

December 2012

Alenia Aermacchi: leader in Unmanned Aerial Systems (UAS), the new technology frontier in aviation

Alenia Aermacchi is the leading European player in the fast growing field of Unmanned Air Systems (UAS) for the civil and defense markets.

Alenia Aermacchi's Unmanned Aerial Systems (UAS) main activities are focused on the development of technological demonstrators such as Sky-X, Sky-Y, and nEUROn and on research and development of advanced MALE products (Medium Altitude Long Endurance).

The Sky-X is the first UAV technological demonstrator developed by Alenia Aermacchi. It was conceived as a UCAS demonstrator and in May 2005 it set the European record in the over-one-ton UAV category with a successful flight testing the main system's components and flight characteristics. In June 2008, the Sky-X set a new world record, taking off from Amendola AFB, in the Puglia Region, completing for the first time in the world a series of join-up manoeuvres with another airplane to simulate a flight-refuelling operation, in a completely automated process.

The Sky-Y was specifically developed as demonstrator of innovative techniques and technologies for a surveillance and reconnaissance MALE UAV. The platform's main goals are to check the use of carbon-alloy light structures and test the diesel engine technologies of automotive derivation for the aeronautical field. This activity is intended to minimize consumption, keep operational costs low, and use the same fuel as jet aircraft rather than the expensive and increasingly hard-to-find aviation fuel. The Sky-Y flew for the first time in June 2007 and holds the continental record of 8 consecutive flight hours for UAVs of below-1,000-kg class, achieved at the Vidsel base in Sweden.

The Sky-Y has been chosen by the MIDCAS program to demonstrate an in flight sense and avoid system available for a UAS, showing it is able to fulfil the requirements for traffic separation and mid-air collision avoidance in non segregated airspace.

nEUROn is a European cooperation program developed to conceive, produce, and test the first European UCAS demonstrator with stealth characteristics. Alenia Aermacchi is a first-level partner with responsibility for design and production of the electric power generation and distribution, the air data system (sensor for flight parameters and algorithms), the low-observability components and, above all, the integrated weapon system called Smart Integrated Weapon Bay (SIWB).

With this solid background and thanks to its capabilities of design, development and integration of certifiable complex systems, Alenia Aermacchi's goal is to offer UAS products for civil and military applications, with advanced autonomy capable of meeting the certification requirements for flight in non-segregated airspaces under definition.