glass
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The smart factory will be based on smart tools

Marc Gimbert discusses the YOUniverse concept and its Tiama ECO-system, which he describes as a data source and another step towards the smart factory in the manufacture of glass containers.

At the recent glasstec exhibition in Düsseldorf, Tiama introduced its YOUniverse smart factory concept, presenting itself as a co-pilot on the way to the smart factory and providing users with real business intelligence possibilities.

Glass plants are full of data that has been underused for years. Tiama inspection machines were always known to deliver production data, used primarily for counting purposes only. This data has a much greater value, however. The hollow glass industry is a challenging market and the objectives of productivity, flexibility and innovations are always growing.

Smart factory concept

This is why Tiama created YOUniverse, where 'YOU' stands for the customer who is playing a central role in smart factory implementation; it aims to help customers to make the most of the information Tiama systems can provide, utilising flexible and automated 'plug and play' solutions, making the inspection process statistical and capable of adapting to any changes, in any environment. Thanks to an open information interchange, this concept allows machines from any manufacturer to be linked to the YOUniverse and 'speak to each other' but also to link Tiama's five areas of expertise: Monitoring, inspection, traceability, service and intelligence.

In the glass plant, Tiama provides data thanks to a series of strategically placed machines; at the hot end (gob control, article shape, emissivity etc), in the laboratory (weight, dimensions etc) and of course, at the cold end with inspection machines (bottle thickness or ovality measurements). With a Datamatrix code engraved at the hot end, each container becomes unique and data gathered from all Tiama sensors can be associated to this code and sent into the intelligent family.

Tiama Intelligence Systems give the opportunity to customers to gather real-time data across the production line, with results displayed on a single
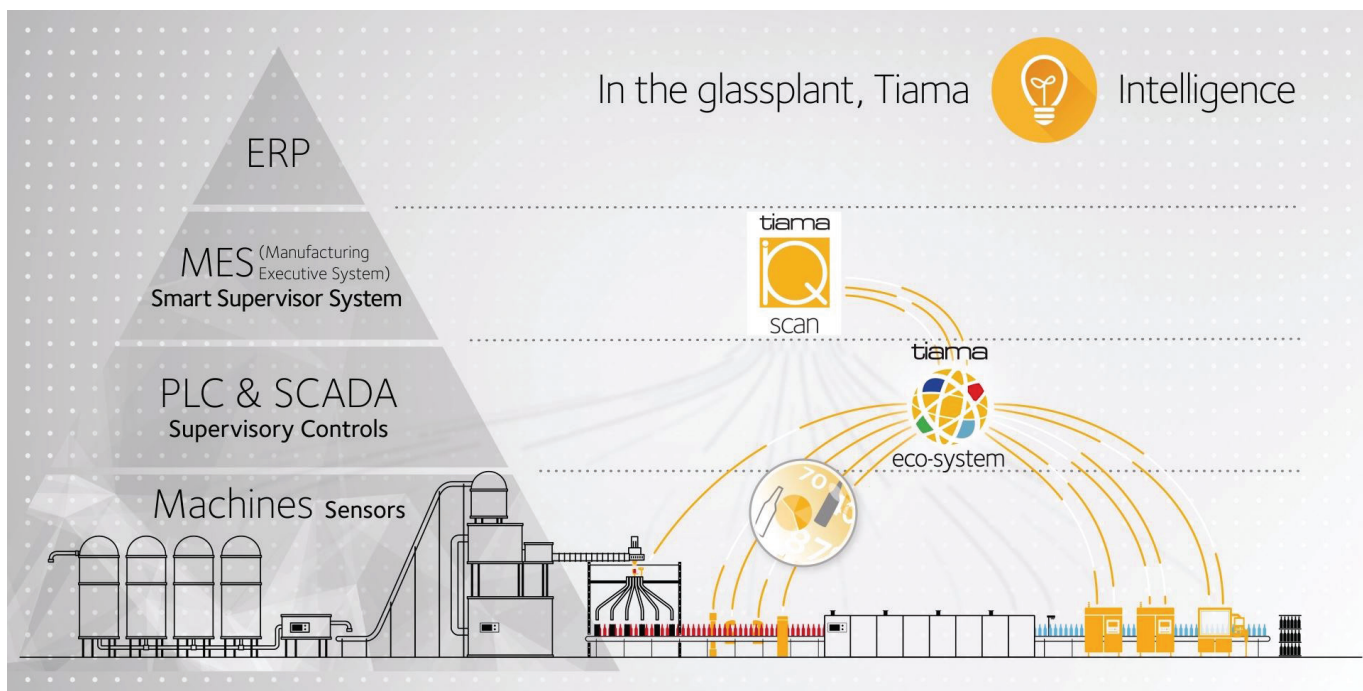

