

## Heye Newsletter I, 2021

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DEAR CUSTOMERS AND FRIENDS,



As a progressive company, Heye International is always looking ahead and not backwards. However, special events give us an opportunity to look back on mutual successes with joy, pride and gratitude. The retirement of Heye International Managing Director, Dirk Pörtner, on May 31, 2021 is such a special event. After more than 40 years in the glass industry and 13 years of management activity at Heye International, one era has come to an end and new era has begun.

The long-standing managing director was given a small, but well-deserved retirement event due to the Covid-19 Pandemic. Henrik Bonn , COO Ardagh Glass Europe, stated "I would like to thank Dirk P rtner for his outstanding work and success, not only at Heye International, but also in the Ardagh Group. In particular, his knowledge and experience in the glass industry and his charismatic personality will be remembered by employees, colleagues and customers. He made a significant contribution to the positive development and growth of Heye International. All in the Ardagh Glass family wish him all the best in this new phase of his life, and that he continues to enjoy good health and activities according to his desire. I am sure that our paths will cross in the future and I look forward to it."

"I look back with great gratitude and a certain pride on what we, as the Heye team, have created in recent years," said Dirk P rtner. "Together we faced many challenges and celebrated many successes. I am proud of all that we accomplished together, and I am especially proud of all of my colleagues at Heye International."

Achim Prange (CTO) and Jens Langer (CCO) will take over the tasks of Dirk P rtner in addition to their previous fields of activity. Jens Langer has been with the company for six years and is now responsible for sales, product management, marketing, service, IT, human resources and finance. Achim Prange has been working in various management positions at Heye for over 20 years and will be responsible for the areas of development, production, logistics, purchasing, quality, application engineering and project management in the future.

"The continuation of the good relationships with our customers and suppliers remain the primary focus of our business. Heye International will continue to play an important role in the development of new technologies for the glass container industry and in the expansion of the global range of our services," said Achim Prange and Jens Langer.

Your Glass People from Heye



# WARE HANDLING FOR BEST RESULTS



In modern glass container manufacture, high production results require good forming techniques. There is also a need for a modern [ware handling system](#) to meet increasing speed and precision demands. Heye International provides advanced ware handling solutions to maximise results.

In addition to the assemblies that are assigned to ware handling at first glance, such as pushers, ware transfer and lehr loaders, other components play a role that have a significant influence on the quality of transport. This starts with a modern servo take-out mechanism that positions the containers calmly and precisely above the dead plate.

A prerequisite for high pusher speeds is that the containers are standing properly and consistently tempered on the dead plate. This is guaranteed by a unique dead plate cooling control, which keeps the amount of cooling air and the time interval on a constant and optimal level.

Exactly constant belt speeds for both the machine belt and the cross belt are ensured by the modern Simotion® drive system, in order to be able to achieve synchronization between the other components.



### THREE AXIS SERVO PUSHER

The transport of hot containers benefits significantly from an improved motion profile when implementing Heye International's high speed [pusher type 2158](#). The optimised motion profile results in a parallel pusher movement to the conveyor belt. This recent pusher innovation combines high speed with long lifetime and less parts.

Many parts are also used in the [two axis 2157 pusher](#) series for standard applications. The servo direct drives in particular reduce maintenance requirements. For large plants with many production lines, the modular design renders a quick conversion from right-hand to left-hand operation. In short, this high speed pusher design provides reduced service requirements, minimum wear, long lifetimes, quick article changeovers through easy profile settings and the fast exchange of pusher fingers.

A further advantage is a simplified job change. Mechanical setting is no longer necessary, for example the manual adjustment of cylinder stroke. Thus, a large part of possible disturbances and inaccuracies in the production process are essentially excluded.

Consistent and approved parameters can be reproduced when running a job again which, in turn, ensures a smooth start-up after a job change. The geometry of pusher mechanisms can be considered a 'constant'. By setting defined parameters controlling the motion profile, the system set-up almost becomes a constant when running a job again. Thus, incorrect settings can be excluded after a job has been successfully run once. The setting menu is easy to use, set so that high usability is guaranteed. The high speed pusher can be implemented on machines with a large number of sections, in double, triple or quad job operation.



