

Mixed Reality will take burden off of laboratories

The sudden growth of demand for the services of diagnostics laboratories, due to the COVID-19 pandemic, has placed a heavy workload on laboratory workers. Today, they not only perform standard tests but also carry out thousands of tests every day; on samples provided by people potentially infected with the SARS-CoV-2 virus. Time pressure and high workload increase the risk of error. The Polish start-up, Holo4Labs, has developed a solution that makes it possible to relieve lab workers of the burden and perform analytical procedures remotely.

In June, the company successfully carried out an equity crowdfunding campaign in 10 days, acquiring PLN 1.2 mln from investors. The solution proposed by the Mixed Reality experts from Holo4Labs makes it possible to automate the process of sample analysis to the greatest possible extent, minimizing the risk of error by the laboratory worker, including, but not limited to, in diagnostic laboratories. The system developed by the Poles takes advantage of the latest Microsoft HoloLens 2 virtual goggles and is integrated with the LIMS software used in laboratories.

Faster analysis

Holo4Labs works like a portable computer, whose infinite screen is always in front of the user's eyes. Lab workers using the solution do not have to input data manually into a computer, and furthermore, thanks to the goggles, they have access to critical information on the subject of samples from any source. – *The entire process of analyzing given material is supported by our original solution. The software automatically scans the sample and suggests the next step to the lab worker. In addition, everything can take place under the supervision of an outside supervisor, who can track the process outside of the laboratory and instruct personnel as to the conditions for performing more complicated, multi-step procedures* – says Przemysław Budnicki, CEO Holo4Labs.

Remote collaboration

Thanks to the possibility of remote work by auditors or leaders of research teams, the solution allows for substantial acceleration of work that must be supervised by senior personnel. If necessary, a laboratory worker can connect to a selected expert, who will literally be able to

draw in the space surrounding the lab worker, thanks to holograms displayed in front of their eyes, indicating key steps of the procedure, sharing their desktops, or transferring the appropriate files. The data input or report generation process itself is also much faster and can take place automatically. – *Integration of our solution with LIMS software makes it possible to transfer results to authorized persons. Using the comprehensive system, the lab worker inputs data directly in the visual interface, and other data are downloaded from connected laboratory instruments and combined in the system. When the system receives a result from a testing device, it generates a report, and if possible, sends it to the appropriate person.* – adds Budnicki.

Real virtual support

The system facilitates management of such areas as remote training, assurance of the compliance of procedures, management of testing instruments, and enables work on virtual laboratory instruments. Automation of the material analysis makes it possible to more effectively use lab workers' work time, thus speeding up the time of sample testing itself.

The tool developed by Holo4Labs, utilizing the latest Mixed Reality technology, allows for optimization of the entire analysis process and limits workers' presence at the laboratory to the absolute minimum. Virtual work makes it possible to better use the resources of experienced employees, who can supervise the work of entire teams in many locations from their own computers.