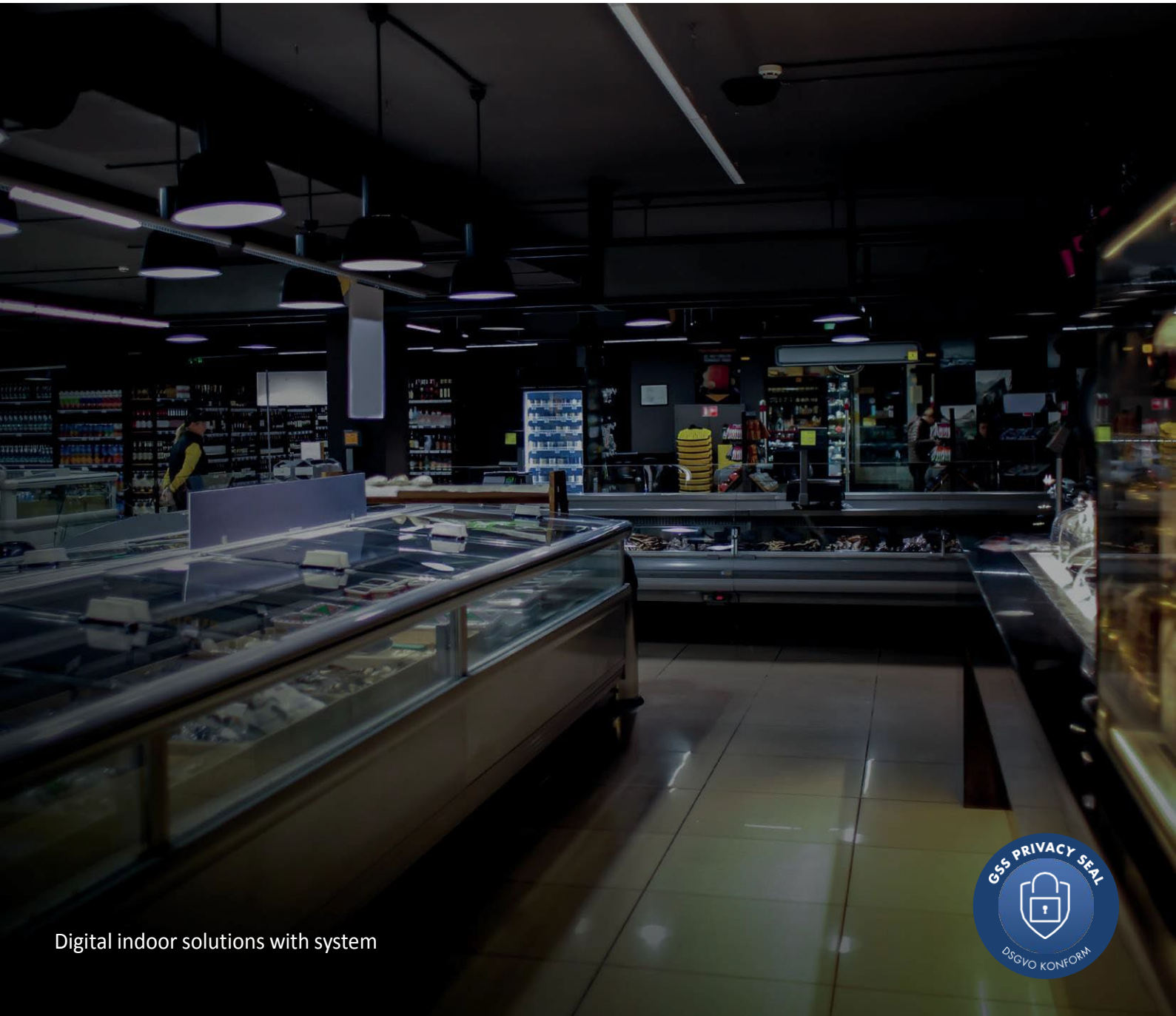


Geck Suite
for retailers

Geck®



Digital indoor solutions with system



More knowledge gain. More turnover.

The intelligent, innovative system solutions from the Geck Suite combines individual instruments from the areas of tracking, analysis, navigation, customer journey and visitor flow and access control into a customised composition for your business. Whether for retail, industry, logistics, administration or events: Geck Suite opens up completely new possibilities for data protection-compliant collection, processing and analysis of relevant data - also in combination with your own modules or apps.

