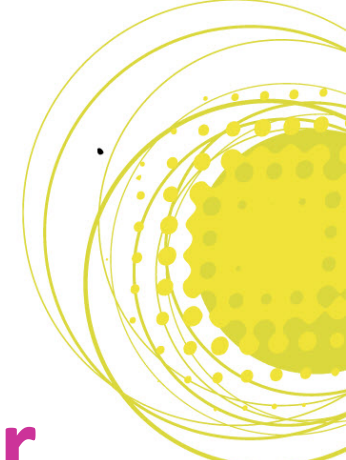
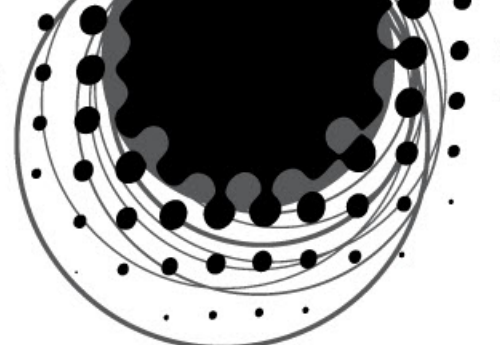




The ROI of Automating Color Management on Press for Packaging Printers

Greg Wuenstel
QuadTech

February 12, 2015 • India Expo Centre • Greater Noida, Delhi NCR

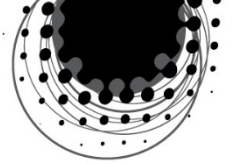




The ROI of Automating Color Management on Press For Packaging Printers

Color Workflow - Press
Inline Color Measurement
Return On Investment (ROI)





Color Management Expectations

Brand Owners

Color Consistency – World Wide

100% Product Conformance

Color Quality Reports

Printers

Real Time Color Quality Assessment

Color Quality Reporting

Process Improvement Reports/Tools

Automate the Process



Color Management Workflow

Color Definition

Design

PDF Generation,
Proofing



Color Reproduction

Color Management
PDF Production, Proofing



Prepress
Printing form

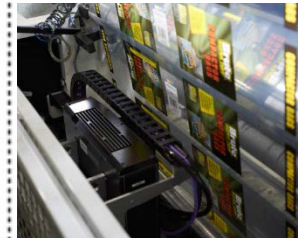


Process Control
Printer Calibration
& Conformance



Color Conformance

Print Control
Print Assessment
& Conformance



Color Control
Color Assessment
& Conformance



ISO 16761-2 Draft –Printing Workflows Definition Packaging Printing

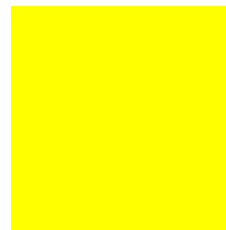
Typical Press Color Workflow



Current



Target



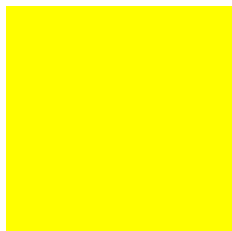
Adjust ink recipe and press settings

Typical Press Color Workflow

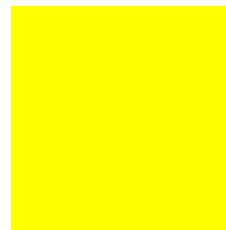


Repeat until color is correct!