### **HIGH PERFORMANCE WARE TRANSFER**

Furthermore, the accurate ongoing transport of containers is assured once the high speed pusher has precisely positioned them on the machine conveyor. Heye International's high performance [ware transfer type 4220](#) (with two parallel running conveyors) makes use of a simple but important principle that is also well known by motor sports racing drivers. They reduce speed when turning (direction change) and then speed up again. Centrifugal forces that also affect containers in ware handling processes and make them unstable are reduced significantly.

The containers perform direction changes in a smooth and even motion sequence. By reducing centrifugal forces and implementing a modern drive system (Simotion®) with constant and reproducible parameters, the transport of containers at this critical point is managed successfully.



## ACCURATE LEHR LOADING

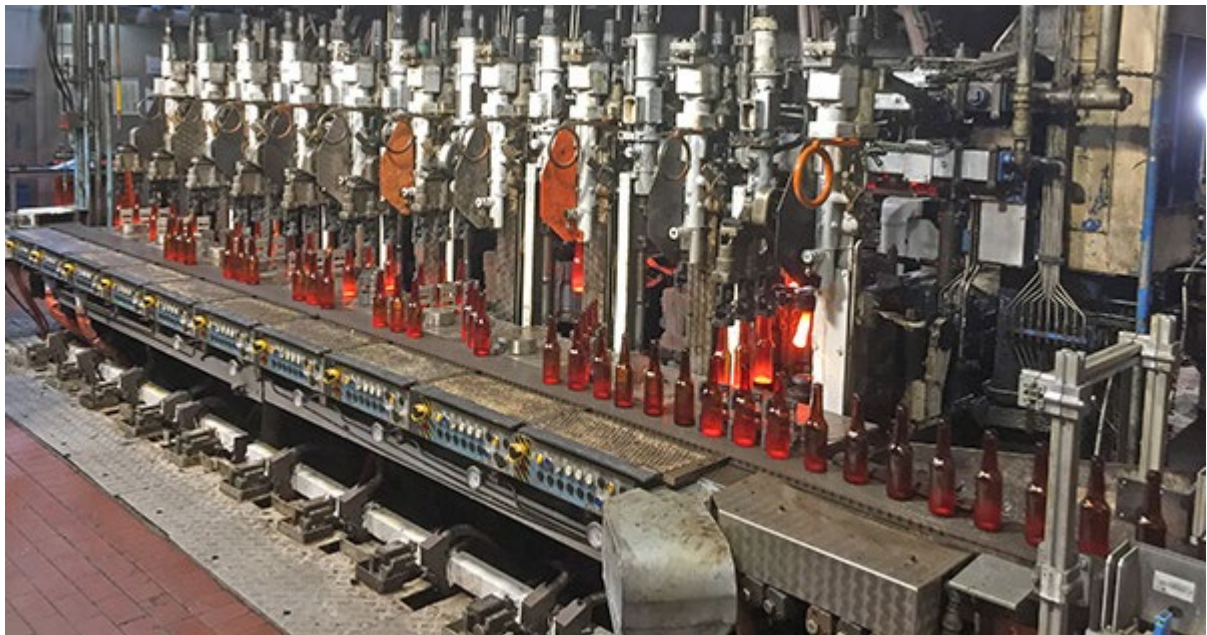
Once containers reach the cross conveyor, it is critical to avoid negating the advantages achieved when pushing ware into the annealing lehr. Here too, lehr loaders driven by servo motors and equipped with up to three independently driven axes operate high speed production lines. The modern and reliable Simotion® drive system provides parameters that can be repeated precisely for each production run, once properly determined.

In addition to these technical accomplishments, the question remains how possible investments can be paid off. This question can certainly be answered by model calculations. However, it makes no sense to implement the latest technologies from batch house to production machinery and accept rejects due to poor ware handling. Every high class article produced properly but rejected during the ware handling process reduces turnover and profit.

