Proofing Problems in Manufacturing of Postage Stamps

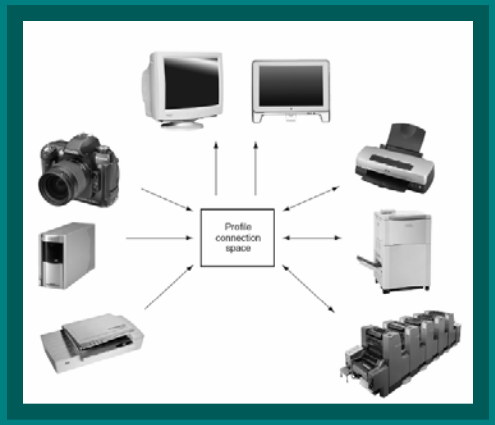
Erzsébet Novotny PhD
State Printing Company
Óbuda University
Budapest, Hungary

Letters nowdays: without or with postage stamps?

COLOUR MANAGEMENT OF THE POSTAGE STAMP PRODUCTION

The main parts of the stamp production's CMS

- ICC profile determination (special papers)
- Application of the established ICC profiles
- Determination of reproducible colour gamut of stamp production



Device-independent colour transformations (Source: ICC)

COLOUR MANAGEMENT OF THE POSTAGE STAMP PRODUCTION

Problems

- Significant difference between the contract proof and the press-room prints
- ICC profile correction at CtP device
- New printing plates, and press set up
- Extra costs

