INTERNATIONAL
PRINECT USER DAYS

WS 17 + WS 29

Prinect Automatic Paper Stretch Compensation: Use cases and measuring of spot colors

T. Mohr, C. Voelker

Prinect APSC. Use cases and measuring of spot colors.

A new way of printing.

How to deal with paper stretching?

How to measure register deviation of spot colors?

How to learn paper behaviour to a software?

How to save time and waste with simply calculating dots?

WORKSHOP

17

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WORKSHOP

29

Customer Interaction.

Reducing Touchpoints.

Driving Productivity & Uptime.

Reducing Waste & Inventory.

Optimizing Consistency & Repeatability.

Providing Business Intelligence.

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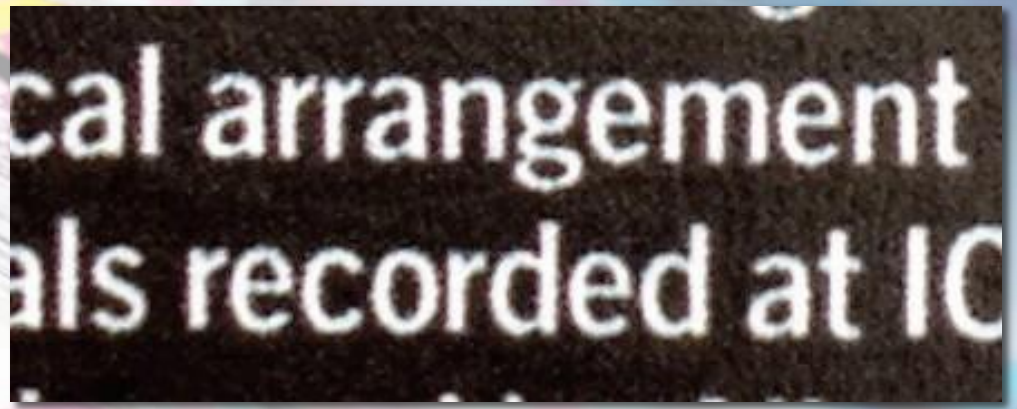
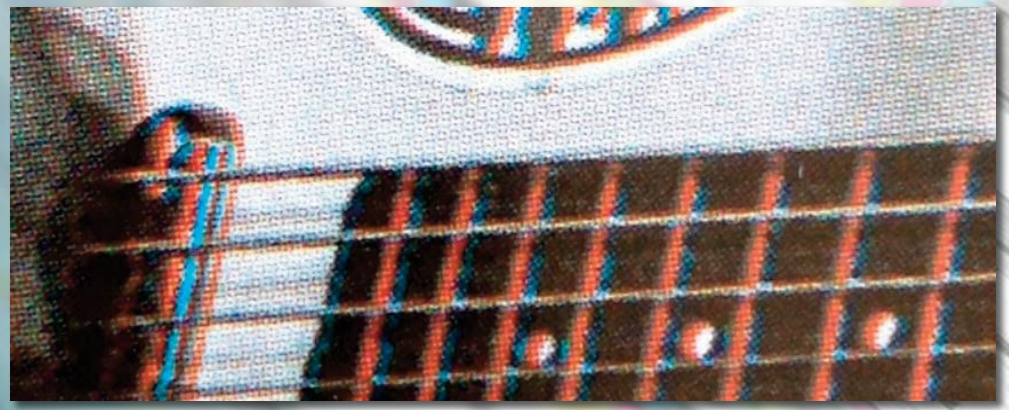
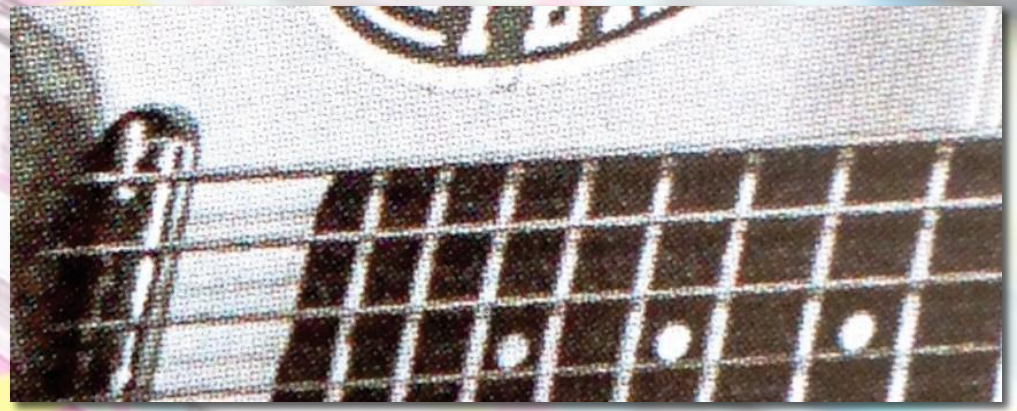
Prinect APSC – what is it all about?

What is paper stretch compensation?







Misregistering due to paper stretching

With Automatic Paper Stretch Compensation

Effect of paper stretching on packaging job

→Only 4 of 12 one-ups can be sold

Substrate: heavy cardboard

Live demonstration.

What influences paper stretching?

- → Paper type, grain, grammage
- → Position of printing unit in printing press
- → Room temperature and humidity

How to measure register deviation?

USB-microscope camera

→ Camera resolution: 1280 x 1024 pixel

→ With polarizing filter

→ USB connectable

→ Rack or mount for the microscope is recommended

NEW FEATURE 2020

How to measure register deviation?