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## MAXIMISING THE ADVANTAGES OF PROCESS VISUALISATION

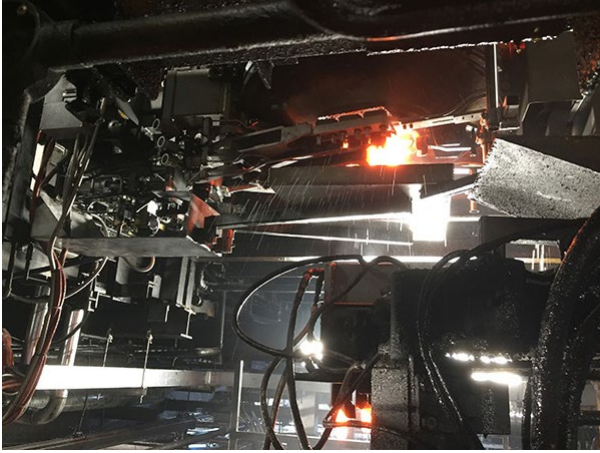


Ardagh Group's Knottingley glass container facility in the UK is benefitting from the recent conversion of an existing production line to [Simotion® Servodrive](#) and FMT control technology.

Installed and commissioned by production machinery specialist Heye International GmbH, the highly flexible control system is based on the future-proof, multi axis Simotion® drive system from Siemens. Independently operating visualisation and real-time control is enabled delivering simplified access to all production data parameters and system error reports.

Enhanced reliability of the electronic components in combination with the application of a compact servo motor with robust resolver guarantee resilient, non-stop operation. If control components need to be changed, complicated programming is not necessary because the configuration data is stored on a memory board. When control is initiated, the data is automatically transferred. Hence, commissioning

times and downtimes during servicing are minimised, whilst the staff training requirements are reduced.



Retrofitting the Simotion® and FMT control equipment at the Knottingley glass plant was combined with Heye's expert technicians installing a series of advanced glass container production technologies as part of the project. This included the installation of a 3inch triple gob feeder mechanism, [Heye Servo Dual Motor Shears](#) (type 2323, 3in triple gob) and a 'Futronic' FMT VDM electronic timing system.

Along with 10-section crane rail equipment, the installation features replacement blank side valve blocks, the [Heye 2157 Servo Pusher system](#), a Heye three axis [Servo Lehr Loader](#) (type 4206), hot end reject equipment and [Heye Process Control](#).

A Simotion® IS conveyor and ware transfer conversion kit was supplied, together with a Simotion® cross conveyor conversion kit. The Heye Simotion® Servodrive System is designed for nine drives and features two control cabinets.

Julie Watson, Director of Operations at Ardagh Glass Knottingley, confirms successful commissioning of the project in close co-operation with Heye personnel, both before and during installation: "We are delighted with the good teamwork between Ardagh and Heye staff. The upgrade of our IS machine and equipment will lead us to the next level of high-end technology". Now, the glassmaker is looking forward to maximising the benefits of using process visualisation within the production process.

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# SMARTLINE 2 – ADVANCED EVOLUTION OF GLASS CONTAINER INSPECTION



*Where special becomes normal - the SmartLine 2nd generation starwheel inspection successfully combines speed, reliability and flexibility to deliver accurate results. Special operations like mini-ware and non-round containers are now standard with SmartLine 2. Customers award top marks for Heye's SmartLine 2 with the camera based check inspection system Ranger 2.*

SmartLine 2 is the latest generation of Heye's starwheel inspection machine series. Developed and manufactured at Heye International's dedicated Cold End Centre in Nienburg, Germany, SmartLine 2 glass container inspection equipment can be configured in several different ways, with up to six inspection stations available. The Nienburg facility employs a team of experts and features a modern production layout. Importantly, the centre is close to the Ardagh Group's Nienburg glassworks to undertake essential testing work.

## **CAMERA CHECK INSPECTION BY RANGER 2**

Equipped with the best in market camera based check inspection system [Ranger 2](#), customers all over the world have confirmed the SmartLine 2 robustness and reliability. Proved in multiple cases, Heye's Ranger 2 detect more than 99.8% of all critical defects. Ranger 2 is now able to inspect pharmaceutical mini-ware. With this evolution the system can fulfill all customer requirements to container sizes and shapes.





