LUCA
Logistic Solutions

# Integration of systems for picking processes

Pick-by-Point®

eLocation®

Pick-by-Frame®

Pick-by-Vision

Pick-Radar®

Pick-by-Voice

Pick-by-Picture®

Pick-by-Light

Pick-by-ePaper®

Pick-by-Weight

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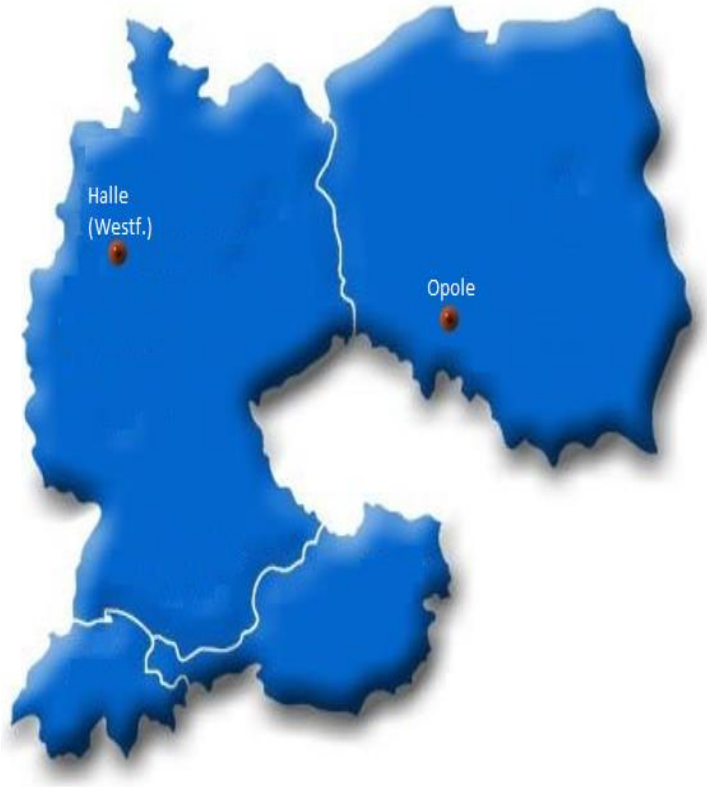
- LUCA GmbH Logistic Solutions since 1995 roku (Halle Westfalen, Germany).

- LUCA Logistic Solutions Sp. z since 2009 (Opole, Poland).



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# Automotive

Adam Opel AG (Rüsselsheim), Daimler Chrysler AG (Brema), DENSO THERMAL SYSTEMS POLSKA SP. Z O.O. (Tychy), Fiat Auto Poland S.A. (Tychy), FIAT Group Automobiles General (Cassino), Motors ESPAÑA (Saragossa), General Motors Vauxhall (Ellesmere Port), IVECO Magirus AG (Ulm), IVECO S.p.A. (Brescia), IVECO Magirus AG (Ulm), New Holland Tractor Ltd. (Antwerpia), Opel Eisenach GmbH (Eisenach), Schnellecke Sachsen GmbH (Wolfsburg), Schnellecke Slovakia s.r.o. (Bratysława), Skoda Auto (Kvasiny, Mlada Boleslav), Volkswagen AG (Wolfsburg).

IVECO MAGIRUS

ŠKODA

NEW HOLLAND AGRICULTURE

SCHNELLECKE SLOVAKIA S.R.O.

FCA FIAT CHRYSLER AUTOMOBILES

LEAR CORPORATION

Aus Liebe zum Automobi..

