

Tiama

Beyond the Scope of Inspection

For decades, the glass industry has been conservative and risk-averse, and relied on traditional methodologies due to the complex physical and chemical processes involved in crafting a diversity of glass containers. Glass manufacturing companies are now investing heavily into big data analytics to overcome these complexities, and boost product quality. But data analytics is not enough. These plants need to constantly upgrade their equipment for improved production efficiency at reduced ownership costs. However, it is quite cumbersome to manage the existing equipment and their spare parts and purchase new equipment, while maintaining flexibility and versatility throughout the glass manufacturing process. Rising up to this challenge is Tiama—a global data and quality control provider.

Tiama offers a turnkey equipment as a service (EaaS) solution to empower glass companies with the best-fit machines, and unparalleled inspection and quality control. “This turnkey solution combines manufacturing equipment with service-level agreements, and big data to help clients make informed decisions pertaining to the glass manufacturing process in real-time,” states Max Hodeau, CEO of Tiama. With a significant global presence and substantial revenue, Tiama leads the charge to spark innovation and competency in maximising glass production process efficiency. The company goes the extra mile to tackle the perturbing capital expenditures (CapEx) cost swings from recurring activities such as machine upgrades and refurbishment via subscription-based business model.

As these recurring activities demand high-fidelity data analytics across the plant, Tiama appends machine vision, what it calls “the heart of the process,” to the glass manufacturing framework. This technology coupled with an ‘auto-set’ feature of EaaS

enables clients to configure their equipment per the type of glass container process they wish to control. From defining shape and colour to packaging and rejecting defects, the company leverages machine vision to cover it all. Tiama additionally helps the clients realise the benefits of investing in machine learning (ML), and helps them set up new equipment at the push of a button. That being said, a plant’s performance is not determined by just the capabilities of the machine, but also the skills of the machine operators. Tiama bridges this skill-gap with its proficient resident engineers.

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Equipment upgrades and defect rejection aside, Hodeau also points out how clients strive to achieve the “right trade-off” between plant productivity and meeting customers’ quality requirements. “Being able to reject defects is not sufficient. Customers today expect defect recognition features and comprehensive data to define multiple criteria for acceptable defects to keep up with the shift in product measurements,” he says. As a response to this, Tiama utilises a mixture of image analysis algorithms in conjunction with deep learning to provide real-time information on the category of defects rejected. This data allows the clients to take critical actions throughout the glass forming process.



Max Hodeau

Tiama delivers a robust range of data solutions, the Tiama ECO-system, for streamlining the glass forming process with intelligence, traceability, and inspection. The company’s intelligent manufacturing execution system (MES), Tiama IQ Scan, accumulates data from various equipment within the Tiama ECO-system to serve as a cockpit for making improved decisions in real-time. With this data backed by powerful analytics, the company presents the clients with process window recommendations for effective productivity optimisation and defect reduction, enabling the equipment operator to turn the knob in the right direction.

To provide reliable data for process machines and automatic feedback loops, Tiama has developed a gob control to maintain quality across the glass forming stages at the process level. The company utilises lasers to mark the glass containers with unique datamatrix or alphanumeric codes for traceability and control of distribution channels, counterfeiting, and returnable container loops.

Today, Tiama continues to explore deep learning opportunities in various industries and is actively looking for R&D and process synergies with industrial vision companies. 