## HOW RANGER 2 WORKS

Each system inspects independently and does not have to be synchronized with others. So there is no influence between the systems and there is no need to compromise one system in favour of another. This allows an individual optimisation of all settings, e.g. lighting, camera position etc., on the respective type of crack. If one system is not available or is not optimally adjusted, the others are still fully functional. Every container produced must be considered as a unique object and every concept of a crack test must take this into account. Therefore, the Ranger 2 uses the concept of **"Intelligent Cloud Masking"**, which makes any kind of "teaching" superfluous after a job change.

Assuming that each container is unique, the Ranger 2 inspects each container for itself and sets one mask for each single container. Therefore, each container is its own reference and has no negative influence on the following ones. So the zones are subject inspection of high dynamics and can immediately adapt to changes that occur during production.

## NON ROUND – OUR CORE COMPETENCE

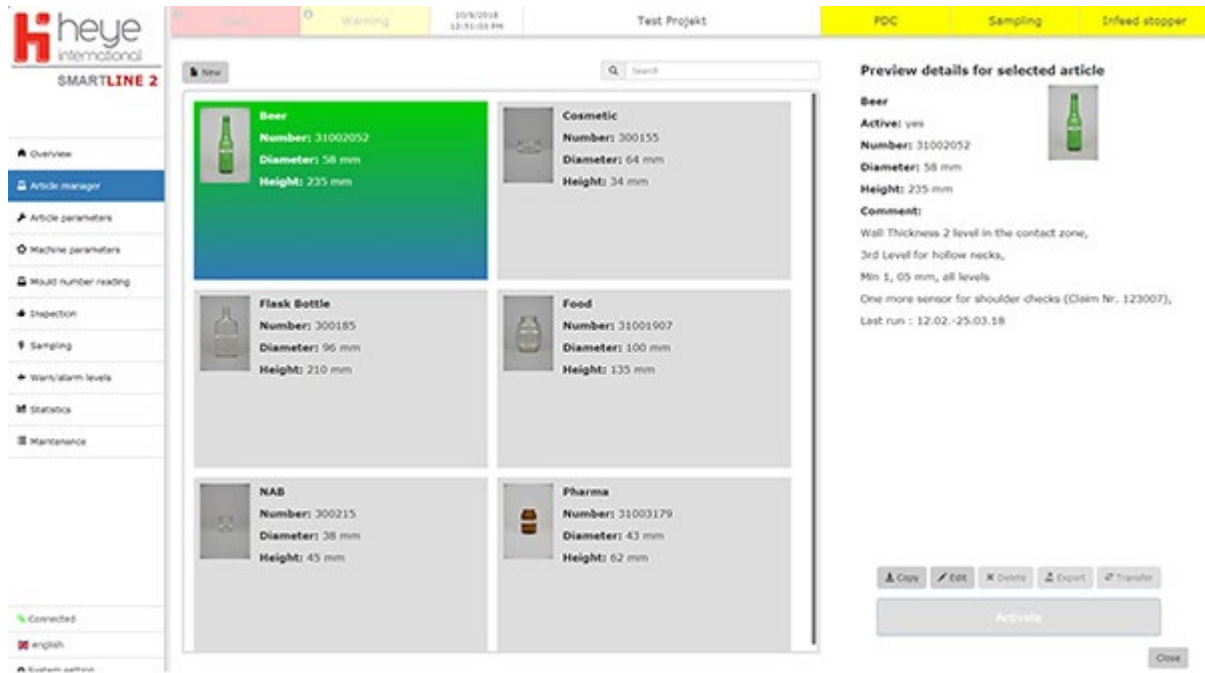
Container shapes, which differ from the standard round container, are one of the most common tasks in the glass container inspection industry. Heye masters this "non-rounds" with the known excellence. The range of inspectable container sizes and shapes is above the average, inspection is possible with almost all imaginable shapes, no matter if they are angular, oval or simply round. With this huge range of testable container sizes and forms, the SmartLine 2 matches the market approach to be a real universal check inspection machine.

