Maintenance made easy using Epson's smart eyewear

The Moverio Pro BT-2000 is ideal for hands-free communication

NTT East was spending too much time and using too many personnel to maintain its networking equipment around Japan. When two-way voice communications failed because of equipment noise in stations, NTT East turned to the Moverio Pro BT-2000.

For any technology company, maintenance is everything. For a major network operator like Nippon Telegraph and Telephone East Corporation (NTT East), achieving reliability and maintaining safety across the whole carrier network is a real challenge. The company uses enormous amounts of equipment in over 3,000 stations in 17 prefectures around Japan, each year having to undertake tens of thousands of maintenance calls, often dealing with unexpected equipment failure at stations in underpopulated areas. Consequently, NTT East was looking for a way to reduce or speed-up operations while improving quality and safety.

Moverio Pro helps highly skilled engineers

NTT East's first step was to consider wearable devices. "Our group has highly skilled local engineers working on equipment maintenance," says Mr. Takaaki Kadono, the manager for network integration at NTT East. Local engineers work in pairs inside the stations, carrying out maintenance instructions, but it takes a lot of time to identify specific equipment and cables from the thousands of components inside each station. "We tag all equipment and cables by number, but this takes a lot of time and a lot of personnel," says Mr. Kadono. Cue the Moverio Pro BT-2000, a smart headset with two-way communications that NTT East were hoping could cut-down on time and human resources spent on maintenance.

Moverio Pro has high resolution cameras

How do you tell one cable from another? This is the challenge for the Moverio Pro BT-2000 at NTT East, where it's being used to create a partnership of one local engineer and one remote operator. The remote operator can see exactly what the local engineer is looking at thanks to the high resolution cameras in the Moverio Pro BT-2000, and can give advice on identifying cables and equipment. This could of course be done by smartphone, tablet or PC, but using smart eyewear's augmented reality capabilities does bring unique advantages that are changing how industry works.

Moverio Pro allows hands-free working

"If you use a device such as a PC, your hands are not free, and your efficiency is reduced," says Mr. Kadono. "By using the Moverio Pro, the engineer can work hands-free." The device also offers two-way communications between the engineer and the remote operator, so specific pieces of equipment can be confirmed just as if the two engineers were in the same room – as used to be the

NTT East Japan

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Mr. Takaaki Kadono

Manager for network integration

Key Facts

Moverio Pro BT-2000 smart glasses helped NTT East streamline their engineering call-outs, even in remote locations

The smart glasses offer a sharp enough resolution to remotely read even small labels on cabling

In noisy environments, the smart glasses allow engineers to exchange short written notes

case. Since audio from the two-way communication comes through the headphones of the on-site engineer, the problem of network equipment noise and air conditioning units – which used to affect voice communications when using a PC – is also overcome. If the ambient noise within the station is still too high for effective communications, engineers can exchange short written messages, which the on-site engineer can see in their field of vision while wearing the Moverio Pro BT-2000.

Moverio Pro can overlay graphics

As well as offering reliable communication, the Moverio Pro BT-2000 offers cutting-edge resolution and graphics that are well-suited to industrial environments, where fine detail is often crucial. The remote engineer can not only see videos sent from the Moverio Pro headset worn by the on-site engineer, but the resolution is such that the remote operator can read labels on cables, which is vital for accurate work in NTT East's stations. "The remote operator can easily guide the engineer to the working point, and confirm the equipment and cable precisely," says Mr. Kadono. "The remote operator can then write or draw graphics surrounding the equipment on the video, and those graphics will be shown overlaid onto the equipment in the eyepieces of the on-site engineer," adds Mr. Kadono.

Moverio Pro can be used outdoors

For NTT East, the Moverio Pro BT-2000 has been a huge success, and by the end of 2016 the company has plans to roll out the device to all of its stations. "After gaining experience in stations, we would like to use them outdoors for other works," says Mr. Kadono. Given how much the Moverio Pro BT-2000 has changed how its engineers work indoors, it was an easy decision.

Sharp enough resolution to remotely read even small labels on cabling

A remote operator can see exactly what the local engineer is looking at with Moverio Pro BT-2000

Mr. Takaaki Kadono - NTT East manager for network integration