COLOUR MANAGEMENT OF THE POSTAGE STAMP PRODUCTION

Few types of stamp papers and the media of proof printer

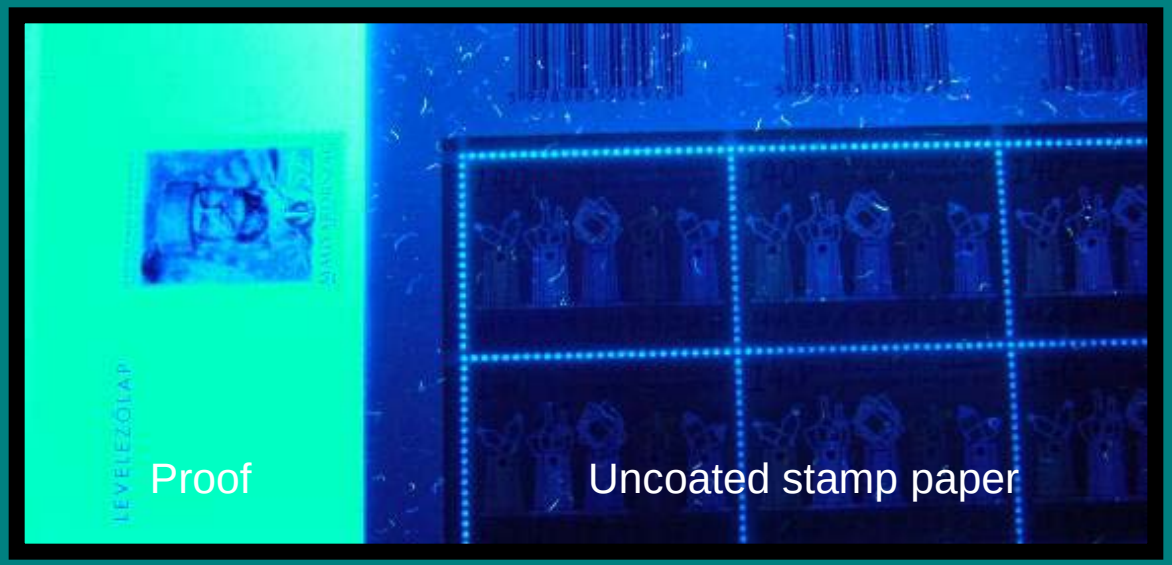
Uncoated, glued with security fibres

Coated, glued

Coated proof paper

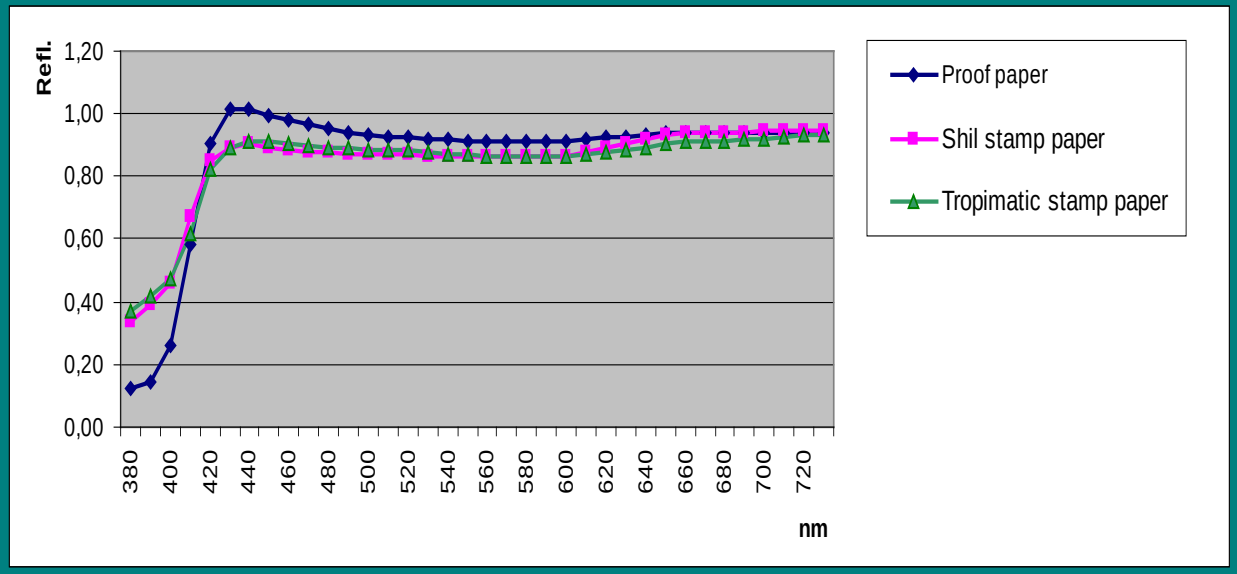
Uncoated, self-adhesive with security fibres

COLOUR MANAGEMENT OF THE POSTAGE STAMP PRODUCTION



Proof and postage stamps printed on special stamp paper
by UV-including radiation

OPTICAL BRIGHTENING



Reflection curves of different types of papers
(Fuji IPPSG proof paper, Shil and Tropimatic stamp papers)

DEVICES AND MATERIALS IN EXAMINATIONS

Proof-Printer:
Epson Stylus Pro 4000

Test charts:
TC 6.02 CMYK

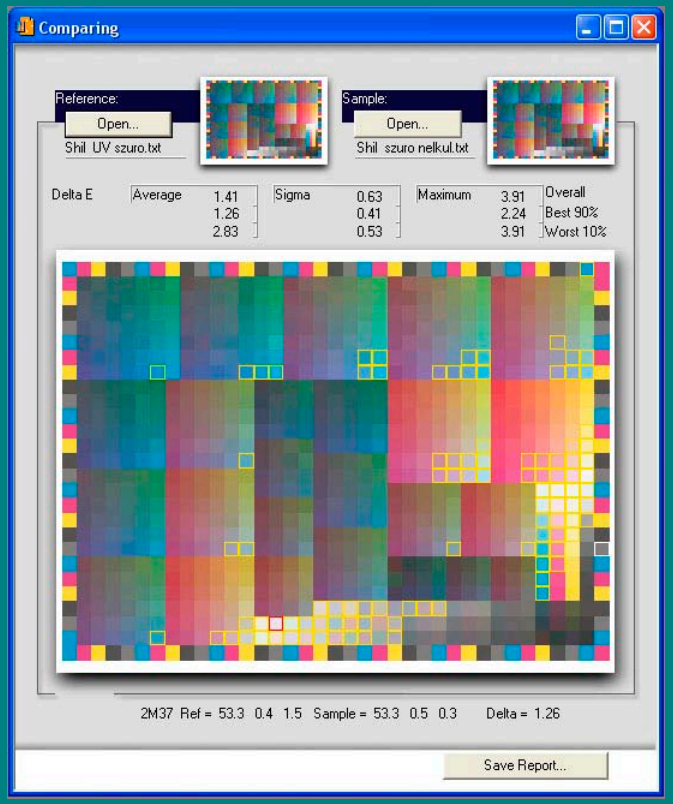
Measuring instrument:
SpectroScan
Light D50 beam scattering observer scans with 45/0 scattering geometry and 2°.

