PRD+
PRODUCTION CONTROL

STAIN
MES SOLUTIONS

LEADS YOU IN INDUSTRY 4.0

- **MACHINE DATA COLLECTION.** Using standard, modular and expandable SIEMENS™ PLC technology, the PRD+ automatically records production, tooling and downtimes, the number of items produced (OK, non-conformities and rejects) and production events for each machine.

- **MONITORING.** Real-time display of the status of all the machines in the various workshops (lathes, grinding machines, milling machines, presses, transfer machines, NC machining centres, assembly and testing centres, and manual assembly stations) with details of current production, number of items made and still to make, production rate, current stoppages and operators.

- **OPERATOR MANAGEMENT.** Recording of the activities of field operators on a machine or manual workbench. Each operator has a badge showing which machine or workbench he is working on. The system can record the activities of one or more operators on any number of machines or manual workbenches.

- **SYSTEM ACCESS.** System access and interaction rights and passwords can be configured centrally for each operator.

- **FIELD OPERATOR STATEMENTS.** Operator interaction with the PRD+ is reduced to a few simple statements via a barcode reading, because all the other information is gathered automatically by the PRD+:
  - Activation of a new production order (or article) to be made by a machine, by scanning the barcode on the order or selecting it from a displayed list.
  - Statement of an operator's presence start/end on a particular machine or manual workstation, by scanning the barcode on the operator's badge.
  - Statement of the cause of a reject by barcode or key.
  - Statement of the cause of a stoppage by barcode or key.

- **PRODUCTION ORDER MANAGEMENT.** The PRD+ can be used to import production orders (POs) from the management system or define them locally for production items not present in the management system. It also handles the status associated with each order, and allows a current order to be suspended or closed.

- **MACHINE LOAD.** The PRD+ displays each machine's load based on defined production orders, taking the shift schedule and efficiency into account. This tells the operator when each production batch will end and gives the client a prompt and precise answer.

- **PRODUCTION ORDER STATISTICS.** The PRD+ displays for each department and machine the number of items made compared to those still to be made, actual production tooling and downtimes, performance, productivity, and the batch number, allowing a prompt analysis of the production costs for each job order.

- **MANUAL WORK STATION DATA COLLECTION.** The PRD+ receives production and stoppage data from operators involved in manual processes (assembly, sorting, testing, etc.) and makes a real-time correspondence between the number of items produced, the time required

to produce them and the remaining shift time available, to enable the operator to justify any unproductive periods before the end of his shift.

- **DOWNTIME MANAGEMENT.** The PRD+ automatically records downtimes (start and end) for each machine, including micro-stoppages. Advanced analysis functions provide stoppage incidence reports by type of stoppage, department, machine, operator, batch, PO and job order.

- **TOOL MANAGEMENT.** The PRD+ automatically records tool changeover times and items made during tooling (test items) before the machine can resume production.

- **REJECT MANAGEMENT.** The PRD+ allows extensive configuration of individual causes of rejects. The field operator can declare a reject in real time on the machine, by pressing buttons associated with particular reasons, or at the end of the shift, using a PC or handheld terminal. Reject trends can be monitored by item, job order, PO, period, shift, machine or department, with detailed reporting of the reasons for defects.

- **MACHINE LOG BOOK.** The operator can compile on the departmental PC a shift changeover spreadsheet (log book) showing all the information it is deemed useful to share.

- **AUTOTESTS.** With this module autotest plans can be defined for each article/machine. STAIN+ automatically generates requests for the operators and records the result.

- **INTERFACE WITH THE MANAGEMENT SYSTEM.** A standard method is provided for exchanging data with SQL tables defined on STAIN fixed layout databases in order to import details of each production order and update output figures, production times and downtimes, operator activities and rejects.

- **COST ANALYSIS PER ARTICLE.** The PRD+ provides specific reports for determining the production cost of each article by analysing labour and machine times used, and for the continuous updating of standard times per article/machine.

- **REPORTING.** The system provides multiple data querying options to allow the calculation of performance, efficiency and productivity, using numerous powerful preconfigured filters for point and period analysis by factory, department, machine, batch, article, production order, operator, shift and so on.

- **CONFIGURABILITY.** Complete parameterization of the system with dynamic configuration of departments, machines, tree charts of the causes of stoppages and rejects, shift calendar, shift activation, and data acquisition times and methods.

- **DATA EXPORTABILITY.** All the data presented on the various query grids can be exported to Excel at a mouse click.

MODULES THAT CAN BE INTEGRATED WITH PRD+
360° COVERAGE

OPR+
Management of operator indirect activities

SCT+
Technical Sheets (Receipts)

LGT+
Department logistics

CNS+
Energy Consumption

ATC+
Auto-tests

APP+
Process Parameter Acquisition

SPC+
Statistical Process Control

MTZ+
Run-to-failure and predictive maintenance

STP+
Mould, die and insert management

CM+
Full machine capacity