New register marks

→ For up to 8 colors

→ Reference color 2x

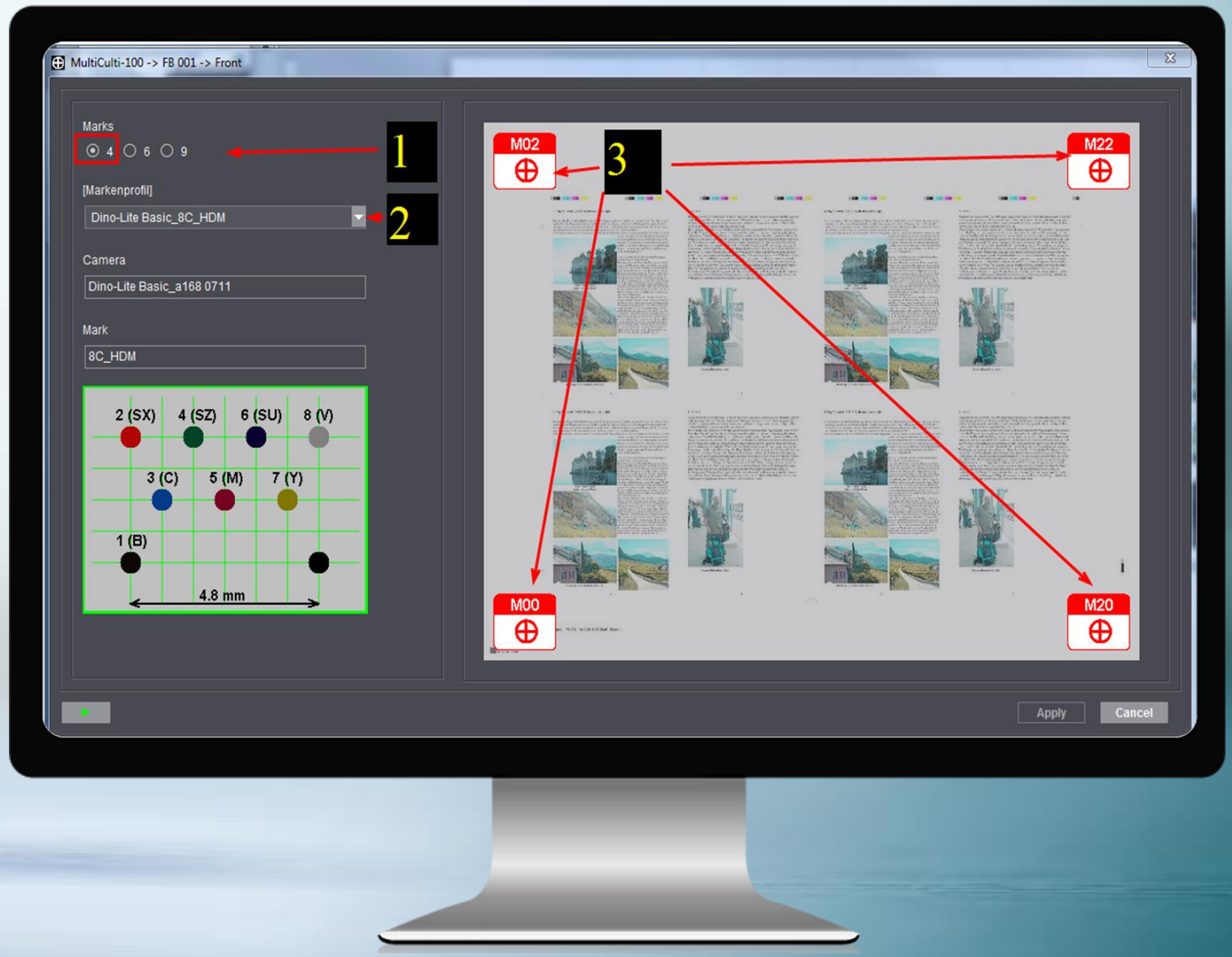
→ Size: 6,4 mm

NEW FEATURE 2020

Measuring and transferring results.

→ Register marks are measured

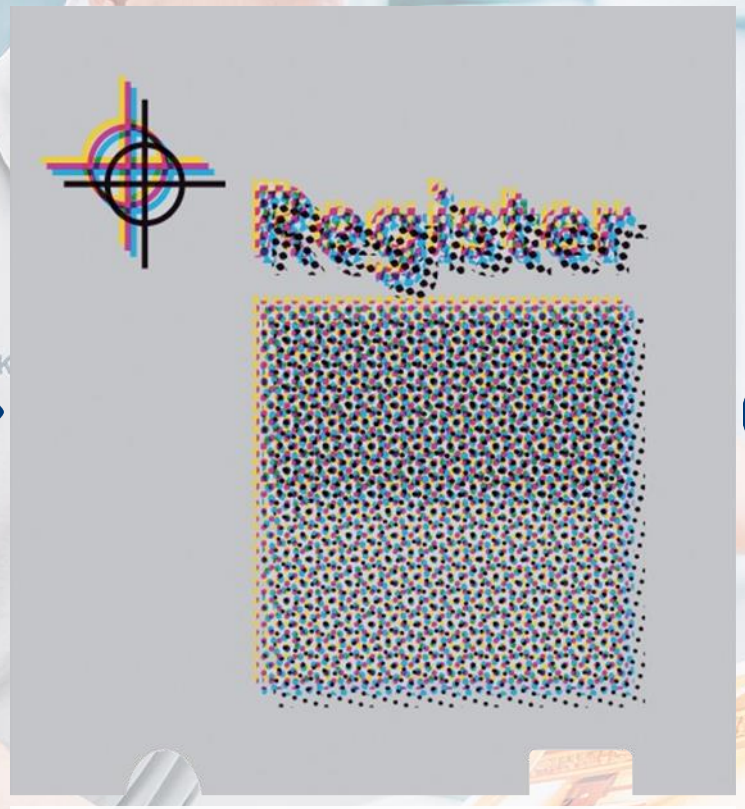
→ Results are automatically transferred to Prinect APSC



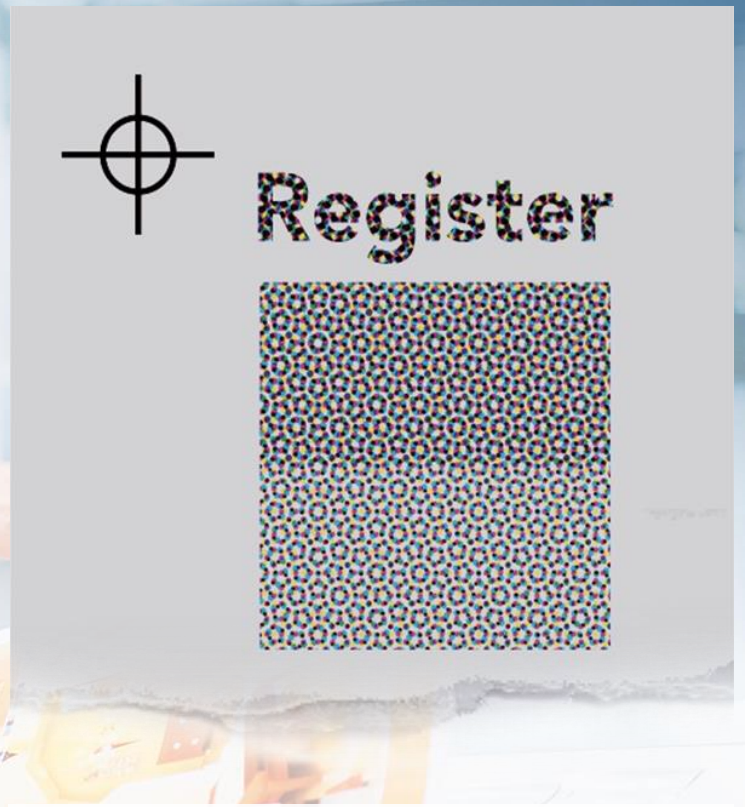
Live demonstration.

How compensation is calculated.

