
Program

5th International Workshop

Unmanned and Swarming Conference

Research Challenges for Future Unmanned Systems
and Autonomous Swarming

Date: October 10-11, 2018

Location: Maison des Associations
55 Avenue du Maréchal de Lattre de Tassigny, 33700 Mérignac, France

in Conjunction with UAV Show (<https://uavshow.com/en>), Europe's largest professional drone airshow and exhibition, Mérignac (Bordeaux), France



registration is open

<https://congres.adera.fr/congres/5th-International-Workshop-Unmanned-and-Swarming-Conference/uk>

Whether or not UAS (the notion encompassing both RPAS and Autonomous Systems) will be part of the toolbox of the future for both military and civilian applications is no longer a question. The vision of Isaac Asimov, when visiting the 1964 World's Fair, of what the 2014 Fair (50 years later) would look like is almost fulfilled. Won't one recognize the unmanned systems of today in the "*vehicles with "Robot-brains" - vehicles that can be set for particular destinations and that will then proceed there without interference by the slow reflexes of a human driver.*" that he describes and that will "*maneuver in crowds at the two-foot level, neatly and automatically avoiding each other.*"? Nevertheless, numerous technical, legal and ethical issues remain. The goal of this conference is to address them.

This conference is the fifth in the series. It focuses on UAS, supportive technologies, software environments and the associated key research issues, with special focus on autonomy and swarming. One of its aims is to bring together the community and to provide an opportunity to share experience and views of current trends and activity in the domain.

Wednesday October 10th, 2018

13h45-14h00 Opening and welcome by the Program Chair

Pr. Serge Chaumette, Bordeaux Computer Science Laboratory (LaBRI), University of Bordeaux, France

14h00-15h00: Keynote 1

Managing Drone Swarms for Inspection

Henri Garih, PhD, Scientific Project Leader

Scalian Eurogiciel, France

Session 1

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| 15h00-15h30 | <p>Interacting with a swarm of semi autonomous drones with SoundPainting Gestures</p> <p>Sébastien Bottecchia (ESTIA), Joseph Canou (ESTIA), David Gomez (ESTIA), Serge Chaumette (LaBRI), and Nadine Couture (ESTIA and LaBRI)</p> <p>University of Bordeaux, France</p> |
| 15h30-16h00 | <p>Distributed Leader Election Within UAVs Swarm Under Leader-Followers Formation</p> <p>Kheireddine Choutri (ASL ASSI), Lagha Mohand (ASL ASSI), Allel Hadjali (LIAS ENSMA) and Samiha Fadloun (LIRMM)</p> <p>University Blida 1, Algeria and University of Montpellier, France</p> |

16h00-16h30: Coffee Break

16h30-17h00: Keynote 2

Drone Detection System for Sensitive Area, a patent from Le Havre Normandy University

François Guérin (Maître de conférences HDR, Le Havre Normandy University, France) and Jean-François Adam (droneXTR, France)

Session 2

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| 17h00-17h30 | Flight Data Summarization: A Fuzzy-Set-Theory-Based-Approach Khadidja Boulanouar, Allel Hadjali (LIAS ENSMA) and Lagha Mohand (ASL ASSI) University of Montpellier, France |
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17h30-19h00 : speed poster-dating followed by poster cocktail

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| 17h30-18h00 | Each poster presenter will have between 5 and 10 minutes to present his/her work |
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| 18h00-19h00 | Poster discussion around a cocktail |

Thursday October 11th, 2018

9h00-9h30: Keynote 3 – visio from University of North Texas, USA

Joint Orchestration of Communication and Control Strategies for Unmanned Aerial Vehicle Swarms

Kamesh Namuduri, Professor

University of North Texas, USA

9h30-10h00: Best poster session

Best poster and prize (the winner will receive a Parrot minidrone), announced by *to be confirmed*

10h00-10h30: Break

Session 3

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| 10h30-11h00 | A Brief Overview of Security Proposals for UAV-based Solutions <u>Damien Sauveron</u> , (XLIM) University of Limoges, France |
| 11h00-11h30 | Bayesian Optimisation to Improve the Coverage Performance of a UAV Swarming Mobility Model Martin Rosalie (SnT LGDP), Emmanuel Kieffer (SnT), <u>Grégoire Danoy</u> (FSTC-CSC), and Pascal Bouvry (SnT FSTC-CSC) University of Luxembourg, Luxembourg and University Perpignan, France |
| 11h30-12h00 | Leader follower formations of multi quadrotors group <u>Mark Bastourous</u> (LITIS), Francois Guerin (GREAH), and Frederic Guinand (LITIS) Le Havre Normandy University, France |

12h00-12h15: Best paper session

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| Best paper announced and prize (the winner will receive a Parrot minidrone), announced by <i>to be confirmed</i> |
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12h15-12h30 Closing by the Program Chair

Pr. Serge Chaumette, Bordeaux Computer Science Laboratory (LaBRI), University of Bordeaux, France