



Internet of Things Experiments



DRENTHE'S INTERNET OF THINGS INITIATIVE

In the Internet of Things (IoT) an increasing number of things are becoming connected to the internet. Cars, refrigerators, bridges, buildings, lights, farms, healthcare; the possibilities are numerous. In the province of Drenthe it is our ambition to become a fieldlab for technological development: creating smart solutions for societal challenges. Among others we work on the digitization of SME's, smart industry (you can find The Netherlands's first shared smart factory here), smart mobility, smart farming cybersafety and big data. In this case study paper we will describe our Internet of Things activities and elaborate on an IoT experiment in one of our national nature parks.

Relations to Workpackages

This pilot shows the LIKE! project's opportunity in combining smart technology with better and more efficient services. Internet of Things is a cross-cutting technology which opens up new possibilities for governments and businesses.

Local partners

IoT Nederland	www.iotnederland.nl
Provincie Drenthe	www.provincie.drenthe.nl
Nationaal Park Drentsche Aa	www.drentscheaa.nl
ComResult BV	www.comresult.com
NHL Stenden Hogeschool	www.nhlstenden.com
New Nexus	www.newnexus.nl
Ik Ben Drents Ondernemer	www.ikbendrentsondernemer.nl

This case study is produced by Esmeralda Top

About LIKE!

Local governments, citizens, universities and SMEs have joined forces to co-create smarter, more efficient and more innovative services through 9 transnational pilot projects covering 3 core themes:



Innovation Culture Approach

Smart Services

Digital Dashboards

SMART SOLUTIONS FOR SOCIETAL CHALLENGES WITH THE INTERNET OF THINGS

How the province of Drenthe (NL) is creating a fieldlab for technological development

LoRaWAN

The communication technology which makes all of this possible is called Long Range Wide Area Network (LoRaWAN). The network is energy sufficient (<15 years battery life), it has a low bandwidth (below 2G) and it has a far reach (10-15 km). Drenthe is part of The Things Network (TTN). A Kickstarter initiative to create a worldwide, crowdsourced and crowdfunded IoT network.

Drenthe's Internet of Things Initiative (DIDI)

Besides TTN, the board of governors of Drenthe has decided to roll-out their own free IoT network with servicelevel agreement. This is called 'Drenthe's Internet of Things Initiative (DIDI). It a free to use network for the inhabitants of the province of Drenthe (app. 500.000 inhabitants). It is also free of charge for governments, schools and non-profit organizations. Due to state aid rules, entrepreneurs and startups can use the network for six months. This gives them the opportunity to experiment with new ideas and applications. The roll-out of DIDI is currently for about ninety percent completed.

Pilot: "Hack the Bridge"

Various pilots are in full swing. For example pilots on: smart rain meters in agriculture, the measurement of bridges (how often do they open for boats); ground water level measurement and smart parking spots. The "Hack the Bridge" pilot is part of the LIKE! project. In this experiment the possibilities of the internet of things are being examined in the monitoring of visitor streams in National Nature Park Drentsche Aa. Visitor streams are being monitored by means of several IoT applications, processed and made visible through a dashboard. This provides for example the park management with more insights in the usage of the National Park and it provides them with data on which they can adjust their policies. In a later stage the open data is also interesting for local entrepreneurs.

lot Drenthe Open Data Portal

The network consists of gateways. "Things" can communicate via sensors through the gateways to a dataserver. The data that is being collected, will become available as open data. The LIKE! project makes it possible for us to create an open data portal. Here, one can find information about IoT, ask for keys to enter the DIDI network, be inspired by various pilot projects, and obtain open data. With the DIDI approach it is our aim to boost innovation and entrepreneurship on two sides. First, on the sensor and smart solutions development side and secondly, on the side of open data. By combining data sets, new applications can find their way.

Pilot: International IoT Hackaton

In March 2019 the province of Drenthe is in the lead for organizing an international LIKE! Internet of Things (IoT) hackathon. In a 30-hour pressure cooker session, smart solutions for societal challenges will be created by making use of the Internet of Things and LoRaWAN. In an energetic and inspiring setting, the participants are diving into four tracks: mobility, health, safety and sustainability. Hackathons are a way to boost innovation and a digital innovation culture. Innovation isn't only for R&D departments, laboratories and universities. Every single person with a bit of inspiration and good thinking can come up with awesome ideas to solve problems and can contribute in shaping our future. The IoT hackathon is a major chance for the LIKE! partnership. It provides the partnership with the possibility to come up with a problem or challenge that their region or municipality faces. So, instead of long term processes and research projects you'll get inspiring solutions, fresh ideas, prototypes and even more just within 30-hours.

"DIDI provides Drenthe with a dancefloor... now it's time to dance!"