Current

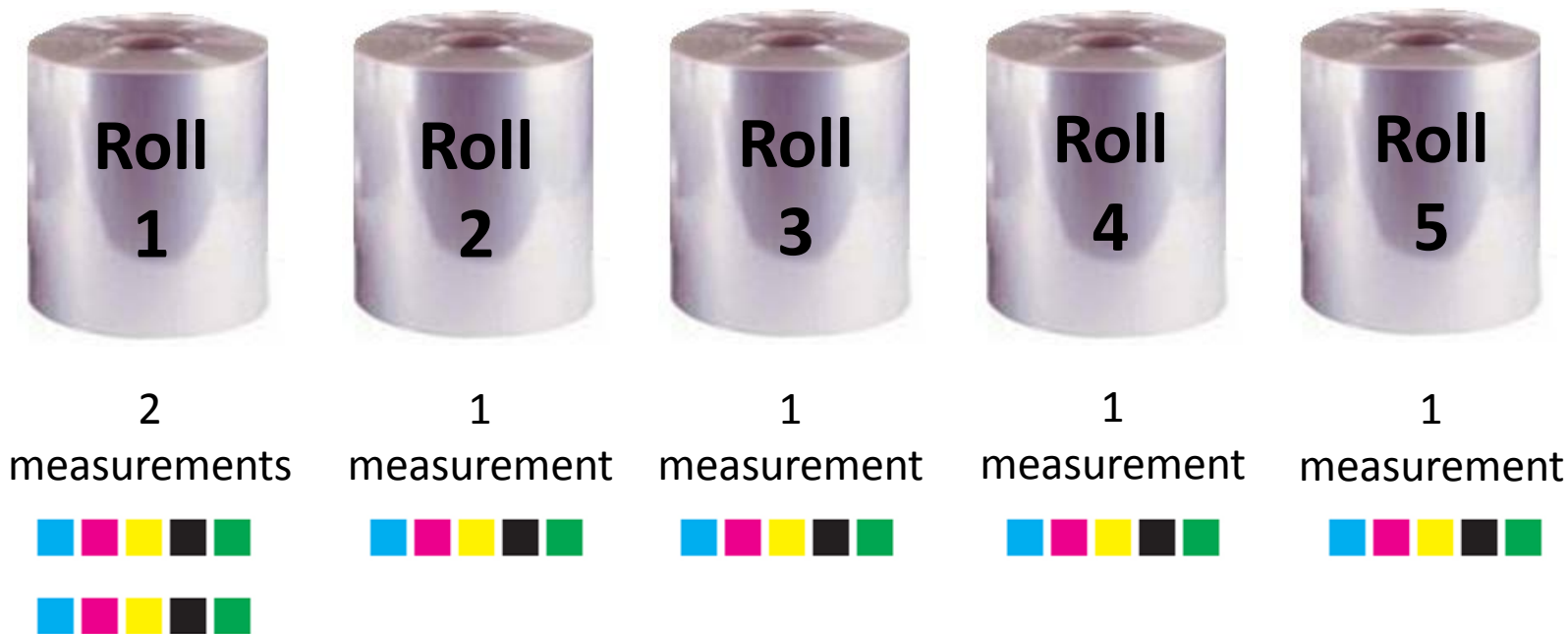


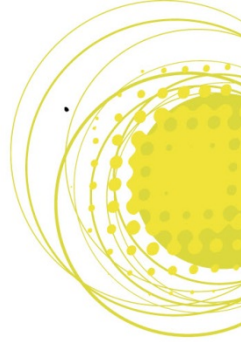
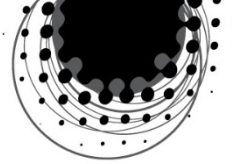
Target



Adjust ink recipe and press settings

How Many Measurements?





ISO 12647-6 Standard

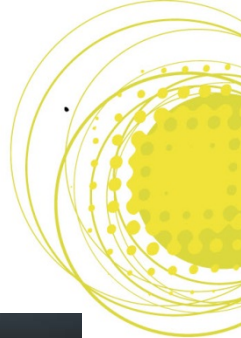
“For at least 68% of the production prints, the colour differences between the printed sheets and the OK sheet shall not exceed the appropriate variation tolerance specified in Table 4.”

