



THE PROVENCE PARTNERSHIP NEWS

www.theprovincepartnership.com

FOCUS ON THE DRONES IN PROVENCE

AERONAUTICS PLATFORMS

Birth of the FCC - Flying Capabilities Campus - at Salon-de-Provence. The FCC - Flying Capabilities Campus - was officially launched on 2 March this year at the Salon-de-Provence airbase, thanks to the combined efforts of a number of scientific, economic and institutional bodies.

The ambition of this new resolutely revolutionary organisation is to accommodate and train professionals specialised in implementing aeronautics and space systems. These flight ops systems, such as drone systems, space missions, etc. are becoming increasingly innovative. FCC also aims to provide training for operators (pilots, astronauts, etc.).

The main areas of FCC research concern space and space operations, drone systems, risk management and energy solutions.

FCC is original not only because of its three-fold function in research, training and industry, but also due to its site, similar to an American university campus. The founding concept consists in offering students, teaching staff and researchers a platform that is open to the world of aeronautics and space industries. Eventually, the campus will benefit from leading-edge facilities, shared laboratories, and will be able to host events and symposiums with an international reach.

Provence acquires a shared technological platform: "Inovsys". Inovsys is an acronym for Advanced Engineering and Processes for System Prototyping. It is a partnership platform devised as part of the Pégase cluster, focusing on mechanical engineering, bringing together industry and the academic world.

Inovsys aims to provide technical solutions to the issues currently faced by companies in the mechanical engineering sector, enabling them to prepare for the technical challenges of tomorrow.

It is a forum for sharing means and skills, a space given over to exchanges between research and industry. The platform offers businesses a wide range of services: expert analysis, equipment made available, prototyping, etc.

Emphasis is placed on four areas of R&D: intelligent dynamic systems, digital and collaborative product engineering, advanced processes for prototyping functional parts and characterisation of materials, parts and structures.

These themes are relevant to many areas of activity, as demonstrated by the support this initiative has received from clusters such as Capenergies (development of energy generation without greenhouse gases), Eurobiomed (biomedical) and Optitec (optics).

Just a few months after it was set up, the Inovsys platform further strengthened its development by acquiring new leading edge technology, representing an investment of nearly one million. www.inovsys.fr

FOCUS ON AERONAUTICS COMPANIES AND UNMANNED AERIAL VEHICLES EXPERTISE IN PROVENCE

The Eurocopter X³ demonstrator was big news at the Paris Air Show. With the first public demonstration of the X³ - a hybrid helicopter - at the Paris Air Show, Eurocopter has defined a new milestone in the race to innovate, and made the world of helicopter manufacturers take notice.

Combining the hovering capacities of a helicopter with the speed of a turboprop aeroplane, the X³ has already exceeded its speed objective during flight tests, achieving a speed of 232 knots (267 mph - 430 kmh). This technological prowess is made possible by combining two turboshaft engines with a five blade main rotor, plus two propellers installed on the fixed wings.

The tests will continue throughout 2011 at the Istres Flight Test Centre, but the X³ already has a very busy schedule to look forward to. Helicopters built according to the X³ hybrid configuration will be designed for long distance search and rescue missions, flights to and from deep-sea platforms, intercity passenger transport, and also transport of troops. The future looks bright indeed! www.eurocopter.com

Avitron, the bionic bird "made in Provence". Once upon a time in the seventies, two engineers invented TIM, the first mechanical bird capable of realistically simulating natural bird flight.

A few decades and technological breakthroughs later, the Avitron project to create the 2nd generation ornithopter is now a reality after three years of unrelenting toil. This small model weighing just 8.35 grammes is a concentrate of innovative materials and technologies, reproducing the real-life movements of birds with great realism.

To design the Avitron it was first necessary to perfect a revolutionary patented speed reduction system, allowing the wings to beat. To build it required two high-end processors, electronic components, carbon fibre, liquid crystal polymers and self-lubricating polyacetal. The bird is controlled by means of a high-end radio remote control, WiFi (2.4 GHz), with a range of 100 metres.

The Avitron is much more than a model aircraft. With its extremely miniaturised components and steering system using wing deformation, inspired by real birds, it is more similar to the drones used in military or civilian fields than to a toy.