## IMPROVED JOB CHANGE TIMES

The application of servo technology results in a high degree of flexibility. Fast and easy changes to an item's indexing positions and optimal use of the servo torque for up to four rotation stations are possible. Optimised motion sequences allow faster reactions to changing process parameters. The equipment's innovative design and its large and easy-to-open hood provide more working space between the inspection stations. Job changes become much easier. The maximum article height accommodated is up to 450mm, with angular, oval and round containers processed. Thanks to the servo-driven starwheel, indexing positions from six to 48 are possible.

## STATE-OF-THE-ART USER INTERFACE

The new design of the graphical user interface of SmartLine 2 has been conceptualised in cooperation with a specialised engineering service provider. The main goal of the development was a practicable and fast operating interface. Orientation for the development amount is coming from our customers. The two-click-management is only one of many advantages next to smart configuration and a great overview over all statistics an operator needs for easy-to-use handling.



## EASY CONFIGURATION OF KNOWN CONTAINERS WITH THE JOB HISTORY

Job history is even customised for

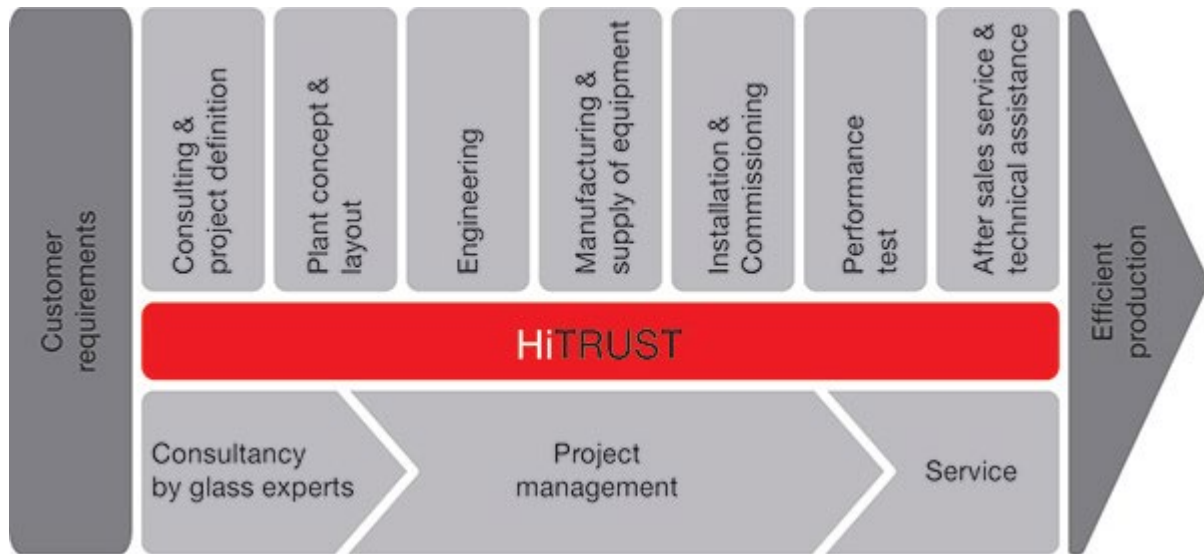
- Quality requirements
- Setups
- Reproducibility data

## POSITIVE FEEDBACK

Feedback generated from Heye International customers has confirmed the SmartLine 2 equipment's robustness and reliability. The mechanical design and drive system in particular are highlighted for their robust design, while the control system is praised for its reliable operation.



# BENEFITS OF STRUCTURED PROJECT MANAGEMENT



Keeping the overview is essential for every project. Many tasks are complex and need specialist knowledge and expertise. Sophisticated project management leads to specified and structured procedures during entire project period, which finally helps to achieve the stipulated objectives in shortest time. Heye International implemented a modern [project management concept](#) to fulfill customers requirements and bring the project to a success.

