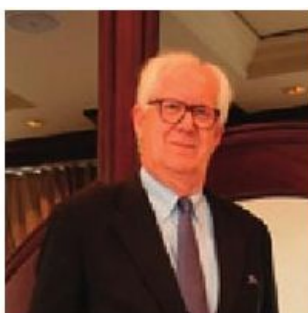


## GIM INTERVIEWS PETER VAN BLYENBURGH, PRESIDENT OF UVS INTERNATIONAL

# Harmonising UAS Regulations and Standards



Many people dream of making a living out of remotely piloted aircraft systems (RPASs), but so far a lack of clear rules and regulations has stood in the way of that dream. However, there is a glimmer of hope on the horizon – especially in Europe – and best practices will spread across the world like an ink blot, according to Peter van Blyenburgh, president of UVS International. His independence from

individual companies or governments makes him notoriously frank and he is an outspoken ambassador for the sector on all five continents.



Peter van Blyenburgh

**Your main concern over the past decade has been the international co-creation of rules and regulations. Are you satisfied?**

Never! But we are going in the right direction, especially in Europe. In December 2015, the European Commission submitted its 'Aviation Package' proposal to the European Parliament and the European Council for their approval. This covers, among other things, the integration of remotely piloted aircraft systems (RPASs) in the general European aircraft regulations and the modification of the basic regulation of the European Aviation Safety Agency (EASA). If the proposal is accepted, EASA will become responsible for the certification of all aircraft, including those weighing less than 150kg. That is the first step towards European harmonisation of the rules and regulations as well as the industrial standards pertaining to RPAS in the 28 EU member states, plus Switzerland and Norway. That's something they can still merely dream of on other continents. Governments and companies can only legally use drones if the local civil aviation authorities grant the required flight permits based on exceptions. The process in Europe will make it possible for the RPAS sector to look to the future with confidence leading to investment and hence growth. I believe that the effects of what is happening in Europe will be felt worldwide. Outside the European Union, individual regulatory authorities with limited resources will find it attractive to adopt these regulations because they represent a negotiated pact with broad acceptance. This would generally be more efficient and less costly than devising their own laws and training programmes.

But a European Regulation takes time; it's up to each member state to make its own laws on how to implement the Regulation and to decide what stance to take until it comes into force. It will take until late 2017 before proper, balanced business plans can be made. In the meantime, UVS International has started a multinational fast-track initiative to produce recommendations on safety rules for test & evaluation sites and also for public demonstrations and drone races. Neither of these topics are dealt with by EASA. The initial core team that will undertake this work consists of the RPAS communities in France, The Netherlands and Belgium, and they will shortly be joined by the communities from several other EU member states.

**Which market size and growth figures are reliable?**

There are no reliable figures so far; accurate statistics will not become available until the second half of this year. For now, there are only reports published by American companies which are aimed not at unreservedly presenting the facts but rather at dreaming up the largest possible market growth to motivate lobby groups, senators and the industry. The EU has recently commissioned the Boston Consulting

Group to conduct a long-term market research study. The initial study should be completed by June 2016 to give a high-level projection of how the market and its segments look right now and how they will evolve over the next 25 years. The study concerns not only the commercial RPAS/drone market, but also public users such as the police, customs and suchlike and the recreational market, which will be the largest segment. Subsequent studies will refine that knowledge

## **Can the professional market grow if the general public doesn't accept the large-scale use of drones?**

No it can't. But privacy, to name the most important issue, is not a real problem in the professional market. The rules will be the same as for mobile mapping: people and number plates will be pixelated. National laws could make the rules even stricter. Drones can be equipped with electronic identity (registration) chips containing the drone's serial number and the owner's name. When a drone passes over you, you can use an app on your smartphone to view that information. This could make policing easier and facilitate filing a complaint. Our organisation is also contributing to the creation of a special website that will focus on awareness and understanding. Last October the European Commission awarded the 'Drone-Rules.EU Consortium' a contract to create the definitive European reference web portal. The initial edition of this website should be online by mid-2016 and the final version should become ready in the third quarter of 2017. It will increase awareness and facilitate understanding of the legal environment and constraints in relation to light RPAS operations (safety, privacy and data protection, insurance, etc.), with a focus on non-commercial operators. The portal will also facilitate access to the European market for commercial operators and showcase the opportunities for economic and job market growth. UVS International has already created [www.rpas-regulations.com](http://www.rpas-regulations.com) to make rules and regulations, as well as related reference documents, available to the international RPAS community. This website monitors 267 countries and overseas territories and includes a section with information about Europe. The RPAS conference also provides a good view of what is happening in Europe. For the past 18 years, this has been Europe's principal event on RPAS-related regulatory matters, pilot training, operator and pilot responsibility and liability, insurance, data protection and privacy, and suchlike.