1. Initial situation

In our test store, Geck Suite solutions were installed for a sales area of 1300 sqm. The store has a large catchment area, good parking facilities and therefore a good customer influx.

2. Task

Until now, it has not been possible to collect precise data on customer behaviour. Markets like this one have always been classically structured according to "supermarket psychology", with the only key figures being the number of receipts and turnover.

With the technologies of the Geck Suite, it is now possible to obtain analyses and key figures from walkways and to navigate customers and assets in real time based on location through exact positioning.

3. Use case

In the reference store, a tracking system on the shopping trolley (Indoor Tracking) was used together with an analysis system (parts of Tracking Analytics) and combined with a sensitive counting system (Cust Counting) of the Geck Suite as a real tool for evaluating customer behaviour within its sales area. With the help of real data, completely new insights into the customer are now gained. With these insights, it is now possible to completely rethink and optimize retail spaces in the market. Customer routes can be analyzed, movement patterns created and unknown bottlenecks identified. Using a digital shopping list, the customer can be navigated through the shop and potential waiting times can be calculated in advance. A quick reaction to visitor flows is possible. Automated access controls and reliable visitor counts are not only informative in times of a pandemic.

4. Solutions

The Geck Suite offers the following solutions. These are in the first project stages in the reference market has been implemented:

4.1 Indoor tracking (already implemented)

Thanks to indoor tracking accurate to the centimetre and second, you can significantly expand your analysis potential and lay the foundation for many other useful applications and services. With our indoor tracking system you solve a central problem of locating inside your closed rooms or halls. Using infrared light, you can record the exact position several times a second and thus in real time. You know where the customer is with his shopping trolley - whether in front of the fruit counter or the fresh produce counter. This gives you the opportunity for targeted communication and control.

For example, you can offer retail customers useful services, targeted recommendations or advertising on current promotions via our Indoor Navigation or Customer Journey modules. Directly displayed at specific positions on the sales floor via a device on the shopping trolley. Here, our system clearly differs from other products on the market due to its precision and scalability (high number of receiver units possible on a large area) and its insensitivity to radio waves or electromagnetic waves.

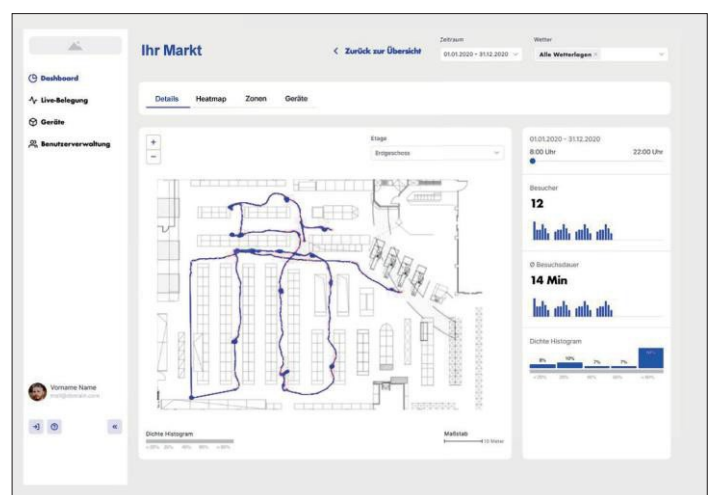


Illustration - Walkways

Our system identifies and tracks both large sales areas and a large number of shopping trolleys in a defined area at the same time. Geck Indoor Tracking thus provides more overview and analysis potential and creates the basis for more communication and control options.

4.2 Tracking Analytics (already implemented)

With our tracking analytics tool, you know exactly which routes your customers or employees take. This allows you to avoid bottlenecks and traffic jams, optimize routes and facilities and tap into new potential. Have this information displayed in detail via our analytics tool.

With its route overview, heat map and individually configurable zone classification and evaluation, Geck Tracking makes analytics and the derivation of optimizations child's play. In addition, you can create context-related profiles and derive measures from them, for example, to make short-term changes to the shop layout in the event of rain. For more flow in your processes and more potential for your turnover.