SCHNELLECKE LOGISTICS

DENSO

GM

DAIMLERCHRYSLER

VAUXHALL

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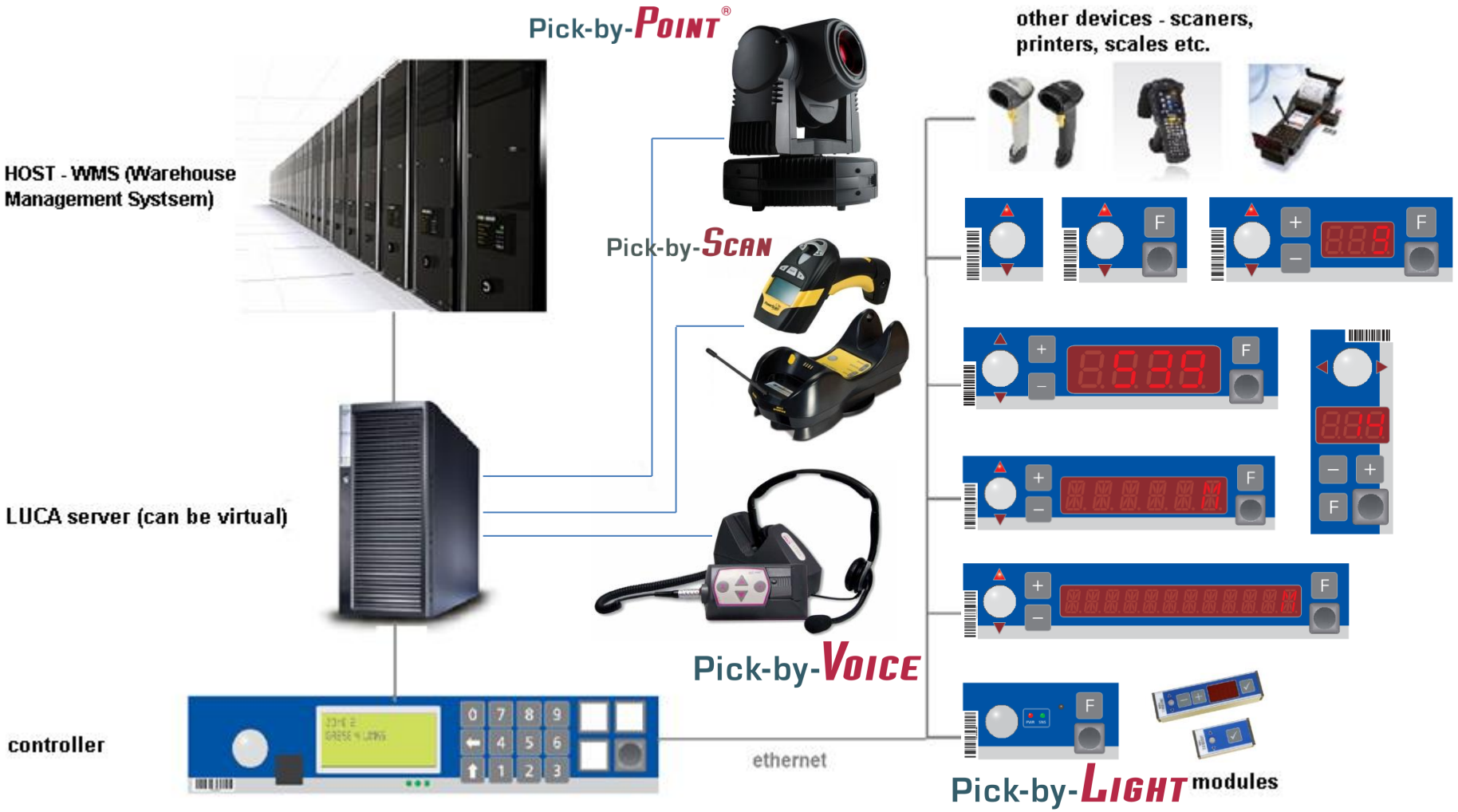
logistics operators, pharmaceutical industry, manufacture, eCommerce.

