

Webinar informations

December 16th 2020 9 am-12 am

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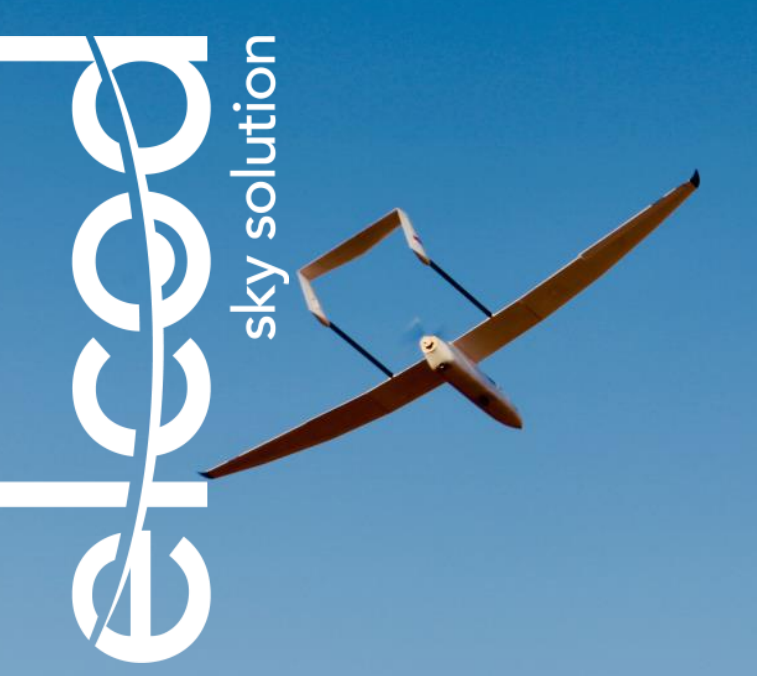
webinar

within the European
INTERREG Programme

December 16th 2020

www.elcod.eu





Endurance Low Cost Drone

Within the ELCOD project that is co-funded by the European Regional Development Fund (ERDF) in the framework of the INTERREG V Upper Rhine program, we develop a long endurance low cost drone. With a maximum takeoff weight of 25 kg we aim for a range of 5'000 km, utilizing proven, robust and reliable components.

This webinar is intended for everyone who is interested in unmanned aerial vehicles. We hereby offer you an interesting programme, where development issues of drones, flight control systems, light weight design, manufacturing, engineering simulations, etc. are covered.

As a highlight of this webinar we invite you to watch some videos of flight demonstrations of different, well proven drones and ELCOD's technology carrier prototypes.

webinar programme

9:00 — 9:10 Prof. Dr. J. Ettrich | **Welcome & Introduction**

A warm welcome to the ELCOD project! We will provide you with a presentation of the ELCOD project.

9:10 — 9:20 Prof. Dr. R. Kiefer | The "Stork" Drone

The prototype developed by the project members at INSA Strasbourg, is designed with respect to the utilization of a fuel cell for long range with brushless DC motor propulsion. We herein present you the design considerations, the technical aspects and implementation for the so called Stork design.

9:20 — 9H30 Prof. Dr. W. Schröder | The "Delta" Drone

Aiming for long range long endurance applications, the project members from Offenburg combine a classical robust design strategy, low cost materials and a thermal engine. The presentation shows the growth and development of the so called Delta design.

9H30—9H50 Break / Flight videos presentations

9H50 — 10H10 Dr. S. Le Calve | Embedded Air Quality Sensing

A device gathering a set of environmental sensors has been developed at ICPEES. These sensors measure the concentrations of air pollutants involved in the episodes of photochemical pollution in large cities. These sensors are embedded in the drone and data could be used to map in 3D the air quality of an urban or non urban areas.

10H10 — 10H20 Dipl. Ing. M. Lefebvre | Manufacturing, Mechanical Simulations and Wing Optimization

The presentation will provide an insight into the mechanical design and manufacturing process of the Stork Drone as well as details and findings from bio composite design and computational engineering methods.

10H20 — 10H40 Dipl. Ing. T. Pavot ; Dr. Dipl. Ing. A. Paulino | Electronic Design and Automatic Flight Control

The "Stork" UAV was designed to operate with a fuel cell. Its integration required the creation of an interface card to power all the electronic components of the drone, from the engine to the flight controller. The Stork UAV will be flown by the PX4 flight controller, renowned and proven by the scientific and industrial sectors. We will discuss about the modelization of the UAV and the optimization of the PID controllers for the real flights.

10H50—11H00 Break / IMAV 2019 competition presentation

10H40 — 10H50 Dipl. Ing. S. Staiger | Delta 4T motor optimization

The "Delta" UAV has been optimized for high endurance flights using thermal engines. The discussion will focus on the optimization of this UAV and its engine based on a 4-stroke engine.

10H45 — 11H15 Prof. Dr. J. Ettrich | **ELCOD conclusion, outlook**
Open discussions

Save the Date

Gotomeeting Webinar & Flight videos
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... our main speakers

Offenburg University of Applied Sciences | IUAS

Prof. Dr. Werner Schröder	Aerodynamic Design & Flight Control
Prof. Dr. Jörg Ettrich	Engine & Flow Simulation
Dipl. Ing. Stefan Staiger	Engine & Flight Control

Institut National des Sciences Appliquées Strasbourg | INSA

Prof. Dr. Renaud Kiefer	Design & Flight Control
Prof. Dr. Marc Vedrines	Mechanical Engineering
Dipl. Ing. Martin Lefebvre	Mechanical Engineering
Dipl. Ing. Thomas Pavot	Electrical Engineering
Dipl. Ing. Dr. Ana Paulino	Automatic & Flight Control

Centre national de la recherche scientifique | CNRS/ICPEES

Dr. Stephane Le Calve	Chemistry & Measurements
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ELCOD TEAM at the 2nd WORKSHOP in KEHL