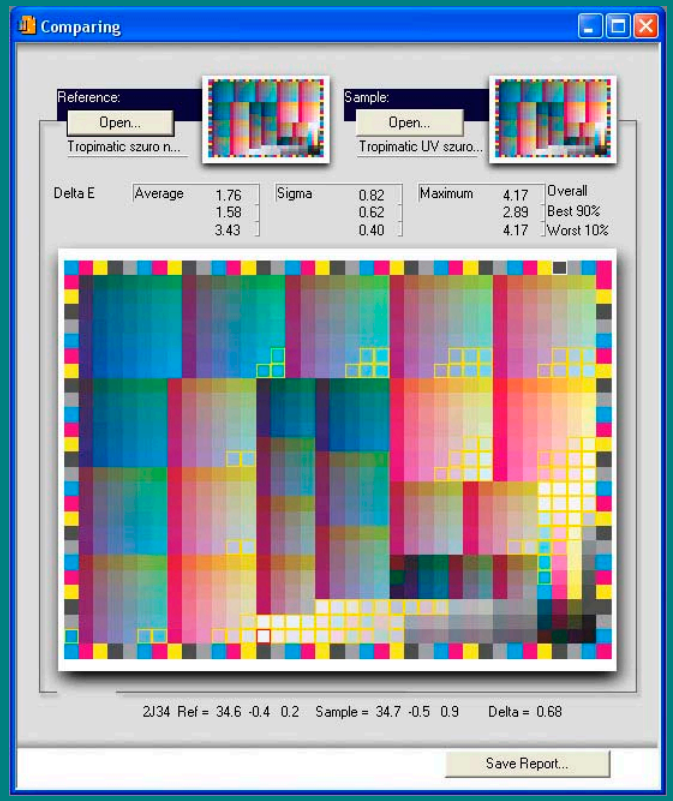
Software package:
ProfileMaker 3.1.5
- ProfileMaker
- ProfileEditor
- ColorPicker
- MeasureTool

Stamp papers:
- Tropimatic (coated, glued)
- Shil (uncoated, glued)

Proof paper:
Fuji IPPSG (semi-glossy)

DIGITAL PROOF EVALUATION





The greatest colour differences of proof measured with UV-emission filter and without filter, using Shil and Tropimatic stamp papers

DIGITAL PROOF EVALUATION

ΔE* and CMYK values of fields with high total ink and low total ink coverage in case of **Shil** stamp paper

Field	2A25	2J34	2K35	W21	2C27
TIC (%)	470.98	500	400	460	470
ΔE*	0.37	0.44	0.46	0.47	0.47