# Strukture of LUCA system

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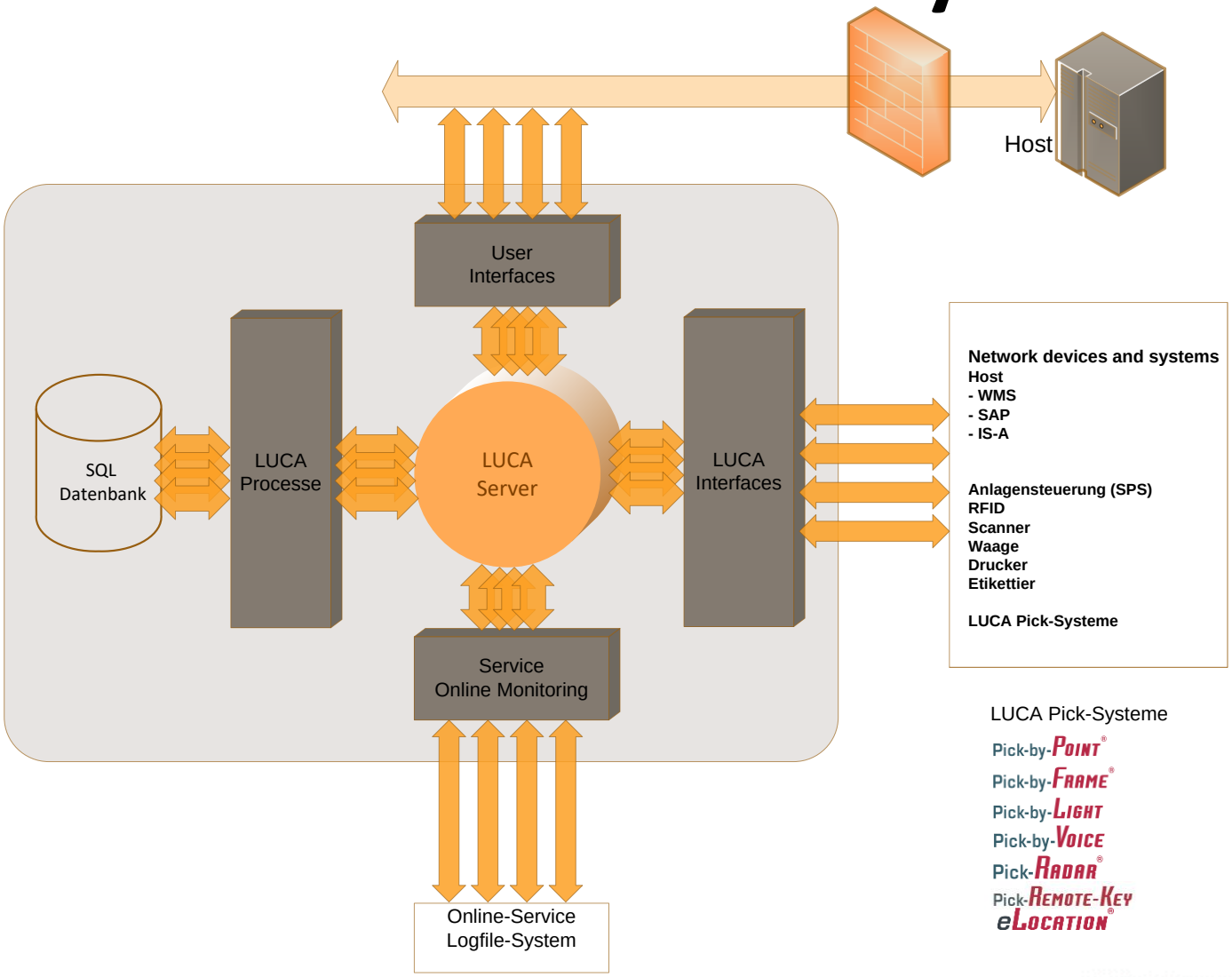
# Strukture of LUCA system




LUCA Pick-Systeme

Pick-by-Point®
Pick-by-Frame®
Pick-by-Light
Pick-by-Voice
Pick-Radar®
Pick-Remote-Key
eLocation®

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# LUCA.... eLOCATION®

The **indoor tracking system** uses ultra-wideband technology and an ultra-wideband (UWB) spectrum to provide precise positioning.

These are the three communication steps:

1. To be tracked, the entity is equipped with a tag that sends out a **UWB signal to anchors** for its localization.

2. The anchors use **UWB signals to synchronize** among themselves.

3. Lastly, the data gathered by the anchors is sent to the eLocation Server for calculating the precise position of the tagged entity – in most projects, this is done via **Ethernet cables**, but it can be also sent **wirelessly via Wi-Fi**.

