

Semi-automated quality control brought efficiency in Vaisala's chip production

Vaisala Oyj is the leading company in providing measurement systems for weather condition metering and for industrial use. The company wanted to improve the accuracy of their quality assurance with modern imaging and robotics. With assistance by OptoFidelity, the company began to change the quality assurance of humidity sensors from the manual microscope-based work to more efficient operations using robotics.

Thanks to OptoFidelity's engineering expertise and ready-made platforms, Vaisala could design a robot-controlled and semi-automatic test platform. The platform was used to improve the operator ergonomics and efficiency, enabling for a first time a completely reliable quality reporting and quality control.

- We produce about 200,000 humidity sensors per year to the 4-inch discs. Previously, they were inspected using a microscope equipped with a ring light. The defective units were marked in the disc with a marker pen. This manual work was heavy and required difficult static positions. The marking of the faults in circuits less than 5 mm in size was not easy. Without saving and reporting the fault markings, a sufficiently good follow-up data could not be received from the production, says **Katja Samuli**, Process Engineer for Vaisala Oyj.

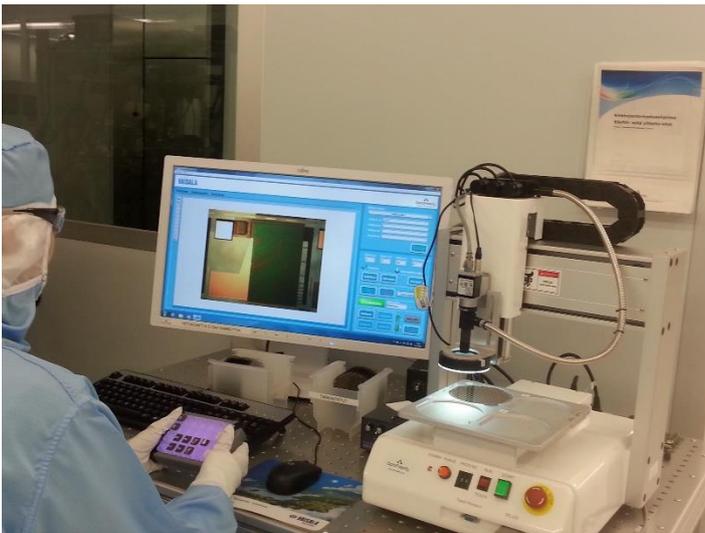


Image: The operator uses a test platform, manufactured by OptoFidelity, to monitor the imaging system controlled by a robot via a large display. Thanks to the control system, the markings in the defective units are digitally saved, removing the need for marking the discs with a marking pen.

Automatic data acquisition of fault types

According to OptoFidelity's LabVIEW Consultant **Henry Kyllönen**, the example of Vaisala is enlightening, because with the reporting enabled by robotics, the company can improve its manufacturing process, not only in terms of quality but also by detecting and preventing the recurring errors in the production.

- Data is continuously collected and the fault types are saved in a specific database in order to facilitate the detection of the recurring faults. We at OptoFidelity have also taken the system scalability into account, which is important, if any changes, for example, in materials, are made to the production process. Then, for

example, pieces of lighting related to the imaging can be easily replaced, if the changes require a customisation of the system, Kyllönen remarks.

‘There was no ready-made solution available in the market that would be suitable for the quality control of the manufacturing process of humidity sensors at Vaisala.’

Katja Samuli, Process Engineer for Vaisala Oyj

The quality control systems for the manufacturing process of humidity sensors always require, almost without exception, work- and material-specific customisations of lighting and optics, among others. OptoFidelity’s ability to create a ready-made solution within a tight schedule is highly appreciated by Vaisala.

- The quality of our end product is of top priority for us. Thanks to the high expertise of OptoFidelity, we have made our production and quality control more effective. We especially appreciate OptoFidelity’s proactive approach. It really conveyed the feeling that the requirements and demands of our operating environment are taken into account when designing the solution. The ideas, know-how, ready-made platforms and components and customer-oriented attitude resulted in a successful outcome which we are very satisfied with, adds Samuli.

Did you know:

The user interface and control system are based on the LabVIEW environment by National Instruments. The changes are then easy to implement and the development work can also be carried out internally in the company, as necessary.

Do you need further information? Please contact Jussi-Pekka Peltonen, Sales Manager for OptoFidelity, telephone +358 45 672 7257