REAL-TIME ESTIMATION OF THE NUMBER OF ELECTRONIC THERMOSTATS

Challenge

- In cold-climate regions, heating is an important part of the overall residential electricity consumption.
- Estimating the energy needed to heat a residential building is crucial for thermal performance evaluation.
- Most homes in North America include one or several electric baseboards per room, each room having its own thermostat.
- Electronic thermostats in a residence often have identical electronic signatures, a system is therefore needed to differentiate them.

Solution

- This technology allows the **non-intrusive real-time estimation** of the number of electronic thermostats in operation in a residence, each thermostat controlling at least one thermal load.
- Present system and method rely on a combination of event analysis and frequency domain analysis.
- Proof of concept tested experimentally.
- A patent pending technology developed by profs. Kodjo Agbossou, Sousso Kelouwani and their team at Université du Québec à Trois-Rivières.

Value proposition

- Estimation of the number of thermostats in operation from a **single power measurement** at electric panel.
- Non-Intrusive Load Monitoring without any need for sensors.
- Very useful in North America where houses are often heated with electric baseboards.
- Thermal performance evaluation and **heating abnormalities detection**.
- Can be used to detect the number of any kind of appliances functioning on 2-stage ON-OFF states.

Business opportunity

- Technology available for licensing.
- Co-development for specific platform implementation.

Contact **Nadia Capolla**, Director business development, ncapolla@aligo.ca, (514) 840-1226, Ext. 3010