduct a study relative to the possible future use of UAV systems for security & environmental purposes in Europe. This study concerns the potential for non-military government applications of all classes of UAS (by ministry of interior, ministry of the environment, ministry of transport, ministry of agriculture, etc ...) for roles such as homeland security matters (crowd surveillance/control, border patrol, illegal immigrant control, anti-terrorism, drug & weapons control, anti-crime, anti-piracy), surveillance of inland & coastal waters, sea lane surveillance, dike inspection, inspection of bridges & historical monuments, search & rescue, fishery control, peacekeeping operations, forest fire detection/surveillance, traffic management, shipping surveillance/monitoring, natural disaster area survey, (nuclear) crisis management, emergency communication networks, crop monitoring, meteorological applications, atmospheric measurements, glacier & ice cap monitoring, pollution monitoring, etc. This study was concluded in September 2006. In 2007 UVS International received a study contract from EDA relative to UAS payloads; this study was successfully concluded the same year.

### **Interim Working Group on Light UAS (IWGLUAS)**

The Interim Working Group on Light UAS (IWGLUAS) was instigated by UVS International in September 2007 with the objective to produce a guidance document for EUROCAE WG73 on how the issue of Light UAS (<150 kg) was to be dealt with by EUROCAE WG73's Sub-Group on Light UAS.

The members of the IWGLUAS were: The CAAs of Austria, Belgium, The Netherlands, Sweden, UK; Eurocontrol; and industry representatives from Belgium, Czech Rep., France, Italy,

Netherlands, Slovenia, Sweden, UK.

The working group's final report was presented to the EUROCAE WG73 plenary session in February 2008.

### **UVS International Awards**

#### The Catherine Fargeon Award

In 2003 UVS International instigated the Catherine Fargeon Award. This award, which carries the name of the first person who received it in 2003 (Dr Catherine Fargeon, French Ministry of Defence, Conseil Général de l'Armement), is presented to persons in recognition of their personal commitment & contribution to promoting the insertion of unmanned aircraft into non-segregated airspace and/or the general promotion of the future use of unmanned aircraft.

In 2009, this award has been granted to the following persons:

- Leslie Carey, ICAO;
- Jim Christner, AAI Corp., USA;
- Gilles Fartek, European Commission, DG TREN;
- Ken Geiselhart, Lockheed Martin, USA;
- Douglas Marshall, University of North Dakota, USA.

Earlier recipients of this award are:

- Michael Allouche, IAI-Malat, Israel (2008);
- Gilbert Amato, EUROCAE (2005);
- Jeff Bauer, NASA DFRC, USA (2006);
- LtCdr Geoff Bowker, CAA-DAP, UK (2007);
- Doug Davis, FAA UAV Program Office, USA (2006);
- Cdt Régis Brigaud, DGA-DCE-CEV, France (2005);
- Roland Decuyper, Belgium (2007);
- Vince Galotti, ICAO, Canada (2007);
- Ian Glenn, ING Engineering, Canada (2008);
- Cdt Christophe Gyr, DGA-DE-CEV, France (2006);
- Alex Hendriks, Eurocontrol (2005);
- Serge Lebourg, Dassault Aviation, France (2006);
- Gerhard Lippitsch, Austrocontrol, Austria (2008);
- Gérard Mardiné, Sagem Défense & Sécurité, France (2008);
- Holger Matthiesen, EUROCONTROL, Belgium (2007);
- Yves Morier, European Aviation Safety Agency (2005);
- Fred Pease, Department of Defense, Policy Board on Federal Aviation, USA (2007);
- Nick Sabatini, FAA, USA (2005);
- WgCdr Mike Strong, EUROCONTROL, Belgium (2007);
- Giuliana Tamburro, ENAC, Italy (2005);
- Karen Tarr, Transport Canada, Canada (2008);
- Ron van de Leijgraaf, IVW (CAA), The Netherlands (2008);
- John Walker, JSWalker Group, USA (2006);
- Cliff Whittaker, CAA, UK (2008).
- Klaus Wohlers, Rheinmetall DE, Germany (2006).

#### UVS International Award

In 2007, UVS International gave a special award to Ken Munson [Jane's Information Group, UK (rtd)] in recognition for his long-standing personal commitment and contribution to promoting awareness of UAS.

#### The UAS Pioneer Award

In 2008, UVS International instituted the «UAS Pioneer Award» in order to honour and thank individuals for their exceptional and dedicated life time services to the international UAS community.

The first recipients of this award are:

- Filippo De Florio, ENAC, Italy (rtd);
- Malcolm Walker, CASA, Australia (rtd).

This award is now called the De Florio/Walker Award.

#### The De Florio/Walker Award

In 2009, the first recipient of the De Florio/Walker award is:

- Giuliana Tamburro, ENAC, Italy († 2009).

