

# PRESS RELEASE

-----  
**PRESS RELEASE**January 8, 2020 || Page 1 | 4  
-----

## **CES 2021: “3Dsensation” presents smart robots for logistics and retail**

*Las Vegas (USA), Jena (Germany)*

**Flexible transport robots and intelligent systems for inventory management in supermarkets: from January 12 to 13, the “3Dsensation” research alliance will present the latest solutions for using robots in logistics and retail at the international electronics trade show CES 2021 ALL-DIGITAL.**

From production to the warehouse and on to retail - as quickly and efficiently as possible. In the wake of online business and a growing range of products, logistics processes are becoming increasingly more complex. Robots can optimize the necessary processes. Making their work more flexible and independent, but also making them safer when dealing with humans, are key factors for the enhancement of existing systems.

Scientists of the “3Dsensation” research network, coordinated by the Fraunhofer Institute for Applied Optics and Precision Engineering IOF in Jena, are researching safer and more efficient human-machine interaction. At CES 2021, two projects with breakthrough innovations from the research alliance will be presented to visitors.

### **“FOLLOWme ILS” enables flexible and driverless transport of goods.**

Transport robots have been used in large production and logistics companies for many years. They allow the autonomous transport of goods entirely without a driver. The problem: Since the robots only travel on predefined routes, these systems are not very flexible.

“FOLLOWme ILS” wants to offer a solution: Using a 3D camera, the robot captures its surroundings, including humans. In this way, it can recognize employees. At the same time, sensory detection of the environment increases the robot's flexible adaptability to changes in the environment and situation. Risks of accidents are thus reduced.

Designed for use in production and logistics environments, both intelligent driverless vehicles and 3D-based control and monitoring systems were developed as part of “FOLLOWme ILS”. The entire system combines interdisciplinary innovation and research within the “3Dsensation” alliance with application-oriented results.

---

#### **Editorial Notes**

**Desiree Haak** | Fraunhofer-Institute for Applied Optics and Precision Engineering IOF | Phone +49 3641 807-259 | Albert-Einstein-Straße 7 | 07745 Jena | [www.iof.fraunhofer.de](http://www.iof.fraunhofer.de) | [desiree.haak@iof.fraunhofer.de](mailto:desiree.haak@iof.fraunhofer.de)

**“ROTATOR” detects gaps in shelves - and thus secures sales in retail**-----  
**PRESS RELEASE**January 8, 2020 || Page 2 | 4  
-----

As a customer, it is inconvenient to stand in front of empty shelves. And gaps in the product range that are not detected in time are also a nuisance for retailers. They can lead to a noticeable loss of sales. “ROTATOR” aims to prevent this: In a mobile and autonomous manner, the robot uses 3D sensors to detect inventory and to report gaps. In addition, the system recognizes humans in its environment and thus enables safe navigation - even in a supermarket with a lot of customers.

During the development of “ROTATOR”, new and applicable key technologies were brought forward that enable the economical use of autonomous mobile robots in intralogistics (i.e., logistics within a company’s premises) - including, for example, 3D mapping as well as 3D obstacle avoidance. The system is now being used in selected supermarkets in France and Portugal. By integrating “ROTATOR” into active retail, the “3Dsensation” research alliance considers the system as a pioneering project that can also increase the acceptance of robotics in public spaces.

**The Consumer Electronics Show (CES) is one of the world's largest trade fairs for electronics. This year's show, hosted by the Consumer Technology Association (CTA), will be held in an entirely digital format from January 11 to 14. The virtual booth of the “3Dsensation” research alliance will be open to visitors specifically from January 12 to 13. The digital presentations can be viewed online until February 15.**

**About “3Dsensation”**

The “3Dsensation” research alliance gives machines the ability to visually record and interpret complex scenarios through innovative 3D technologies. Machines thus become situationally acting partners and personalized assistants to humans. Through this new form of human-machine interaction, “3Dsensation” creates access to living and working environments independent of age and physical ability.

Currently, 20 research institutes are participating in the initial consortium “3Dsensation”. The innovation alliance for a new type of human-machine interaction cooperates with more than 40 companies from the industry and can draw on various networks within the partners. The resulting “cross border synergies” promote innovation and enable “3Dsensation” to push for a rapid market penetration of the new technologies.

**Press Photos**

-----  
**PRESS RELEASE**

January 8, 2020 || Page 3 | 4  
-----



Fig. 1: FOLLOWme supports the transport of goods in production and logistics environments. (Copyright: TU Chemnitz)



Fig. 2: ROTATOR records the inventory on supermarket shelves in a mobile and autonomous manner. (Copyright: metralabs GmbH)

FRAUNHOFER-INSTITUTE FOR APPLIED OPTICS AND PRECISION ENGINEERING IOF

**Contact**

Katja Szafranski  
Fraunhofer IOF  
Albert-Einstein-Str. 7  
07745 Jena  
Germany

Phone +49 3641 807-264

Mail [katja.szafranski@iof.fraunhofer.de](mailto:katja.szafranski@iof.fraunhofer.de)

**Weblinks**

<https://www.3d-sensation.de/>

-----  
**PRESS RELEASE**

January 8, 2020 || Page 4 | 4  
-----

---

The **Fraunhofer-Gesellschaft**, headquartered in Germany, is the world's leading applied research organization. With its focus on developing key technologies that are vital for the future and enabling the commercial exploitation of this work by business and industry, Fraunhofer plays a central role in the innovation process. As a pioneer and catalyst for groundbreaking developments and scientific excellence, Fraunhofer helps shape society now and in the future. Founded in 1949, the Fraunhofer-Gesellschaft currently operates 74 institutes and research institutions throughout Germany. The majority of the organization's 28,000 employees are qualified scientists and engineers, who work with an annual research budget of 2.8 billion euros. Of this sum, 2.3 billion euros is generated through contract research.