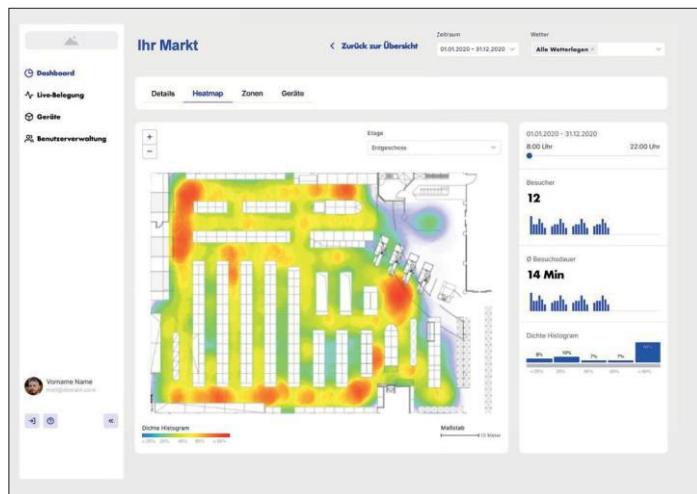


Illustration - Heatmap

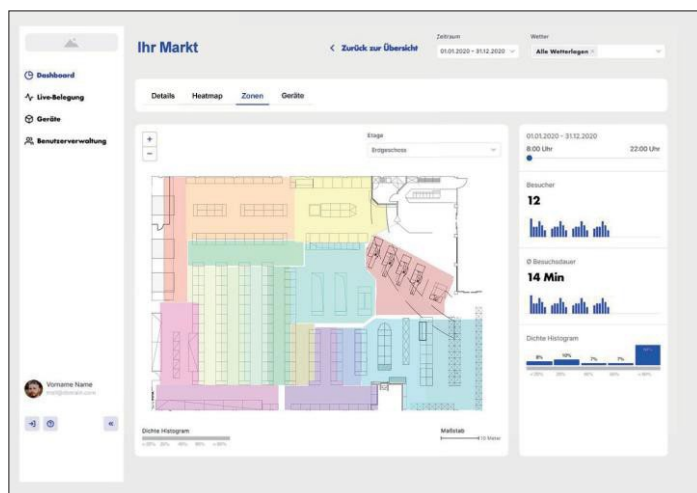


Figure - Zone frequency

4.3 Indoor navigation

Geck's indoor navigation finds the best routes through your shop. Direct the attention of your end customers in a targeted manner. With Indoor Navigation, you have the option of guiding customers individually with their shopping trolleys within the sales area. You can guide your customers - just like in a car - navigate directly to specific products, for example to a special offer from an advertisement, to current special areas or live promotions. If the customer has already created a digital shopping list before the visit, they are guided to the respective products with the help of the customer journey. The optimal route through the shop appears on the device on the shopping trolley - for the customer and for you as the operator. You can use your own app and implement our Indoor Navigation or use our Customer Journey. For more efficiency on all indoor paths.

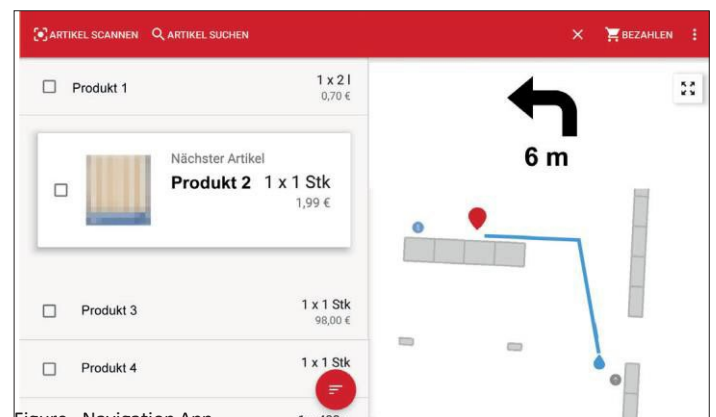


Figure - Navigation App

4.4 Customer Journey

Offer your retail customers a special navigation service with the Customer Journey and gain more opportunities for targeted messages and concrete offers in the shop. The Customer Journey was developed especially for the stationary retail trade. It is an individually configurable solution for the optimal guidance of the individual customer in your shop: After the customer has created a digital shopping list on his smartphone at home or on the road, this list is transferred to the Customer Journey system. The customer uses a device in the smart wall and puts it on his shopping trolley.

Now the navigation starts and the customer is guided through the shop in an optimized order based on his shopping list. Along the way, individual product information, recommendations or specific (special) offers can be sent to the customer in real time.

They can also be directed to promotions or special areas of interest to them. Depending on which use of their personal data they have agreed to, the messages are based on their recent purchases, their socio-demographic data or individually shared preferences.

