

USE CASE

Monitoring of Environmental Conditions in Pharmaceutical Storage



AT A GLANCE

- location and temperature monitoring of containers
- notification when permissible temperature values are exceeded



TECHNICAL IMPLEMENTATION

Bluetooth Low Energy (BLE) beacons with integrated temperature sensors, which can be used to determine not only the location but also the ambient temperature, are attached to the containers to be monitored. Using infsoft Tracking, attributes such as product type, delivery date, etc. can be assigned to the beacons and can be searched for. infsoft Locator Nodes with connected infsoft 360° Antenna are installed in the building. For moderate positioning accuracy requirements, the number of required hardware can be kept low.

The infsoft 360° Antennas detect incoming signals of the beacons and send the scan data via USB interface to an infsoft Locator Node. From there, the data is transmitted to the infsoft LocAware platform®. Here, the containers' positions are calculated and made available via individually customizable dashboards. Employees can access the data using an app or browser application and view the location, current temperature, and temperature history.

Using the infsoft Automation Engine, the temperature values are linked to conditions, so that alerts can be triggered automatically if limit values are exceeded or fallen below. Via infsoft Analytics, historical data can be called up and evaluated at any time, providing verification of compliance with the cold chain.

PROBLEM DEFINITION

Elevated temperatures or sub-zero temperatures can affect the chemical stability of pharmaceuticals and even alter their physical properties. For this reason, it is extremely important to keep medicinal products within a certain temperature range at all times. Pharmaceutical companies must be able to verify the temperature-controlled storage of their products. However, due to the complexity of storage logistics, maintaining and verifying the cold chain can be a daunting task.

SOLUTION

A real-time tracking system including temperature monitoring enables continuous maintenance of a temperature-controlled environment in all phases of the storage of pharmaceutical products. It ensures that products requiring a cool environment are stored at a constant temperature of 2 to 8°C. The real-time data can be viewed at any time. If limit values are about to be exceeded, a notification is sent, e.g. in the form of an email.

Imprint

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