ICUAS ASSOCIATION, INC.

ISSUE 11, SUMMER 2022

***Dear Readers:***

Welcome to the Summer 2022 issue of the ICUAS Association Newsletter. The focus of this Newsletter is on reporting about the ICUAS 2022, and on sharing initial information about the 2023 Conference. However, the first piece of important information is to let you know that the Conference Proceedings have appeared on IEEE Xplore, click on **https://ieeexplore.ieee.org/xpl/conhome/9836022/proceeding.**

## REPORT ON ICUAS 2022

The 2022 International Conference on Unmanned Aircraft Systems that took place in Dubrovnik, Croatia, on June 21-24, was very successful, beyond initial expectations. ICUAS'22 was planned to be a mainly 'physical presence' meeting, also allowing for virtual presence. ICUAS'22 was attended by 241 physically present participants and more than 70 virtual attendees.


We capitalized on our prior experience in organizing and handling hybrid nature conferences. We had an 'open channel' of information with all interested parties. We provided clear steps for both physical and virtual attendance. We offered recommendations for play-back video presentations, although we encouraged live video presentations. We assembled a technical program that considered the different time zones of virtual paper presentations and attendees. We used the zoom for business platform, which was proved, once more, reliable. Each session was coordinated by the session chair and/or co-chair, and it was monitored by a graduate student volunteer, who was physically present in the corresponding meeting room; audio was handled properly, without issues. All technical sessions ran smoothly without interruptions; we did not face major technical problems that could not be handled on the spot - it was an easy ride in the park!

Even though COVID-19 is still present in our lives, we received in response to the Call for Papers a healthy number of 245 contributed, invited session, and poster papers. All things considered, the number of received contributions is indicative of the reputation of the conference and the appeal it has to the technical society. Following a very thorough and in-depth peer review process in which each paper had at least three reviews (plus an additional review from a member of the organizing committee), and as high as 11, the committee

accepted for presentation and inclusion in the conference proceedings 200 contributed, invited session and poster papers. All papers were also checked following the iThenticate Document Viewer Guide before the final decision was made. We assembled a full three-day top-quality Technical Program composed of five parallel tracks. The Table shows submitted and accepted papers per country.

| | SUBMITTED | ACCEPTED | | SUBMITTED | ACCEPTED | | SUBMITTED | ACCEPTED |
|---|---|---|---|---|---|---|---|---|
| USA | 43 | 39 | Croatia | 6 | 6 | Romania | 2 | 1 |
| Spain | 14 | 13 | Czech Republic | 6 | 6 | Switzerland | 2 | 1 |
| Canada | 13 | 11 | Korea, South | 5 | 4 | Costa Rica | 1 | 0 |
| Germany | 12 | 10 | Turkey | 5 | 3 | Ecuador | 1 | 1 |
| China | 11 | 7 | United Kingdom | 5 | 5 | Egypt | 1 | 0 |
| France | 11 | 8 | Austria | 4 | 3 | Finland | 1 | 1 |
| Norway | 11 | 11 | Denmark | 4 | 4 | Israel | 1 | 0 |
| Brazil | 10 | 8 | Australia | 3 | 3 | Japan | 1 | 0 |
| India | 10 | 7 | Greece | 3 | 3 | Lebanon | 1 | 1 |
| Italy | 10 | 9 | Iran | 3 | 1 | Luxembourg | 1 | 1 |
| Mexico | 9 | 6 | Portugal | 3 | 3 | New Zealand | 1 | 1 |
| Cyprus | 8 | 8 | Russia | 3 | 2 | Sweden | 1 | 1 |
| Poland | 7 | 4 | Belgium | 2 | 1 | United Arab | | |
| Singapore | 7 | 4 | Netherlands | 2 | 2 | Emirates | 1 | 1 |
| | | | | | | **Totals** | **245** | **200** |

**ICUAS'22 considered seven Tutorials/Workshops. Based on registration, the following three were offered:**

- New Developments on Sense-and-Avoid (S&A), Distributed Fault Diagnosis (DFD), Fault-Tolerant Control (FTC) and Fault-Tolerant Cooperative Control (FTCC) Techniques for UAVs and Their Applications
- U-space for the future Urban Air Mobility: concepts and challenges
- Aerial-Core – boosting the adoption of aerial robotics in real-world applications

