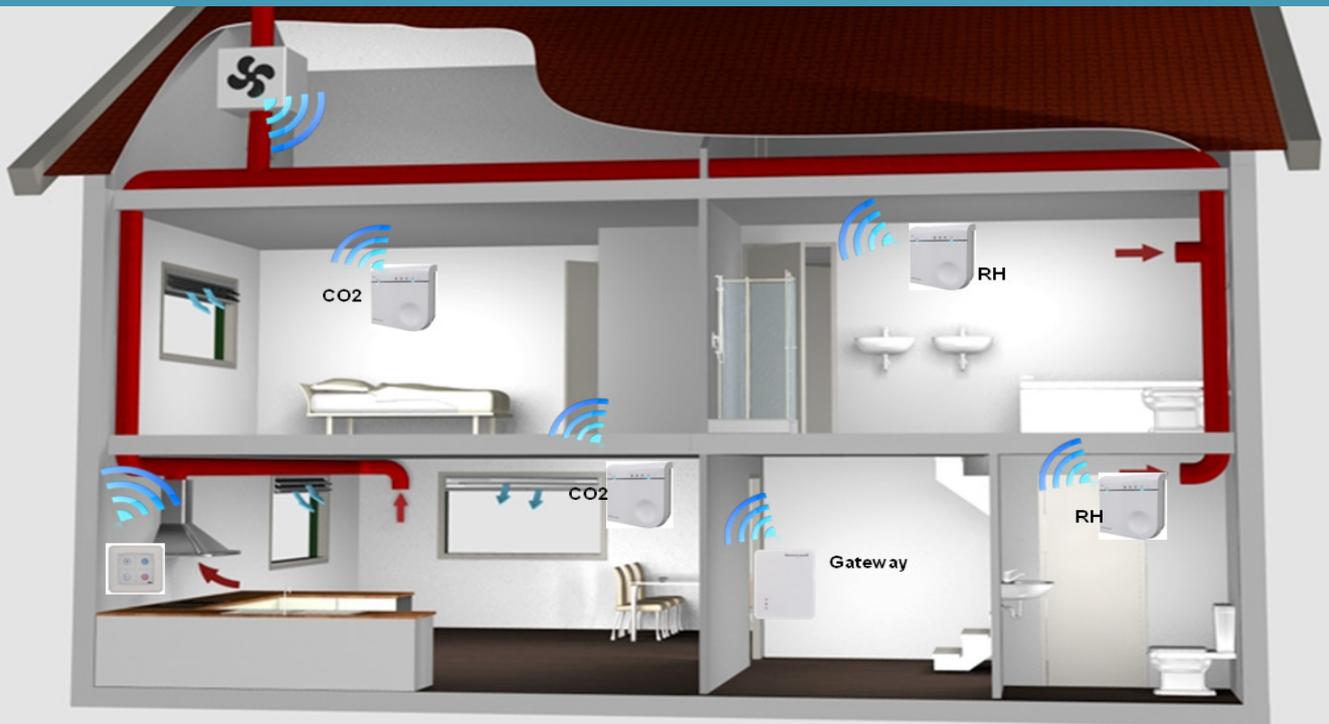


# Connected ventilation system



## Honeywell Customized Comfort Products develops connected ventilation system

Smart, connected products are being installed in an increasing number of buildings and houses. Honeywell Customized Comfort Products (HCCP) is responding to this Internet of Things (IoT) trend and has developed new functionalities for heating and ventilation systems in partnership with Altran. Altran's IP based solutions have enabled HCCP to focus sooner on its go-to-market strategy.

### New opportunities with IoT

IoT creates new functionalities for traditional systems, such as heating and ventilation systems. These functionalities allow consumers to see how they are using the systems while at the same time giving suppliers and service providers an insight into consumer behaviour, breakdowns, service reports and system use. In addition, IoT technology makes the system extremely user-friendly, in terms of simple installation or component replacement, for example.

