

Digitalized Heat Systems Management

*A Cooperation Between
e-globe solutions AG and electrojoule AG*



Overview

Today, heating systems are managed by manual intervention and hardly have any digital documentation. The challenge is to digitalize the necessary information in a suitable form, to make real-time information available from the heating systems and to make these results available to all those involved. A digitalized heating system results in transparency, an increase in efficiency in the execution of the work as well as a reduction in operating costs, a reduction in CO₂ emissions among other advantages.

What is the Current Situation?

Today, heating systems are managed by manual intervention and hardly have any digital documentation. If an owner or tenant requires any information about their heating system, e.g. when to perform the next burner maintenance, when an overhaul of the heating system is necessary or when the oil tank or the boiler are due to be replaced, is usually known only to the heating company. If the owner is lucky, the documentation is physically available in the boiler room, where they would need to leaf through the technical documents and understand them. In addition, many organizations are often involved, from the plumber to the heating company to the product suppliers and of course the property management.

Furthermore, there is a dependency on the companies involved if the owner, the property manager or the tenant want to understand whether the heating system has been correctly dimensioned and is working in an energy-efficient manner. There is also often a lack of a precise view of when a heating system or system components need to be replaced.

The Challenge

The challenge is to digitalize the necessary information from the heating system in a suitable manner and to make real-time information available to all parties. This results in improved cooperation between owner and tenant, building management and suppliers.

The Solution

In cooperation with *e-globe solutions*, *electrojoule* has developed a groundbreaking innovation to solve this challenge. The heating manager from *electrojoule* together with the **godoo®** system from *e-globe solutions* digitalizes and condenses the heating system information and makes all processed data available to those who need it.

The basis of the solution is the installation of sensors, data loggers and transmission devices on the heating system in order to record measurement data in **electrojoule cloud®**, as well as digitalizing the data coming from the heating system components with **godoo®**. The devices are attached to various components of the heating system to provide the data necessary for a comprehensive analysis. Once installed, the sensors provide the necessary data for:

Fault Diagnosis:

Determination of the cause(s) of any error and definition of measures to rectify the error.

Defect Detection:

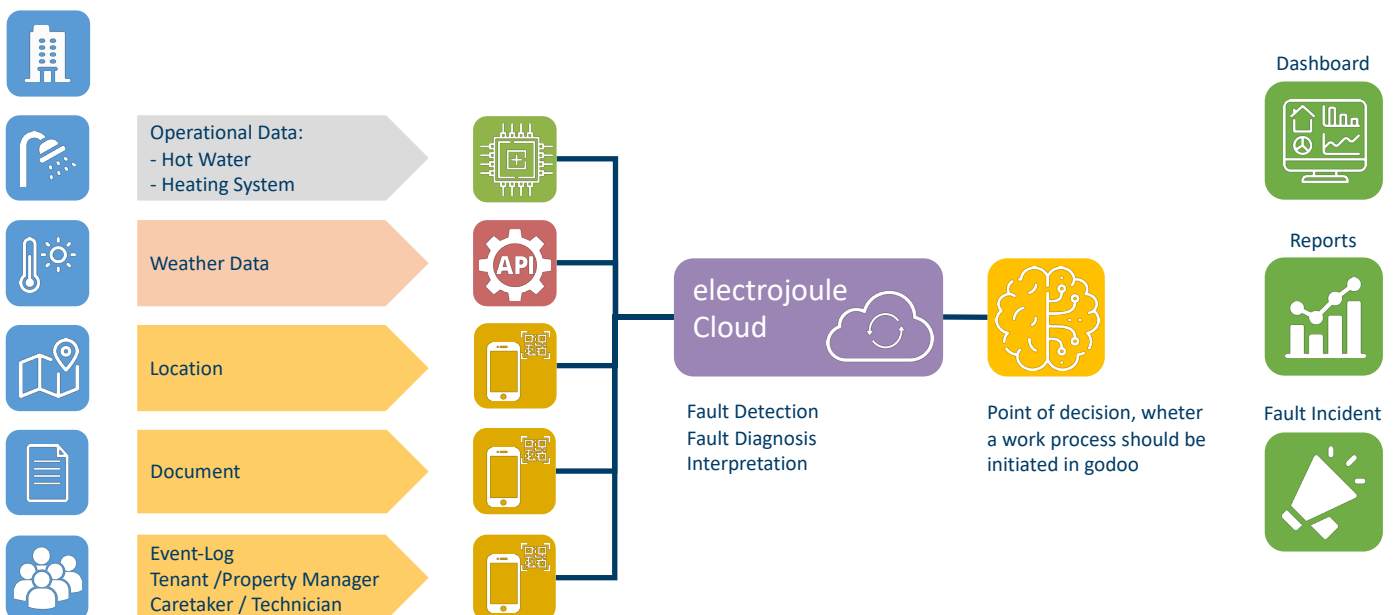
Detection of unacceptable deviations and symptoms of malfunctions, errors and outages.

