CASE

Nærenergi puts biogas stations into operation using Augmented Reality

The corona crisis has sped up the use of remote assistance using Augmented Reality. New stations for biogas for buses in Danish cities Hadsund and Brønderslev are put into operation with technical assistance from Søborg in Denmark, northern Italy and South Korea. From here, experts can guide the local technician through his HoloLens 2, seeing what he sees and drawing in his field of vision.

Nærenergi, a company specializing in green energy solutions, is setting up a new biogas station for buses in Hadsund, Denmark. The service technician in Hadsund is equipped with the HoloLens 2, and at the Nærenergi office in Søborg near Copenhagen, CEO Jacob Himmelstrup and COO Dan Madsen follow his every move. The technician is preparing a new station where in just a few days, 13 regional buses will be able to tank up biogas. Through the built-in camera in the glasses, Jacob and Dan see what the technician sees, and they can draw in his field of vision and communicate verbally.

Usually, when Nærenergi puts these kinds of stations into operation, technicians from suppliers in northern Italy and South Korea visit to perform work on the stations. But the travel restrictions caused by corona have forced the company to think of innovative ways to keep up with the time schedule and ensure that the filling line is delivered according to the plan. After visiting Hadsund, the technician would have to travel to Brønderslev to put a similar station into operation. From there, he would have to travel to Esbjerg, only to continue north to Jönköping in Sweden.

Remote Assistance via Teams and HoloLens 2

Nærenergi found a way to solve that problem: Augmented Reality (AR) and HoloLens 2. HoloLens 2 is a pair of AR glasses from Microsoft, and the remote assistance is through a normal Microsoft Teams meeting that the experts from Italy and South Korea attend virtually.

“Our partner from South Korea is a compressor expert. He knows every piece and all there is to know about pressure, temperature, and every button you can push. The preferred option would still be to get him

to Denmark, but when he can see everything the technician is doing, he can guide the technician around the station to make sure we don't miss anything. The expert from Italy is the supplier of the compressor control panels, and while the program is loaded into the PLC in advance, it still needs to be configurated with the right set points. Having both experts present at the same time, we ensure effective coordination of automation and technology," says Jacob Himmelstrup.

That coordination is in this case done in part online, and that has been a good experience for everyone involved.

"The technology ran impeccably, and both those on site and those of us in the office had a good experience. Just the fact that the technician takes a walk around the area and we can see his field of vision while communicating gives us a far better sense of presence than if he had for instance been recording it on a cellphone," says Jacob Himmelstrup.

The technology attracts the best technicians

Nærenergi was able to execute fast and utilize the opportunities of remote assistance via Augmented Reality because the company were already in the process of developing a solution for their traveling service technicians before the corona crisis.

"We're extremely dependent on our service people on the ground. They're the face of Nærenergi, and our goal is to build up a franchise model with a number of smaller, independent service technicians. We need to offer something extra in order to attract the best people. With a pair of AR glasses, we can save them many steps in their workflow. They capture and document all the small things while they're there and don't need to spend time filling out Word documents afterwards. If an O ring is missing, they just need to take a picture using voice command, and then the people in the office have the documentation they need to supply whatever is missing. We can create intuitive workflow guides, and we can make lists they can check off just by snapping their fingers while performing the work, so they don't need to fill out the service book afterwards," says the CEO, who is not trying to hide the fact that he expects the company to benefit financially from embracing the technology.

"We want to triple our turnover, and that requires innovation. As a small Danish company, we must be at the forefront of the technological development, or we'll lose our competitive power. We were well under way with planning this transition, but it's typical that it takes such a thing as corona for us to speed it up, and this way, we'll hopefully turn this situation into a competitive advantage," he says.

Must work every time

Functioning technology is a significant precondition for remote support to have succeeded during the set-up of the biogas stations in Hadersund and Brønderslev. And it is also a significant precondition for technicians embracing the glasses. Therefore, Nærenergi has entered into a collaboration with Virsabi, a company that helps other companies fully use the business potential in Virtual and Augmented Reality.

"We'll only succeed with this if the technology works well. If we have a technician on site in pouring rain in Brønderslev to change the oil on a station late in the afternoon when he should have already been on his way to pick up his children, then a pair of AR glasses can come to the rescue, because he can get the help he needs, and it speeds things up. But then we can't have the glasses require a software update first or trouble with the internet speed. We need equipment for industrial conditions, so everything works as it needs to, and that's where Virsabi among other things helped us secure that the licenses are okay and that the infrastructure is in place, so we have the right internet connections at all of our stations," says Jacob Himmelstrup.

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