Pilot project: Digital Inspection Elvia

Innovation type:
Tool/prototype

Innovation:

TRL: # 4

Year: 2022

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Potential users:

User	X
DSO, TSO	X
Technology provider	
Member organisation	
Market operator	
Research/consultancy	
Teaching	

Credit: Disruptive Technologies

In this pilot, Elvia tested different sensors to see if they can make the inspection and monitoring of secondary substations more efficient. Elvia is, for example, testing proximity and touch sensors to see if open doors and the position of switches can be identified, and temperature sensors which can identify of faulty components faster. In addition, Elvia has tested a more experimental sensor for the identification of falling trees on the power line.

Challenge
The project started with the premise that the power grid needs to be exposed to a large number of sensors and sensor technology. Elva wanted to learn what data is available and what we need. Sensors from Disruptive Technologies were therefore installed.

Solution
Installing 350 sensors from in 39 secondary substations and gaining experience related to the use of daa. In addition, a prototype of a new sensor detecting threes falling onto the line was developed.

Potential
One of the major lessons from the pilot is that setting temperature thresholds and predicting failures is very complicated. In the pilot, a switch was replaced due to temperature changes because there was a significant temperature deviation. In other use cases, Elvia saw that several components had very high temperatures without being able to determine whether this was within or outside the desired thresholds. Elvia learned a lot about what works and what doesn't. Deploying sensors, setting up communication, and getting the system to work is relatively straightforward today. The challenge is acting on various alerts or signals that have not been integrated into the work processes. Additionally, some issues "fall between everything" as it is not clear whether, for example, maintenance or the operations center should handle them.

Reference in CINELDI
- Pilot "Digital Inspection" report (in Norwegian)
- Pilot results