As a leading producer of heating and ventilation systems for houses, HCCP wanted to contribute to these developments. Systems such as these are generally brought to market via OEM partners. Twan Smets, R&D Manager at HCCP, decided to take on the challenge of innovating the already successful offline ventilation systems. By connecting these products to the internet, HCCP aims to strengthen its position as market leader in the Benelux region and to break into new markets in Europe.

### Internet-connected ventilation systems

HCCP wants to offer users the option of communicating with their ventilation systems via their smartphones and they also want to provide users with an insight into the use and status of the systems. Furthermore, HCCP wants to enable all other interested parties to monitor the ventilation systems for improvement and service/maintenance purposes. HCCP set themselves the goal of presenting connected functionality for the current

generation of ventilation systems to their OEM partners and the market as quickly as possible. To achieve this goal Smets needed to find a suitable partner.

HCCP chose Altran, worldwide leader in the field of innovation and high-tech engineering consultancy. Altran supports clients by creating and developing new products and services. It was Altran's solution for IoT and connectivity that was the deciding factor for HCCP and the two companies entered into partnership on the basis of co-creation. By using Altran's existing solutions on a licence basis, HCCP was able to accelerate the process of bringing new products to market.

The shared vision in terms of IoT and working practices contributed largely to the success of the partnership. Dominique de Wit, Solution Manager at Altran, explained: "Every company and every requirement is different and so we put a lot of energy into identifying the client's requirements or problems before starting to develop a product. We apply the same principle to our partnership with HCCP and we have been able to quickly customize and add value by using existing components. For this project Altran not only provided technological expertise for subsystem integration, we also implemented solutions for mobile apps, cloud storage and embedded software."

#### Existing components

HCCP and Altran created an connected ventilation system in less than six months. Altran supported the development of the following innovations:

- Protected and encrypted communication on existing low power hardware with the help of Altran's picoTCP (TCP/IP stack) in the form of a licence;
- Protected cloud storage for the collection of data and the generation of reports with the help of Altran's Internet of Things Framework;
- Development of a back office system for administration and data insight.

"Through these innovations we are able to offer new functionalities that bring many benefits for both consumers and stakeholders," said De Wit. "These functionalities allow consumers to use an app on their smartphones to operate their ventilation systems and to request information, such as the temperature, CO2 level and humidity. And because the system gathers large amounts of data, stakeholders have a better understanding of system use. For example, by analysing the data they will be able to predict when a

problem is likely to occur and therefore anticipate it. This is also referred to as 'predictive maintenance'."

Using Altran's Internet of Things Framework, which links product data to the cloud and makes it available to applications, the first version of protected cloud storage was realized in less than two months. This approach was supported through continuous integration software factory, a way of developing software with continuous controls and tests so that products can be launched quickly and safely. The aim is to expand cloud storage to at least 100,000 ventilation systems within three years. HCCP's OEM partners are able to offer this functionality on the market under their own brand name. There is a separate cloud storage area available for this which can be fully personalized. Alongside this, Altran is also developing multiple applications for a variety of fields and various target groups, ranging from residents and contractors to housing corporations.

#### Agile partnership

HCCP and Altran have worked in an Agile way. "By working flexibly we were able to identify any problems very early and by adjusting our working practices during the process we managed to avoid any stumbling blocks," said Smets. "Alongside the connected ventilation system, we also created a demo kit for OEM partners and this has led to several partners showing interest in the new systems. The first OEM partner is already offering the new ventilation system on the market. This confirms the success of the HCCP/Altran partnership. In addition, we can see even more opportunities for linking our internet-connected products to a smart grid network," said Smets.

## Realized benefits

- ▶ Reduction of time-to-market through Agile way-of-working and deliver value quickly by combining existing and custom made building blocks
- ▶ Development of new functionalities for traditional systems and increase usability
- ▶ Insight in order to optimize the system and maintenance