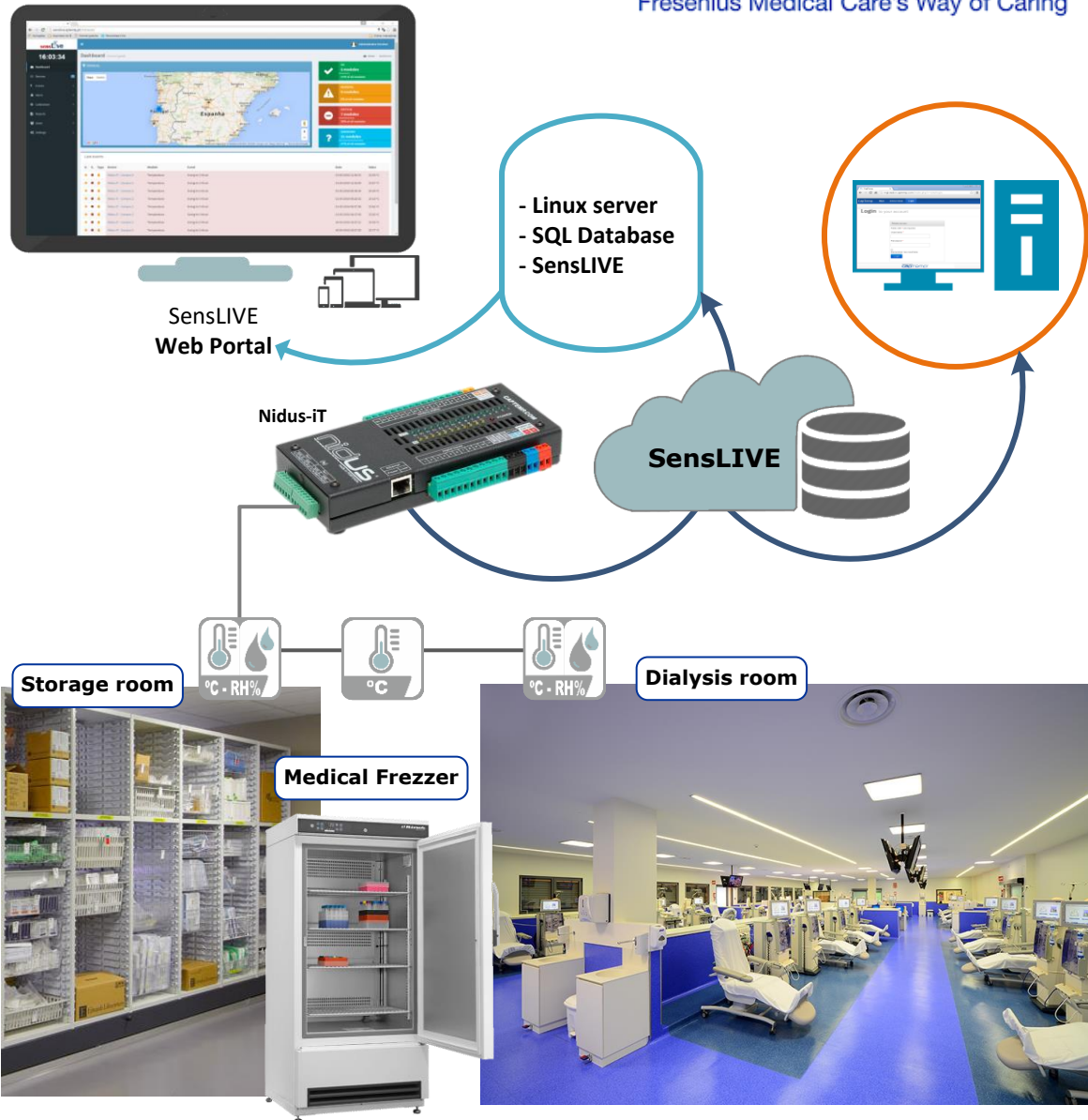


Case Study



NephroCare is the service brand of Fresenius Medical Care. We provide services in dialysis centres in more than 30 countries across Europe, Middle East, Africa and Latin America. **NephroCare's** commitment to excellence and the resulting comprehensive business model drives us to work closely with the healthcare authorities to ensure affordable renal care, now and in the future, for the maximum possible number of patients. Institutional web site: <https://www.nephrocare.com/>

NephroCare Portugal engaged the services of **CAPTEMP** because of the needs to monitor the temperature and humidity at various critical points, as well as an alarm system able to interact with multiple users at different levels. It was also required that the system be capable of eventually reading other types of sensors, such as: ex. water consumption, energy consumption, etc ..

Monitoring system composed by:

1. Remote Server with administration.
 - LINUX server
 - SQL Databae
 - SensLIVE v3
2. Equipment at each clinic
 - Sensors of Temperature and Humidity/Temperature
 - Nidus-iT Data Collector

Operation Principal: The information that the Nidus-IT collects, are periodically sent to the central server, and saved then in the database. Through a secure connection, it is possible to access these files using a browser such as Chrome, Mozilla or IE.

The access to these files are controlled by an administration that defines the privileges of each user and each company, guaranteeing, confidentiality of the data from one firm to the other. Alarms are triggered when the limits are exceeded and sent according to a set schedule. There is also an alarm system that allows warnings to the heads of each clinic, whenever there is no communication between the devices and the server.

The system is built according to the two main references:

- **FDA 21 CFR Part 11** (Electronic records, Electronics Signatures)
- **WELMEC 7.2 2015** ((Measuring Instruments Directive 2014/32/EU)

Conclusion:

The project was finished within the defined patterns and at the moment counts with :

- 1 company
- 1 MASTER administrator
- 16 Administrators
- 35 Users
- 35 Nidus-iT
- 59 Temperature sensors
- 160 Humidity/Temperature sensors
- 35 High resolution Humidity/Temperature sensors (Used for internal calibrations)

CapTemp, Lda

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