



A.R.I.B.I.C  
Artificial Intelligence Based Indoor Cartography

## ARIBIC

### Artificial Intelligence based Indoor Cartography

**Motivation:** Intelligent industrial trucks with assistance systems or automated or autonomous industrial trucks are already in operation in many department stores. All these vehicles have sensors on board that enable them to perceive and understand their environment. However, this data is only used to perform the task at hand and then forgotten. With ARIBIC, this valuable information will be collected and stored to provide a data platform for future Spatial Services.

**Goal:** The aim of the consortium is to develop an AI-based, open platform solution for the autonomous creation of semantic 3D maps and the provision of 3D data for services that use this information (Spatial Intelligence). This will enable digital applications and services that enable, for example, localisation in these environments. In addition, typical fleet and warehouse management software systems can be linked to the platform to provide relevant data on the vehicles to perform picking tasks or specific deliveries.

**Intended outcomes:** The algorithms developed in the project for automatically generating and continuously updating a highly accurate and detailed 3D indoor map in real time provide the basis for creating a digital twin of the department stores' and effectively tracking and tracing the environment in real time. The necessary data and information are provided by autonomous mobile robots or automated vehicles and stored and processed in the cloud.

**Expected impact:** The fully automated creation of 3D maps for indoor spaces also offers potential for use in various areas such as smart living, autonomous driving, smart building or smart manufacturing.

**Tags:** 3D maps, AI, robotics, track and trace, smart living, autonomous driving, smart building, smart manufacturing

#### Contact of the German consortium

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2 YEARS  
DURATION



March 2021 -  
November 2023

4 PARTNERS



**Canadian:** LeddarTech;  
University of Toronto-  
STARS Laboratory

**German:** STILL GmbH;  
Karlsruher Institut für  
Technologie (KIT)

€ 0.7 MILLION  
FUNDING



The total project costs are  
€ 1.1 million, of which €  
0.7 million will be funded.

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