## UAS Photo Competition

In 2009, UVS International organized its fourth international UAS photo competition. This competition is open to all persons from all countries and it is not a requirement to be a member of UVS International. The winners of the 2009 photo competition, and the winning photos can be found in this publication.

All information relevant to the 2010 UAS photo competition (including the photo categories, technical details & submission deadlines) can be found on-line at: [www.uvs-international.org](http://www.uvs-international.org) & [www.uvs-info.com](http://www.uvs-info.com)

## Global Access Initiative

Detailed information on the Global Access Initiative can be found in a separate feature article in this publication.

## EUROCAE Working Group 73

UVS International strongly contributed, in close co-ordination with Eurocontrol and EASA on the European side, and the FAA and RTCA on the American side, to the start up of EUROCAE (European Organization for Civil Aviation Equipment) Working Group 73 on unmanned aircraft systems in April 2006. UVS International continues to be strongly involved in this very important initiative; the UVS International president is member of the leadership team as standing adviser to WG73. See feature article in this publication.

## UAS Terms & Definitions + Abbreviations & Acronyms

Blyenburgh & Co has created for UVS International, and the international UAV community, a list of English language UAS-related abbreviations & acronyms, their explanation and origin, as well as a list of UAS-related terms and definitions (where possible mentioning the source document). The purpose of this task was to create an educational reference document for persons who are not native English speakers, and to contribute to the international harmonisation of UAV terminology, which is imperative, if internationally acceptable standards, airworthiness rules and certification norms are to be defined. The 7<sup>th</sup> edition of these documents is freely available at [www.uvs-info.com](http://www.uvs-info.com). These are living documents and will continue to grow. The international UAV community is encouraged to supply additions for both of these documents by email to UVS International.

A list of the terms & definitions submitted by the Interim Working Group on Light UAS to EUROCAE WG73 and ICAO can be found in the Global Access Initiative section of this publication.

## UAS Categorization

UVS International has drawn up a categorization of unmanned aircraft systems, which permits to slot in all existing systems, as well as UAS that are currently under development (See Reference Section). It should be noted that this categorization has not been designed for certification purposes. Its main purpose is to come up with a universal system of cataloguing UAS, combining various parameters, for reference purposes.

## ACTIVITIES IN 2008

### UAS 2008 Conference

The 10th edition of UVS International's annual conference, UAS 2008 (70 speakers), took place at the Docks Event Centre in Paris, France on 10-12 June 2008. A photographic review of this event, as well as the presentation given, are posted on [www.uvs-info.com](http://www.uvs-info.com)

## Arctic Observation with UAS

In June 2008, discussions started with the National Oceanographic & Atmospheric Agency, USA relative to global climate change and the potential concerted use of Light UAS by the Arctic Council countries (Canada, Denmark, Finland, Iceland, Norway, the Russian Fed., Sweden, USA) for Arctic monitoring purposes. From these discussions emerged a progressive UVS International advocacy and awareness-increasing strategy, which included the association's implication in UVS-Tech 2009 in Moscow, the 4th Trans-Atlantic UAS Roundtable in Washington, and a special session on this topic at the UAS 2009 conference in Paris. These activities will be continued and will be coordinated with the scientific and government authorities of the countries involved.

## EUROSATORY 2008

In 2008, UVS International was, for the second time in a row, partnered with COGES, the organizers of Eurosatory, the world's largest army equipment & aviation exhibition, which took place in Paris, France on 16-20 June 2008. The UVS Forum, organized by UVS International at this world class event, featured exhibition booths, a briefing section and a meeting area. The UVS Forum focused attention on micro, mini & tactical UAS, as well as unmanned ground vehicles (UGV). The UVS Forum also featured the indoor demonstrations of UGV systems (<150kg) on a dedicated indoor area equipped with an obstacle course, which had been designed and organized by the French Ministry of Defence (DGA). The UGV demonstrations were one of Eurosatory's largest crowd gatherers (250-430 persons per demonstration).

## 1<sup>st</sup> UAS Conference in China

With the intent of contributing to maintaining safety in Chinese airspace, and within the framework of its Global Access Initiative and international harmonisation, UVS International accepted an invitation from International Aviation Group, China to co-organise and chair UAS China 2008, the 1<sup>st</sup> national Chinese UAS conference. As contribution to the organization of this event UVS International endeavoured to make it possible for the Chinese regulatory authorities and UAS community to be made aware of the ongoing international regulatory work pertaining to UAS. UVS International's goal was to contribute to motivating the CAA of China to recognise that they have start preparing for admitting UAS into Chinese non-segregated airspace.

The 2-day UAS China 2009 conference took place in Beijing, China in September 2008 and drew 423 delegates. Half of the speakers (regulatory authorities, researchers & industry) were brought on board by UVS International. UVS International gave 3 presentations, including one on behalf of EUROCAE.