**The conference also included four Keynote/Plenary Lectures given by leading authorities in their fields.**

- ***Is control a solved problem in robotics UAV research?*** Antonio Franchi, University of Twente, Twente, The Netherlands.
- ***Unmanned Aircraft Systems Regulations. New era for Aviation Law?*** Anna Konert and Piotr Kasprzyk, Institute of Air & Space Law, Warsaw, Poland
- ***Recent Advances in the Assessment and Certification of AI Ethics***, Ali G. Hessami, Vega Systems, London, United Kingdom
- ***Frontiers of Autonomous Flight and Real-time 3D Reconstruction from Skydio,*** Hayk Martiros, Skydio, Redwood City, California, USA

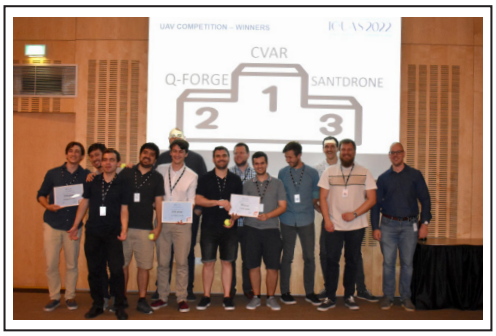
Each session was coordinated by the session chair and/or co-chair, and it was monitored by a graduate student volunteer, who was physically present in the corresponding meeting room.

A novel aspect of ICUAS'22 was that it included for the first time a UAV Competition. The Competition was student focused, offering unique opportunities for students to test and compare their skills with those of their peers, worldwide. 47 teams from around the world expressed interest in participating in the competition. The committee received and reviewed 15 solutions for the simulation phase, and selected the top 5 teams to perform live, during

the conference. ICUAS'22 supported the finalists covering their accommodation and registration expenses. After a very tight competition the team CVAR from Universidad Politécnica de Madrid, Escuela Técnica Superior Ingenieros Industriales ETSII, Spain (David Perez Saura, Pedro Arias Perez, Rafael Perez Segui) won the first place.

The social agenda complemented the technical component of the conference. It allowed for participants to interact with each other, socially, technically, cordially, and in a relaxed atmosphere. It was obvious that physical interaction in conferences has no substitute.

We ensured that the social agenda of the conference fits the people's needs to relax and interact. Dubrovnik and its beautiful scenery made our choices even better! We carefully planned a series of events both for young and experienced professionals, and allowed for attendees to interact with each other, socially, technically, cordially, and in a relaxed atmosphere.




In summary, ICUAS'22 was a very successful conference. Attendees were very pleased, understanding, and accommodating. We received only positive feedback after the event, and we are happy about it. We are ready to go to Warsaw, Poland, in 2023, June 6-9. We aim for a physical participant only conference. Time will show!

*The "three musketeers" from left to right Matko Orsag, Alejandro Suarez, Kimon Valavanis.*

## ICUAS ASSOCIATION NEWS

To better serve you, we have upgraded our website and we have made it more reader friendly. We still encourage you to submit information about your projects, laboratory, research findings, etc., which will be uploaded under the "External Projects" entry. You also may submit a write up on project results, or a link that summarizes your research activities, a video of a successful flight, or any other accomplishment. Please submit the information to **kvalavanis@gmail.com.**

## ICUAS - CONTACT US

**For any information, feedback, membership, you may contact us as follows:**

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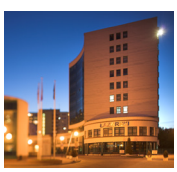
# 2023 INTERNATIONAL CONFERENCE ON UNMANNED AIRCRAFT SYSTEMS (ICUAS '23)

**www.uasconferences.com/2023_icuas**

## JUNE 6 - 9, 2023
## Lazarski University, Warsaw, Poland





For any information about ICUAS'23 e-mail Kimon Valavanis, **kvalavanis@gmail.com**.