Table 4 –Colorimetric tolerances for the solids of the process colours and spot colours

	Black	Cyan	Magenta	Yellow	Spot Colours
Deviation tolerance	$\Delta L^* < 5, \Delta C^* < 3$	$\Delta h_{ab} < 6^\circ$	$\Delta h_{ab} < 6^\circ$	$\Delta h_{ab} < 6^\circ$	$\Delta h_{ab} < 8^\circ$
Variation tolerance	CIE DE2000 <3	CIE DE2000 <2	CIE DE2000 <2	CIE DE2000 <2	CIE DE2000 <1.5



Inline Color Measurement



Spectral sensor

Web stabilizer

Paper and film substrates

Measurements taken at press start



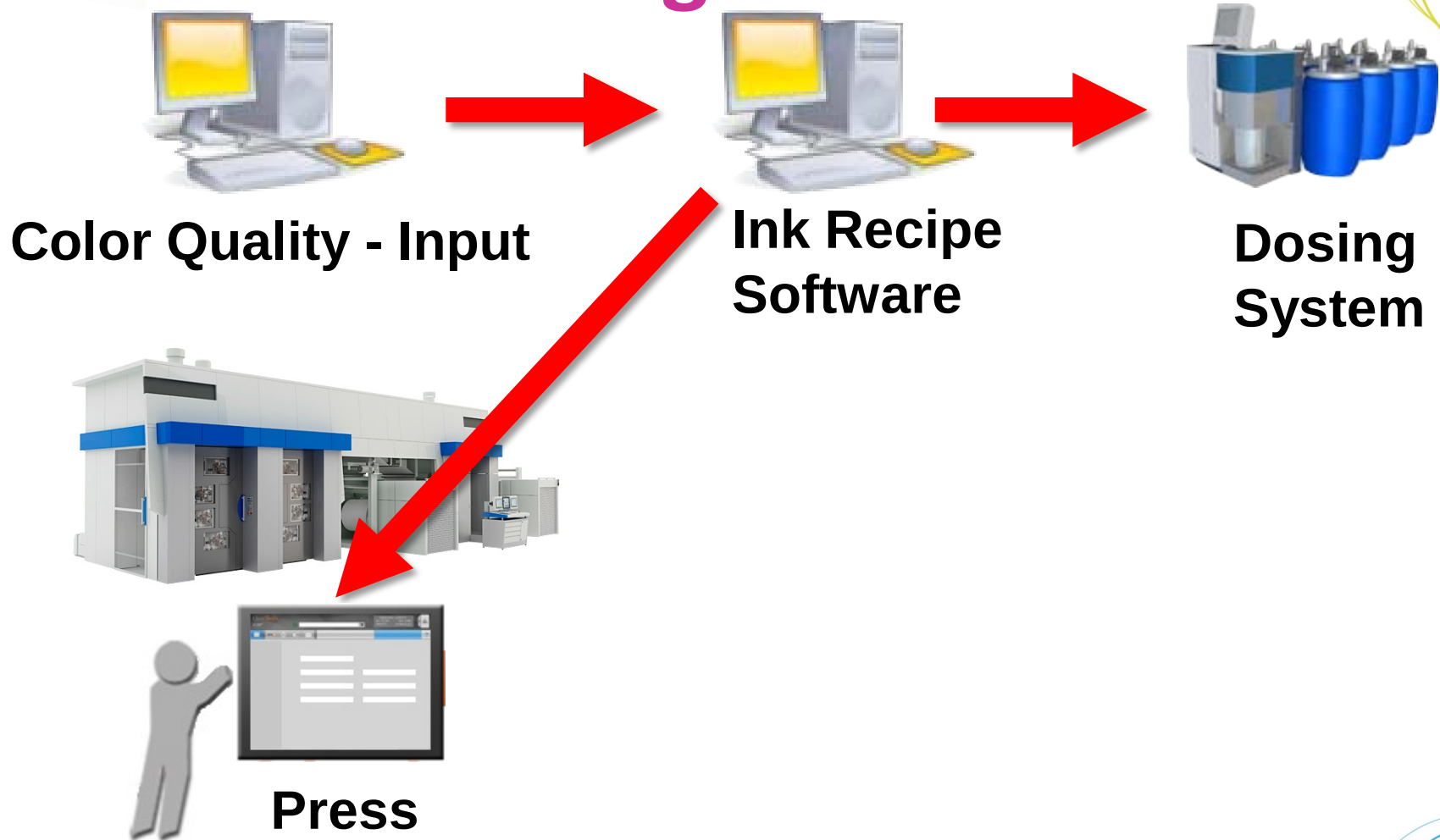
Mark patterns



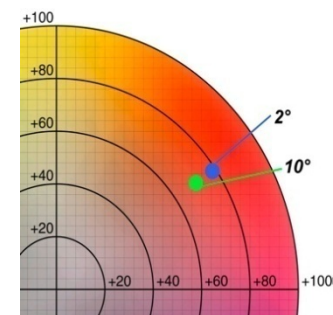
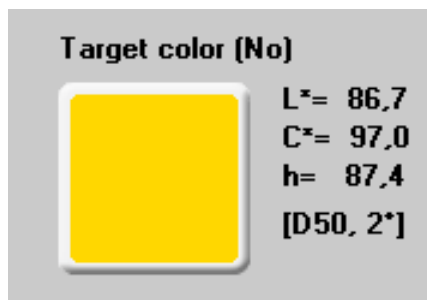
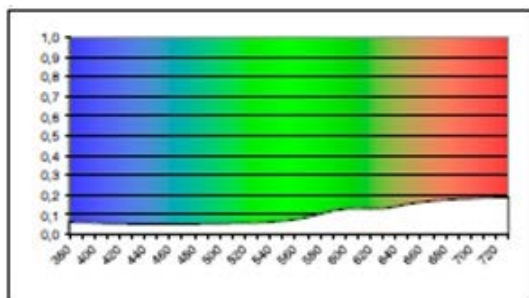
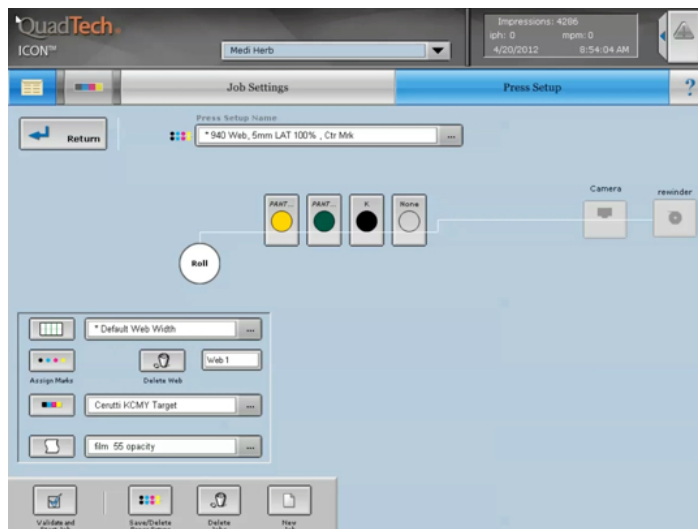
In the work