International Aviation Group and UVS International plan to organise the second edition of this event in September 2010.

## Strategic Partnership Agreement with China

During the UAS China 2008 conference in September 2008, UVS International signed a strategic partnership agreement with International Aviation Group, China. Within the framework of this agreement the parties will jointly strive to:

- implicate the Chinese authorities in the regulatory initiatives being undertaken by the global UAS community;
- improve awareness within the Chinese UAS community (government & industry) concerning the ongoing international activities relative to UAS-related standards, rules & regulations;
- promote active Chinese industry implication in these activities;
- work towards goals of common interest relative to unmanned

systems.

### **International Test Range Directory**

In October 2008, UVS International instigated the International Test Range Directory initiative. This initiative has as objective to create a new open and free access web site, which will reference the world's flight test and evaluation ranges. In cooperation with several ranges, a very comprehensive test range description and categorization form has been produced and is posted on [www.testranges.org](http://www.testranges.org).

This web site has as purpose to not also reference test ranges, but also to make it possible to compare their facilities and the services they offer.

### **Regulatory Workshop at UVS Canada Conference**

UVS International organized & chaired a regulatory workshop at the UVS Canada 2008 conference in Ottawa, Canada on 4-7 November 2008.

### **Award Received from UVS Canada**

During ist 2008 conference, UVS Canada presented UVS International, in recognition of its UAS-related organizational activities, with its 2008 Organizational Award.

### **Study Contract Received from the French Ministry of Interior**

On November 6, 2008 the French Ministry of Interior, Direction Générale de la Police Nationale, Services des Technologies de la Sécurité Interieur, notified (subsequent to a tender) the award of a study contract to UVS International. This study concerns the analysis of the French legal framework relative to the use of Light UAS (<150 kg) by the French Homeland Security forces.

This study will include the following:

- A detailed analysis of the existing legal framework and the proposal of a solution that will permit the operation use of Light UAS by the French Homeland Security forces;
- Technical guidelines on how to deploy a Light UAS and be in conformity with the current French regulations;
- A proposal concerning the adaptation of the current French regulations in the medium term in order to permit generalization of the operational use of Light UAS by the French Homeland Security forces.

UVS International, the prime contractor, is conducting this study in cooperation with UAS Consulting & Services, France, its sub-contractor for this contract.

UVS International is proud to have been selected by the French Ministry of Interior to conduct this study.

### **Trans-Atlantic UAS Roundtable**

Within the framework of its Global Access Initiative, UVS International organized, together with The European Institute, and participated in the 3<sup>rd</sup> Trans-Atlantic UAS Roundtable in Washington, DC, USA on 10 November 2008. The theme of this event was «Security-related UAS Applications». The purpose of this on-invitation-only annual event is to improve high level trans-Atlantic understanding and forge trans-Atlantic links.

## **ACTIVITIES IN 2009**

### **UVS-Tech 2009 Conference & Exhibition in Russia**

In September 2008, UVS International was invited by the Ministry of Industry & Trade of the Russian Federation, through Expo-Ecos Ltd, to contribute to the organization of the UVS-Tech 2009

conference by organising presentations concerning international UAS-related regulatory work and research applications. This successful national event took place in Moscow on 27-29 January 2009. A photographic report & the presentations can be found on [www.uvs-info.com](http://www.uvs-info.com)

### **ISR 2009 Conference**

Within the framework of the Global Access Initiative, UVS International accepted an invitation to give a key note address at ISR 2009, the 40th International Symposium on Robotics. This event was organised by AER-ATP, Spain and took place in Barcelona, Spain on 10-13 March 2009.

### **Export Regulations Symposium**

On 17 March 2009, UVS France organized, in co-operation with UVS International, and with the participation of all the relevant competent French governmental authorities, a symposium dealing with French export regulations pertaining to unmanned systems in Paris, France. In the morning session the French authorities presented and explained the French export regulations relative to unmanned systems (air, ground, naval) at systems & sub-systems & critical component level, as well as services for & service with unmanned systems. The afternoon session was dedicated to generic case studies with which the participants could identify. The objective of this event was to inform French small & medium-sized enterprises on the existing export regulations & the upcoming changes, and increase their awareness of the legal risks of not complying with these regulations. The presentations given are posted (in French) on [www.uvs-info.com](http://www.uvs-info.com)

### **1<sup>st</sup> Swiss UAS Day**

On 27 March 2009, the Ecole Polytechnique Fédérale of Lausanne organized the 1st Swiss UAS Day. This event brought together the majority of the Swiss companies involved with UAS at system and sub-system level. Within the framework of the Golbal Access Initiative UVS International participated in this symposium.

### **1<sup>st</sup> UAS Conference in India**

In May 2008, UVS International was invited by the Indian Ministry of Defence, Defence Research & Development Organization, Aeronautical Development Establishment, to co-organize the 1<sup>st</sup> national Indian UAS conference.

