// iPQ-Workflow

Fast and smooth processes allow a higher level of efficiency with perfect results.

Be inspired. Move forward.

BST eltromat
INTERNATIONAL

LOGGING OF DEFECTS.
TAGGING OR REMOVING WASTE.

Competition in the printing industry is stiff, and the requirements are continuously increasing. Exact control of the print is a prerequisite for error-free printing products – and for satisfied customers.

Precision based on experience

As the leading manufacturer of quality assurance systems for the web-processing industry, BST eltromat International has performed more than 100,000 installations in more than 100 countries all over the world.

The powerful all-rounder

The increasing Productivity & Quality-Center (abbreviated: iPQ-Center) of BST eltromat is a modular product line for the central control of numerous quality assurance functions. BST eltromat integrates web viewing, 100% inspection and spectral measurement as well as further functions into a single system. Configure your quality monitoring based on a modular concept.

Workflow solutions for maximum process reliability

iPQ-Workflow is the base for combining machines, processes, and different departments to create fast and smooth processes which allow a higher level of efficiency with perfect results.
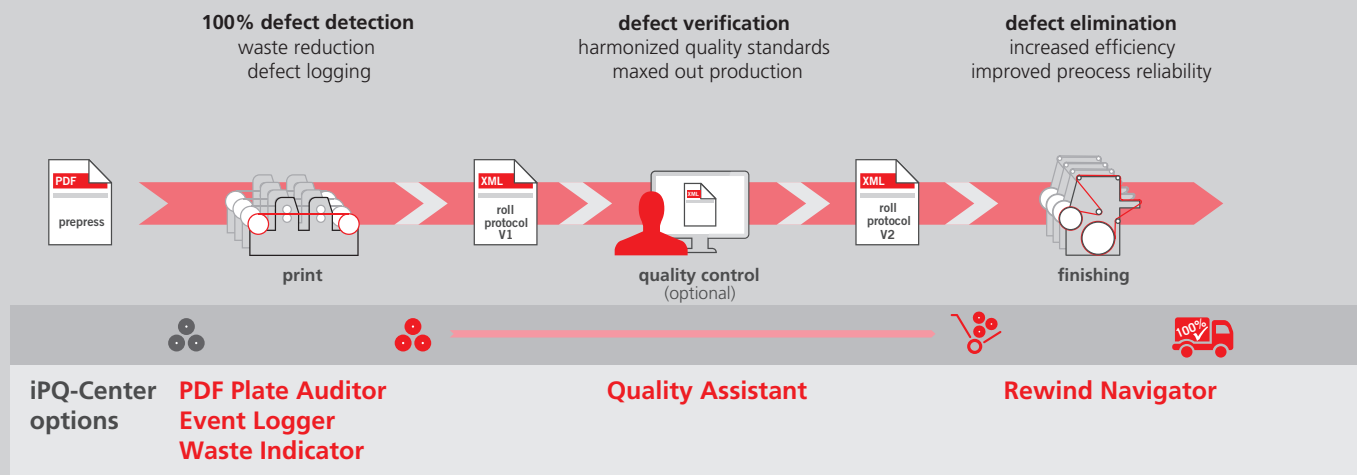
The software enables reliable assessment and correction of any occurring errors and offers solutions for data import and export from pre-printing to further processing.

iPQ-Workflow offers a coherent overall concept which can be adapted to various production processes. Beside the printing process iPQ-Workflow also assists you in the complex finishing processes. It helps you to make the best use of your production data. Moreover you can optimize the defect protocolls for the converting processes or for your customers. Only a continuous work flow which makes optimal use of the different machine speeds in the process ensures economic working.

This increases your process reliability and correspondingly ensures perfect print results.

QUALITY MANAGEMENT

From pre-printing to further processing:
perfect print results are based on continuous data management.

