

# Building the intralogistics metaverse

## ARIBIC ("Artificial Intelligence-Based Indoor Cartography") for digital twins of warehouses

**The challenge:** The future of the warehouse is digital. While driverless transport vehicles with modern sensors such as laser scanners and cameras are already being used in intralogistics and production plants, their data isn't always being used to its full potential. What other possibilities could be unlocked? In 2021, STILL and its cooperation partners LeddarTech, the Karlsruhe Institute of Technology (KIT) and the STARS Lab at the University of Toronto launched the ARIBIC ("Artificial Intelligence-Based Indoor Cartography") project to build a live digital twin for warehouses to collect and analyse telemetry data to build the next generation of autonomous, smart warehouses.

**Why Google Cloud?** With a platform offering a full range of services for data and Machine Learning, Google Cloud was a natural fit for the project to host the huge quantities of videos and 3D data from forklifts and use them to train and run machine learning models. Moreover, the future readiness is given, when ARIBIC will deploy to n-customers and warehouses by using Kubernetes for instance.

**The solution:** The ARIBIC platform, which builds a digital twin of a warehouse. Data is collected from sensors integrated in forklifts or stationary and combined that into a digital representation of the environment, which is then transferred into the cloud and enriched with semantic information. The enriched map now represents the warehouse at a single point of time, however as forklifts continue to move through the actual warehouse and the map is updated in real-time to become a living 3D digital twin. The next step to make it a big benefit will be to provide applications for localization, load tracking, inventory, damage detection, warehouse optimization, and much more. E.g. a customer wants to get the current status of goods in the warehouse, the customer just needs to press a button and gets it right away from this digital representation. This together will form the intralogistics metaverse.



Image credit: STILL



“For the Aribic project, we were looking for a platform that offered a wide range of services for data and machine learning. Google, with its Google Cloud, its broad product portfolio and some expertise in 3D mapping, was the ideal partner for our project.” (Frank Müller, Senior Vice President STILL Brand Management)

**About STILL:** STILL offers customised intralogistics solutions, and implements the intelligent teamwork of forklift trucks and warehouse technology, software and services.

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