With a new investment, certain targets have to be kept. Finally it is all about budget, quality and time: The fixed budget may not be exceeded, the quality of products and practices must be satisfactory and the time schedule has to be kept. There is often an overwhelming amount of information when it comes to a new investment in a glass production facility. When Heye gets a machine order, the company handles all commercial and technical processes with a structured and permanently reviewed project management system, called „PM@Heye“. According to the project’s type and scope the basic structure can be adapted and customised. In the first phase Heye’s Sales Managers finally clarify all technical and commercial points with the customer before they hand over the project to the project manager, who then is the permanently responsible contact person during the entire project („one-face-to-the-customer“). The project management processes at Heye are well-organized and transparent to the customer. In each stage of the project the customer is informed on the latest status, kept in the loop, with a comfortable „one-face-to-the-customer“ approach.

With the invention of the SpeedLine IS-Machine, Heye’s flagship within the Hot End portfolio, tremendous improvements in project time-schedules have been generated based on standardised parts logistics, modular assembly and the integration of many sub-systems into the factory-assembled and factory-tested machine. This also allows the machine to be installed and put into operation in shortest time due to standardised processes, less interfaces and its modular and premounted design. Under best conditions, a skilled Heye installation team can move and install a Speedline-machine within a period of 15-20 days from unloading from a truck until start of the cold-run. Start-up and performance-run is an important part of the project and the experienced Heye service team is able to achieve full machine performance already two days after hot production start. During all these project stages the project manager is the link between all acting groups and the customer.

The following schedule gives an overview of all typical project phases (here: Hot End project of an IS-Machine).

## Phase 1: **OPENING**

- Final customer meeting
- Commercial and technical clarification
- Placement of purchase order / contract signing

## Phase 2: **PLANNING**

- Heye internal project handover form Sales to Project Management department
- Customer kick-off:
  - Introduction of the Project Manager
  - Verification of the scope of supply
  - Project planning including milestones for delivery, start-up and training
  - Determination of start-up containers
- Continuous customer communication

## Phase 3: **PRODUCTION**

- Production phase
- Testing and verification of machinery and equipment
- Preparing of readiness for shipment

## Phase 4a: **TRANSPORT**

- Transport and shipping process in accordance to agreed Incoterm

## Phase 4b: **INSTALLATION AND COMMISSIONING**

- Arrival of machinery and equipment at site
- Installation
- Training
- Cold run and approval for first glass
- Commissioning
- Approval of readiness for packing bottles by customer
- Acceptance

## Phase 5: **COMPLETION AND LESSONS LEARNED**

- Final project meeting of customer and Heye Project Management
- Lessons learned
- Special support until end of warranty period

These single phases have proved a useful tool to structure and manage the complexity of many projects. By stipulating and maintaining these project goals and sub-goals in their single phases, the overall goal is usually better achieved and customers are satisfied, as Ralph Versluis, Production Technology Manager at Ardagh Glass Europe, confirms: „Since my cooperation with Heye I have been involved in many projects and I also met several project managers. The process PM@Heye is certainly a main driver for an effective flow through the different phases of a project and finally for a successful start of a machine. I am a strong believer that good processes drive good results. The main focus for the cooperation with Heye has always been on the process and the transparency. A mutual understanding of what the needs are and how those can best be translated into the project process is what has driven the good results over the latest projects.“



## HEYE WELCOMES CADRES EN MISSION AS NEW SALES AGENT



Heye welcomes the French company Cadres en Mission as new sales agent in its Glass People community. As representative to the market Mrs. Mélanie Basset will manage all [Heye PlantPilot](#) and [Quality Control Software](#) (QCLab) sales projects. Mrs. Basset has a long-time experience in the container glass industry especially for [plant management systems](#).



