Quality Management is a software product that forms part of ABB’s cpmPlus for pulp and paper mills. It contains functions to handle high-level quality control as well as useful tools for process development, genealogy tracking and customer service.

Main functions

The foundation data is common to all cpmPlus for Pulp and Paper Suite products. Quality specific foundation data is used for configuring mill specific quality control settings for example, properties that define the attributes of the quality measures, like name and value handling rules.

Quality Management provides test schedules, entry forms, reports and graphical presentations for monitoring quality on tested samples, and for streamlining quality related operations in the laboratory and production in real time against product standards and customer specific requirements.

The system identifies all kinds of quality non-conformance and alerts the operators to adjust the process in order to reduce waste. The deviations and actions taken are written to the alarm log, where they can be commented and analyzed.

Process values are typically acquired from different process analyzers or Distributed Control Systems (DCS) while manually entered values can be test results from wet end, coating color and water treatment samples. The system stores all process measurements as frequently as possible and for as long as needed.

Time based process information may be associated with ready-made jumbo reels, and process data and paper quality can thus be analyzed and reported side by side, increasing the transparency of the data.

The roll set analysis combines profiles, profile scans, defect information and laboratory test results with the cutting plan and wound trim pattern of the jumbo reel. It calculates roll specific quality values for each critical property.

Roll quality is compared to customer specific quality standards, and based on the analysis the system is able to automatically classify the rolls even before the jumbo reel is cut at the winder. This ensures that customer requirements are fulfilled in every roll, and additionally, in case of poor quality, it gives the operator a chance to re-trim the jumbo reel in order to cut out problem areas.

Comprehensive quality control ensures that both intermediate and end-products meet the quality specifications.

The Statistical Quality Control (SQC) function continuously analyzes selected quality variables and identifies changes in the process. Three different types of alarm can be set up for each monitored variable: limit, trend and zone alarm. As an alarm is activated, it is listed in the alarm log. This kind of proactive quality control detects changes in the process even before the specification limits are reached, and alerts the operators to react in order to avoid quality problems and losses in production.

Traceability is a tool for tracking the paper reels, rolls and sheet pallets that are produced, as well as their quality level. Customer service personnel can easily track delivered units starting from an order code or package number, for example. The search returns relevant production information such as production stages and times, together with quality measures originating from automation systems and laboratory tests.
Features
- Raw material quality
- Process quality
- Jumbo reel quality
- Profile handling
- Roll set analysis
- Roll/SHEET quality
- Laboratory device check and calibration
- Work orders for outside samples
- Data analysis
- Customer quality certificates
- Calculations for environmental production and other mill specific figures
- Operative quality reports
- Traceability

Interfaces
- Quality Management is fully integrated with the Production Management module but, if necessary, communication links can easily be established to third party manufacturing systems.
- Quality Management is typically integrated with automation systems such as Quality Control Systems (QCS), Distributed Control Systems (DCS), and Web Imaging Systems (WIS). This provides transparency in production and ensures that all relevant quality data is available in one, comprehensive system.
- Interfaces to laboratory measuring devices.
- Advanced reporting thru cpmPlus Decision Support

Important benefits
The Quality Management software streamlines quality operations and visualizes and consolidates quality related data from various sources.

Improves your profitability by:
Preventing quality losses
- Comprehensive quality control using information from various sources such as laboratory devices, Enterprise Resource Planning (ERP), Manufacturing Execution System (MES), QCS, DCS, WIS
- Quality based trimming
- Online SQC analysis to identify changes in the process

Reducing customer returns and rebate costs
- Customer quality requirements fulfilled in every shipped roll

Enhancing customer service
- Transparency between production and quality data for efficient quality tracking and complaint handling – e.g. direct access to related jumbo reel/roll/sheet/pallet/order process environment
- Automatic generation of quality certificates according to end-customer specific layout requirement.

Boosting manpower efficiency
- Configurable displays with predefined user defaults
- Bar code labels to speed up sample identification in laboratory
- Automatic calculation from sample, shift, day and month values – e.g. environmental administration values
- Automated data entry via interfaces to measuring devices
- Long data histories easily available for process development purposes

Contact us
ABB Oy
Process Industries
P.O. Box 94
FI-00381 Helsinki, FINLAND
Tel: +358 (0)10 2211
www.abb.com/cpm