100% defect detection	defect verification	defect elimination
waste reduction	harmonized quality standards	increased efficiency
defect logging	maxed out production	improved preocess reliability

PDF — prepress — print — roll protocol V1 — quality control (optional) — roll protocol V2 — finishing

iPQ-Center options	PDF Plate Auditor Event Logger Waste Indicator	Quality Assistant	Rewind Navigator

CONVINCING FEATURES.
FIRST-CLASS RESULTS.

iPQ-Workflow allows the various modules of iPQ-Center to flawlessly integrate with other devices and has been carefully structured to meet the requirements of the printing, label and converting industries:

Selective quality monitoring

- **iPQ-Check**
  - 100% inspection over the whole web width
  - relative color measurement by means of RGB assessment (color monitoring)

- **iPQ-View**
  - sample inspection
  - barcode check
  - relative color measurement by means of RGB assessment (color monitoring)

- **iPQ-Spectral**
  - absolute spectral color measurement in the print machine

- **SHARK 4000 LEX**
  - 100% error detection for use in narrow-web print machines and rewinders

The inspection system (typically installed on a printing press) can use information of the pre-press department to check the printed design and to detect wrong printing plates / cylinders. This avoids waste as early as possible in the printing process.

The various iPQ-Center modules reliably detect and log errors in a reel depended protocol. The 100% print inspection detects defects immediately which assures a significant waste reduction. Defects like register deviations, doctor blade streaks, missing prints, splashes, hickies, hazing or color deviations are detected. Regarding label printing, matrix removal residues as well as damaged and missing labels can be identified. Additionally these defects will be reported with all important information like images and the position.

This is the base for defect tracking in the post process. The reports can be reviewed and modified to establish a harmonized quality level. The modified protocols are used to control the finishing machine. To drive the efficiency to the maximum the rewinder stops only at the relevant defects and runs at maximum speed.

This is how BST eltromat supports you for quality control along the complete printing process. The benefit of our efficiently designed workflow is:
- reliable detection of errors,
- waste reduction,
- continuous control of further processing,
- maximum production speed,
- avoidance of customer complaints.

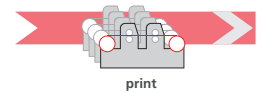Combine your iPQ-Center modules as needed and ensure quality control along the complete process chain.

At a glance:

iPQ-Workflow – your benefits:

- uninterrupted quality control
- reliable error detection starting at set-up
- fast error correction
- automatic tagging and removal of waste

- targeted error prevention based on the analysis of production logs
- optimized process reliability
- reduced waste and complaints
- increased customer satisfaction

COMPARISON OF PRINT AND REFERENCE FILE. PREVENT ERRORS AND AVOID WASTE.

100% defect detection
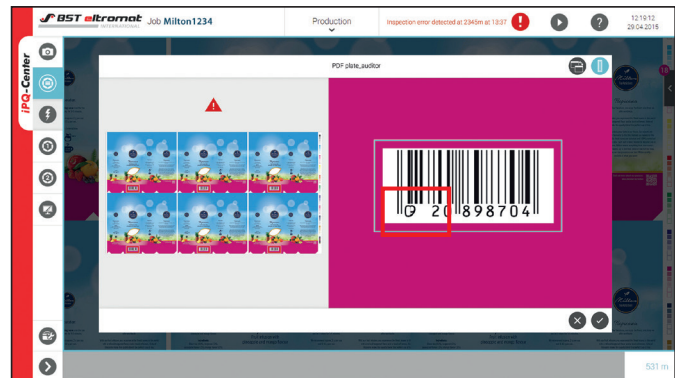waste reduction
defect logging

print

Prevent and avoid errors: PDF Plate Auditor

Even when operating with great care it is not possible to completely exclude the introduction of defective or wrong printing plates/cylinders into the machine.

The PDF Plate Auditor compares the current print from the machine to the pre-print reference. Using a special structure comparison, the module detects defects of the print form as well as wrong languages or contents as early as during set-up.

This allows, for example, the early avoidance of errors that, despite utmost care, result from the use of damaged or wrong print forms. Expensive waste is reduced to a minimum.

The PDF Plate Auditor is only available for iPQ-Check. The SHARK 4000 Lex also provides a similar functionality, but it is named PDF comparison.

The PDF Plate Auditor clearly shows deviations between print and reference.