Bad register due to paper stretching



Compensated printing plates



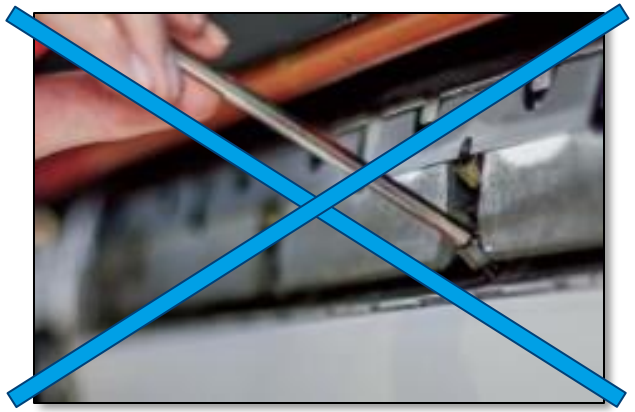
Perfect dots and rosettes in print

Outcome
Savings with Prinect APSC

→ Saves make ready time of 5 minutes and more per compensated job

→ Saves waste of 80 sheets and more per compensated job

→ Improves productivity All parts of the sheet can be sold instead of only half of it



Prinect APSC – two modes of compensation

Individual mode:

- For individual print sequences
- For jobs with spot colors instead of process colors
- For any kind of substrates

Use Cases:

- Spot color jobs
- Label and packaging print jobs

→Compensation by individual calculation

- Printed job is basis for compensation

Automatic mode:

- For jobs with fixed print sequence:

→ B-CMY- spot colors

- For multicolor jobs: B-V-C-G-M-O-Y
- For often used paper types

Use Cases:

- Commercial print jobs
- Optimization during print run

→Compensation by calibration curves

- Paper behaviour is learned

Both modes can be used one after the other in one job!

Prinect APSC –
Individual Compensation.

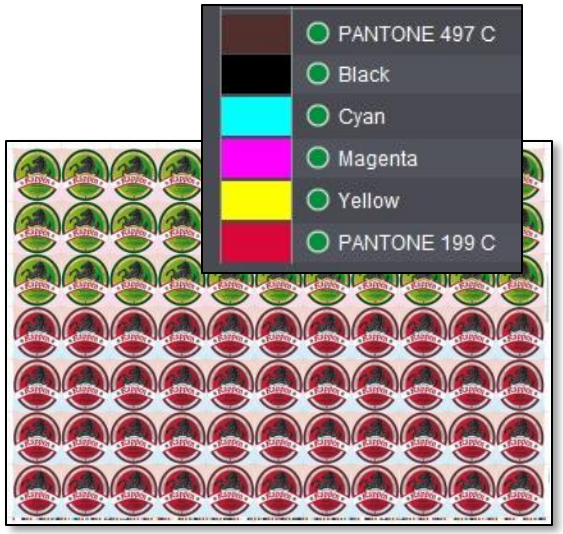
How Prinect APSC works: Individual mode for compensation.

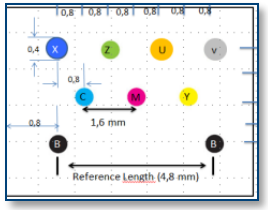
Step 1:
Individual job is printed.

Step 2:
Register deviations are measured by USB micro-scope camera (also spot colors) and automatically transferred to Prinect APSC.

Step 3:
Prinect APSC calculates the individual compen-sation for this job.

Step 4:
Plates are imaged.

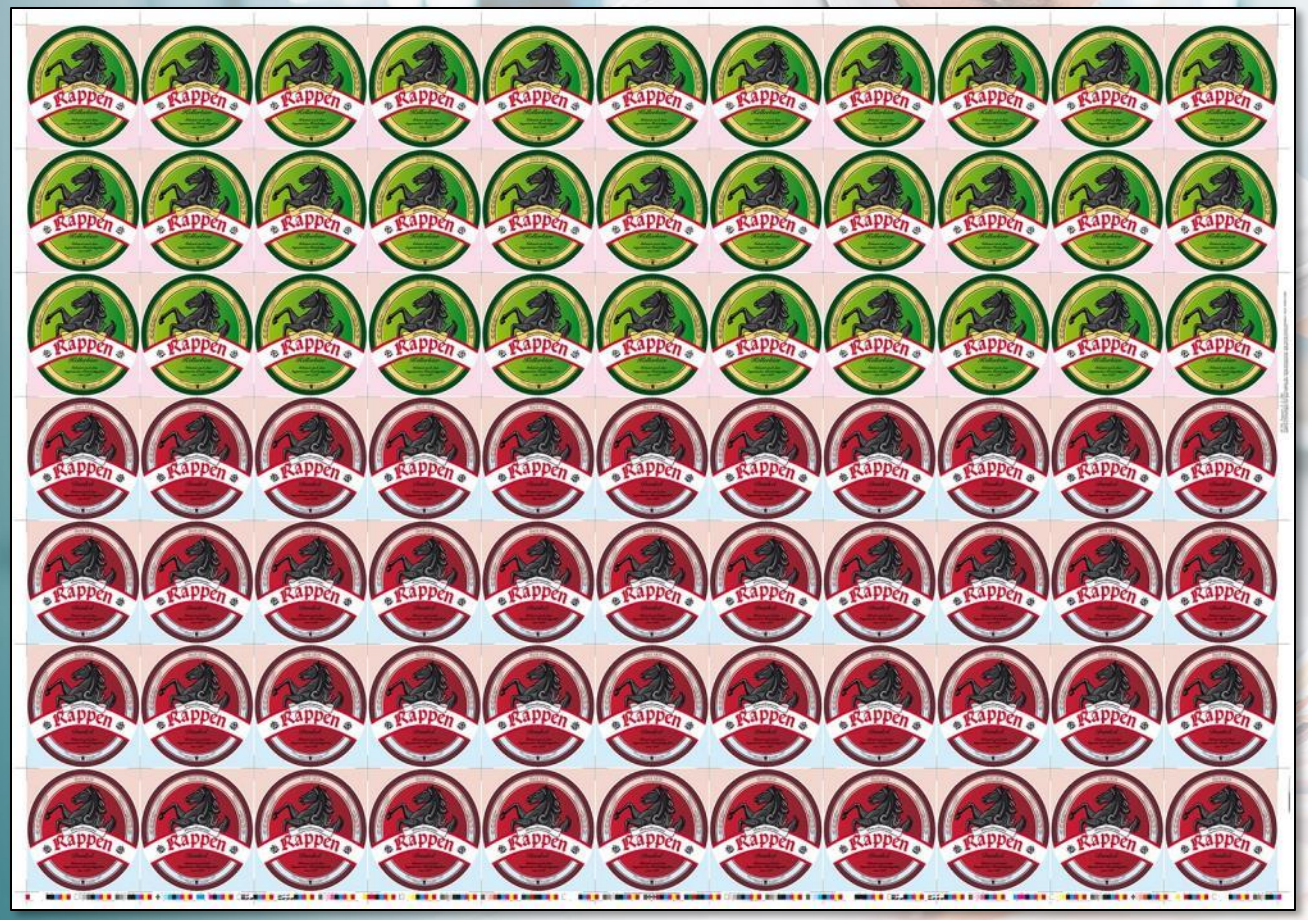


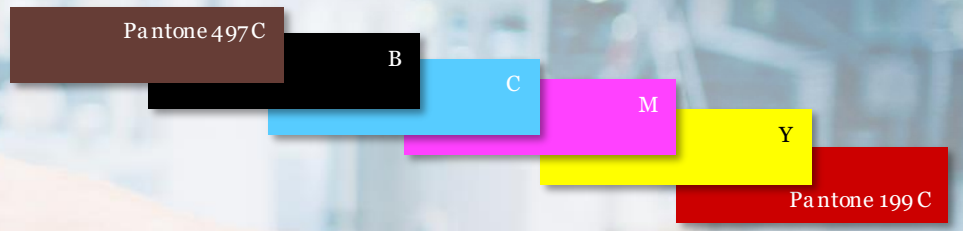


Live demonstration.

