

Hitachi and Daicel Develop Image Analysis System to Determine Root Cause of Facility Failures and Deviations in Front-Line Worker Activities



Challenge: Daicel Seeks to Improve Manufacturing Processes

Daicel Corporation is a global manufacturer of chemical and pyrotechnical products. Daicel's automotive airbag business operates in an industry that has experienced major recalls. This led to a renewed interest in quality control and the analysis of manufacturing quality and performance data. It is ineffective to manually filter data as a way to find and eliminate the root causes of product defects. Therefore, Daicel considered the use of advanced analytics to provide early detection and resolution of root causes.

Solution: Hitachi Provides Manufacturing Insight

Together, Hitachi and Daicel developed an image analysis system that uses in-depth cameras to measure worker activities. The system detects operational failures in product line facilities and deviations in worker activities in the front lines of manufacturing. Through front-line interviews and observations, the system derives standard behavior models and identifies deviations in worker activities by using statistical comparisons with standard behavior models.

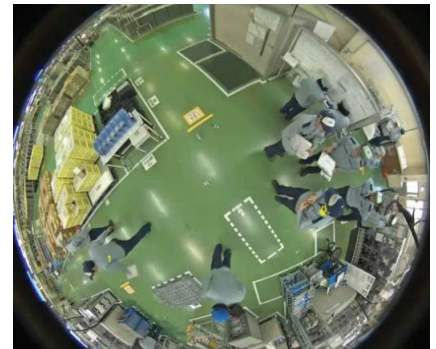


Photograph above: Front-Line Worker

Photograph below: Facilities Sensing Using Image Analysis System

Expected Outcomes: Early Discovery and Correction of Quality Issues

- Detects operational deviations and failures in production line promptly.
- Improves root cause discovery with the use of advanced analytics and reduces time-to-discovery.
- Improves quality and productivity and reduces overall risk of recalls.
- While the solution piloted at the Harima plant in Japan, plans are in motion for the image analysis system to roll out to six overseas manufacturing sites. The next stage is to build a globally integrated cloud-based quality management system, including additional applications.



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