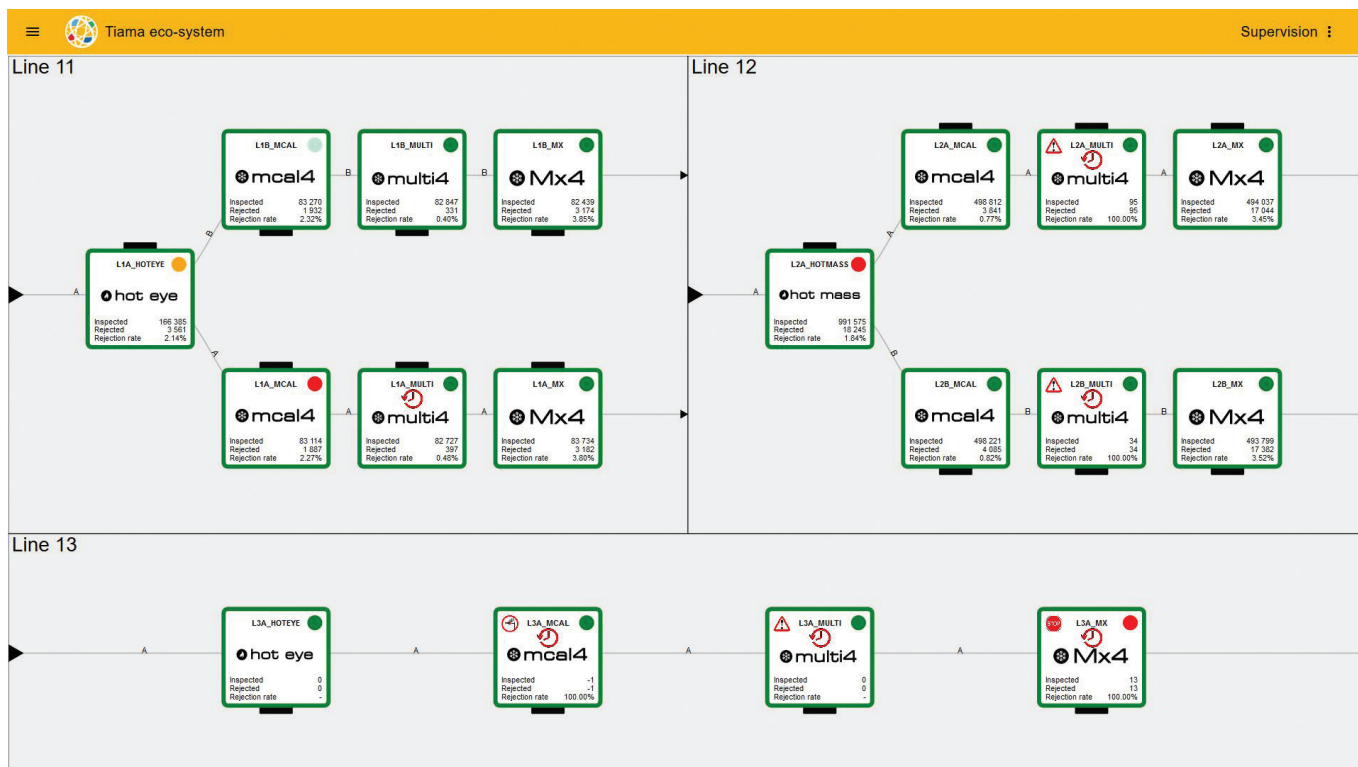Introducing the YOUniverse concept at glasstec 2018.

platform. At the heart of the smart factory, Tiama offers these enhanced software solutions, identifying production drifts so that corrections can be made automatically, even before the relevant defect occurs.

Supervisory control

Following the Tiama IQ Track and Tiama IQ Scan (a manufacturing execution system that helps to monitor the lines and allows glass plant management to have a quick overview of key performance indicators for their factories), Tiama has extended its Intelligence product family by

The Intelligence range in the glass plant.

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This control centre module presents three production lines and the status of 18 Tiama machines.

introducing the Tiama ECO-system.

While Tiama IQ Scan helps glassmakers to operate the plant, access relevant information and make the correct decisions promptly, Tiama ECO-system provides more high value data coming exclusively from Tiama machines and sensors.

Control centre

The Tiama ECO-system is a supervisory control and data acquisition system dedicated to Tiama machines. The user can have an overview of hot and cold end machine behaviour.

From a single dashboard, the operator can monitor inspection machines at the cold end, without needing to walk to each machine, providing more time to focus on important tasks.

Operators can take control of the user interface, compare settings, import/export them to another machine or line, acknowledge alarms and look at the pictures or measurements of the last rejected containers. "Such tool can change the job of cold end operators in the future, making it effortless and much more interesting for future generations of employees" commented a customer at glasstec, while

The Tiama ECO-system attracted considerable interest at glasstec 2018.

discussing future challenges.

The operator can be notified in real-time of the most important events or anomalies and access an automatic reporting tool including mail distribution to facilitate the communication of information to managers. This makes the decision-making process much quicker. The operator will not need to dig into each machine to find out what he is looking for; relevant information will come to him into one single point… the Tiama ECO-system.

Open system and data source

The Tiama ECO-system is not intended exclusively for use by hot and cold end operators. It is an open system that can provide data to IQ Scan but also to other manufacturing execution systems, the plant's information system or ERP. Where inspection machines provide mainly data on inspected/rejected containers, the Tiama ECO-system will deliver more process, quality and maintenance data. The objective is to gain better use and follow up of Tiama machines.

Measurements like thickness or verticality given by Tiama sensors can be computed and tracked by statistical tool to monitor and control processes. Sample challenge reports go automatically from inspection to the system without human intervention. Tiama machines will appear as connected devices from where

availability, the reasons of downtime, performances etc will be known. This will make preventive and predictive maintenance possible.

One single database

Last but not least, it is the ideal system to record all traceability data into one database for every single bottle and for each Tiama sensor. This way, from the Datamatrix code, it will become possible to retrieve all data for an engraved bottle that went through inspection machines, laboratory machines or monitoring sensors.

Using the same principles as the IQ products, the Tiama ECO-system operates the most advanced database appliances for faster access of large volumes of data. Being fully web-based, the entire application can be accessed through any modern web browser. It can be operated from any mobile device and of course, users have access to the system anytime, anywhere. ●

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