



**CALL FOR PAPERS
SPECIAL SESSION ON**

**Autonomous navigation systems of unmanned surface vehicles (USVs)
and unmanned underwater vehicles (UUVs)**

**for ICCAD 2026
July 7-9, 2026, Lisbon, Portugal**

Session Co-Chairs:

-Duarte Pedro Mata de Oliveira Valério, IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Portugal, duarte.valerio@tecnico.ulisboa.pt

Session description:

This special session deals with the problem of autonomous navigation systems of unmanned surface vehicles (USVs) and unmanned underwater vehicles (UUVs). In many sectors, autonomous cars are becoming more and more common. In marine contexts, where we can differentiate between unmanned surface vehicles (USVs) and unmanned undersea vehicles (UUVs), their dynamic evolution may also be seen. One of the most important functions that such marine vessels must carry out is navigation. To prevent collisions with both static and dynamic barriers, the vehicle must be able to move safely between its current position and a predetermined final position. Oceanographic research, monitoring of maritime traffic and coastal areas, search and rescue, inspection, maintenance, and surveillance activities in the offshore industry are just a few of the many applications for USVs and UUVs.

This Special Session is aimed at presenting high-quality research and the state of the art in the area of unmanned surface and underwater vehicles. Since the primary goal of this Special Session is to design and develop navigation systems for USVs and UUVs, contributions about applicable sensors and sensor fusion, obstacle avoidance systems and techniques, motion control systems, and algorithms are all invited.

The topics of interest include, but are not limited to:

- Machine learning, swarm intelligence, and other computational intelligence methods for USVs and UUVs;
- Autonomous navigation systems of USVs and UUVs;
- Motion control methods for USVs and UUVs;
- Sensors and sensor fusion in USVs and UUVs;
- Obstacle avoidance methods for USVs and UUVs;
- Swarms of USVs and UUVs.
- Mission planning;
- USVs and UUVs applications;

SUBMISSION

Papers must be submitted electronically for peer review by **January 31, 2026**

<https://www.iccad-conf.com/submission/>

All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double-column format).