Uninterrupted error logging: Event Logger

Uninterrupted logging of all errors is the key for successful elimination of waste. The Event Logger performs lane-based logging of all relevant errors – with the highest possible precision. Furthermore, error class, running meter positions and error images as well as the appropriate reference images are recorded for each error. Moreover, process-relevant information such as change of inspection sensitivity are recorded.

Uninterrupted documentation is useful both as proof of quality and as a valuable instrument for process optimization. You can use the Report Generator to adapt the appearance of your PDF report to your individual requirements, allowing for inclusion or omission of any information available; for example, you can create a 1-page overview or a complete overall report including error images and error information. The Data Server software can be used to store the logs at a central location in your network.

When using the Quality Assistant (page 6) or the Rewind Navigator (page 7), the roll logs can also be visualized at another workstation. You can also provide a barcode to your logs to simplify allocation of logs and roll. This allows for automated loading of the created log and further processing of the roll.
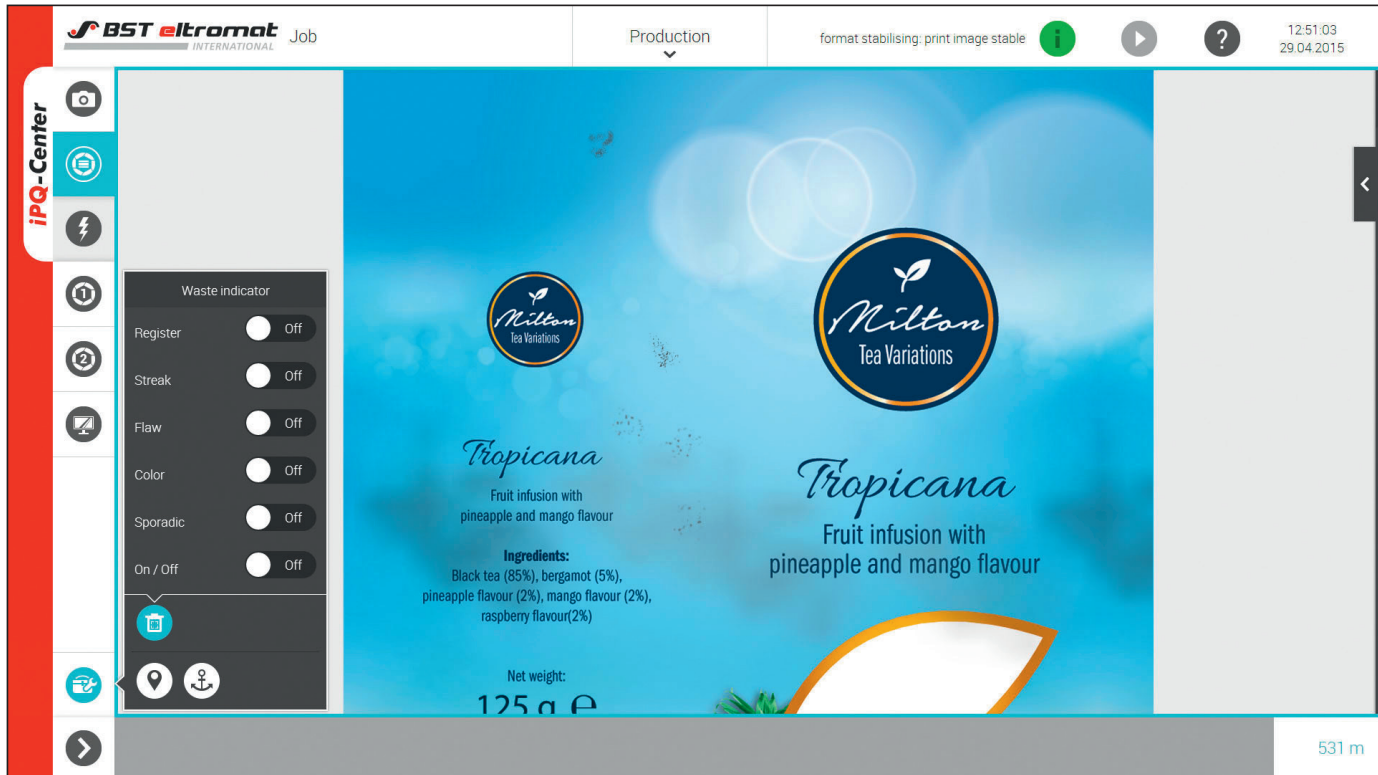
The Event Logger is available for iPQ-Check, iPQ-View and iPQ-Spectral. The SHARK 4000 Lex also provides a similar functionality, but it is named Job Report.

