

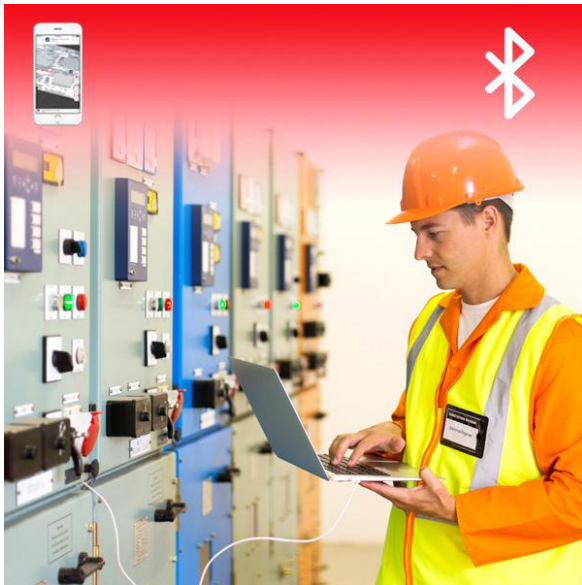


## Indoor Navigation and Monitoring in the Substation



### **AT A GLANCE**

- 2D/3D building maps
- Indoor navigation to waiting units
- status information on the respective rooms



## PROBLEM DEFINITION

Like any technical installation, transformer stations must be maintained to ensure operational safety. Since substations are often highly automated and there are no staff on site, the external maintenance technicians must be able to find their way around and locate the units to be serviced. To protect technicians, reduce shutdown times and reduce maintenance costs, it is therefore essential that technicians find their way quickly.

## SOLUTION

With the help of a mobile app, the maintenance technician can start a route from his location. Transformers, control centres and other POIs (e.g. circuit breakers, switching relays, etc.) can be selected as navigation targets. Maintenance work can thus be coordinated better and faster.

In addition, the app provides the technician with an overview of the blocked (e.g. live) areas

in the substation, so that the workers are warned before entering such an area by the app. This reduces the number of accidents and ultimately also the company's insurance costs.

## TECHNICAL IMPLEMENTATION

The position is determined via a network of Bluetooth Low Energy (BLE) beacons distributed evenly throughout the building. Beacons are inexpensive and can be installed without great effort due to the self-sufficient energy supply with batteries. They emit signals from which the app installed on the user's smartphone calculates a position with an accuracy of up to 1-3 meters. The maintenance technician is guided to his destination via turn-by-turn navigation.

Using a control system, the employee app provides an up-to-date overview of all rooms to be maintained and their power supply. Information on the technical equipment of the rooms can also be stored in the system. A coloured background allows potentially endangered areas to be identified at a glance and, if necessary, warnings to be issued automatically on the basis of the position data. infsoft's Beacon Management Tool also facilitates the maintenance and monitoring of radio transmitters.

Optionally, the collected data can also be sent to the infsoft LocAware platform® for intelligent further processing.

### Imprint

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