Individual compensation.

Use Case: Jobs with spot colors / special print sequences.





Individual compensation.

Use Case: Special print sequence as repeat job.

The stored compensation is reused without a 2nd set of plates.

Your benefit of individual compensation:

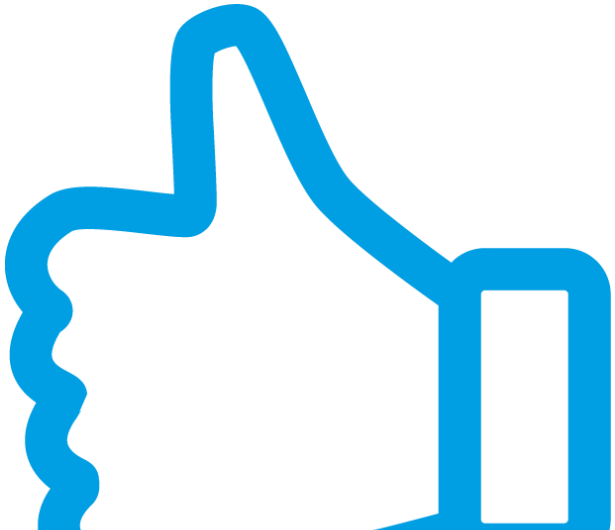
→100 % accurate register

→Higher productivity

→Spontaneous compensation possible

Conditions

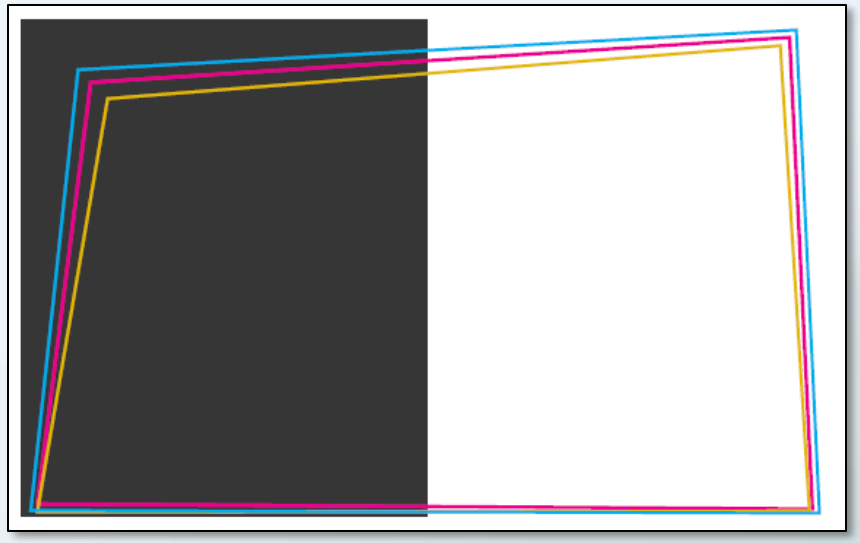
→2nd set of plates

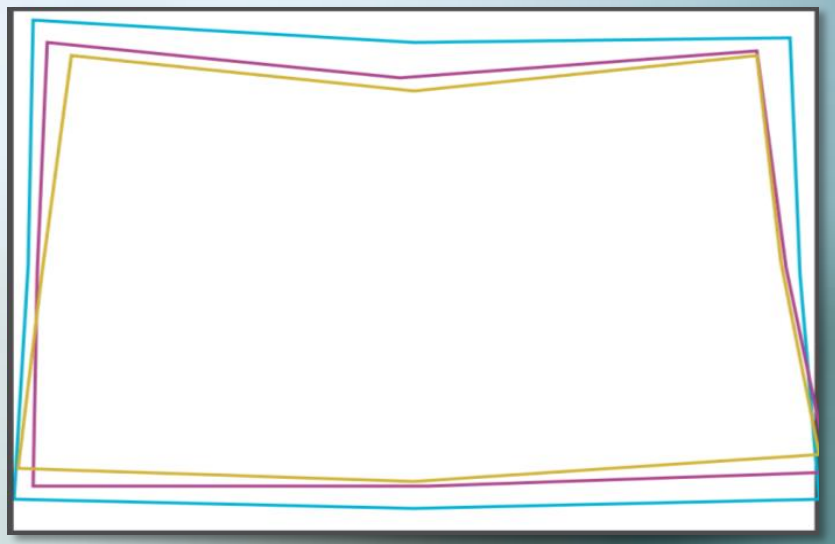


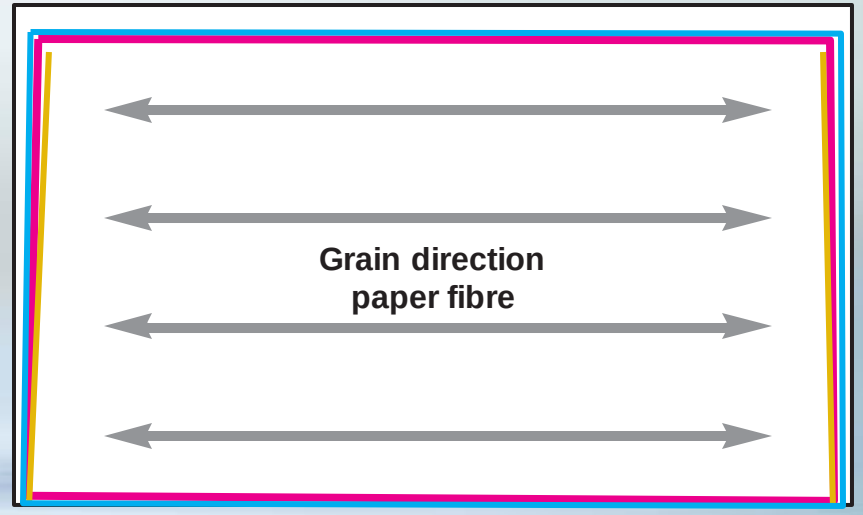
Prinect APSC –
Automatic Compensation.