The 2023 International Conference on Unmanned Aircraft Systems, ICUAS'23, is organized for the first time in a university campus. It will be held on June 6-9, in Warsaw, Poland, at Lazarski University, **https://www.lazarski.pl/**. Prof. Anna Konert, Director of Lazarski Aviation Academy, and Dean of the Faculty of Law and Administration is the conference coordinator, and in charge of the regulations and legal track of the conference.

ICUAS'23 offers unique opportunities to meet, interact and shape the future of unmanned aviation, worldwide, bringing together the technical, regulatory, and legal communities. Details may be found at **http://www.uasconferences.com/2023_icuas** and related links. ICUAS '23 is fully sponsored by the ICUAS Association, Inc., a non-profit organization, see **www.icuas.com**.

The central theme of ICUAS'23 is threefold: 1) r**econfigurable aerial platforms**; 2) **multi-purpose/hybrid aerial platforms;** 3) r**egulations and standards for autonomy.** National and international organizations, agencies, industry, authorities, work towards defining roadmaps of Unmanned Aircraft Systems/Remotely Piloted Aircraft Systems (UAS/RPAS) expectations, technical requirements and standards that are prerequisite to their full utilization and integration into the national airspace. The next generation of UAS/RPAS will be used for a wide spectrum of civilian and public domain applications.

ICUAS'23 aims to bring together different groups of qualified representatives worldwide, funding agencies, industry, academia, end-users, and practitioners, to discuss the current state of unmanned aviation, and the roadmap to their full utilization in civilian and public domains. Special emphasis will be given to research opportunities, and to *"what comes next"* in terms of the tools, essential and support technologies, and standards, which need to be utilized and implemented to advance the state-of-the-art.

ICUAS'23 includes the UAV Competition. The Competition is student-focused and student-centered, offering unique opportunities for students to test and compare their skills with those of their peers, worldwide. The competition is organized in two stages: simulation qualifiers and in-person finals. The finals will take place during the conference, allowing for students to meet and participate in the conference, too. Details on how to participate in the UAV Competition are available on the conference web.

Through keynote addresses, round table discussions and presentations, the outcome of the conference will be a clear understanding of what industry, civilian, national, and international authorities need, and what are the crucial next steps to be completed before UAS/RPAS are utilized in everyday applications.

## IMPORTANT DUE DATES

| | |
|---|---|
| **January 15, 2023:** | Full Papers / Invited Sessions / Tutorial Proposals Due |
| **February 1, 2023:** | UAV Competition: simulation-based scenario |
| **March 31, 2023:** | Acceptance / Rejection Notification |
| **March 31–April 20, 2023:** | Early Registration |
| **April 20, 2023:** | Upload Final, Camera Ready Papers |

## SUBMISSIONS

**Papers:** Paper format (two-column) follows IEEE guidelines. Electronic submission will be handled through PaperCept - details are available on the conference web site. Submitted papers should be classified as *Contributed or Invited Session* (max. 8 pages), or *Poster* (max. 6 pages) papers. Accepted, contributed, and invited session papers only, will be allowed up to two additional pages for an extra charge per additional page. Poster papers should aim at novel and cutting-edge ideas with potential, however, not yet fully developed.

**Invited Sessions:** Proposals for invited sessions should contain a summary statement describing the motivation and relevance of the proposed session, the invited paper titles, and the names of the authors. Authors must submit FULL invited papers. Each paper must be marked as "Invited Session Paper".

**Workshops and Tutorials:** Proposals for workshops and tutorials should contain title, list of speakers, and extended summaries (2000 words) of their presentations.
All contributions (papers, invited papers, proposals for invited sessions, workshops, and tutorials) must be submitted electronically through **https://controls.papercept.net** by the due date.

**Paper Review Process:** All submitted papers will undergo a thorough peer review process coordinated by the Program Chairs, Advisory Committee Members, IPC members, Associate Editors, and qualified reviewers. Each paper will be reviewed by (at least) three qualified reviewers. Each Associate Editor will make recommendations. The Program Chairs will finalize and announce decisions by the due date. Each submitted paper will be checked for originality through the *iThenticate Document Viewer Guide*.