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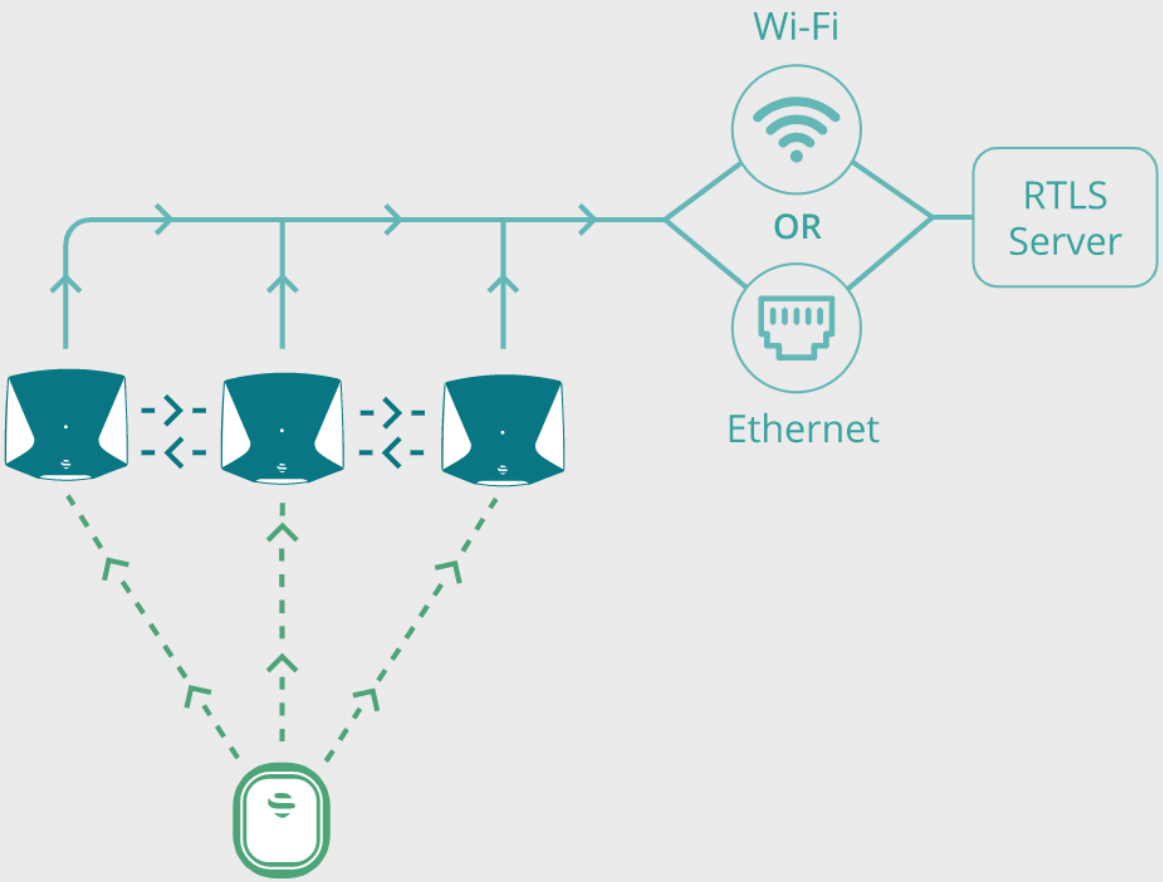
3. Backhaul data from the anchors is sent to the RTLS Server either via Wi-Fi or Ethernet to the RTLS Server

2. Anchors transmitting a UWB signal for time synchronization among themselves.

1. A tag transmitting a UWB signal with a timestamp for localization to the anchors.

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eLocation Anchors - antennas