The roll logs of the Event include, amongst others, information on the error class and the running meters.

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HIGHLY ACCURATE ERROR SIGNALS.
INTELLIGENT ERROR CLASSIFICATION.

defect verification
harmonized quality standards
maxed out production

quality control
(optional)

The Waste Indicator allows for selection from various error classes. Error of theactivated classes are displayed by a signal.
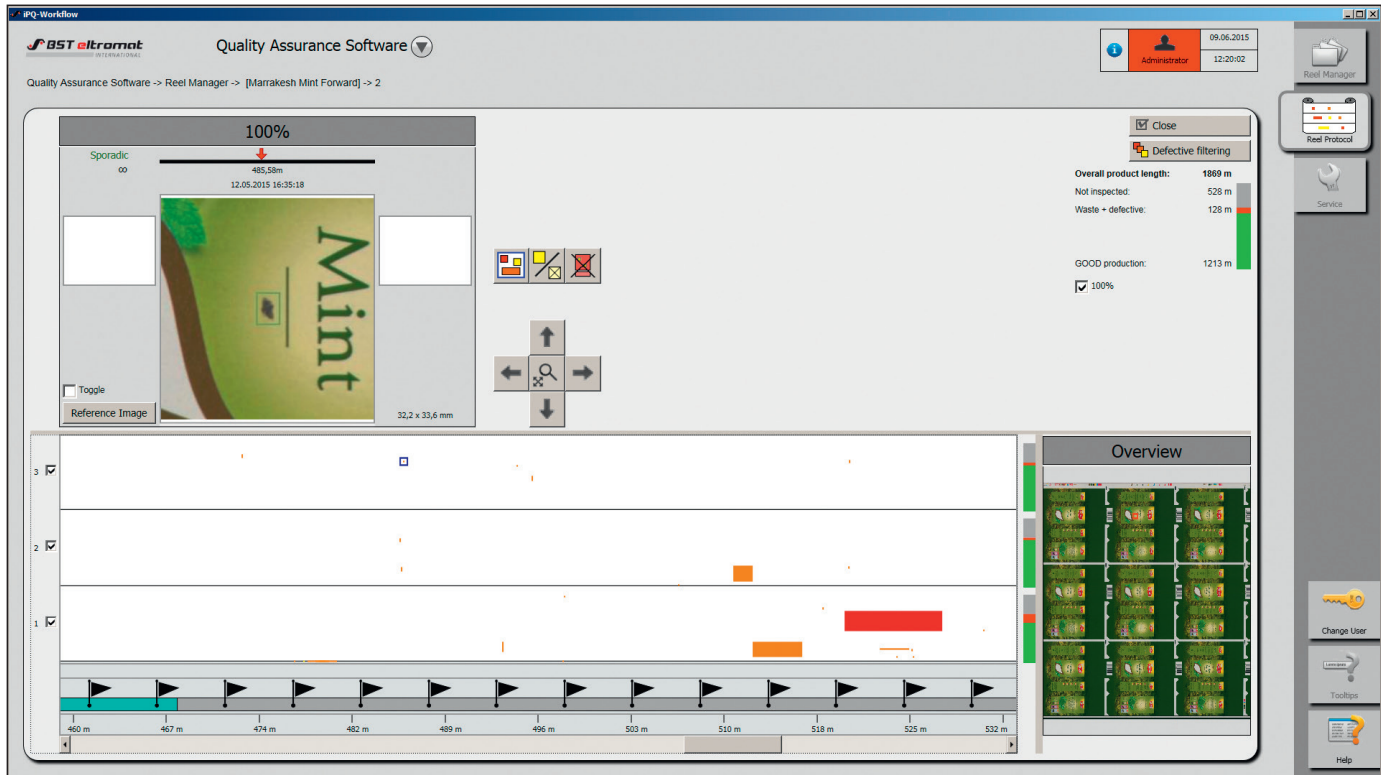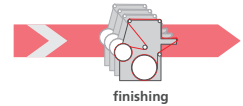
Highly accurate error signals: Waste Indicator

Regardless if a system to tag waste is installed in your printing press, if a material remove is initiated or if another process is to be informed with regard to waste, the Waste Indicator reliably carries out this task. It provides an accurate 24V signal for the whole web or alternatively for up to 12 lanes separately.

