

SPECIAL REPORT

Jönköping simplifies everyday life with IoT



Many Swedish municipalities make use of new, innovative IoT applications to better keep tabs on their infrastructure. Small, cheap, low power sensors and new communications networks make it possible to connect things that were previously expensive and awkward to monitor. For example, Jönköping has connected life saving devices and defibrillators to the new IoT network being built by Jönköping Energi. Another example are sensors in and alongside road surfaces that provide new, better decision support data for snow clearance and gritting.

Reimer Selero, who is operations manager at the streets, parks and woodlands department at the technical office in Jönköping municipality, sees major possibilities with the new technology:

“IoT brings new measuring and monitoring capabilities and thus the ability to detect any defects early. We’re already using Infracontrol Online to manage fault reports and observations from residents, and by connecting sensors and systems we gain full control and can more easily manage every case no matter where the information comes from. Faults spotted by residents or detected by IoT sensors are sent to Infracontrol Online, which makes sure the information reaches the right person for action.”

New infrastructure for IoT

Jönköping Energi has built a LoRa network for Jönköping municipality. This is a type of low power, wide area network (LPWAN), which is the standard for connecting battery-powered sensors in regional, national or global networks. The network provides IoT devices with the ability to wirelessly transmit data to a host system.

“LPWAN allows sensors to be small and energy efficient,” says Patrik Casta at Jönköping Energi. “The network we’ve built provides the municipality with the infrastructure for IoT applications, enabling us to monitor practically anything.”

He also tells us that one of the challenges they had to solve was the municipality’s topology. For example, one of them is at the top of the heating plant’s chimney.

Smart sensors detect icy roads

Sensors that measure temperature and moisture in and alongside certain road surfaces are an excellent example of a useful IoT application via the new network in Jönköping. So far they’ve connected 12 of these mini weather stations:

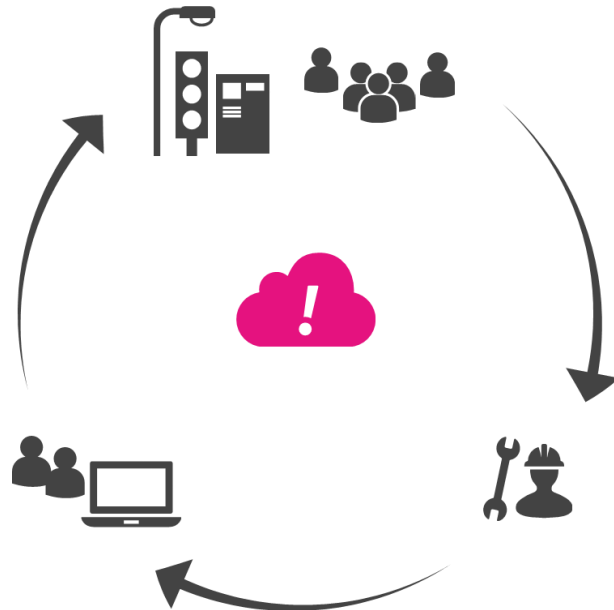
“The weather stations consist of a puck-shaped sensor set in the actual road surface. Designed by the Swedish Transport Administration, they monitor temperature changes in the road surface extremely well. Alongside the road there are also sensors that measure air temperature and humidity,” says Reimer Selero.

He tells us that up until now they’ve monitored the need for gritting by doing rounds and visiting places scattered around the municipality where they know ice first appears. Now they have an entirely new ability to assess the true requirement.

“In addition to the sensors, we also supply information from the Transport Administration’s road weather stations, VVIS, to Infracontrol Online, thus providing our managers with additional reliable decision support data.”

Because IoT devices and communications solutions are provided by many different suppliers and comprise different technologies with a variety of functions and architectures, there is a need for an overarching platform to which all types of technical system can be connected via various types of communication. Also, practical responsibility for society’s infrastructure is spread across many different operators who all need access to information.

“Which is precisely what Infracontrol Online provides us with,” concludes Reimer Selero.



Infracontrol Online provides full control over society’s infrastructure by collecting information from both technical installations and residents with the aid of e.g. IoT sensors.

20 smart tips for IoT applications

- Alarms from of technical equipment such as lighting controllers, pump installations, ventilation installations, heating cables and escalators, etc.
- Pushbutton to call attention to e.g. littering or the need to empty skips.
- Open cabinet doors or covers for electrical installations
- Leaning or twisted objects
- Waste levels in bins and recycling containers
- Stolen objects – via switching or GPS
- Humidity and air temperature in equipment rooms, ops rooms and technology structures
- Moisture and temperatures in walls, floors and foundations
- Moisture and temperatures in soil, grounds or surface coatings
- Moisture or water on the ground or floors
- Blocked drain grates
- Voltage drops to important equipment such as lighting, HVAC installations or dehumidifiers
- Water levels and flows in watercourses and lakes
- Flows through hoses and pipes
- Groundwater level
- Air quality (multiple parameters)
- Lights level – direct or indirect
- Noise
- Broken glass
- Precipitation (rain or snow)

Want to know more?

Contact Niklas Lennerstad, +46 31 333 27 33, niklas.lennerstad@infracontrol.com