



IPIN 2023
THIRTEENTH INTERNATIONAL CONFERENCE ON
**INDOOR POSITIONING
AND INDOOR NAVIGATION**
25th-28th Sep. 2023, Nuremberg Germany

NUREMBERG



Proceedings of the Work-in-Progress Papers at the 13th International Conference on Indoor Positioning and Indoor Navigation

IPIN-WiP 2023

September 25-28, 2023, Nuremberg, Germany

<http://www.ipin-conference.org/2023>

Organized by

Fraunhofer Institute for Integrated Circuits IIS

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Editor's Addresses

Susanna Kaiser

(susanna.kaiser@dlr.de)

- German Aerospace Center
Institute of Communications and Navigation
(<https://www.dlr.de/kn>)
Muenchener Straße 20, 82234 Oberpfaffenhofen-Wessling,
Germany

Norbert Franke

(norbert.franke@iis.fraunhofer.de)

- Fraunhofer Institute for Integrated Circuits IIS
(<https://www.iis.fraunhofer.de/>)
Nordostpark 84, 90411 Nuremberg, Germany

Christopher Mutschler

(christopher.mutschler@iis.fraunhofer.de)

- Fraunhofer Institute for Integrated Circuits IIS
(<https://www.iis.fraunhofer.de/>)
Nordostpark 84, 90411 Nuremberg, Germany



Preface

The 13th International Conference on Indoor Positioning and Indoor Navigation (IPIN 2023) was held in Nuremberg, Germany, on September 25-28, 2023. This proceeding contains the Work-in-Progress Papers presented at IPIN 2023. Launched in 2010 in Zurich, Switzerland, IPIN is a unique event entirely dedicated to indoor localization, its applications, and its development.

Indoor navigation and positioning, often referred to as the 'last mile' of navigation, play a pivotal role in various sectors including transportation, shopping, finance, special care for individuals, and safety production. This area has emerged as a prominent topic in recent years within the navigation and positioning domain. Moreover, it constitutes a crucial research focus in fields like unmanned driving, 5G/6G technology, and more.

The conference received 154 regular papers and 39 work-in-progress papers with a total number of 577 different authors from universities, research institutes and renowned companies worldwide. Each paper was reviewed by at least two members of the Program Committee of the Conference. 89 out of 154 Regular Papers were accepted and submitted to the IEEE Xplore Digital Library, while 32 were accepted as Work-in-Progress (WiP) and submitted to CEUR Workshop Proceedings. Regular Papers were presented as oral presentations while Work-in-Progress papers were presented in a dedicated poster session.

IPIN 2023 hosted 2 Tutorials, 3 Keynotes, 1 Tech-Talk, 23 Parallel Sessions, including Machine Learning for Localization and Navigation, Fingerprinting, UWB, Inertial and Hybrid Systems, 5G-Positioning, and Visible Light Positioning (VLC). There were 260 registered on-site attendees at this purely onsite conference.

The conference also held the 10th International Indoor Positioning and Navigation Competition from September 23-24, which included 7 tracks such as 5G positioning, UWB positioning and smartphone positioning, attracting 38 teams from all over the world. The global synchronous online competition mode (first adopted in 2022) was used again, demonstrating the highest level of the current international indoor positioning and navigation field. One onsite competition track was held in a local museum in Nuremberg.

IPIN 2023 awarded 6 best papers, 1 best poster and 16 competition track winners. Besides, authors of selected papers are given the opportunity to send a technically extended version to the IEEE Journal of Indoor and Seamless

Positioning and Navigation (J-ISPIN), first inaugurated at IPIN 2022. The journal is currently the only international academic journal focusing on the field of indoor navigation and positioning.

Thanks to all members of the IPIN 2023 Technical Program Committee for their effort in the review process that was fundamental for maintaining the high scientific level of the conference. Thanks to all members of Organizing Committee for their hard work in making the meeting go on smoothly. Thanks to all the researchers who supported this event by submitting their work and actively participating in it. Thanks to all participants for their efforts to make IPIN 2023 a success.

October 2023
Christopher Mutschler, Dongyan Wei
Conference Co-Chairs



Conference Chairs

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