In automatic mode you operators determine for which defect classes a signal is provided by the Waste Indicator. Thus, they can concentrate on other important tasks. In semi-automatic mode they activate the signal output specifically for a defect after the defect alarm has occurred. So, at all times the decision is up to them.

The Waste Indicator is only available for iPQ-Check.

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CLEARLY ARRANGED ANALYSES
FOR INTELLIGENT ERROR ASSESSMENT.

The roll map of the Quality Assistant provides information of position and severity of errors.

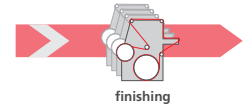**Harmonized quality standards: Quality Assistant**

Not every defect detected during the printing process automatically means waste. With the Quality Assistant based on the roll log you quickly and efficiently evaluate the quality of your product according to your overall quality criteria. This can be carried out either at a central workplace or directly at the rewinder. Thus, you make the most use of your production output.

The Quality Assistant displays the defects provided by the roll log in a clearly structured way in the form of a roll map. A classification according to color informs you about the defect's level of severity. Immediately after selecting a defect, the monitor alternately displays the defect image and reference image. When using the Data Server software (page 4) you can easily exchange logs between printing machine, Quality Assistant and Rewind Navigator.

Thus, your operators may quickly and simply decide, whether a real defect has occurred. Individual defects or defect groups can be defined as being irrelevant. Also, by means of one click your operators may classify single areas or complete lanes as waste. Simple shortcuts allow an intuitive operation. Usually, one roll log is handled in less than a minute.

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CLEARLY ARRANGED ANALYSES
FOR INTELLIGENT ERROR ASSESSMENT.

Increased efficiency: Rewind Navigator

If your roll log bears a barcode and the Data Server software (page 4) is used, the correct log will be loaded automatically during the reading process via the Rewind Navigator.

The system uses a label for easy synchronization of the log with the printed roll. For this, the printing machine uses an external signal (e.g. roll end) to control a label dispenser at the end of the roll.

This label position is recorded in the log by a virtual label. If this roll is then inserted at the rewinder or another machine for further processing, the operator will place the label on the splice table and then will select the virtual label in the log. This will synchronize roll and log.