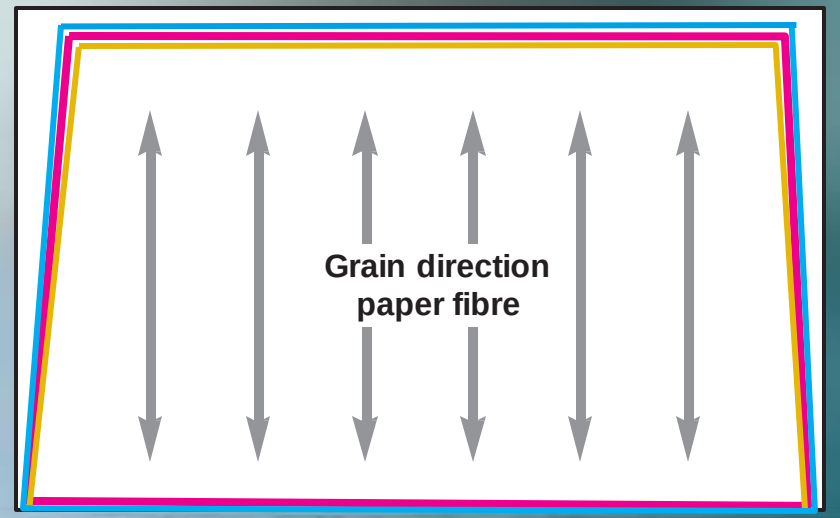
How can paper stretching look like?

→ Examples of deviations caused by paper stretching







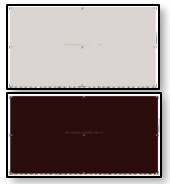


Automatic compensation – Paper behaviour

Paper stretching is different for:

- → Grain direction
- → Surface
- → Grammage
- → Ink coverage
- → Position in press

1. 2. 3. 4. } Different test forms



5. Fixed print sequence B-CMY-...

Substrate‘s behavior needs to be learned

- → 1 single compensation curve for one paper type
- → Ink coverage is considered automatically
- → Environmental conditions have to be stable

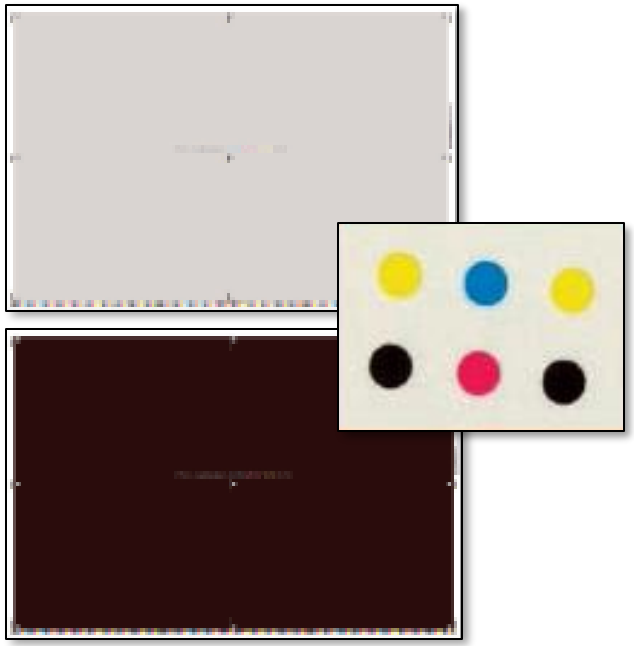
Compensation curve generates a repeatable print result.

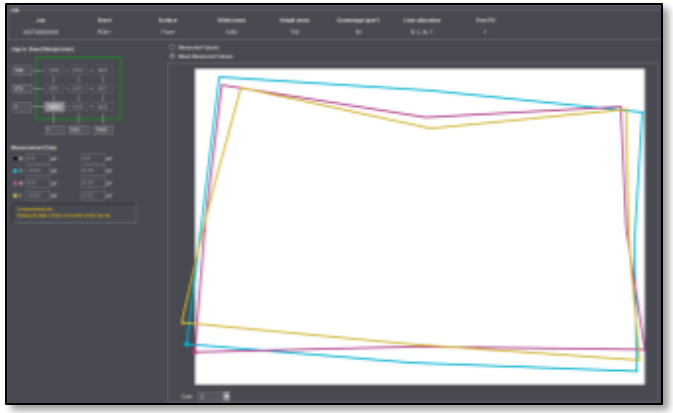
How Prinect APSC works: Automatic Compensation.

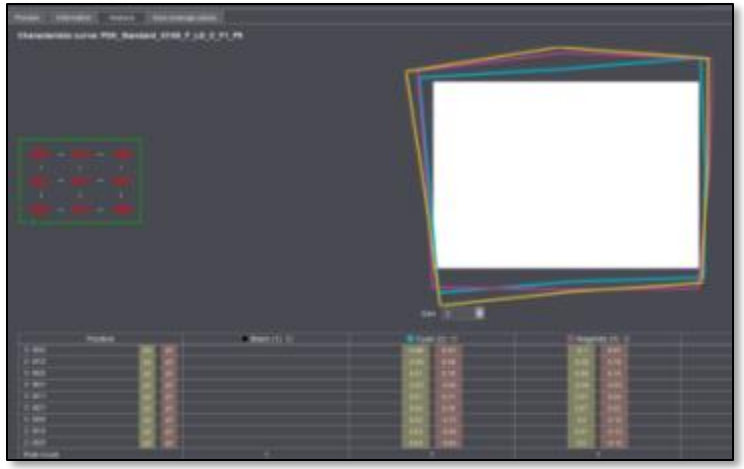
Step 1: Paper behaviour
Test forms are printed at least for all grain directions and paper classes.

Step 2: Basic preparation
The register of the printed sheets is measured by a USB microscope camera and automatically transferred to Prinect APSC.

Step 3: Standardization
The characteristic curve for each defined paper type is created.





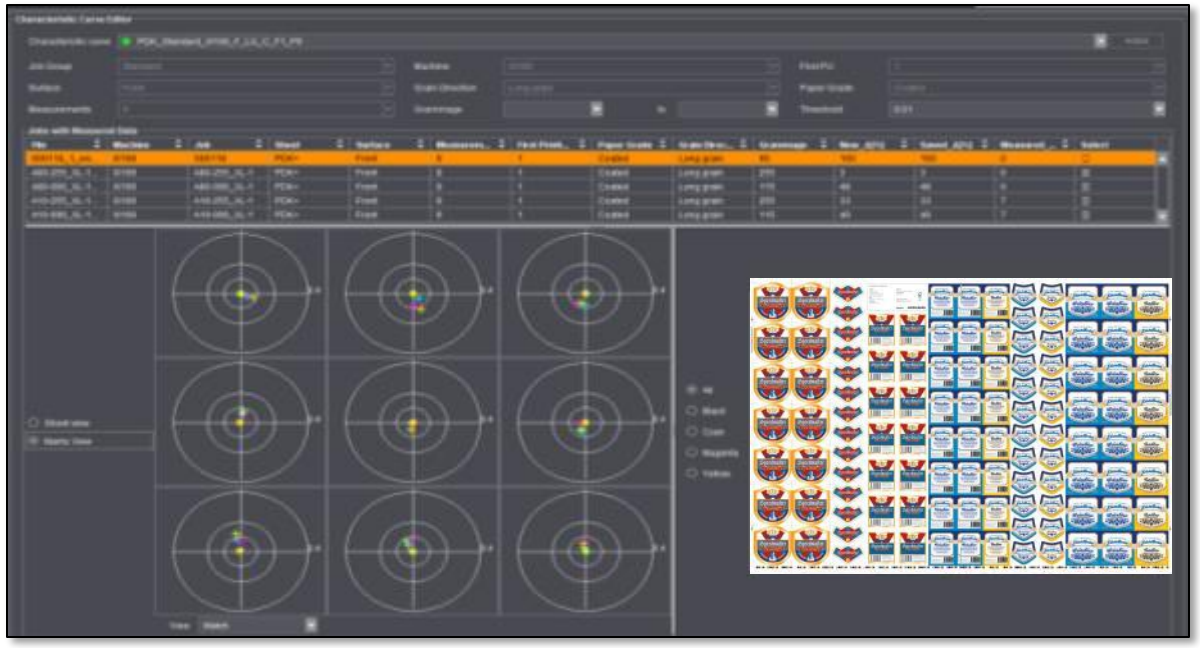


How Prinect APSC works: Serial production with automatic compensation.