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eLocation tags

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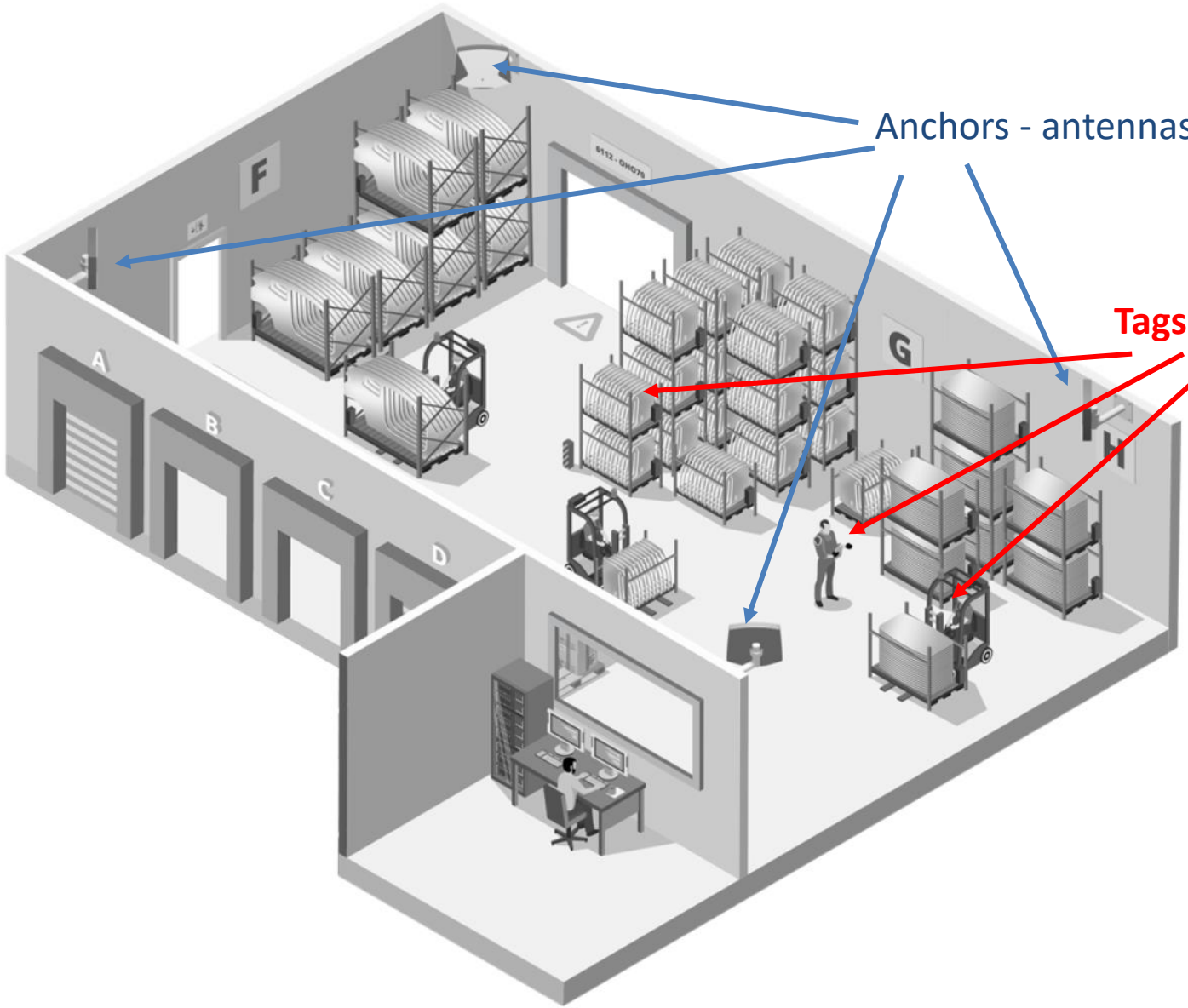
# LUCA.... eLocation®