Based on the roll log, the Rewind Navigator triggers your rewinder in a way that the defects to be eliminated are placed precisely at the splice table. Until the next defect, the rewinder continues operating at maximum speed. This saves precious time. Depending on the configuration, the operator may decide by means of a skip function if a detected defect is to be eliminated or not.
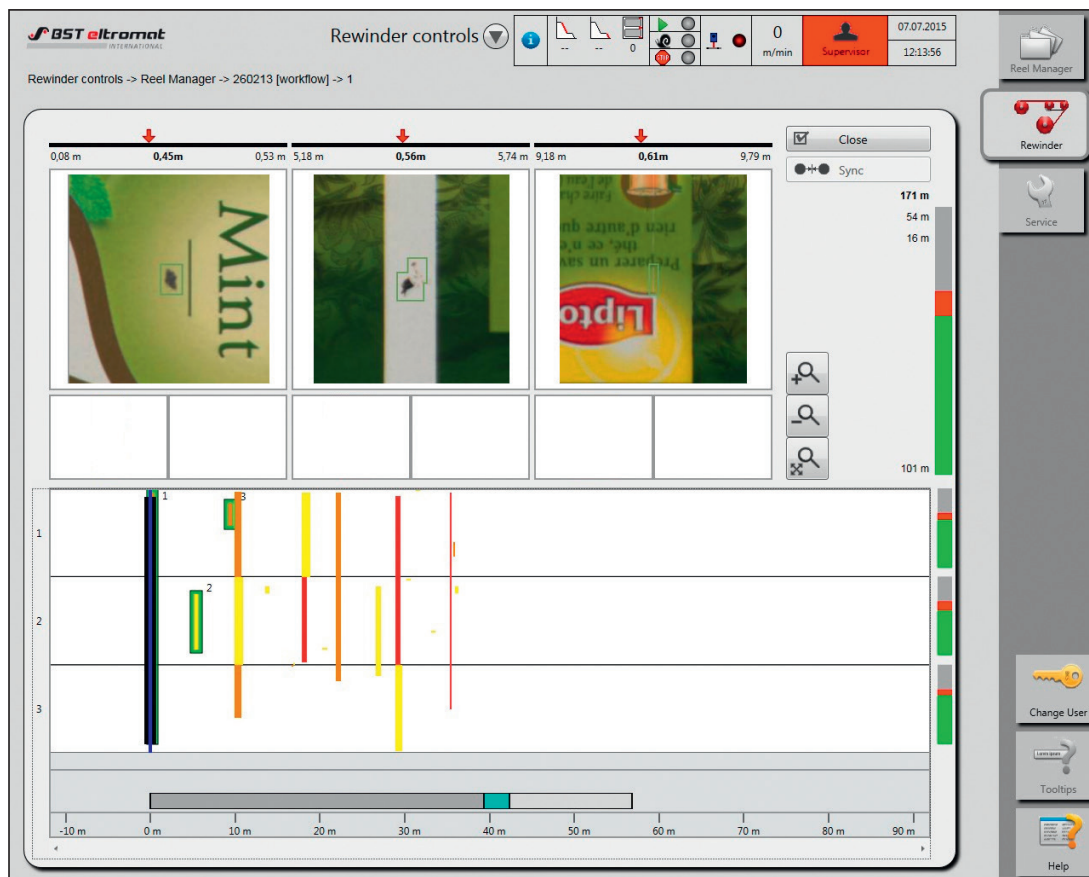

Image of printing process/rewinder

MODULAR QUALITY ASSURANCE: THE IPQ-CENTER.
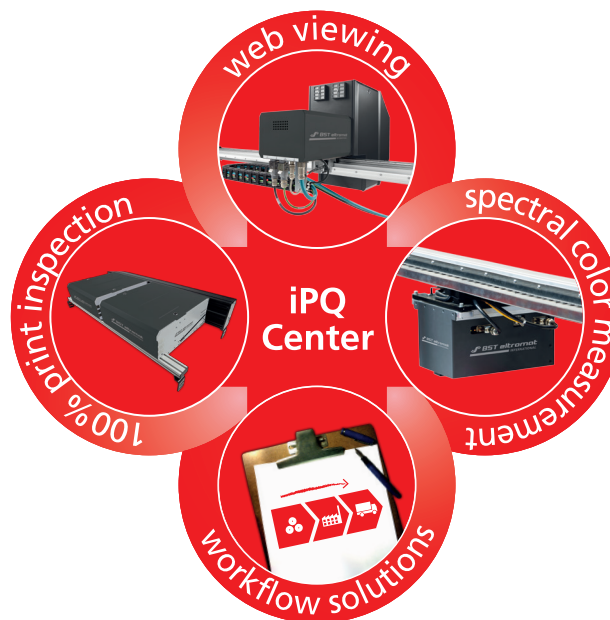
Integrated functions. Intuitive operation.

The features of the iPQ-Center are always based on your needs. Cameras, image analysis functions, error detection, additional illumination, spectral measurement and other components can be integrated when they are needed.

Thanks to the iPQ-Center it is not necessary to switch between different operating elements: all modules and functions are integrated into a uniform, intuitive multi-touch operator interface.

At a glance:

iPQ-Center – your benefits:
- **numerous quality assurance functions** on a single software platform
- hardware and software modules efficiently integrated into a **single system**
- intuitive and **uniform operation**
- **central access** to various quality management functions
- **freely configurable** as wanted or needed
- functions and modules can also be integrated at a **later point in time**

web viewing

spectral color measurement

iPQ Center

100 % print inspection

workflow solutions

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