Step 4: Automatic compensation

Paper stretch is forecasted by
→combining the characteristic curve
→with the individual ink coverage of a job.

During production the compensation is done fully automatically.



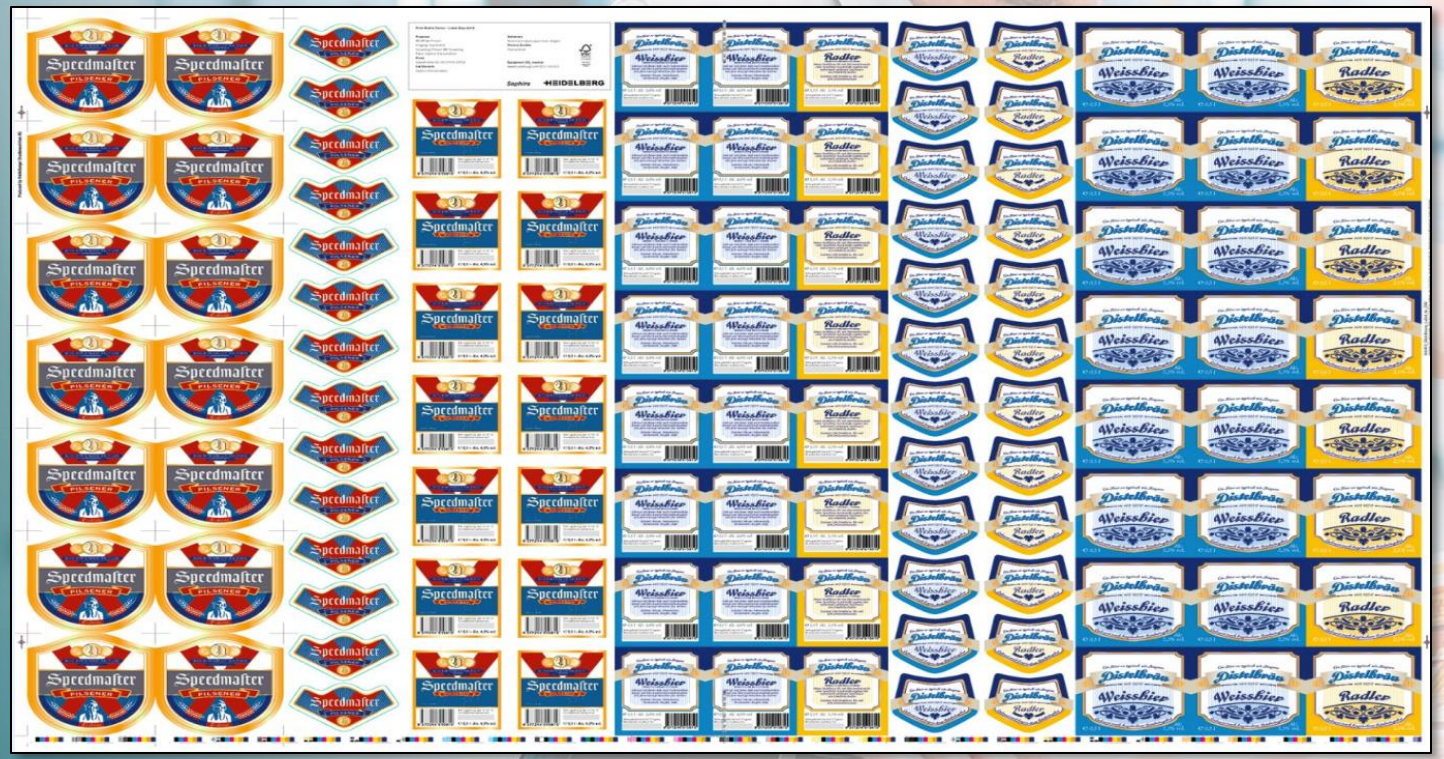
Live demonstration.

Automatic compensation.

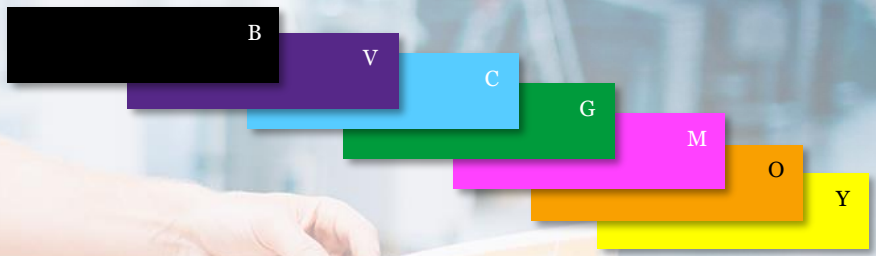
Use Case: Commercial job with process colors.

Automatic compensation.

Use Case: Label/ Packaging jobs with process colors & spot colors.



Automatic compensation.
Use Case: Jobs with multicolor.



Your benefit of automatic compensation:

