Smart glasses: how technical experts can monitor our sites from a distance

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Distance can present a challenge in a vast country like South Africa but, thanks to smart glasses, technical experts can help their colleagues solve problems at power plants hundreds of miles away. It's a great example of smart technology.

Smart glasses have revolutionized the activities of **Operation & Maintenance** (O&M) by improving multiple aspects: from the effectiveness of actions to the safety of our employees, from the use of resources to cost reduction. We have been using this technology at Enel Green Power for several years, and it has enabled us to follow work **remotely** at numerous renewable plants in different countries. This approach is now being adopted in South Africa in order to bring about a major step forward in terms of **efficiency, operational excellence, innovation and safety**. For this reason, RealWear® smart glasses are now being used at most of our operational sites around the country.

How they work

The head-mounted devices clip into the safety helmets of users and allow for remote mentor video calling, document navigation and guided workflow, among other applications.

> "The glasses are particularly useful on site for solving machinery-related issues. While our technicians understand the machinery and have been trained to troubleshoot most issues, sometimes they need additional input from an expert".

> Asante Phiri, Head of Maintenance and Technical Services, EGP South Africa.

“Because people with **expert knowledge** are often located in **Johannesburg**, Europe, or elsewhere – and sometimes at the site of the original equipment manufacturer (OEM) – the smart glasses are an excellent way for them to gain sight of the machinery without having to travel all the way there,” Asante Phiri adds.

A helping hand

EGP employees on site can liaise with an expert, who can then walk the technician through various processes or procedures and advise them on how to deal with the problem.

Asante says that, once connected, the person on the other side is able to see what the wearer is seeing via the camera on the glasses, while communicating through the microphone and headphones.

> “The glasses also have a liquid crystal display (LCD) that allows the wearer to see user menu items, as well as images and documents. In addition, they can record videos and take pictures.”

> Asante Phiri, Head of Maintenance and Technical Services, EGP South Africa

The glasses can be put to simpler use. “Sometimes the technicians out in the field want a specific part from the **warehouse** in Johannesburg. In some instances, they may want to check that the part in the warehouse is the exact part they require – and they can use smart glasses to do so,” adds **Asante.**

Virtual meetings

The smart glasses need a **WiFi or mobile connection** in order to work. Applications like Microsoft Teams can also be downloaded, enabling the user to take part in team meetings.

EGP uses an interactive cloud platform, **Brochesia**, to facilitate the interaction. The difference between Brochesia and other cloud platforms is that its software is specifically designed to facilitate the interaction between the users in real time, without compromising data security.

Asante says that, while employees have reported that the glasses work very well, one of the **challenges** that needs to be overcome is sustained WiFi or 3G reception. “Because our sites are in some of the country’s most remote locations, internet accessibility can be an issue. We are, however, finding ways to overcome this, and we’re looking at installation of equipment to improve network reception.”

The glasses will have a significant impact on the way some aspects of the work are performed. “There is no doubt that the glasses will help **save time and money** – time the expert would have needed to travel to the site; and money that would have been spent on travel and equipment downtime,” concludes Asante.

Smart Glasses are a splendid case of state-of-the-art technology being used to help implement the smartest idea of them all: renewable and sustainable energy.