Color Target Data Flow

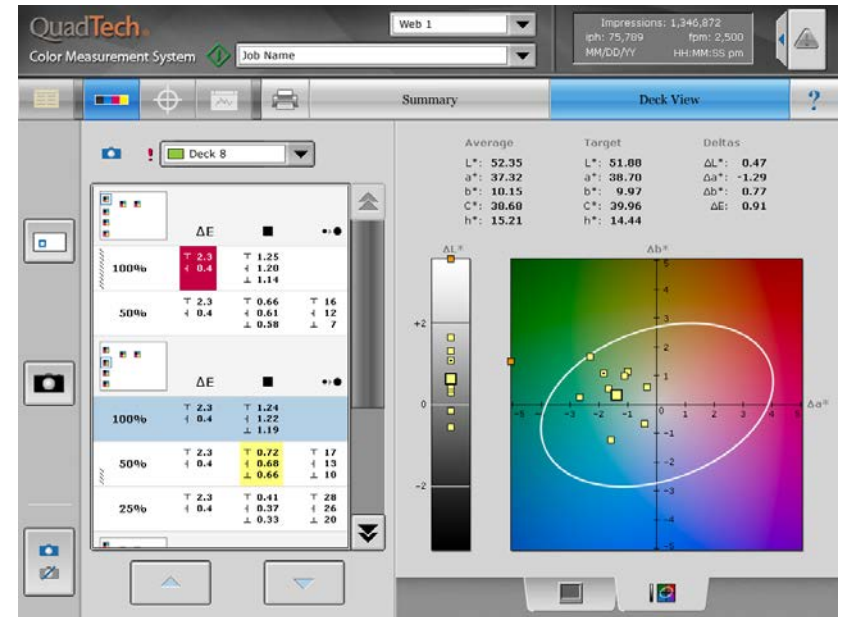


Job Set-up - Import .CxF



ΔE

Real Time Measurement Values



CQS - Workflow

Color Quality - Input

Ink Recipe Software

Dosing System

Press

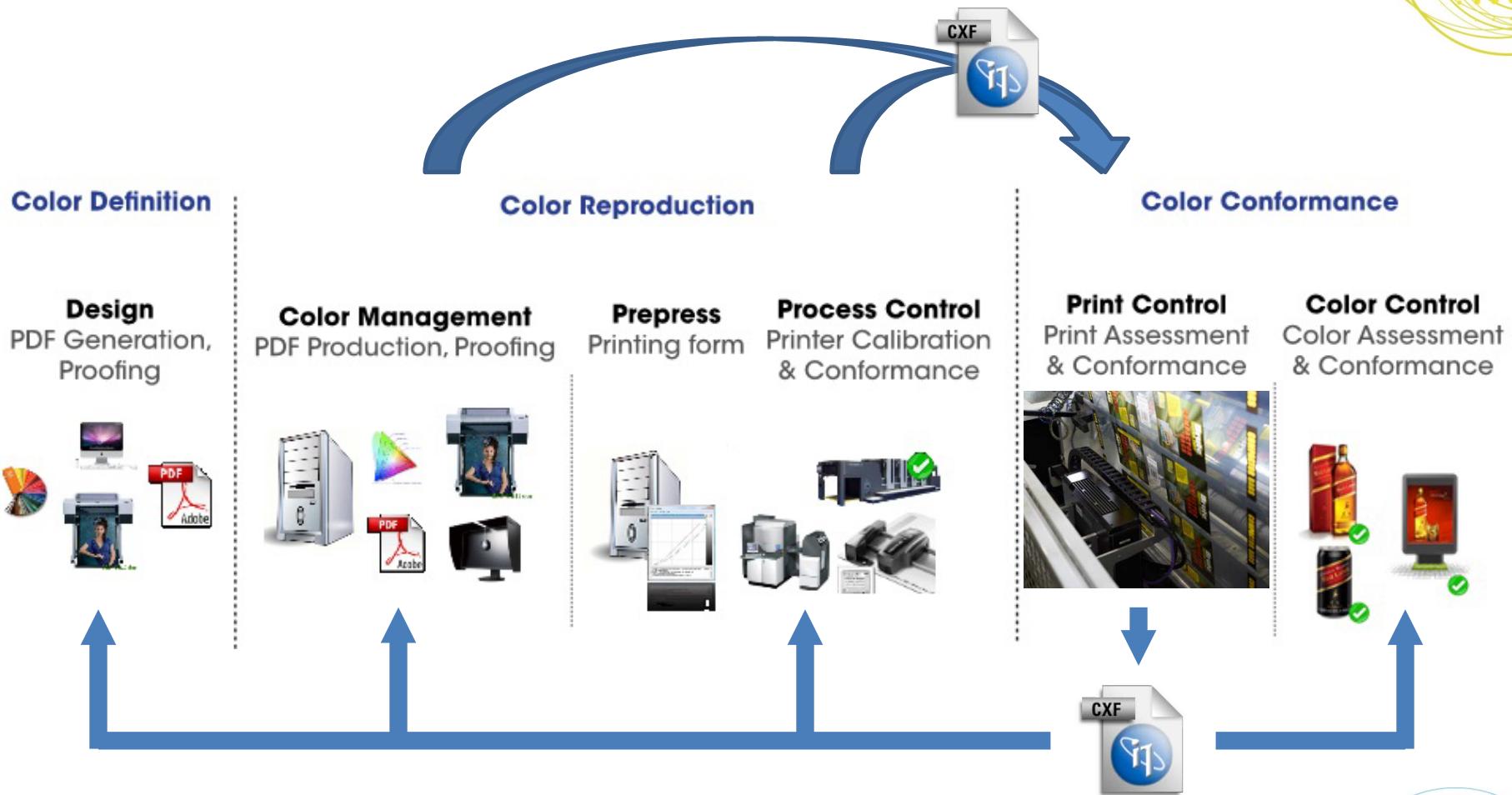
Color Measurement System

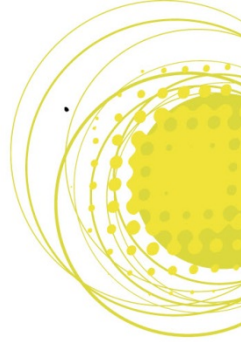
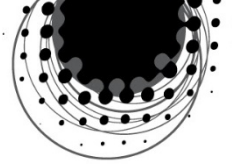


