Program

6th International Workshop

Unmanned and Swarming Conference
Research Challenges for Future Unmanned Systems and Autonomous Swarming

Date: October 19-20, 2021

Location: Palais 2 l'Atlantique
Parc des Expositions de Bordeaux, Bordeaux, France

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

It is now clear that UAS (the notion encompassing both RPAS and Autonomous Systems) will be (and already are) part of the toolbox of the future for both military and civilian applications. 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 sixth 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.

This sixth conference is the first post pandemic one, and we thus have a lot to share, which has been difficult to do since last edition.

Tuesday October 19th, 2021

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

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

14h00-15h00: Keynote

Cas d'usages militaires et civils des essaims de drones

Raphaël WOJCIECHOWICZ, Directeur Technique / CTO

BP SOLUTIONS, France

15h-15h40: Session 1

15h00-15h40	**Corridors: Concept, Design, and Rules of Engagement** **Kamesh Namuduri** University of North Texas, USA

15h40-16h00: Coffee Break

16h00-17h20: Session 2

16h00-16h40	**A drone honeypot able to deal with interactions with the physical world** Serge Chaumette and **Titien Cubilier** University of Bordeaux, LaBRI, France
16h40-17h20	**Clone attack detection in Swarms of Autonomous Aircraft Systems** Bouchar Bounab, **Serge Chaumette**, Damien Sauveron et Akka Zemmari University of Bordeaux, LaBRI and University of Limoges, XLIM

17h30-19h00: (students) Posters and cocktail

17h30-19h00	(students) Posters around a cocktail

Wednesday October 20th, 2021

9h00-9h30: Best poster prize

9h-9h15: discussion around the students posters

9h15-9h30: Best poster prize   announced by Pr. Kamesh Namuduri and Pr. Serge Chaumette

9h30-10h10: Session 3

9h30-10h10	**Trajectory path tracking of a drone in a disturbed environment** Serge Chaumette, Pierre Melchior, **Stéphane Victor** and Halim Ould Lahsen, Université de bordeaux, IMS, LaBRI and Ecole Centrale Lyon, France

10h10-10h30: Break

10h30-11h10	Automating the design of UAV Swarms
	Grégoire Danoy, Daniel H. Stolfi, Gabriel Duflo, Florian Felten, Pierre-Yves Houitte, Pascal Bouvry
	University of Luxembourg, Luxembourg
11h10-11h50	**Grounded cognition and Tangible User Interface combination for optimization of situational awareness of UAVs from ground control stations**
	Valentin BRAUD, Vincent FERRARI, Nadine COUTURE, Laurent BOVET
	Centre de recherche de l'école de l'air, Ecole de l'air et de l'espace, Aix-Marseille université, Univ. Bordeaux, ESTIA INSTITUTE OF TECHNOLOGY, Bidart, ELISA Aerospace, Saint-Quentin

11h50-12h00 Closing by a member of the Steering Committee and announcement of the next edition

Pr. Kamesh Namuduri, University of North Texas