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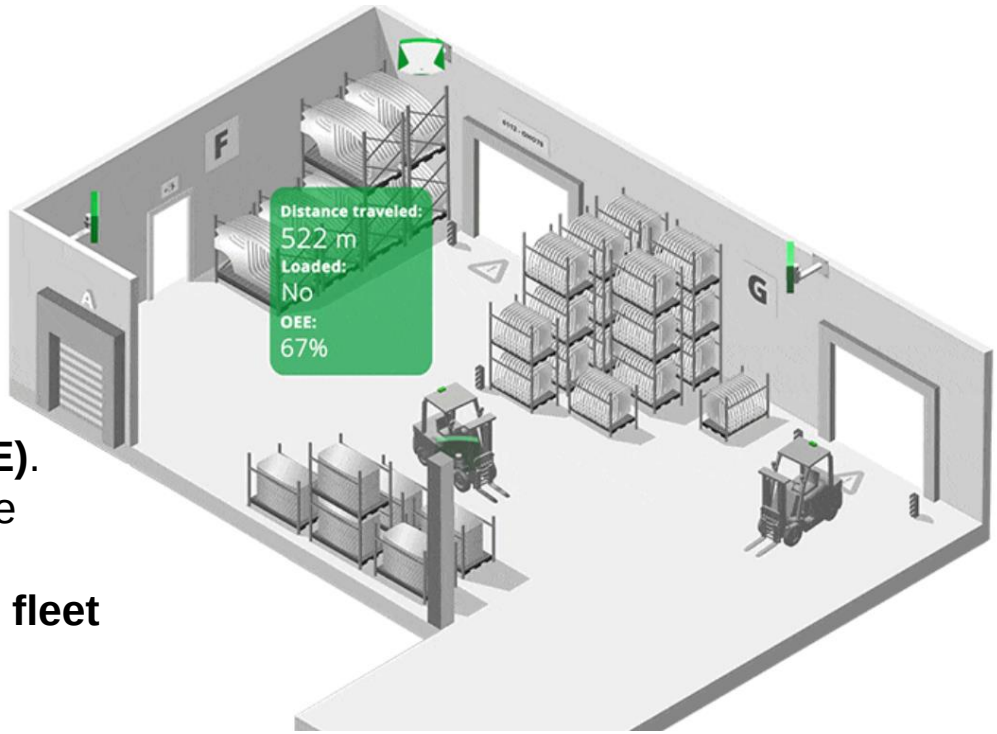
# The Benefits of Forklift Tracking

## Real-time and Historical Insights into Forklift Operation

The data is transformed into
easy-to-read metrics such as

- the distance traveled by each forklift,
- run time versus stop time,
- the ratio of loaded and unloaded time,
- the time needed to complete a task,
- **Overall Equipment Effectiveness (OEE)**.

Given these insights, managers can improve processes and the overall efficiency and utilization of their fleet using the **forklift fleet management system**

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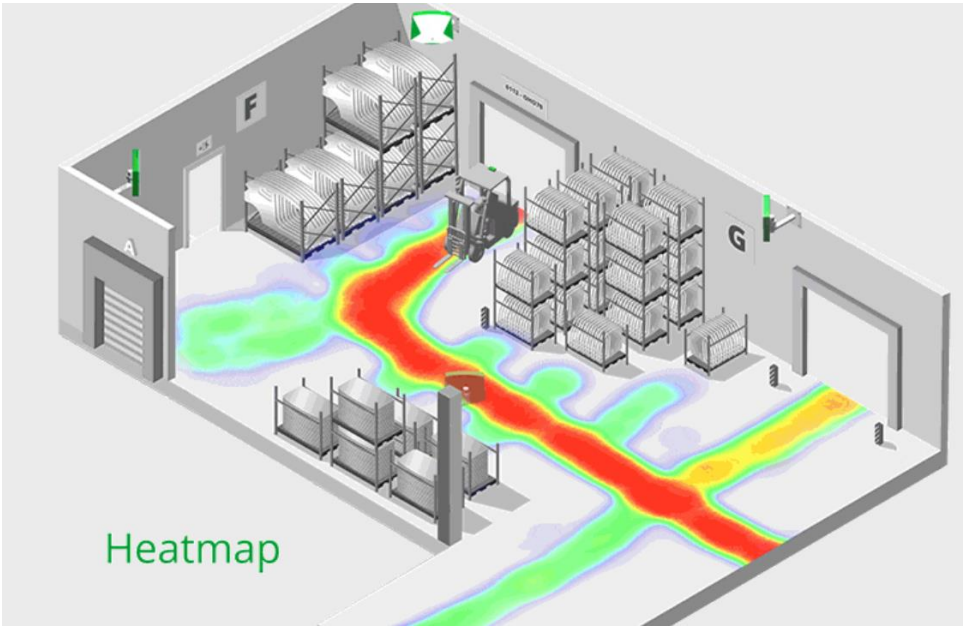
## The Benefits of Forklift Tracking

