Customer

For customers of electronic industry, which produce electronic components, modules and systems, inray Industriesoftware GmbH implemented the OEE acquisition.

Solution

Live-views of the effectiveness analysis (OEE) enable an overview of plant's productivity, issues can be recognized immediately and improvements can be started.

Introduction of OEE

The economic efficiency of a company is measurable by different key data. These key data are predefined with the so-called Key-Perfomrance-Indicator (KPI). The KPI illustrates the productivity and effectivity from different point of view of the company, for example machines, employees. The OEE is one of these and aimes at the efficiency of machines and mechnical equipment. With the OEE it can be measured how the really economic efficiency of a machine is proportional to the possible efficiency. The introduction of OEE analysis (Overall Equipment Effectiveness) by inray Industriesoftware GmbH enables to investigate specifically the production losses, to assign them with a numerical value and - if nescessary - to correct them.

Representation of OEE with the Factory Apllication Server

In order to start a production mandate, the data are transferred from the SAP system to the control system of the machine. During the production process, the data are collected to a database, a Microsoft SQL database for example. Determining the appropriate indicators (OEE) is realized with the webbased Factory Application Server by inray Industriesoftware. The data for monitoring the good items and the defective ones are coming from the database directly and the flaws can be discovered by direct monitoring immediately.

Electronic components in the production process

By manufacturing of electronic components it is important to demonstrate that the workpieces are technically and optically in accordance to the standards. For this purpose, all the electronic components in the production line are supervised and tested at the electrical test machine. Thus, resistance and voltage are measured, all

the general functions are tested and rated according to optical selection criteria.

If the test is not successful, the defective items are rejected immediately. They can be analyzed in closer detail in a further step and after that, they can be either corrected or they can be declared as reject.

The results of this examination are transferred to the database directly in such a way that the data from the indicators report are available and they can be visualized on a screen. This allows the data to be analyzed shift-related or batch-related after the production process. The good parts are afterwards blistered and the coils will be made available in the storage facility.

Advantages of OEE with the Factory Application Server

In a custom-created web application, the employees can examine all the current performance coefficients of the machines according to shift, order, line or product. The live-views make it possible to react rapidly to deviations and thus, to reduce the costs. For further evaluation, reports with detailed analysis are placed at disposal.

The metrics are available in real time. By documenting the loss of effectiveness during the production process and between the different orders, it is possible to identify downtime and losses. The evaluation through metrics is the basis for developing the improvement measures and thereby for optimizing the production plant. The improvement in quality and the avoidance of rejects enables extensive costs reduction. The FAS application by inray Industriesoftware with its finished machine data acquisition / production data acquisition projects can be customized in a highly flexible way to the demands of the customers.

Automated data exchange through the OPC Router

The OPC Router by inray Industriesoftware is a communication platform which ensures data exchange between machines and database. Data transfers are initiated promptly, they are event-driven and the collected data are made available for use immediately. The OPC Router is a well-established platform by inray Industriesoftware, employed for years, which collects data, brings it together and provides information to the right time and the right place.

The high-performance OPC server by Kepware (KEPServerEX) offers the interconnectedness with the OPC Router with its driver for the control system. Inray Industriesoftware has introduced the server in Germany, being Kepware's Preferred Distributor. The company also offers technical support for any arising problems.