The customer himself decides how much of his own data he shares with your company in the process and consequently how individually the services and offers are tailored to him. This opens up completely new, extremely individual opportunities for you as an operator to address customers and generate advertising subsidies. In this way, the customer journey ensures more digital customer service and more shop turnover.

4.5 Cust Counting (already implemented)

The Geck Cust Counting works autonomously and uses the data available under

4.1 - 4 technologies described. For example, you capture Quick Shoppers who do not use a shopping trolley. You get valuable data and analysis for more efficiency,

e.g. for personnel and task planning or advertising effectiveness control. With the reliable and secure Cust Counting systems from Geck, you can record the flow of people from end customers at entrances and exits or other interesting zones of the retail area, the visitor area or shop-in-shop areas easily and in compliance with data protection regulations.

All recorded information is collected and processed on a software platform. Analyses and display of the data for the responsible person are carried out via a separate, com- fortable dashboard.

With more transparency about your visitor flows, you not only directly save personnel costs, e.g. at entrances and exits.

You gain valuable data for evaluations and analyses that will help you optimize your operation and make it more attractive for your customers, visitors and employees.

5. Technology

The following conditions must be met in order to use the indoor tracking of the Geck Suite.

Hardware required

In order to be able to optimally equip the sales area of a shop with indoor tracking, one transmitter of the system is required on approx. 10 sqm. This enables the receiver to receive the signals of at least three transmitters at any time and to determine the exact position of the receiver. The specific details may vary depending on the selected transmitter characteristics and mounting height.

One receiver is required per shopping trolley. Only a Raspberry Pi is used as a link and central module for external communication and the management of all system processes. A stable WLAN network environment should be available for secure operation. The data protection-compliant storage of the data in the Microsoft Azure cloud enables the display of all relevant data and analyses on the dashboard (optional, if facts are not sufficient).

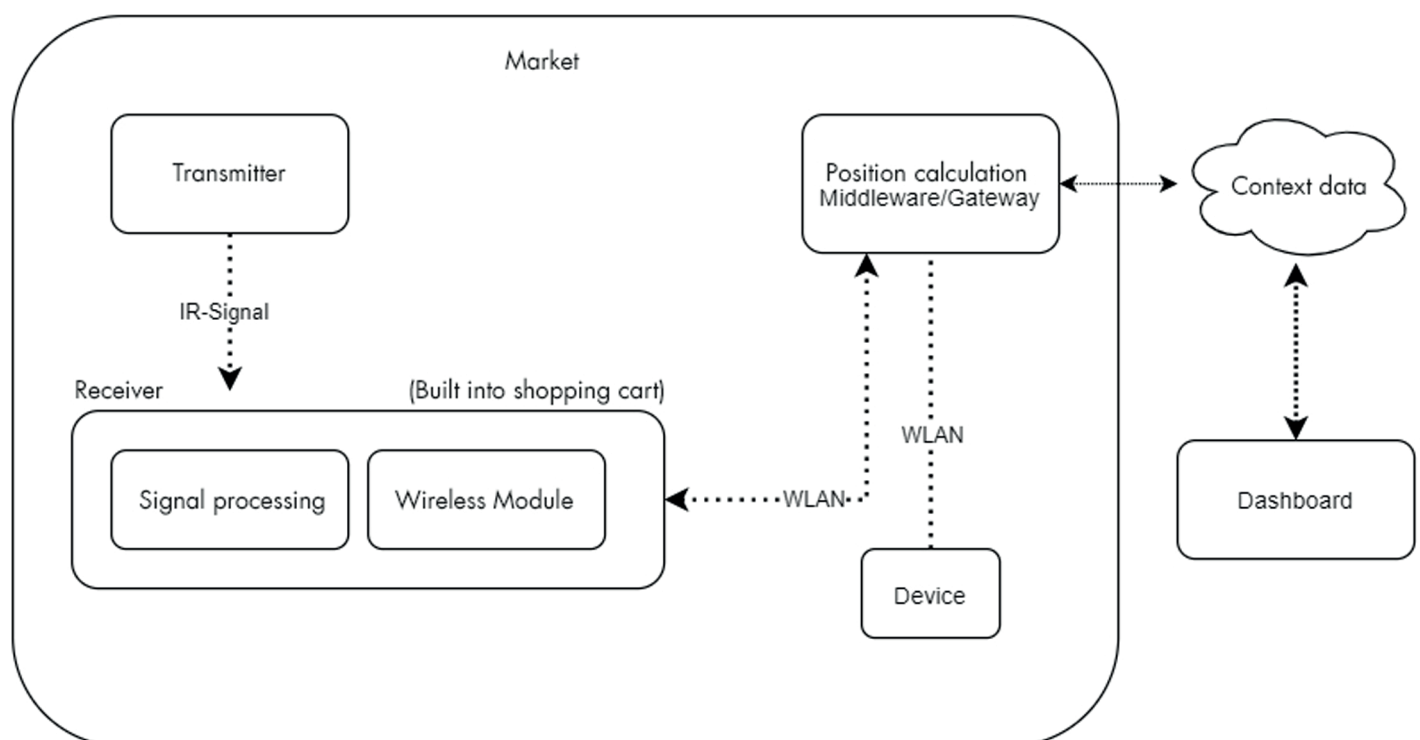
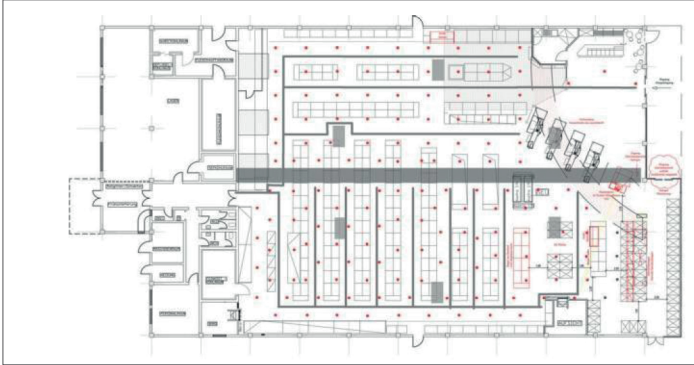