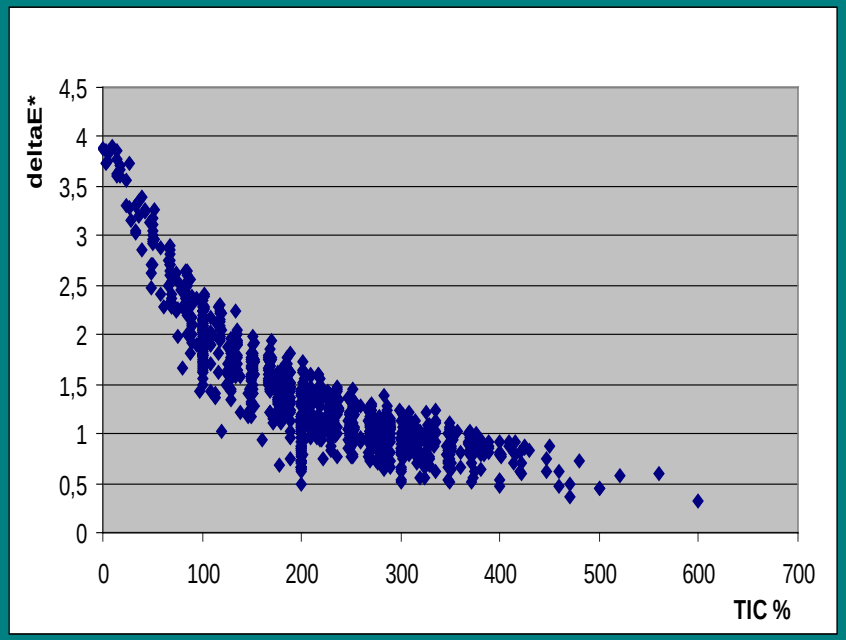
Field	O25	2L36	2I33	N25	2J34
TIC (%)	9.42	0	2.75	14.13	7.06
ΔE*	3.91	3.89	3.85	3.84	3.84

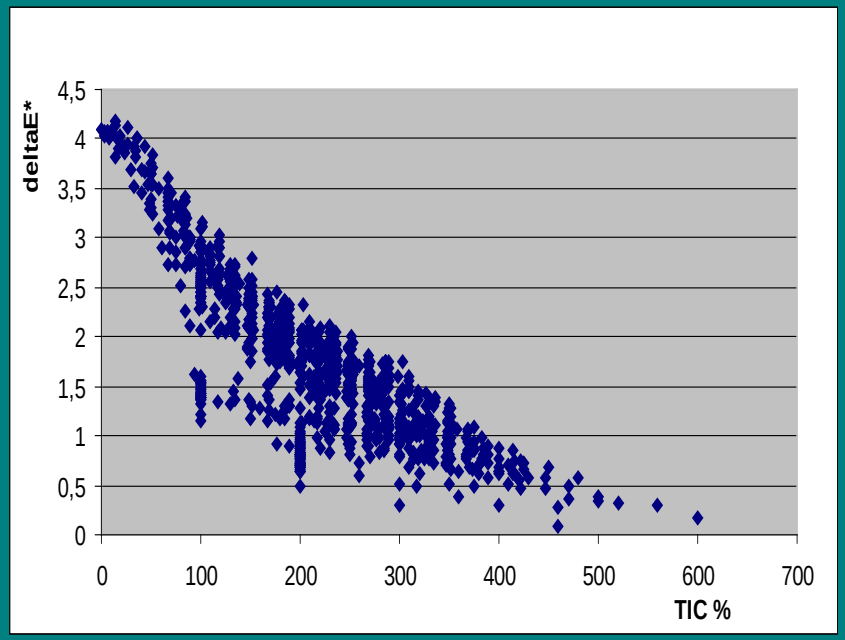
ΔE* and CMYK values of fields with high total ink and low total ink coverage in case of **Tropimatic** stamp paper

Field	W21	X21	W22	2J25	2L26
TIC (%)	280	360	280	200	400
ΔE*	0.09	0.33	0.28	0.29	0.16

Field	N25	N26	P25	2L15	2K16
TIC (%)	9.4	9.4	18	0	2.7
ΔE*	4.13	4.17	4.11	4.09	4.07

DIGITAL PROOF EVALUATION





The colour difference dependence on the TIC (total ink coverage) using Shil stamp paper (left) and using Tropimatic stamp paper (right)

