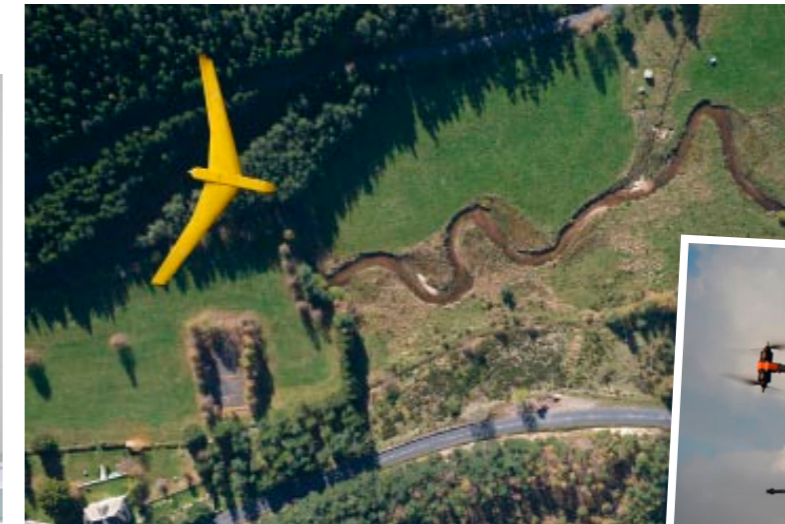


► The L'Avion Jaune team



▼ Bruno Roux and Michel Assenbaum, the co-founders of L'Avion Jaune.



▼ The YellowScan laser scanner system on board an octocopter.



▲ The Altium: gas-powered, fixed-wing UAV with a 4.2m wingspan.

L'AVION JAUNE

# Imaging the Environment

L'Avion Jaune is a service company located in Montpellier, France, providing aerial imagery for environmental studies and precision agriculture. A pioneer in the French market of unmanned aerial vehicle (UAV) mapping services, the company focuses on multispectral imagery and tailor-made operations for research organisations and governmental agencies. To provide such services, L'Avion Jaune has developed unique know-how about specific remote-sensing hardware for UAVs and ultralight aircraft.

L'Avion Jaune is an independent private company which was founded in 2005 by three associates in Montpellier, France. The founders came from various public research institutes (climatology, mapping, agronomy) and had a strong background in optimisation, modelling and remote sensing. The initial business consisted of providing RGB and NIR

imagery to public research institutes using small RPAS. The company then decided to use manned planes for the main production, which was the only way to survey hundreds of square kilometres, as well as carrying heavy and expensive sensors (thermal imagers or multispectral sensors). For specific work, a fully automated system was developed in 2009: a gas-powered fixed-wing UAV with a 4.2m wingspan which is capable of flying for several hours at a pace of about 100km/h. This has allowed L'Avion Jaune to survey the Mururoa and Fangataufa atolls in the South Pacific for the French authority for atomic energy (CEA). The mission was extremely demanding in terms of operational capabilities: flying autonomously at high

altitude (2,000 to 4,500ft), under precise solar angle and sea-state constraints at a remote distance of 45km. 9,000 images were collected on a 60km linear length of the main atoll, and processed into 5cm and 20cm-resolution orthomosaics. In the following years, other contracts have been fulfilled by mapping power plants and rivers in France. Co-founder Bruno Roux comments: "We had the intuition that a company able to deliver aerial images from UAVs could find its way in the geomatics world. The idea was simple, but it took a while to produce the right results." In response to market demands, thermal imagery and laser scanning systems have subsequently been integrated into the company's offering.

**PRIORITISING QUALITY**

Today, L'Avion Jaune continues to map the environment and to unveil features using bird's-view and non-visible imagery. Special attention is given to innovative research projects on remote sensing hardware and survey methodology.

At L'Avion Jaune, a main priority of the management team is quality, both in terms of products and the working atmosphere. The company is led by the belief that quality is primarily ensured by commitment and competence, much more than by formal procedures. Hence, the employees enjoy a very large degree of autonomy, a flat hierarchy and a flat revenue structure. As a result, the company is successful in retaining its experienced workforce – people are more likely to stay in a team where most colleagues become friends, and everyone is committed to providing the best possible customer experience. With a staff of eight and an expected turnover of EUR1 million in 2015, L'Avion Jaune relies on its highly competent team to handle challenging service and R&D contracts, where accurate remote sensing experience is compulsory. Michel Assenbaum, CEO, states: "I'm so happy to work with the staff at L'Avion Jaune and to see everyone's commitment to getting the best possible data and squeezing every piece of information out of it. We have already come a long way from our early beginnings to reach our present level, and yet we are still improving every day."

**INTERNATIONAL FOCUS**

L'Avion Jaune operates mainly in the field of environmental monitoring and agriculture for research and industrial organisations. Its

involvement in the French Association for Environmental Engineering (UPGE) brings many opportunities to collaborate on projects that are ethically and technically rewarding. The company provides highly specialised and tailor-made services to its customers all around the world, with the primary focus being in Europe, North America, South Africa and South America.

Photogrammetry surveys require clear skies and favourable conditions, and a quick response according to the weather forecast is mandatory. To meet the increasingly high demand for surveys, L'Avion Jaune is setting up an international team able to operate anywhere in the world, either with its own UAVs or with manned aircraft and helicopters hired from third parties. In this context, reliable partnerships with local pilots are preferred for manned aircraft, and compact and lightweight materials are used to facilitate logistics.

**YELLOWSCAN**

The company's largest hardware development to date is YellowScan, an ultralight laser scanner system for UAVs. It rose to the challenge and succeeded in designing a fully functional ALS system, including positioning sensors and power supply, within a 2kg box making it one of the lightest fully integrated laser scanning systems in the world, especially suited for UAVs. This new kind of Lidar sensor allows data to be collected cost effectively on projects of just a few square kilometres, which are too small for traditional airborne surveys and too large for TLS. This offers very promising global export opportunities, and the company is currently building up a network of local distributors and resellers who are able to provide YellowScan

demonstrations, training, after-sales services and even surveying services to end customers.

**FUTURE OUTLOOK**

The enthusiastic market response for YellowScan has triggered a new stage in the evolution of the company. The instrument development has now become mature and the next step is industrialisation. Since the YellowScan business is now becoming so large and hardware production is a very different kind of activity than providing services, a new company is being created in the course of 2015 to host instrumental developments and production. The aim is to develop a product range around ultralight laser scanning systems combined with RGB and multispectral cameras in the short term and hyperspectral and thermal cameras in the longer term.

The growing UAV market will probably experience some ups and downs as a result of changes to flight regulations and further technological advances. Many of the newly founded service companies may merge or even disappear if they fail to respond adequately to the market requirement for high-quality data. However, with more than ten years of experience within the UAV remote sensing market and a highly qualified workforce that is comparable to that of a research institute, L'Avion Jaune has the skills and expertise to add value to its clients' most demanding projects. ◀

Every month *GIM International* invites a company to introduce itself in these pages. The resulting article, entitled *Company's View*, is subject to the usual copy editing procedures, but the publisher takes no responsibility for the content and the views expressed are not necessarily those of the magazine.

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