## **Many people in the geomatics branch feel drawn to UASs. Are they better informed?**

No, apart from a handful of them. I have spoken with many geomatics professionals all over the world; they see dollar signs in front of their eyes and dream of building sexy aircraft or opening up a geo-drone shop. But when I tell them about the liabilities, they look at me as if I want to rain on their parade. Your company will be torn apart if there's an accident with a drone! They don't realise that the aviation world is a totally different ball game than ground-based surveying and geomatics. They think drones are toys because the devices are easy to use, but you have to be very well insured and the insurance companies' certification demands increase in relation to the complexity of the flight mission. For small and medium-sized companies, the real profit lies not in the application of the aircraft but rather in the data collection, processing and analysis.

## **What will UASs still not be able to do by the end of 2017?**

Let me rephrase the question, because in two years' time the professional systems will certainly be technically capable of doing almost anything that is currently done by a surveyor, aerial photogrammetry, Lidar or a very-high-resolution satellite – and with the same or higher precision, faster and at a fraction of the total cost. But what will a UAS still not be able to legally in two years' time? It's all about insurance. If you're not insured, you are acting illegally and you will not be able to present a good enough business case. Looking to Europe, within approximately two years from now there will be one set of European rules which an insurance company will force you to comply with. The rules may be different in the rest of the world, but I think the European rules will spread like an ink blot. In any case, the possibilities will be limited to flights under 500 feet (150 metres) since above that height there is too great a risk of possible collision with other aircraft. For a while, the second limit will be – as a rule – that the drone has to be in sight of the remote pilot at all times. But the nice thing about the existence of a formal legal framework is that you can arrange exceptions for specific projects. For instance, when a project concerns trajectory observations – roads, railways, dikes, dams – or mapping or surveillance applications over large non-urban areas, insurance companies will probably be more willing to make an exception to the line-of-sight rule in proportion with the lower risks.

## **Will the surveyor become obsolete?**

I believe that aerial photogrammetry as we know it today for mapping purposes will become obsolete, but the surveyor will not. Surveyors will still be needed in dense urban areas. Flying in urban canyons is complicated and new technologies must be developed for situations in which buildings are close together or there are different building lines. In the meantime, surveyors will have to help determine the air corridors for the flight plan, and they can of course operate the drones.

## **What is the current focus of the largest, non-military R&D investments?**

The biggest investment is being made in air-traffic management: manned and unmanned aircraft in the same airspace and at airports. In the EU's Single European Sky ATM Research (SESAR) programme alone there are 19 projects working on developing innovative technological and operational solutions. The funding amounts to EUR500,000 per project, which is actually a rather low budget. The total sum is enormous when all national and European investments are added together but there is a large degree of overlapping, duplication and re-inventing the wheel. What would save a huge amount of money is a register, because nobody knows what is being done worldwide. All those researchers and engineers travel around the world from one conference to the next, but they focus on minor differences between their research plans to defend their spending. There should be a worldwide database – or just a European one for starters – containing all research projects that are even remotely related to UAS technologies. Who is involved, what are the goals, the programme, the budget, evaluations, contact data and so on? Then everybody can verify whether what they want to do is really new, and the large companies can use it to see what interesting research is already being done and, of course, who the promising students are. Such a register would cost only a few million to build and maintain, but the added value would be enormous. Most universities say they would like to participate, but when it comes to building the system they don't have the time. Perhaps it's not in their interest to have such openness?

## **Which development will shift everything up a gear?**

We're now aiming at pushing product safety. UVS International has initiated the RPAS Autopilot Validation Tool Group, which has developed an inspection algorithm for autopilots – one of the most crucial parts of a remotely piloted aircraft. The study group brings together important industry players from Europe as well as Canada, China and the USA. They have determined the required functional capabilities which the algorithm has to fulfil. This model will be integrated in a laptop which will be hooked up to the autopilot of the aircraft that has to be inspected. The laptop will be used to program the various flight missions that the autopilot has to perform. Those missions will be flown virtually and during the flights the autopilot will be presented with internal and external problematic events. How does the autopilot react? How precisely is the flight plan executed? The algorithm will measure the results. Depending on the grading, the system would then receive the European CE quality mark of product safety – or not, as the case may be. This would set a very useful industrial standard. If the autopilot does not obtain the predetermined grade, it will be difficult to obtain insurance for the related drone system. The next step now is to supply the study results to the European authorities so they can use them as the basis for a public tender to produce the required algorithm.

## About Peter van Blyenburgh and UVS International

Peter van Blyenburgh has been involved with unmanned aerial systems since 1987 and supplies advisory services in this field to corporate and governmental entities in Europe, the Middle & Far East and North America. He is president of UVS International ([www.uvs-international.org](http://www.uvs-international.org)) which he founded in 1997. Van Blyenburgh is an active participant in many RPAS-related international working groups and advisor to EUROCAE WG73, honorary member of the European Group of Institutes of Navigation, The European Institute (in the USA), UVS France and a member of the Air Traffic Control Association.

Operating out of Paris, France, UVS International is a non-profit organisation that represents over 2,800 stakeholders in 44 countries in the field of remotely piloted systems. Manufacturers, operators, service suppliers, research organisations and academic institutions are represented on a worldwide basis in all the competence areas that matter. The annual publication *RPAS: The Global Perspective* is regarded as the world's leading reference work on RPAS (1<sup>st</sup> edition in 2003). See [www.uvsinfo.com](http://www.uvsinfo.com).