DIGITAL PROOF EVALUATION

ΔE* values of dark and light shades in case of **Shil** stamp paper

Field	2A25	2J34	2K35	W21	2C27
L*	33.89	28.01	34.99	31.23	32.56
ΔE*	0.37	0.44	0.46	0.47	0.47

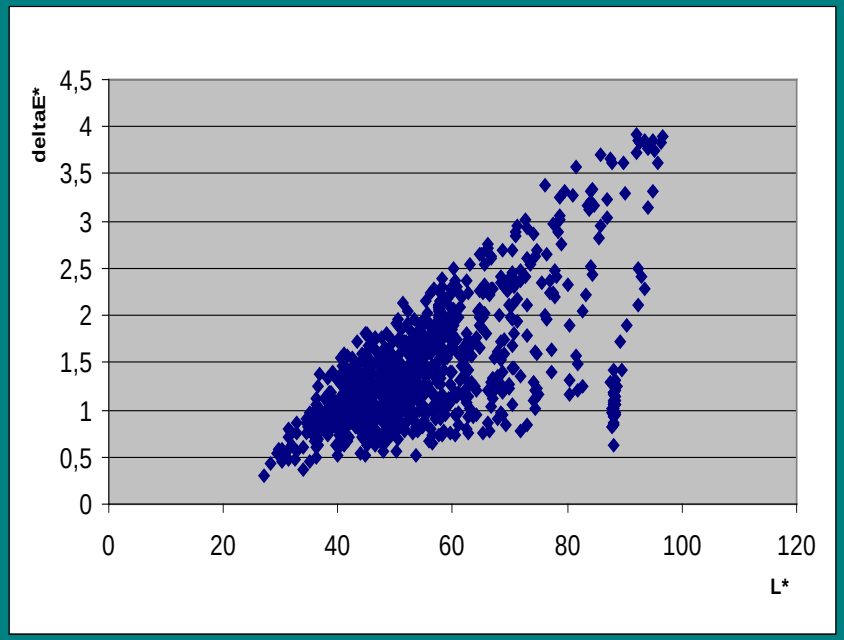
Field	O25	2L36	2I33	N25	2J34
L*	92.8	96.56	94.94	93.41	96.21
ΔE*	3.91	3.89	3.85	3.84	3.84

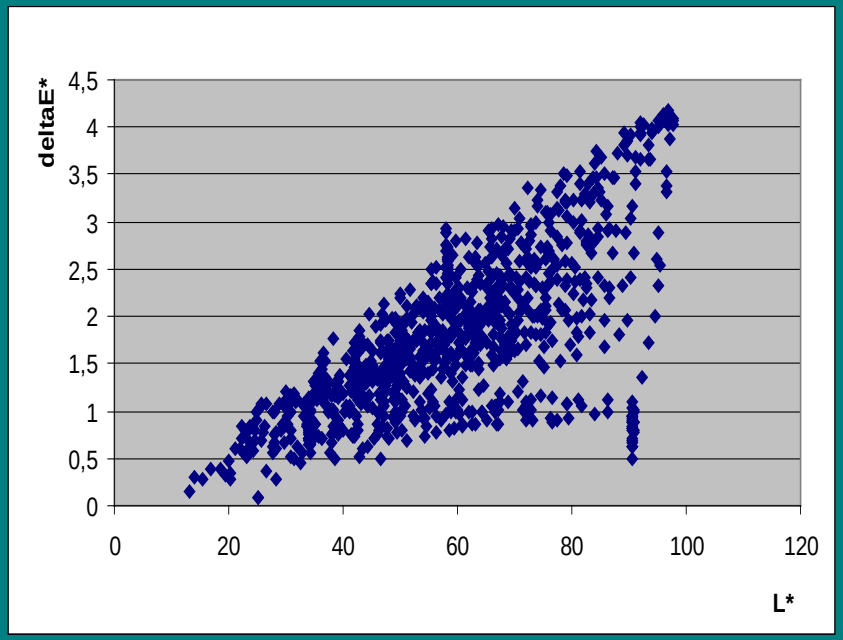
ΔE* values of dark and light shades in case of **Tropimatic** stamp paper

