



# More time for care with IoT: Domicil intelligently monitors medication.

Domicil is the number one provider of long-term care in the canton of Bern. Around 2'000 employees look after the well-being of 1700 residents. The tasks of the professional nursing team are manifold. Until recently, this included the manual documentation of medication storage by the nursing staff. With an IoT

solution from Bechtle, this task has now been automated, which significantly reduces the workload of the nursing staff. With the flexibly expandable solution, Domicil complies with all legal requirements and saves time and costs.

## PROJECT DETAILS

- **Services**  
IoT/AI
- **Industry**  
Healthcare
- **Manufacturer**  
> 2'000 employees

## TECHNOLOGY

- Temperature sensors from Axino
- Air quality sensors from Airica
- LoRaWAN gateways from Miromico
- LoRa network servers from Loriot
- Microsoft Azure IoT Hub
- Microsoft Azure Databases
- Microsoft Azure Storage
- IoT application based on .Net technology developed by Bechtle

## OUR PARTNERS

**axino™**

**LoRa™**

**LOR I O T**

**Microsoft**  
Solutions Partner  
Microsoft Cloud

Thanks to the new temperature monitoring solution from Bechtle based on sensors with LORA technology, Domicil Bern has succeeded in taking a decisive step in our digitalisation strategy. This greatly relieves the everyday workload of the nursing staff. Thanks to Bechtle, we are using an environmentally friendly and sustainable technology with enormous potential. Thank you very much!" **IT Department, Domicil Bern AG**

**CHALLENGE.** Around 1700 residents live at the 21 Domicil locations in the canton of Bern. New methods and tools are required so that the nursing staff can optimally use their time for the residents. The aim was to automate the documentation of medication storage, which was previously carried out by the nursing staff. Previously, the IT department monitored the medication (refrigerator) cabinets and storage rooms at great expense and often had to replace batteries and the entire hardware annually. The nursing staff, in turn, documented all medicine (refrigerated) cabinets and rooms manually - several times a day. The documentation printed on paper is important for audits by the cantonal pharmacy. There was no automatic alarm in case of over- or under-temperature.

The technology of the previous temperature control system was regularly replaced with new technology in order to be certified and calibrated according to cantonal regulations, as well as to ensure that the temperature regulations for the respective medicines were adhered to. This resulted in high investment costs and an enormous amount of electronic waste. Domicil's IT team, which oversees the company-wide IT, was therefore looking for a solution for automated temperature monitoring of the stored medicines. With it, the legal, cantonal regulations for the pharmacy sector should be complied with, be more sustainable and take place without manual documentation. Domicil wanted to relieve the caregivers of the testing and documentation effort.

**SOLUTION.** The experts from Bechtle had the right smart approach with their expertise in the Internet of Things (IoT). Bechtle used high-quality temperature sensors from Axino and air quality sensors from Airica as generating data points. Their operating life is a very long four to ten years. With a LoRa network server from Loriot and LoRa gateways from Miromico, Bechtle created the basis for an Internet of Things (IoT) network at Domicil that intelligently reads and documents the sensors and automatically sends alerts. The sensors are connected to the IoT platform via LoRa gateways. This creates a so-called Long Range Wide Area

Network (LoRaWAN), which connects sensors and gateways easily, over long distances and with little energy consumption. This in turn increases the battery life of the sensors.

As the network's control suite, Bechtle developed a suitable IoT platform using Microsoft .Net technology. All the data converge on this platform and are evaluated. The Control Suite is operated in a Microsoft Azure tenant as an IoT hub. The cloud connection enabled Domicil to test the solution in the form of a proof of concept (PoC) before making a final decision. For Domicil, it quickly became clear: the Bechtle Control Suite fulfils all wishes and forms an excellent basis for further monitoring options such as air quality, humidity, pollen load, as well as many future needs.

**ADVANTAGES/BENEFITS.** Bechtle's IoT solution at 21 Domicil locations, with over 100 temperature-critical locations, not only automates the complete monitoring and documentation process of the medication storage, the sensor technology is also certified and calibrated for at least four years.

Domicil saves massively with the new technology. The sensors only need to be calibrated or replaced every four years, and savings of up to 16,000 hours are expected in maintenance. Instead of checking the temperature and air quality of the medication storage several times a day at 100 locations, the nursing staff can now concentrate on caring for the people entrusted to their care. The automatic, intelligent medication monitoring system reports when something is wrong. If there are temperature fluctuations, the solution alerts those responsible for care by email. The central web platform evaluates everything automatically. In the report, it is possible to read out exactly where a medication hazard has arisen due to temperature deviations and IT can act accordingly - a relief in everyday life and security for passing the next audits.

Further information:

**bechtle.ch**



Domicil is the number one provider of long-term care in the canton of Berne. The name Domicil stands for an active, fulfilled and self-determined life in old age. As a not-for-profit company, Domicil employs around 1800 staff from 68 nations, who look after the well-being of around 1700 residents. Domicil has 21 locations in the canton of Berne, five of which form the Domicil Dementia Competence Centre. Domicil's all-round services also include Domicil transitional care, Domicil meal service, Private Spitex AG and Friedens-Apotheke Bern. [domicilbern.ch](https://domicilbern.ch)