



3<sup>rd</sup> International Conference on Unmanned Vehicle Systems Intelligent Systems for Industrial Challenges

# 9-11 Feb 2026

Sultan Qaboos University Muscat, Oman

## **Call for Papers**

The range of targeted topics is very broad, but priority is given to subjects on real world applications; including: research, industry, business, and education. The Technical Program Committee is inviting proposals for paper presentations, demonstrations, and poster contributions on topic relevant to UVS.

## **Closing date** 15 Sep 2025

### **Conference Tracks:**



Technological Advances in Unmanned Vehicle Systems and Robotics



Intelligent Navigation, Control, and Decision-Making



Applications and Use-Cases of UVS and Robotics in Industry and the Public Sector



Integration with IoT, Smart Cities, and Urban Mobility



Data Analytics, Cybersecurity, and System Resilience

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Education and Training of Unmanned Vehicle Systems (UVS) and Robotics



Regulatory, Ethical, and Societal Implications



Challenges and Future Trends in UVS and Robotics

#UVSOman @UVSOman Conference website: http://uvsc.om



Submission of full Manuscript Notification of Acceptance Camera-ready Submission

15 Sep 2025

17 Nov 2025 8 Dec 2025





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# **Call for Papers**

#### **Steering Committee**

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- Dr. Majid Al-Maharbi, Assistant Dean for PGSR
- Dr. Hassan Al Lawati, Assistant Dean for UGS
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- section HoD, ECED Prof. Hadj Bourdoucen, (Chair, Organizing
- Committee)
- Prof. Rashid Salim Al-Maamari, (Co-Chair, Organizing Committee)

#### **Organizing Committee Chairs**

Prof. Hadj Bourdoucen, Chair Prof. Rashid Al-Maamari, Co-Chair

#### **Technical Program Committee Chairs**

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**Publicity Chair** Dr. Aliya Al-Hasim

#### **Financial and Local Arrangement** Mr. Mohammed Al Sawafi, Chair Mr. Ahmed Al Kharbooshi, Co-Chair

#### Information

Any comments or requests should be submitted through: uvs-oman@squ.edu.om, engadm@squ.edu.om

> **Submissions** All submission should be done through EDAS: https://edas.info/

#UVSOman 🕥 @UVSOman Conference website: http://uvsc.om

#### 1. Technological Advances in Unmanned Vehicle Systems and Robotics

- · Innovative design approaches and modular, scalable architectures
- · Propulsion systems: electric, hybrid, and alternative power sources
- · Lightweight and durable materials for improved efficiency
- · Sensor and perception technologies for enhanced autonomy
- Energy efficiency and power management solutions
  Self-healing materials and damage-resistant structures
- · Adaptive camouflage and stealth technologies
- · Bio-inspired design and engineering
- · Micro-Electro-Mechanical Systems (MEMS) Applications in UVS
- 2. Intelligent Navigation, Control, and Decision-Making

  - Machine learning and Al-driven navigation algorithms
    Simultaneous Localization and Mapping (SLAM)
    Navigation in GPS-Denied Environments

  - · Swarm intelligence and multi-vehicle coordination
  - · Bio-inspired navigation and adaptive control systems
  - · Real-time decision-making and self-learning autonomy · Multi-sensor fusion for robust localization and obstacle avoidance
  - · Condition monitoring and fault tolerance of autonomous vehicles and operations
- 3. Applications and Use-Cases of UVS and Robotics in
  - Industry and the Public Sector
  - · Oil and gas asset monitoring, inspection, and maintenance
  - · Inspection of power grids and critical Infrastructure
  - · Logistics, supply chain, warehouse management, and package delivery
  - · Precision agriculture and innovative farming solutions
  - · Environmental monitoring and disaster response
  - · Mining and hazardous environment operations · Mapping and Geographic Information Systems (GIS)
  - Marine and underwater exploration
  - · Defense and security applications, including border surveillance
  - Healthcare applications, including medical supply delivery
    Tourism and Filmmaking

  - · Space exploration and planetary rovers
  - · Design, Construction, and Building Performance Monitoring
- 4. Integration with IoT, Smart Cities, and Urban Mobility
  - · Data interoperability and real-time traffic analysis
  - · Smart traffic management and autonomous public transportation
  - · Emergency response systems and disaster management integration
  - · Standards for data exchange and communication
  - Community engagement in urban planning and adoption strategies
     Integration of UAVs with 5G networks

  - · Digital Twins for Smart Cities

#### 5. Data Analytics, Cybersecurity, and System Resilience · Big data analytics and predictive insights for UVS

- · Real-time data processing, edge computing, and visualization tools
- · Communication protocols for reliable system coordination
- · Cybersecurity threat assessment and vulnerability analysis
- · Blockchain for secure data sharing in connected unmanned systems · Robust security protocols, encryption methods, and cryptographic
- protection · Secure communication, incident response, and adaptive defense mechanisms
- · Continuous monitoring strategies for resilient unmanned systems
- · AI-driven anomaly detection in cyber-physical systems
- · Post-quantum cryptography for securing unmanned systems



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#### 6. Education and Training of Unmanned Vehicle Systems (UVS) and Robotics

· Integrating Unmanned Vehicle Systems into Engineering & STEM Curricula

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- · Hands-on Learning with UVS: Lab-Based Approaches and Simulations · Developing Low-Cost Educational Drones and UGVs for
- Schools & Universities
- Multidisciplinary Approaches to UVS Education: Combining Robotics, AI, and IoT Competitions and Hackathons: Engaging Students in UVS
- Innovation
- · Certifications and Accreditation in UVS Education
- · Teaching Ethics, Safety, and Regulations for UVS Operations Digital Twins and Virtual Reality for UVS Training
- · Bridging the Gap Between UVS Education and Industry Needs
- · Internships and Industry Partnerships for UVS Students

#### 7. Regulatory, Ethical, and Societal Implications

- Safety standards, certifications, and legal accountability
  Ethical dilemmas in autonomous decision-making
- · Privacy concerns and data protection in unmanned systems · Public perception, acceptance, and policy frameworks
- · Development of international regulations and compliance
- measures

· Trust, reliability, and user acceptance studies

practices

trends

autonomous vehicles

Targeted Audience

**Parallel Activities** 

Sultan Qaboos University

Al-Khoud, Muscat

Sultanate of Oman

P.O. Box 50, Postal code 123

regulating UVS.

presented.

Location

- · Liability in accidents involving unmanned systems
- · Workforce displacement and economic impact of automation · Risk and reliability of autonomous vehicle systems

#### 8. Challenges and Future Trends in UVS and Robotics Intuitive user interfaces and ergonomics for unmanned systems Training, simulation, and VR/AR-based operator environments

· Sustainability considerations and eco-friendly operational

· Overcoming regulatory, technological, and societal barriers · Psychological and cognitive effects of human interaction with

Anyone interested in using, developing, and

In parallel with the conference event, workshops

will be organized on a number of specialized

subjects for UVS developers and end-users. In

addition, an exhibition of UVS products will be

· Standardization of human-UVS interaction protocols · Emerging technologies, AI advancements, and global market