### HEYE PLANTPILOT - INTELLIGENT INFORMATION MANAGEMENT

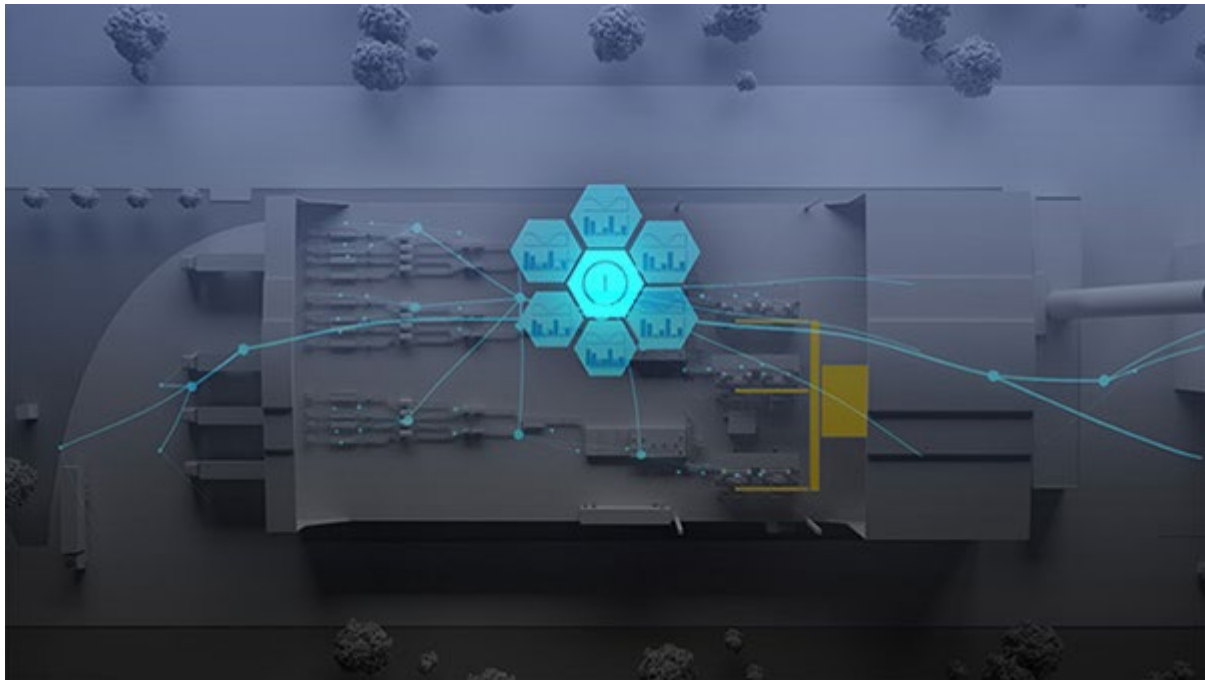
Where are the losses along the line? How do we retrieve events occurred during the production? How do we improve the efficiency of the plant?

As pioneer in the development of solutions for the glass industry dedicated to hot end and cold end areas, Heye developed also an intelligent system for the smart glass plant of the future: The PlantPilot. Thanks to the PlantPilot, all data from the production lines are centralised in a database. At a glance, operators and managers have a general overview of the actual production tendency in the plant. The modularity of the system enables also manual inputs. Operators and shift managers can enter any important information, such as setouts, warning messages, downtimes, tool changes, etc. Thus, glassworks take decisions based on facts. They save time and improve their efficiency, thanks to real time KPIs™ spread all over the plant. Reports and data are available at any time.

## QCLAB – BEST QUALITY DELIVERED TO CUSTOMERS

The high quality standards on hollow glass articles request various quality controls and measurements. To meet with these standards, Heye developed a solution for the laboratory: QCLab. Automatic devices are connected to QCLab, which will retrieve automatically all quality control results from a centralised database. With QCLab, the quality department is focused on the quality of the controlled articles: capacity, thickness, pressure, automatic dimensional devices, etc. The quality of the results is enhanced: No more manual inputs, no more risk of mistakes and no more paper. Control charts and distribution diagrams help to supervise, evaluate the process and anticipate on drifts. The plant reduces customers' risks thanks to full traceability.

Heye looks forward to a good cooperation with Mrs. Basset and says “Welcome to the Global Heye Team!”



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