### Forklift Traffic Data

**Heatmaps** – showing how the **density of the traffic** is distributed within the facility
and
**Spaghetti diagrams** – visualizing **the continuous flow** of traffic throughout the halls

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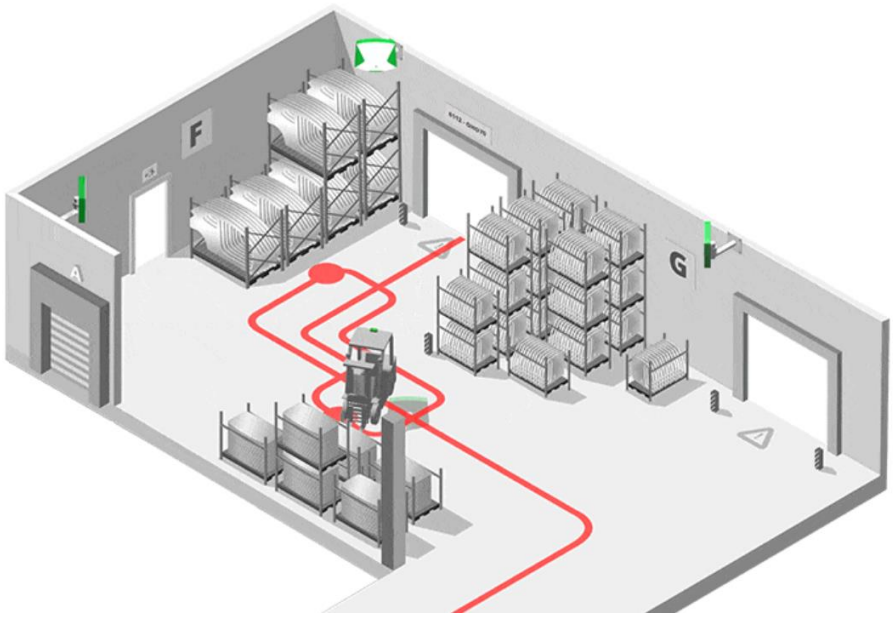
# The Benefits of Forklift Tracking

## Forklift Route Optimization and Wareh




- Fuel costs,
- the time of drivers
- the number of lift trucks needed,

all of these can be improved when drivers use **the most optimum route.**

Through looking for inactive vehicles, better planning of the utilization of the warehouse by knowing each item's exact location and seeing who is doing which task in real-time – **higher utilization and a reduction in costs**

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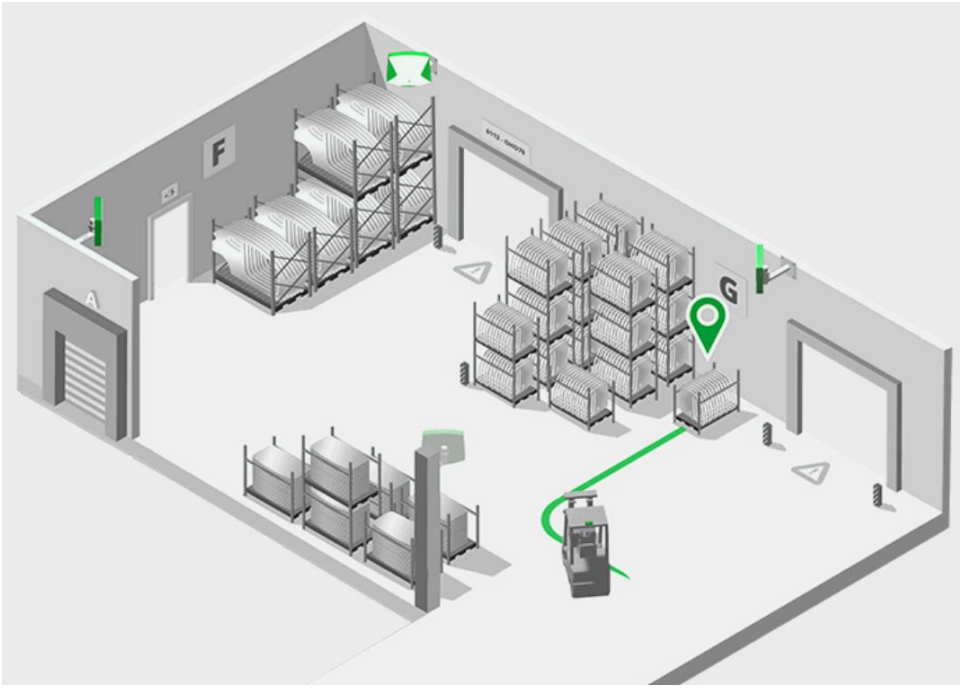
## The Benefits of Forklift Tracking