Real Time Measurement Values

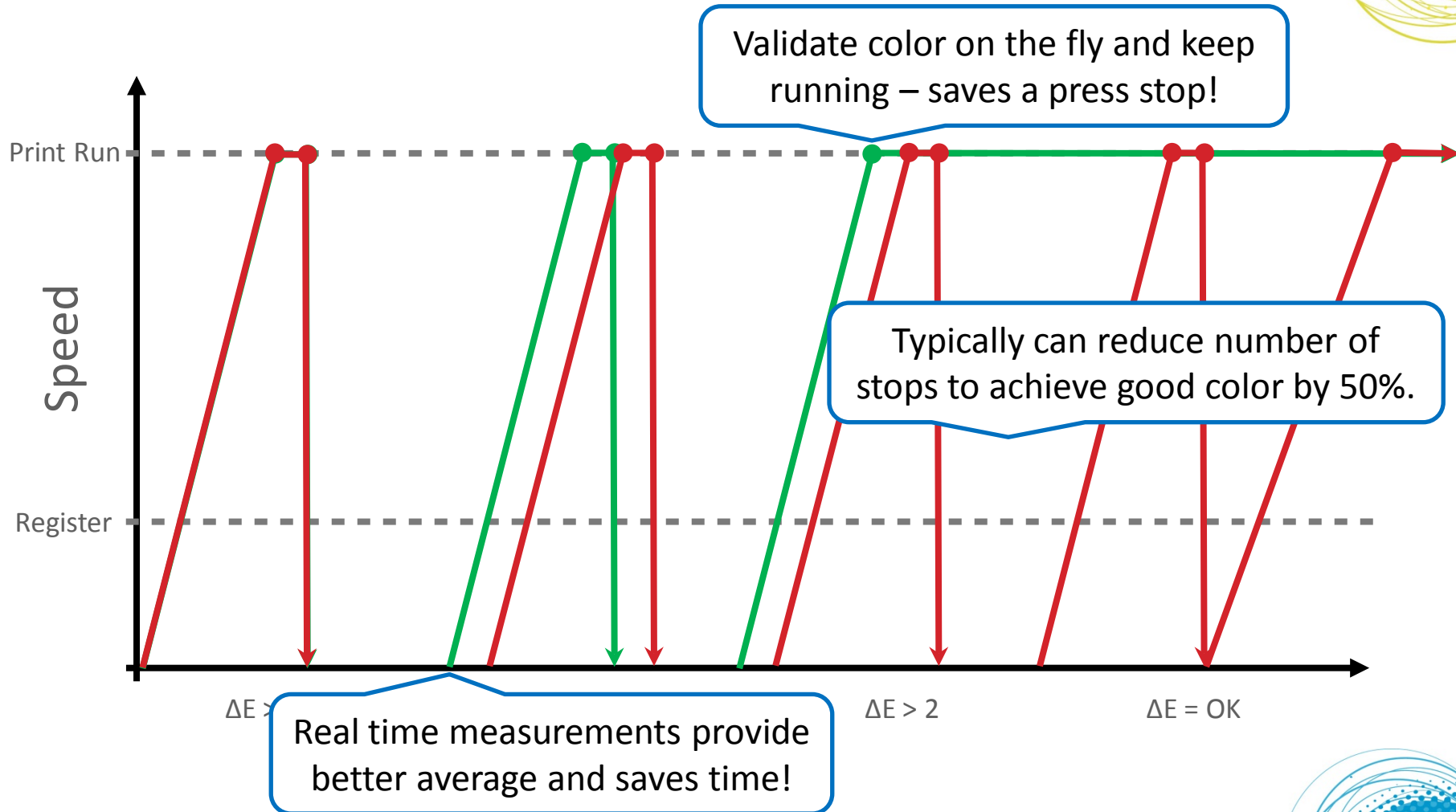


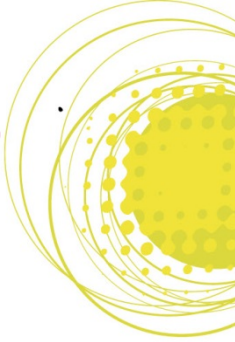
Color Management Workflow





Makeready Process



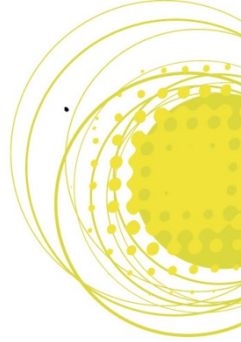
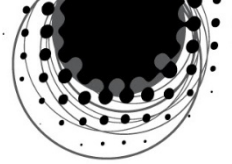


Return On Investment – 10 Color Gravure Press

Press rate / hour:	€350
Press stop due to color correction:	7 min (~€40)
Material cost:	1000kg = €1000
Material consumption per press stop:	300 m (~€40)
Job changes per day:	3
Working days per year:	255
Press stop due to color correction	New Job: 6, Re-Run: 3, Average: 4

Costs for color correction/year €244.800 (₹17,347,432)

