

# USE CASE

## Cold Chain Monitoring in Food Logistics



### AT A GLANCE

- real-time visibility into locations of goods
- temperature monitoring using BLE sensor beacons
- timely alerts for guarantee of unbroken cold chain



## TECHNICAL IMPLEMENTATION

A BLE beacon with an integrated temperature sensor is attached to each goods package. Important areas at the logistics center and the food retailer (e.g. loading zones, sales areas) are equipped with one (or a few) insoft Locator Nodes. The Locator Nodes detect incoming signals of the beacons and transmit the data to the insoft LocAware platform®. Here, all data is processed and can be viewed and managed via web-based tools.

The beacons provide internal memory for up to 200 entries. This enables storing the temperature data during shipment in the refrigerated truck. The stored history records can be read out automatically via the Locator Node upon arrival. Live tracking (presence detection, idle times, temperature curve) takes place in all areas covered by a Locator Node. If real-time tracking during shipment is desired as well, trucks can be equipped with an insoft Locator Node with GPS module. Triggers for temperature or idle time violation alerts are defined using threshold values and initiate a notification chain.

## PROBLEM DEFINITION

In order to preserve the characteristics of their products, food and beverage industries are in need of reliable ways for ensuring an unbroken cold chain system. Incomplete cooling chains caused by mechanical breakdowns, traffic delays and other factors create changing temperatures that can affect spoilage and safety of perishable foods. In addition, a lack of real-time visibility of goods locations can be a contributing factor to inefficient operational processes.

## SOLUTION

By implementing a tracking and condition monitoring solution, it becomes possible to maintain visibility into the location and condition of products in food logistics. The cold chain monitoring ensures stable temperatures for transport and storage of sensible goods. Bluetooth Low Energy (BLE) beacons with temperature sensors enable tracking goods locations at relevant checkpoints and tracing temperature data continuously and seamlessly (at the logistics center, during shipment, and at the food retailer). Warnings can be triggered automatically when limit values are exceeded.

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