### Forklift Navigation and Prevention of Incorrect Unloads

operators immediately know
where to pick up the next load
and
the exact location of where to unload it

**preventing an incorrect unload**

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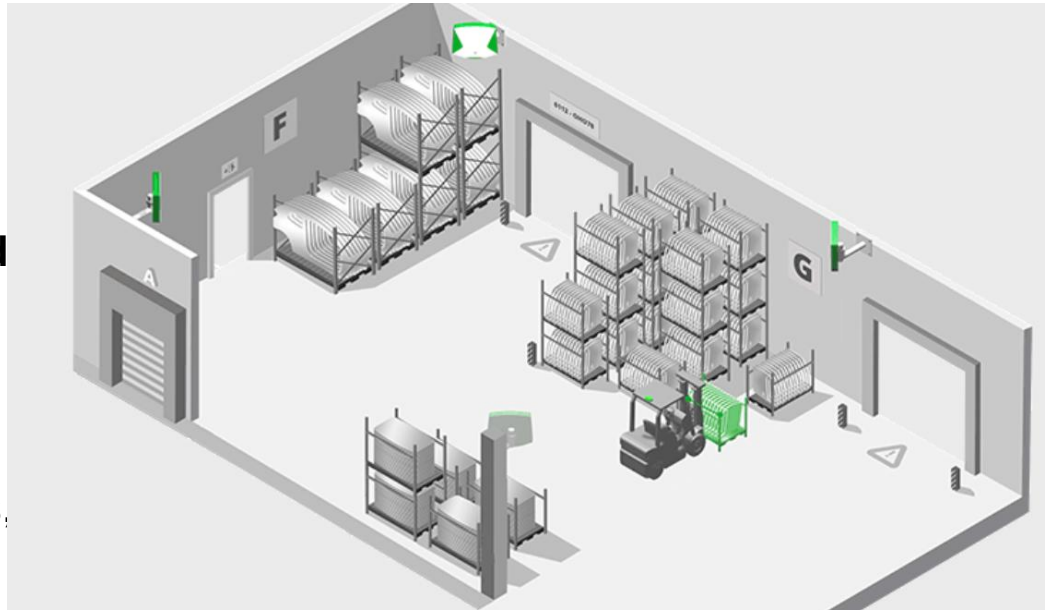
# The Benefits of Forklift Tracking

## Tracking Material Flow using Forklift Tracking

Anytime the forklift loads the material, the pallet is identified using either cameras and barcodes or NFC.
At the same moment, the real-time position is known, which creates **full visibility of the material's location and its flow** without tracking the pallet itself.

Furthermore, as the forklift driver **doesn't have to leave the driver's cab** for collecting Kanban cards, work orders or scanning the pallet, the risk of accidents is significantly reduced.

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## Rely on Enterprise-Industry Proven Technology

Unlike other indor tracking and positioning technologies LUCA eLocation operates on dedicated, unoccupied and interference-free UWB technology that is **fully industry certified** to guarantee reliable and scalable performance in even the harshest environments.

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## Extensibility That Accelerates Innovation

Deliver **shorter time-to-value** Industry 4.0-ready projects fast, with lower maintenance costs and on budget for the wide acceptance of all stakeholders

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## Assuring Highly Positive ROI

The **5+ year battery life**, maintenance-free solution resistant to damage and the possibility to combine antennas types within a single project are just a few of the reasons for **the highly positive ROI** of your indoor

tracking projects with LUCA....

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