

D4.5 Special issue on operational precipitation opportunistic sensing

Version 0.1

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Description	This document describes the publication of abstracts, keynotes, posters, and papers in special workshops and conferences that together combined the OpenSense community.
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About OPENSENSE (COST Action CA20136). OPENSENSE brings together scientists investigating different opportunistic sensors (e.g. microwave links, citizen science), experts from weather services, and end-users of rainfall products to build a worldwide reference opportunistic sensing community. The overarching goals of the COST are to overcome key barriers preventing data exchange and acceptance as hydrometeorological observations, define standards to allow for large-scale benchmarking of opportunistic sensing precipitation products and develop new methods for precipitation retrieval, coordinate integration of the opportunistic observations into traditional monitoring networks, and identify potential new sources of precipitation observations. Further details can be found [here](#):

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Glossary

WG	Working Group
IEEE	Institute of Electrical and Electronics Engineers
ICASSP	International Conference on Acoustics, Speech, and Signal Processing
EGU	European Geosciences Union

1. Description of the Goal

In delivery D4.5, which is part of the responsibilities of WG4, we set a goal to create and publish a special issue in a scientific journal/venue, aimed and directed to the broad spectrum of the field of the OpenSense community. The idea is to give a stage and to publish community works that are, in general, very multidisciplinary in nature.

2. Challenges

Top researchers and the stakeholders arrive from different fields such as hydrology, meteorology, and electrical engineering. Even though OpenSense made such connections possible, and many fruitful collaborations arose from it (including a number of publications), it was proven very challenging to establish and produce a specific special issue in a journal, as the hydrology and meteorology and the IEEE (for electrical engineering) societies have different traditions when it comes to publications, and bridging the gap became harder than initially thought.

3. Achievements

Nonetheless, we were able to achieve the goal, although in a different variation:

- 1) During June of 2023, we established a workshop in the IEEE ICASSP conference (the main venue of the signal processing society), for which 8 full (4 page) papers from OpenSense community members were accepted after peer-review, and presented in the conference. See [1,2] for details regarding the workshop.
- 2) During the life of the action, a number of review keynotes concentrating a works from multiple OpenSense members were presented in the EGU general assembly meetings [3].
- 3) On June 25-26, 2025, the first ***International Conference of Opportunistic Sensing of Precipitation*** took place in Offenbach, Germany. The conference was held and sponsored by the OpenSense team. 50 works were accepted to the conference, about 40% of them as oral presentations and the rest in poster sessions. Furthermore, three keynotes were presented by leaders in the field. We took all accepted works and presentation of the conference and created the conference proceedings, which is a book of abstract [4]. Although not a full special issue, such book presents an excellent opportunity for

Opensense current member and new interested parties to get familiar with all the state of the art directions and ideas that are being researched in the community.

References

- [1] <https://2023.ieeeicassp.org/satellite-workshops/>
- [2] <https://cellenmon2020.wixsite.com/oisac23>
- [3] <https://www.egu25.eu/>
- [4] https://indico.kit.edu/event/4624/attachments/9710/16486/OpenSense2025_Book_of_Abstracts.pdf

