

PROFILE

Fraunhofer IOSB-INA in Lemgo, Germany, is the center of competence for the industrial automation technologies of Fraunhofer Institute of Optronics, System Technologies, and Image Exploitation (IOSB), providing solutions for clients from IT and mechanical engineering sectors as well as equipment suppliers and operators of technical systems. We offer innovative hardware and software solutions in the following business segments:

- Industrial Internet
- Intelligent automation
- Human-machine interaction
- Cybersecurity in the industry

Process data acquisition, reliable communications, analysis, monitoring and user-friendly design of technical systems in conjunction with application know-how in the field of industrial automation are our core competencies.

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REAL TIME LOCALIZATION AND TRACKING

NETWORKING PEOPLE, MACHINES
AND PRODUCTS





BOOSTING EFFICIENCY

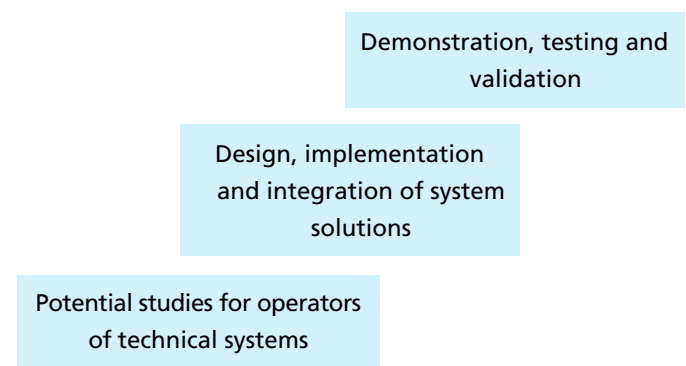
Industry 4.0 necessitates networking people, machines and products. In context-sensitive services, this often requires taking into account, not only connectivity-related issues but also the location of people and objects.

A wide range of localization and tracking technologies is available when implementing location based-services, and they can be deployed and combined, depending on the specific application and requirements (for instance, accuracy). Location-related applications facilitate, for instance, simple tracking or location detection of people, machines and products in real time, reduction of service and maintenance costs by implementing context-based information processing methods and optimization of workflow.

Fraunhofer IOSB-INA has the necessary expertise in various localization technologies and developed an integration framework for implementing these technologies in conjunction with industrial communication systems and mobile devices. Furthermore, IOSB's expertise in the field of imaging sensors and their analysis also facilitates the integration of efficient processes for object recognition and classification. Therefore, we can provide comprehensive networking solutions for technical systems.

OUR RANGE OF SERVICES

- (1) Potential studies for operators of technical systems, investigating the commercial and technical potential resulting from the introduction of localization and tracking solutions while taking into account the existing technical infrastructure and specific requirements.
- (2) Design, implementation and integration of system solutions: based on state-of-the-art technologies, we develop system solutions for specific localization and tracking tasks where we focus on integrated, context-sensitive networking of people, machines and products.
- (3) Demonstration, testing and validation of solutions based on a sensor platform in the SmartFactoryOWL or in field tests.



KNOW-HOW AND RESOURCES

- (1) Interdisciplinary know-how in mechanical/plant engineering, automation technology, ICT, hardware and software development.
- (2) Application of various localization technologies (optical/imaging, UWB, WiFi, RFID, iBeacon).
- (3) OPC UA-based framework for system integration.
- (4) Sensor platform in SmartFactoryOWL, an initiative of Fraunhofer-Gesellschaft and OWL University of Applied Sciences, with modular and networked assembly sites for localization systems.

SELECTED PROJECT REFERENCES

- (1) Quality assurance of manual assembly processes by optical tracking of tools and linking with modern control systems.
- (2) Context-sensitive assistance system for supporting service and maintenance tasks in production facilities based on indoor location technology.
- (3) Beacon based indoor localization of smartphones.
- (4) Implementation of augmented reality and indoor localization for simplifying the organization of complex service and maintenance tasks.
- (5) RFID-based visitor management in production facilities.