Figure - Block diagram showing the function of the tracking system

In the reference market, 147 transmitters were installed in the ceiling to completely cover the 1300 sqm.



The receivers are installed directly in the shopping trolley handle. All that is required is a modification of the existing shopping trolleys! Currently, 20 shopping trolleys are equipped. The batteries are currently changed manually every two to three weeks.



Illustration - Installing the receiver electronics in the handle



Illustration - Finished handles with matching inlay that lets the optical signals through

The mode of operation

Each transmitter emits an individual address in the invisible infrared range. The receivers installed in the shopping trolley detect these signals and convert them into evaluable data. Based on this data, the position on the receiver is calculated and forwarded to a central backend via WLAN. The position can be used several times per second for live navigation and positioning. Position data is linked to a path number (path_ID) and transmitted to a database with a time stamp and other parameters. This makes the data available for later analysis by the analytics tool.

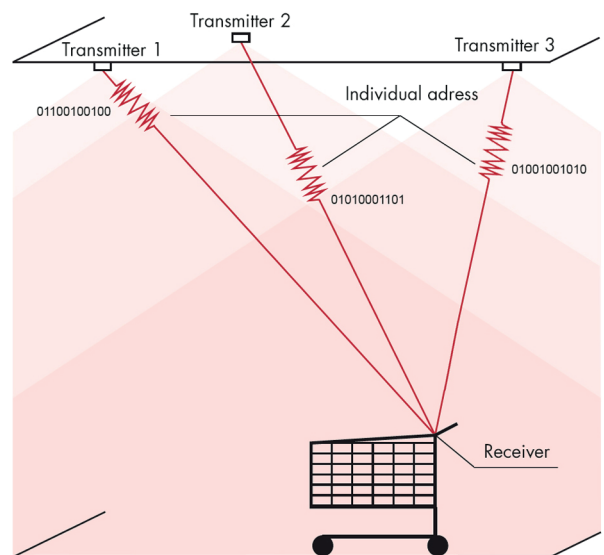


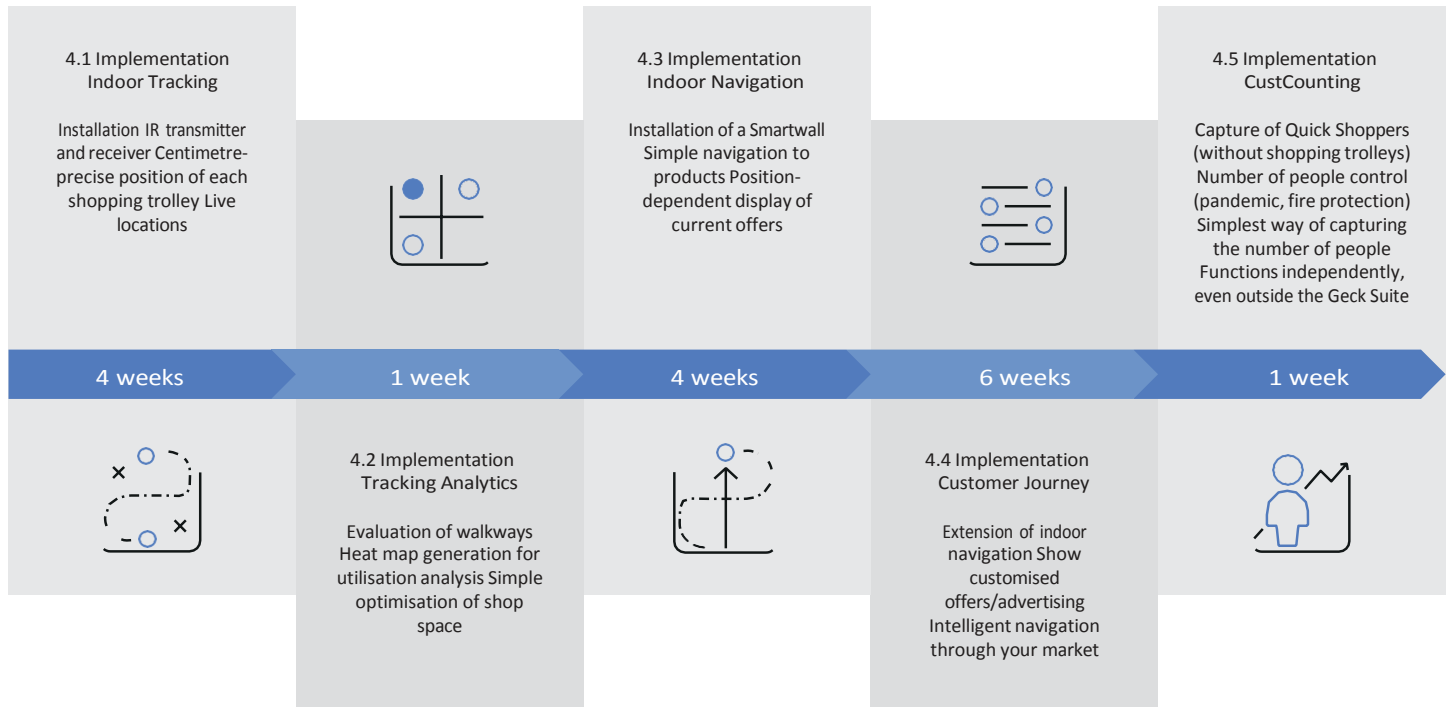
Illustration - Functionality transmitter - receiver



Data protection compliant

The Geck Suite meets the requirements of the catalogue of criteria currently in force under European data protection law. No data is generated that allows conclusions to be drawn about the specific identity of individuals without their personal consent.

Timetable Implementation Geck Smart Shopping | Geck Suite for Retail