The ICAUV 2009 conference & exhibition took place at the Eagleton Golf Resort in Bangalore, India on 3 & 4 April 2009. This event celebrated the Aeronautical Defence Establishment's 50<sup>th</sup> anniversary and was organized by the Indian Min. of Defence, Defence Research & Development Organization (DRDO), Aeronautical Defence Establishment (ADE), in partnership with UVS International. A photographic report & the presentations can be found on [www.uvs-info.com](http://www.uvs-info.com)

### **Middle East UAS Summit**

UVS International supported & chaired the 1<sup>st</sup> UAS Summit Middle East 2009, which took place at the Meridien Hotel, Abu Dhabi, United Arab Emirates on 19-20 April 2009. The presentations given are posted on [www.uvs-info.com](http://www.uvs-info.com)

### **UAS 2009 Conference, Workshop & Exhibition**

The 11<sup>th</sup> edition of UVS International's annual UAS conference & exhibition took place in Paris, France on 9-12 June 2009. With 108 presentations by speakers from 18 countries, UAS 2009 is now the world's largest conference dedicated to UAS. UAS 2009 featured a special 1-day plenary session on regulatory matters,

a special half day session on Arctic observation using UAS, and a 1-day workshop on Light UAS (<150 kg).

### **Global ATM Forum on Civil/Military Co-operation**

UVS International has been invited by ICAO to participate and support the first Global Air Traffic Management Forum on Civil/Military Cooperation, which will take place at ICAO headquarters in Montreal, Canada on 19-21 October 2009.

### **UVS Canada Conference**

UVS International has been invited by UVS Canada to contribute to the 2009 edition of its annual conference by organising a 1-day workshop on UAS-related regulatory matters. The UVS Canada 2009 conference will take place in Victoria, BC, Canada on 2-5 November 2009.

## **ACTIVITIES IN 2010**

### **UVS-Tech 2010 Conference & Exhibition in Russia**

UVS International has again partnered with Expo-Ecos Ltd, to co-organize the UVS-Tech 2010 conference and exhibition, which will take place in Moscow, Russian Federation on 3-5 March 2010.

### **UVS Forum at Eurosatory 2010**

UVS International has been invited by COGES, the organisers of the international Eurosatory exhibition (the world's largest army, army aviation and homeland security exhibition, which takes place once every two years in Paris, France) to organise its annual conference on site at Eurosatory 2010. Next year's UVS International annual conference will be designated UVS Forum 2010, and will consist of UAS 2010 (UAS conference) and UGV 2010 (unmanned ground vehicle conference); these conferences will run in parallel on 14-18 June 2010. More detailed information on the UVS Forum 2010 can be found in a special article on this topic in this publication.

### **Additional Events**

UVS International is in discussion with several other organizations in various countries concerning the possibility of (co-) organization various other events.

### **The International UAS Industry**

The updated listing of 422 UAS manufacturers and developers (an increase of 16% over the quantity referenced in 2008) in 50 countries that have been referenced by UVS International, using the aforementioned categorisation, can be found in this publication. The 1190 UAS models (an increase of 23% over the quantity referenced in 2008, and an increase of 60% over the quantity referenced in 2007) that these manufacturers, or consortia, have produced, are producing or developing, are listed in this publication. The status of each model has been indicated by means of symbols.

The purpose of this listing, which without any doubt is not complete, is to clearly illustrate the large amount of UAS that are already out there, or are about to enter the international skies. Manufacturers reading this publication and noticing that their UAS has not been referenced are encouraged to forward information on their systems to UVS International for inclusion in future updates.

## **The Future**

UVS International's primary focus is currently very clearly on UAS-related airworthiness, certification and air traffic management issues. As indicated earlier on, the problems associated with these issues should not be seen only on a European, American, Australian, South African or Japanese level, but on a global one. The association is striving to play an international advocacy and federating role in order to tackle the problems associated with inserting UAS into non-segregated airspace and to be instrumental to making it possible to harmonise the various national and international approaches at the earliest possible stage.

In this context, UVS International will continue to reach out, to all stakeholders, associations and organizations dedicated to furthering unmanned systems and their safe utilisation. This publication, the production and distribution of which is being totally financed by the advertisements, should be seen as part of this effort.

### **Access to the UVS International Web Sites**

To gain access to [www.uvs-international.org](http://www.uvs-international.org) and [www.uvs-info.com](http://www.uvs-info.com), visitors are to complete the on-line web site registration form. When doing this, the visitor is to define his own password; this password will be confirmed to the visitor by email after his registration has been validated.

The same password is valid for both sites. Hereafter the visitor can access each web site by entering only its email address and password in the applicable boxes after having logged on. Visitors having forgotten their password, can click on the relevant button on the home page of one of the sites and their password will be automatically emailed to them.