Indeed, the US Army is interested in this type of technology, and recently acquired a drone that is



the same size as a hummingbird and looks like one too.

The Avitron, this bionic bird made in Provence, could easily attract the interest of major players, thanks to its revolutionary design.

www.mybionicbird.com

Novadem : “Drones Earn Their Wings”

A reduced size, totally new ergonomics, with a small wingspan and capable of multiple roles... You may recall that, in 2006 already, Novadem’s tiny drone had caught the eye of France’s Direction Générale de l’Armement (General Directorate for Ordnance). Today, Novadem is spreading its wings and introducing more new models. After five years of research and development, with support from the State, the Ministry of Research, the Direction Générale de l’Armement and local regional development agencies, Novadem has gone from the project stage to putting a comprehensive service package on the market.

Specialists in the design and construction of drones, Novadem now offers a range of several aircraft types:

- **The NX110**, designed for emergency situations, such as search and rescue operations;
- **The UI30**, used for inspecting structures and aerial photography missions;
- **The NX110m**, the “heavy-duty” version, adapted to withstand severe conditions in a hostile environment. Developed for military



applications, this version features the latest in vision technology.

Drones can be used in every market in fact, whether it’s military, civil or commercial.

For example, the construction industry intends using them for inspecting structures

and the civil defense and fire departments for search and rescue or damage appraisal following natural disasters. Moreover, each drone must be adapted to suit the buyers’ specific requirements. A comprehensive package implies more than just delivery; it must include assistance, training and maintenance to give the clients the freedom they need to get on with the job. Today, these solutions are ready for the market and, already, the first contracts have been signed.

www.novadem.com

SYNERGIES

Drones: the new direction for the future of the Pégase Cluster

On 5 May 2011 the Pégase Cluster officially created the drones committee. This committee is in fact a think tank segmented according to fields of interest, bringing together people from industry and academia. Its two main objectives are to:

- identify the best technological solutions designed in the Provence-Alpes-Côte d’Azur region in order to improve the industry’s visibility,
- contribute to structuring and developing a national industry of excellence in the drones sector.

By appointing experts renowned for their professional experience and expertise, it is the ambition of this new body to become a unique centre of expertise, recognised as such at the national and international level. The drone committee will also act as a “toolbox” to facilitate the emergence of innovative technologies and production of new generations of aircraft. Bearing in mind that the civilian drone market is estimated at €2 billion, forecast to triple in size in the next 10 years, local small businesses developing innovative projects have an important role to play. In addition, the transverse nature of new technological applications developed by the local industrial fabric promises to give drones a bright future.

The creation of the drones committee by the Pégase competitiveness cluster is a logical consequence of the actions undertaken by the Provence-Alpes-Côte d’Azur and Aquitaine regions, united within the bi-regional SYSDRONES group. www.pole-pegase.com

Sysdrones unifies the drones industry in France

The SYSDRONES association was officially created on 21 June this year at the Paris Air Show, as the result of determination shared by the Provence-Alpes-Côte d’Azur and Aquitaine regions to provide governance for the national Drones industry. The purpose of this body will be to contribute to structuring industrial facilities and to define a national roadmap for development of this sector of activity.

In a context where a sector generating high added value jobs is emerging, SYSDRONES has two ambitions: to open up domestic and export markets, and to organise the industry to create tomorrow’s “champions”.

This initiative is part and parcel of the actions already implemented by the Provence-Alpes-Côte d’Azur region, the Pégase competitiveness cluster, and AETOS, the drones cluster in the Aquitaine region.

FACTS & FIGURES

Keys figures

- 40,000 jobs,
- 45,000 military jobs,
- 2,500 individuals in private R&D,
- 1,700 researchers,
- 250 specialized SMEs (180 from the Pegase Cluster).

Fields of expertise in UAV and dirigibles

- Aeronautical design,
- Sensors,
- Signal processing,
- Inspection,
- Airworthiness.

Companies specialized in UAV in Provence

- ACSA - www.underwater-gps.com
- Bertin Technologie - www.bertin.fr
- ECA - www.ecagroup.com
- Novadem - www.novadem.com
- Opera Ergonomie - www.opera
- RFTronic - www.rftronic.com
- Subsea Tech - www.subsea-tech.com
- 2MoRO - www.2moro.com
- Pict’earth - <http://pictearth.com>

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