

Application Case Study - Friedrich Miescher Laboratory (FML), Germany

Efficient and reliable Data Matrix decoding on vial trays with Microscan's smart camera

Customer Profile

The Friedrich Miescher Laboratory (FML) is a research institute of the Max Planck Society, named after Friedrich Miescher, a Swiss biologist who discovered the DNA while working in Tübingen, Germany. The FML is part of the Max Planck Campus Tübingen, which also hosts the Max Planck Institutes for Developmental Biology, Biological Cybernetics, and Intelligent Systems. The research groups at the FML work on various different aspects of biology.

The Challenge

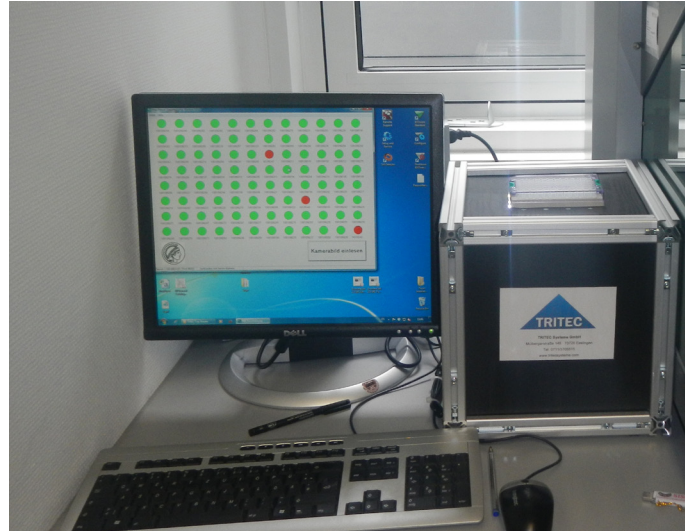
Laboratories often use 96-well trays, which allow laboratory employees and researchers to organize the tubes while adding sample and mix. A tray like this reduces spillage and tube mix-ups. A tray contains 96 small tubes or vials with a high density Data Matrix code printed on the bottom of each tube.

The Friedrich Miescher Laboratory (FML) needed a reliable solution to decode each of the 96 two-dimensional (2D) Data Matrix codes in one go, and to transmit the data via an Ethernet connection in a fast and efficient way.

The Solution

TRITEC Systeme GmbH, a valued Microscan reseller, was founded in 1994 in Esslingen. The company integrates and distributes automatic identification and machine vision systems and label printers.

To meet the needs of FML, TRITEC developed a vial reader based on a C-mount Vision HAWK camera from Microscan. The Vision HAWK is a flexible industrial smart camera that delivers powerful vision capabilities in a compact, easy-to-use package. Developed for vision users of all experience levels in a broad range of applications, the Vision HAWK



The all-in-one vial reading solution with software from TRITEC Systeme GmbH displays the good reads and no reads in just one click.

features an intuitive vision interface, optional C-mount lens design, and simple plug and play connectivity.

A custom-made case was built to accommodate the solution, and a Vision HAWK camera with a WUXGA sensor and Visionscape advanced machine vision software were chosen as the ideal platform to achieve the necessary field of view. Additional white-light LED-rows were integrated on the top of the case, to ensure a consistent light field for precise detection of the 96 codes on the tubes.

To realize a graphic presentation of the read cycle results, TRITEC and their partner Systemhaus Booms also developed a software program that immediately shows the good reads as well as the no reads, i.e. if one of the tubes is missing.

- **Requirement:** Reliable decoding of 96 two-dimensional (2D) Data Matrix codes on the bottom of each tube in one go.
- **Project:** Integrated vial reading solution to decode, display and transmit data.

- **Solution:** Vision HAWK C-mount smart camera from Microscan integrated into a custom-made case.
- **Result:** Easy and cost-effective all-in-one solution to ensure efficiency and minimize errors.

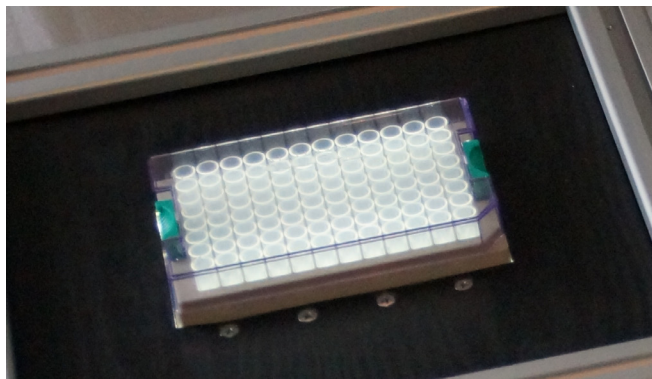
Application Case Study - Friedrich Miescher Laboratory (FML), Germany

Afterwards the data from the 96 codes is sent to a csv-file, which can be used in any way the customer desires. The camera is triggered by a click of a button on the screen.

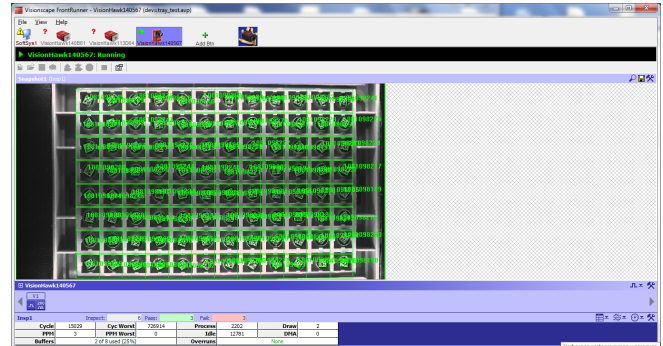
The Benefits

Dr. Frank Chan, Max Planck Research Group Leader comments: "This system provides us with an easy and cost-effective all-in-one solution. Our employees are able to capture all codes in the tray in one click and to send the information to any of our systems."

Sven Kaluza, Project Manager at TRITEC concludes: "Thanks to the high flexibility of the Vision HAWK camera and the pc-based software, individual customer requirements could be integrated easily. The Vision HAWK crosses the bridge from barcode reading to machine vision which made this application possible with a very short time to market."



The 96-well vial tray can be placed on top of the vial reader, which then reads the codes on the bottom of each tube.



Microscan's advanced machine vision software is used behind the scenes to ensure the correct field of view.



The Vision HAWK C-Mount Smart Camera is integrated at the heart of the vial reading solution.

OVERVIEW:

- **Customer:** Friedrich Miescher Laboratory (FML)
- **Industry:** Laboratory Automation
- **Application:** Vial Reading
- **Products:** Vision HAWK C-Mount Smart Camera from Microscan
- **Reseller/integrator:** TRITEC Systeme GmbH, Germany

Founded in 1982, Microscan has a strong history of technology innovation which includes the invention of the first laser diode barcode scanner and the 2D symbology, Data Matrix. In 2008, Microscan acquired the Siemens Machine Vision division. Today, Microscan remains a technology leader in automatic identification and machine vision with extensive solutions for ID tracking, traceability and inspection.

MICROSCAN®

www.microscan.com

Product Information:
info@microscan.com

Technical Support:
helpdesk@microscan.com

©2013 Microscan Systems, Inc. 10/13