

EAE: Loop

Inline colour control without control marks by the EAE Loop system. The measuring system is positioned directly behind the final printing couple.



Loop is an automatic colour control system for newspaper presses that works without control marks. It helps achieve a consistently high colour quality, while reducing both waste and ink consumption.

The Loop in-line colour control system, according to EAE, is a spectral, CMYK-based measuring system that allows a "genuine CMYK measurement and control". As with a spectrophotometer, Loop measures the entire visible spectrum; in addition, the IR range is also covered. Andreas Dau, Head of Product Management in the EAA Research & Development Division, states that Loop, in the case of overprinting, is able to establish precisely the shares of the individual colours. Because black (K) absorbs light in a stronger manner in the IR range, it can be clearly recognised in the measurement from the run of the remission curve whether a grey value is built-up from CMY or produced from black. In this way it is ensured that, in the event of colour deviations, corrections will be carried out on the correct colour control elements.

Measurement without marks under controlled conditions

The system does not make use of marks. Two measuring heads, arranged side-by-side in one device and equipped with sensors, move on a rail from right to left across the width of the web, scanning the running web in a spiral motion. Each measuring point is sized 4x4 mm; thus an 8 mm-wide strip on the page is measured at once. After the measuring device has reached the left margin, it returns to its start position and begins with the next measuring process. Andreas Dau says: "The web speed is determined exactly by an angular momentum sensor on the plate cylinder. The web speed determines the measuring speed and the feedrate of the cross-bar." One measuring cycle comprises 200 cylinder revolutions and lasts 24 seconds at 45,000 revolutions per hour (presupposing a web width of 1600 mm and a cylinder circumference of 1140 mm).

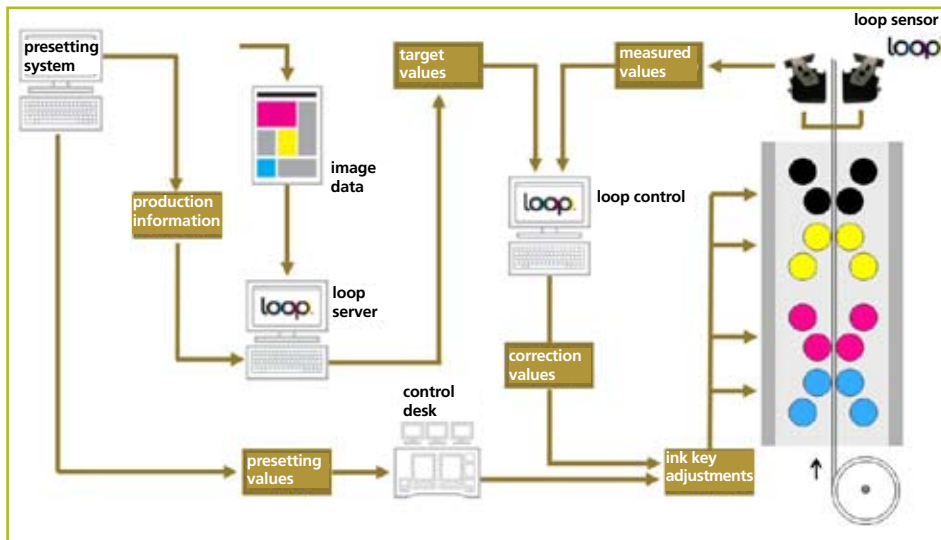
According to Dau, another important factor for an exact measurement is the distance between measuring device and web. "The measuring distance must be maintained exactly. Loop measures on a guide roller; a measurement of a free web is too imprecise." Moreover, by this method any influences of the printed reverse side of the web (show-through) are eliminated. The measuring lighting covers the entire spectrum as well as the IR range.

Reports in real time and evaluations

Loop documents all target and actual values throughout the production run. The data can be used to produce reports, e.g. exported to a management information system, and sup-



Loop is integrated into the printer's control desk. From here the operator has access to all relevant information.



ply information about the number of copies within the tolerance, an analysis of specific pages, inking zones or publications, as well as about possible disturbances. A possible application is the production of general quality reports for customers.

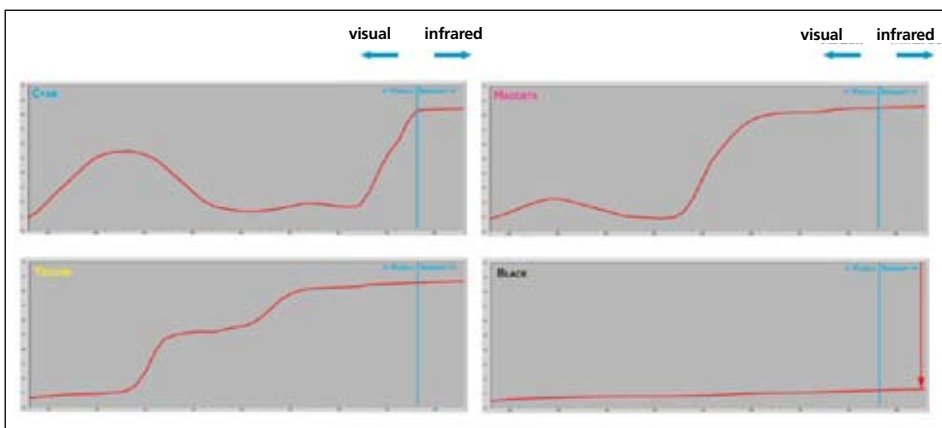
Special features of the system and advantages for the user

Dau claims as special features of the Loop system i.a. the possibility to correct errors at the prepress stage, e.g. in the colour separation, so that with a corresponding keyword-protected setting it is possible to carry out corrections deviating from the Tiff original. The CMYK measurement causes Loop to take over this correction as a new target value and the automatic control continues on this basis.

EAE emphasises the following features as major advantages of the system for the user:

- saves ink
- reduces waste (especially in the production run)
- detects toning
- identifies wrongly positioned plates
- reduces complaints
- relieves the workload of the personnel and increases production efficiency.

Once again according to Andreas Dau, Loop exercises an indirect influence on start-up waste by carrying out measurements at the proof printing stage and notifying achievement of the target values to prepress that, due to its learning capacity, reaches good results faster at the next start.



By measuring in the IR range, EAE Loop can establish the CMYK colour shares bestimmen.

In brief

■ **System name:**
Loop

■ **Manufacturer:**
EAE, www.eae.com

■ **Measuring device:**
Spectral, CMYK-based measuring system. The measuring heads, both equipped with optical sensors, measure the entire visible spectrum and IR range.

■ **Measuring position:**
No measuring marks used; the full web side is scanned.

■ **Function:**
The measuring system, mounted on a bar, scans the running web from right to left in a spiral motion, returns to the start position and begins the next measurement.

■ **Colour reference:**
The Tiff data from the prepress stage act as target values for alignment with the measured values.