Hardware

Transmitter
1 per 10 sqm

Server/Gateway
1 Raspberry Pi

Receiver
1 per EKW

The tracking technology

IR-POS

Model
Transmitter - Receiver

Accuracy
< 30 cm

Asset tracking
EKW, handheld for employees

Transmitter
separate modul

Power supply
flexible

Application height
3 - 5 m

Optical Signal

Uses only infrared signals for position determination

System-Integrity
Highest interference immunity

- Transmitter-receiver model
- Accuracy < 30cm
- Asset tracking (e.g. EKW, handheld for employees)
- Transmitter completely independent module

- Requires only a power supply (very flexible)
- Application height 3-5m
- Only infrared signals required for position determination (optical signal)
- High immunity to interference from external influences

Receiver

Energy supply
own battery

Charging system o.
Powerbank

Operating Time
~100h @6000mA/h battery

Standby consumption
~1mA

Communication
MQTT battery

- Power supply: own battery incl.
- Charging system or power bank
- Operating time: ~100h @6000mA/h
- Standby consumption ~1mA
- Communication: MQTT

6. More success

You too could now have many options available to you in your market with newly gained insights.

- Location-based optimized offers at the place of product placement in real time increase the conversion rate
- Customer guidance via navigation is now possible
- Article search for consumers
- Optimization of shopfitting through evaluation of people's movements and length of stay.

We could arouse your interest?

Feel free to contact us and start the future of shopfitting with Geck.

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Your benefits

