

UIMP - Summer School

TECHNOLOGIES FOR FUTURE SERVICES AND BUSINESS MODELS
BASED ON SAFE AND AUTONOMOUS DRONES

July 18-22, 2022, Santander, Spain

Course Description

The course aims to provide interested participants with a research roadmap and state-of-the-art in enabling technologies for drones. The course, derived from the research activities in the COMP4DRONES project, covers key technologies in this domain, such as smart sensing, trusted communication and model-based system engineering. The technologies will be demonstrated on four industrial application domains for drones (transport, logistics, agriculture, supervision and inspection).

The 5 days program has been structured by devoting each day to a specific topic. Concretely, the reference architecture for drones, the required SW in smart, autonomous drones, the trusted communication for swarm applications and the technologies enabling the development of UAV-based services. A final panel with the main stakeholders in the field will discuss current barriers and future developments. The course will count with outstanding lecturers from industry and academia.

The course is targeted to engineers and managers in companies providing drone-based services, researchers in industry and academia, entrepreneurs and public in general interested in the last technologies supporting the development of those complex services.

Registration: https://lnkd.in/eN8wD_vW



Lectures

- 1) Comp4Drones: Key enabling technology framework for drones
- 2) Safe Integration of UAV in the Airspace
- 3) UAV Architecture and Challenges: C4D Reference Architecture
- 4) C4D Reference Architecture Implementation on the Paparazzi autopilot
- 5) Artificial Intelligence with grid cells and synthetic data
- 6) Neuromorphic sensors and processing systems for drone applications
- 7) Risk Analysis and Certification Frameworks for Critical Trusted AI Applications
- 8) U-SPACE regulation and simulation
- 9) Cellular connectivity and telecommunication infrastructure for UAS solutions
- 10) A positioning solution for long indoor infrastructures relying on robust and enriched ultra wideband (UWB)
- 11) Autonomous Drones for Infrastructure Inspections: Design and Challenges
- 12) Drone development from existing vehicle technologies
- 13) Building An All-European HPC Processor using Open technologies
- 14) Modeling and Simulation of UAV-based Services
- 15) Model Based Development and Testing: case study cryptography
- 16) Droneport: From Concept To Simulation and Prototype
- 17) Use-Cases Demonstrations

Round Table: Innovation vs Regulation. Opportunities and Challenges; *Teresa Riesgo - Secretary General for Innovation – Spain, Nicholas de Kergolay - USPACE Expert – France, Javier Viejo Acosta - Business Development Director - INDRA – Spain, Emmanuel Grolleau - Full Professor - ENSMA - France*