→No touch points during production

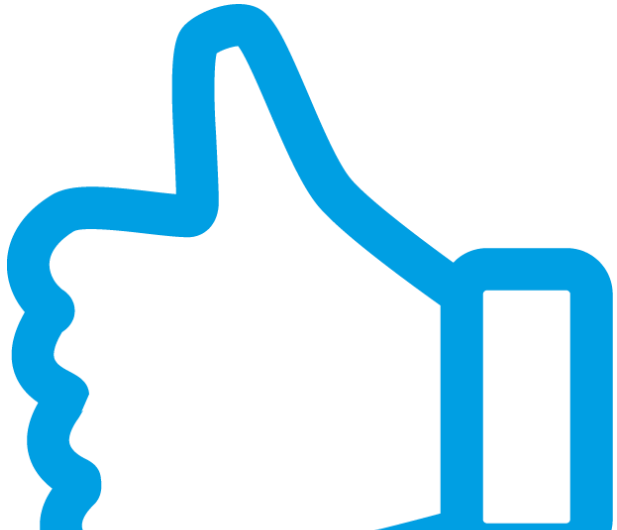
→Standardization

Conditions

→For frequently used paper types

→Given print sequence

→Stable print conditions

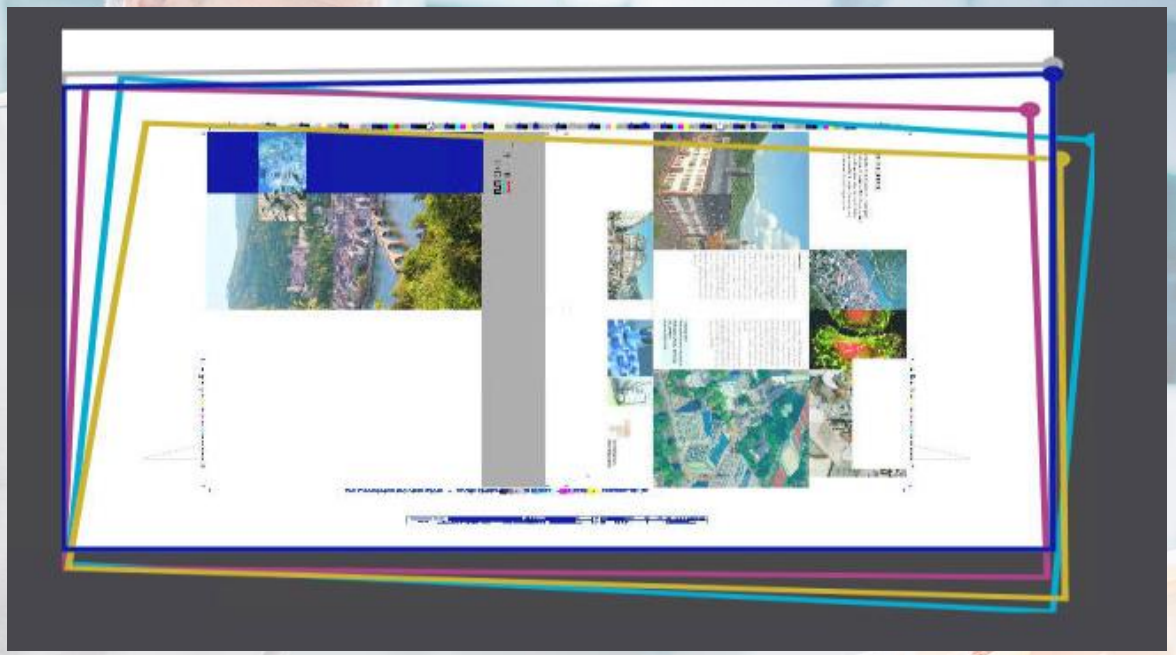


Prinect APSC –
Combination of Automatic and Individual Compensation.

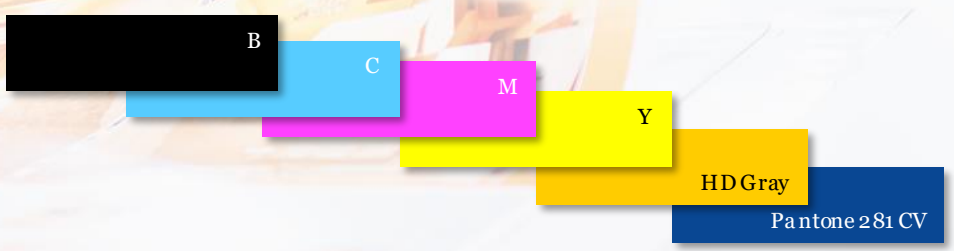
Use Case: Job with process and spot colors.

