How is our efficiency, what trouble do we have and why? Where do we lose production and which defects are produced? These are the key questions for a plant manager today. The HiShield Plant Management System is a designated software solution which helps to centralise, structure and display all this data.

The glass plant generates information for the production process: At the Hot End, where the bottles are produced, and at the Cold End, where the bottles are inspected and packed. Information is also generated in the laboratory for statistic measurements and in the mould shop. But the information is widespread over the plant rather than centralised.

All the data will be aggregated to get a complete overview of production. The operator can comment each event in the system. The next shift can see what happened and why in the previous shift. The group director can compare different plants.

The Plant Management System supports:
- The group director who wants to know the performance of all plants, primarily by a mobile device;
- The plant manager, to monitor plant efficiency and quality level;
- The department manager, to manage his department in terms of maintenance and improvements; and
- The operator, so that he can react quickly and target-oriented.

The information flow starts with operational information and will be aggregated for the strategic level.

Managing quality levels is important, resulting in more demanding customers with high-speed filling lines. So tracking and tracing is key. All existing data are safely stored in a database. That gives the opportunity to get information about former production runs. These will be helpful for comparisons and for a later proof of the production quality level at a certain moment.

Different modules
The solution consists of different modules. The events of the last 24 hours will be displayed by a line sheet.

It includes occurred defects, works/adjustments carried out and the realised efficiency split in Hot End and Cold End. The inspection equipment will be displayed on a separate page. A summary of the detected defects helps to check the current production status. All data are linked to the cavity number, which allows the operator at the Hot End to react quickly.

Trace the success of improvements by long term trend charts. The trend charts are useful to see how stable the production is. The person responsible can prevent poor efficiency.

Be prepared for the daily production meeting by using the predefined reports. The reports summarise the daily production data. How much downtime occurred and why? Which defects, classified in categories such as risk and critical arose?

Evaluation sheets build the basics for trouble-oriented assessments.

The evaluation sheet will help figure where the trouble comes from. In addition it tracks the result of the improvement measures. Do they remove the problem or do they make it worse? Essential hints can be found by checking these sheets.

A clear documentation is key for success, e.g. the mould shop module. If the tools at the IS-machine will be changed, the operator documents the reason for the change in the system. The information will be displayed in the mould shop module. So the workers of the mould shop know what happened with the tool and can carry out target-oriented repairs. Assisted by time stamps, it is possible to calculate the run time of the tools. By using this information, it is possible to create a uniform run time over the whole mould set. The mould shop module can build a history of the tools, including life time.

Systems Integration
Available interfaces to common IS-machine control units as well as to common inspection machines already exist. The HiShield QC-Lab software for the laboratory can be linked to the system. Hence, the off-line inspection data can also be integrated. The HiShield Production Management System is an evolution of the Heye Information System (HIS). It is performed as a browser based system. That means, particular software at the workstations is not required and the existing IT-infrastructure can be used. This builds the base for further developments such as a mobile version.