Potential savings per year €122.400 (₹8,673,716)



Industry Activity

ISO-IEC 16761-2 Draft



PDF/X Support for embedded color specifications



Packaging software suppliers

Inline color measurement system suppliers





Color Management on Press

Reduced makeready waste and time

Real time color quality assurance

Consistent print quality world wide

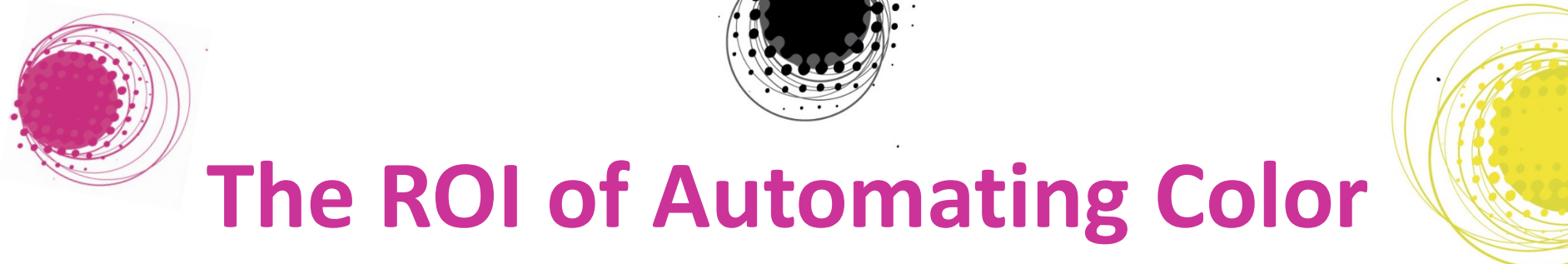
Automate color data flow

Higher customer satisfaction

Color quality reporting

Process improvement reports/feedback





The ROI of Automating Color Management on Press For Packaging Printers

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