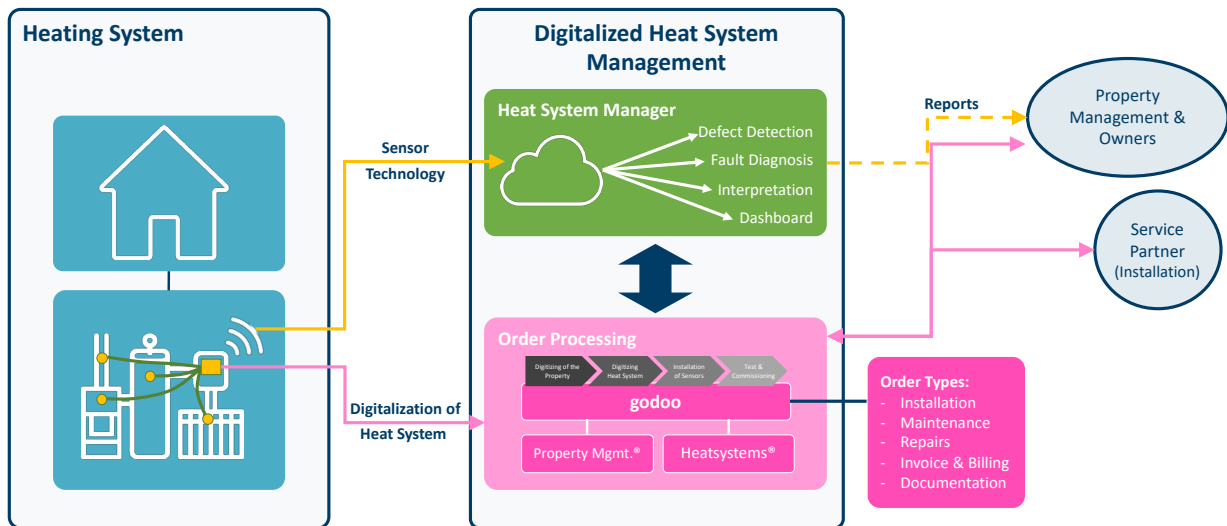
Interpretation:

Targeted evaluation of the measurement data in order to determine potential power requirements or optimization goals.

electrojoule Dashboard®:

Processing and visualization of the measurement data as characteristic value diagrams and time series.





On the basis of this data, evaluation reports including situation analyses, proposed solutions and catalogs of measures are being created. The evaluation of the measurement data allows for determinations such as the **precise power requirement** for the replacement or optimization of the heating system. This results in **reduction of operating costs, energy consumption and CO₂ emissions**, all of which directly benefit the customers.

All-In-One Heating Management

The solution includes the following:

- Instrumentation & digitalization of the heating system
- Digitalized documentation: system sheet, repair, service and maintenance, etc.
- Operation of the monitoring solution:
 - Active monitoring of the heating systems in real-time
 - Annual control of the monitoring solution
 - Detection of malfunctions of the heating system
 - Management of maintenance such as malfunctions, errors or outages
- Supplier management in the event of incidents, as requested by the property manager (inclusion of local suppliers)
- Invoicing and billing
- Reporting of operations and documentation of all work on the heating system
- Real-time information and online access for everyone involved

Aspects of Innovation

Heating Systems Management Reimagined

The solution enables substantial improvements in heating systems management. The evaluation of the measurement

data for the detection of malfunctions, errors and outages leads to an increase in efficiency and faster response times. Possible outages are often recognized in advance and measures can be taken to prevent outages and malfunctions.

The real-time monitoring enables the notification or alerting of predefined entities and/or persons in the event of an incident and the initiation of repair or maintenance interventions.

The provision of the measurement data evaluations offers involved parties a level of transparency previously unattainable.

Operational Procedures and Organization

godoo® ensures digitalized work processes and operational procedures.

When installing the system, the heating components are digitalized with **godoo®** and processed with the **godoo Heatsystems®** and **godoo Property Management®** modules. Documents such as the commissioning protocol, the system sheet for all repair services and maintenance work on the heating system, heating schemes and legal fire controls are digitalized and are then available in real-time. From this, plans for maintenance and service work can be specifically deduced.

With the godoo® supplier portal, many 'small local suppliers' can also be included in the handling and operation at the request of the property manager.

In the event of malfunctions and outages, assignments and maintenance orders are digitally sent to suppliers via **godoo®**, so that the parties involved, from the caretaker and owner to the administration to the supplier, have the same information available at all times.

Advantages for the Customer

- ✓ Transparency over their heating system
- ✓ Increased efficiency for the execution of work processes
- ✓ Reduction of operating costs
- ✓ Optimization of the heating system
- ✓ Reduction of CO₂ emissions
- ✓ Contribution to the climate protection goals
- ✓ Predictive planning for heating interventions and maintenance
- ✓ Predictive planning for investments in heating innovation

With the **godoo supplier portal**[®], many 'small local suppliers' can also be included in the handling and operation at the request of the property manager.

In addition, approval processes, such as placing an order, invoice control and the settlement of orders between the individual parties, can be carried out in digitalized form.

Collaboration and Experience

electrojoule has developed a new, innovative business model that offers added value for homeowners, property managers, and heating and plumbing companies. The sensors allow for the introduction of heating system diagnostics, which creates transparency and provides those involved with information about when a repair or maintenance must be carried out. The data further shows how a heating system can be optimized.

With the collaboration between *electrojoule*, the **electrojoule cloud**[®] and *e-globe solutions*, our software **godoo**[®] is used together with the ERP modules **godoo Heatsystems**[®] and **godoo Property Management**[®] for integrated work processes, mobile data transfer and innovative heating management.

e-globe solutions specializes in the digitalization of work processes. In close cooperation with our customers, we develop and operate tailor-made software solutions based on our products. Our main focus is to provide you with a sustainable solution for the digital transformation with our products. We combine the specialist knowledge of our customers with our experience in optimization, integration and automation. Always with the aim of further developing the interactions between humans and machines.



Examples of Digitalized Documents:

- Commissioning report
- System sheet: Documentation of all repair, service and maintenance work on the heating system and the associated components such as the boiler, circulation pumps and valves
- Electrical scheme (if available)
- Hydraulic scheme (if available)
- Legal fire control: Documentation of the fire control (for oil, gas and pellet heating systems)

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