→ Automatic compensation as first step

→ Individual compensation for spot colors in order to get 100% register accuracy

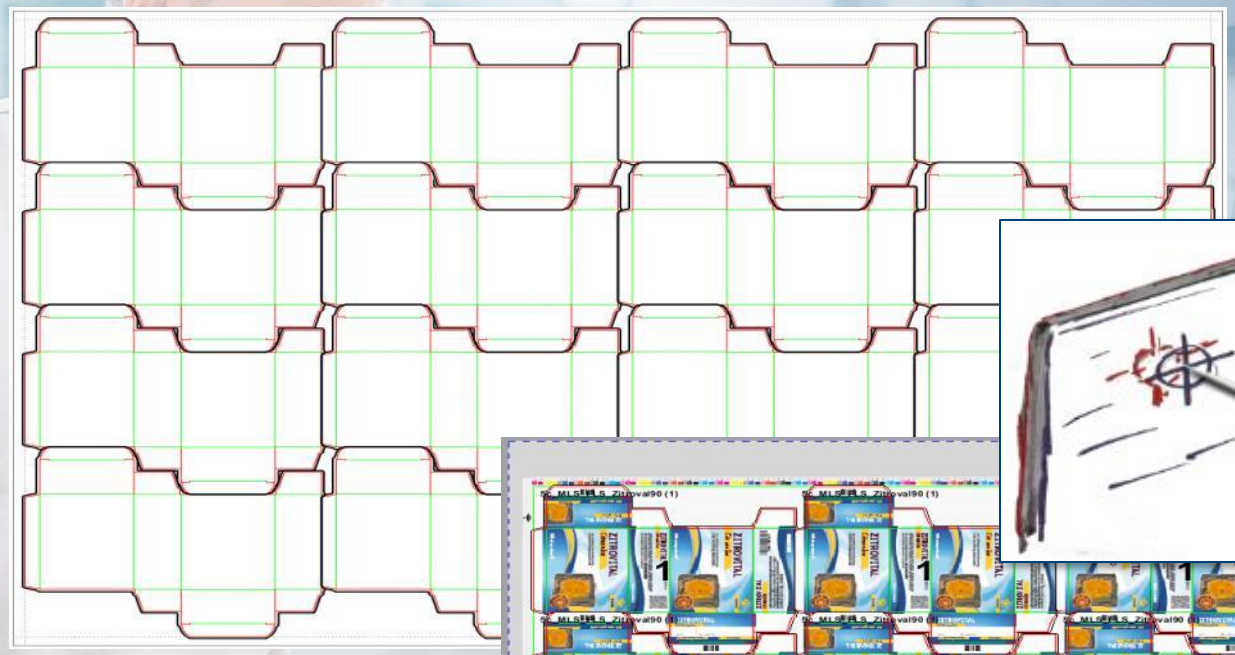


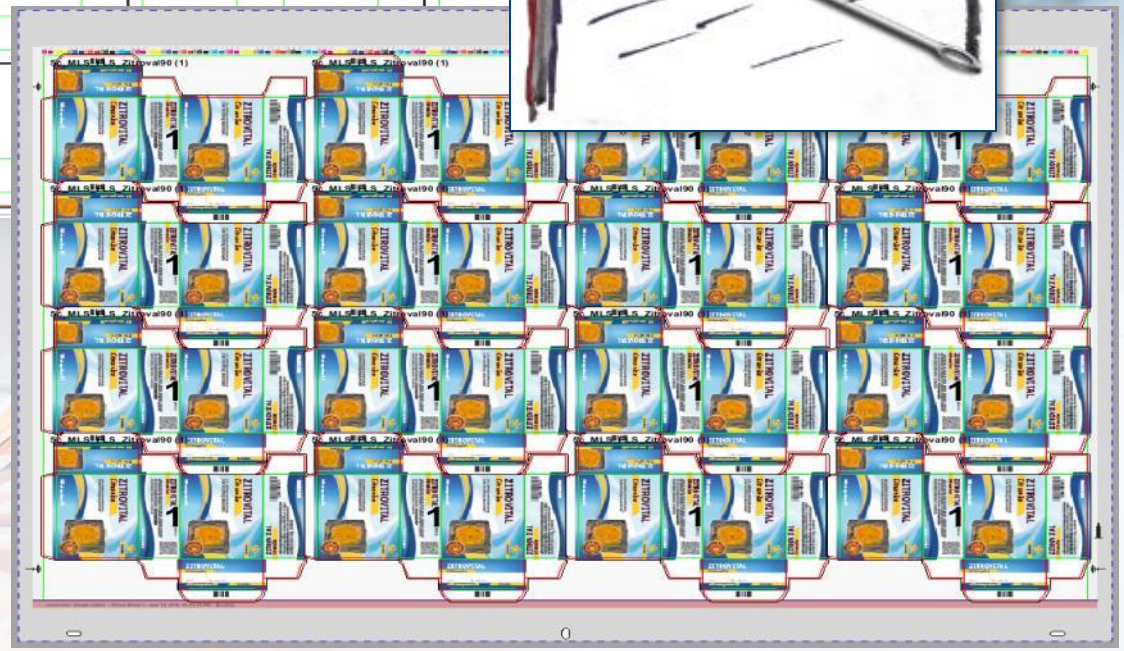
ΔX	0.0	ΔY	0.0	Black
ΔX	0.07	ΔY	-0.25	Cyan
ΔX	-0.04	ΔY	-0.18	Magenta
ΔX	0.01	ΔY	-0.29	Yellow
ΔX	0.0	ΔY	-0.08	HD Gray
ΔX	0.0	ΔY	-0.1	PANTONE 281 CV



Use Case: Correct register by puncture and pre-distortion.

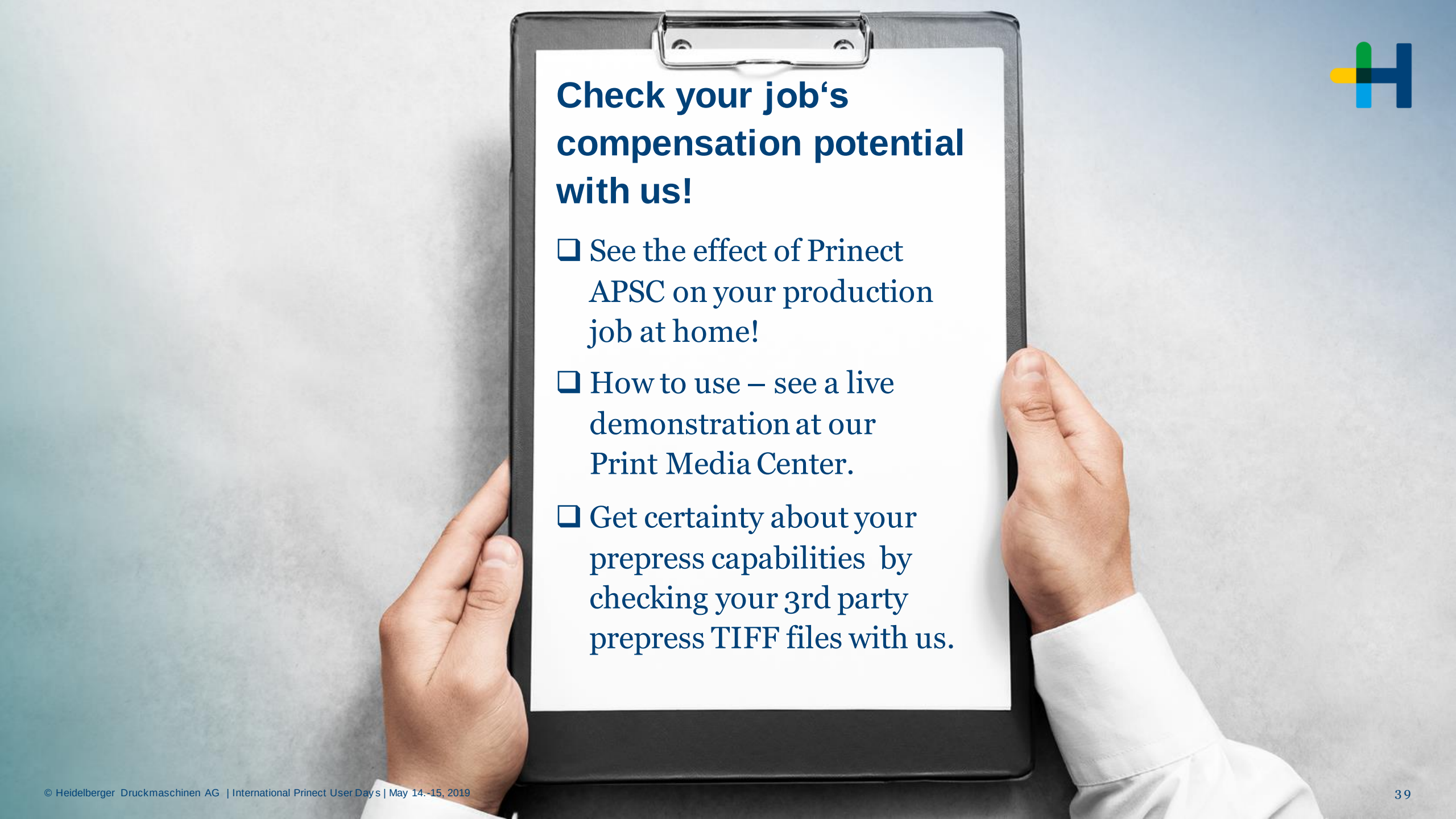
- → Individual compensation
- → Correct registering between back and front page of printed image
- → Correct registering of printed image to cutting die (or similar)





Prinect APSC –
How to increase your productivity.


Checklist:
How can you use Prinect APSC in your print shop?
❑ Prepress workflow
❑ Plate imager
❑ Print shop environment
❑ Substrate
❑ Ink
❑ Print sequence


Check your job‘s compensation potential with us!
❑ See the effect of Prinect APSC on your production job at home!
❑ How to use – see a live demonstration at our Print Media Center.
❑ Get certainty about your prepress capabilities by checking your 3rd party prepress TIFF files with us.

How can you increase your productivity with Prinect APSC?

- Potential in quality of register.

- Potential in time savings.

- Potential in waste savings.

Prinect APSC for highest productivity

Prinect APSC – Success story.

Mr. Groth – Managing Director of Druckhaus Becker:

Prinect APSC works perfectly.
Our printers are fascinated.

Workflow solutions for Business and Production.
Prinect. Driving the Smart Print Shop.

Thank you very much for your attention.

We are happy to answer your questions.