Field	W21	X21	W22	2J25	2L26
L*	25.12	19.55	28.22	20.18	13.07
ΔE*	0.09	0.33	0.28	0.29	0.16

Field	N25	N26	P25	2L15	2K16
L*	95.95	96.92	96.21	97.64	97.62
ΔE*	4.13	4.17	4.11	4.09	4.07

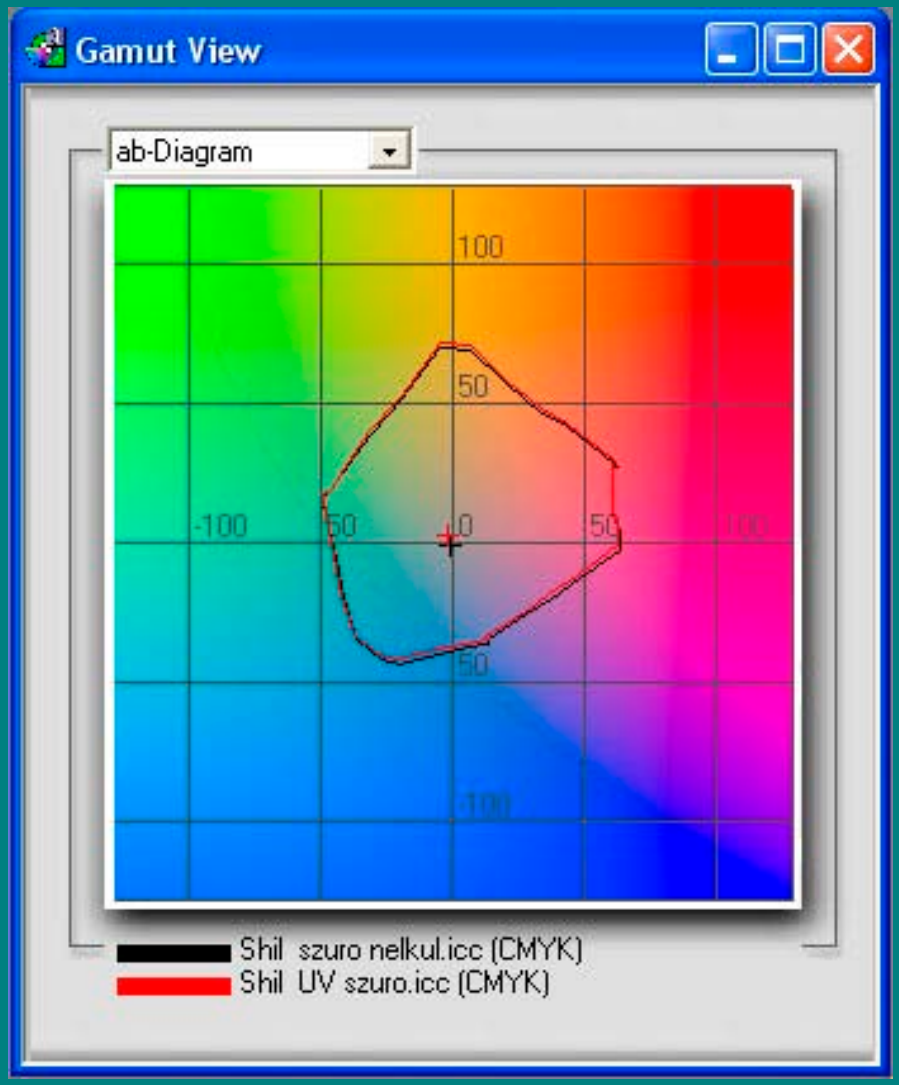
DIGITAL PROOF EVALUATION

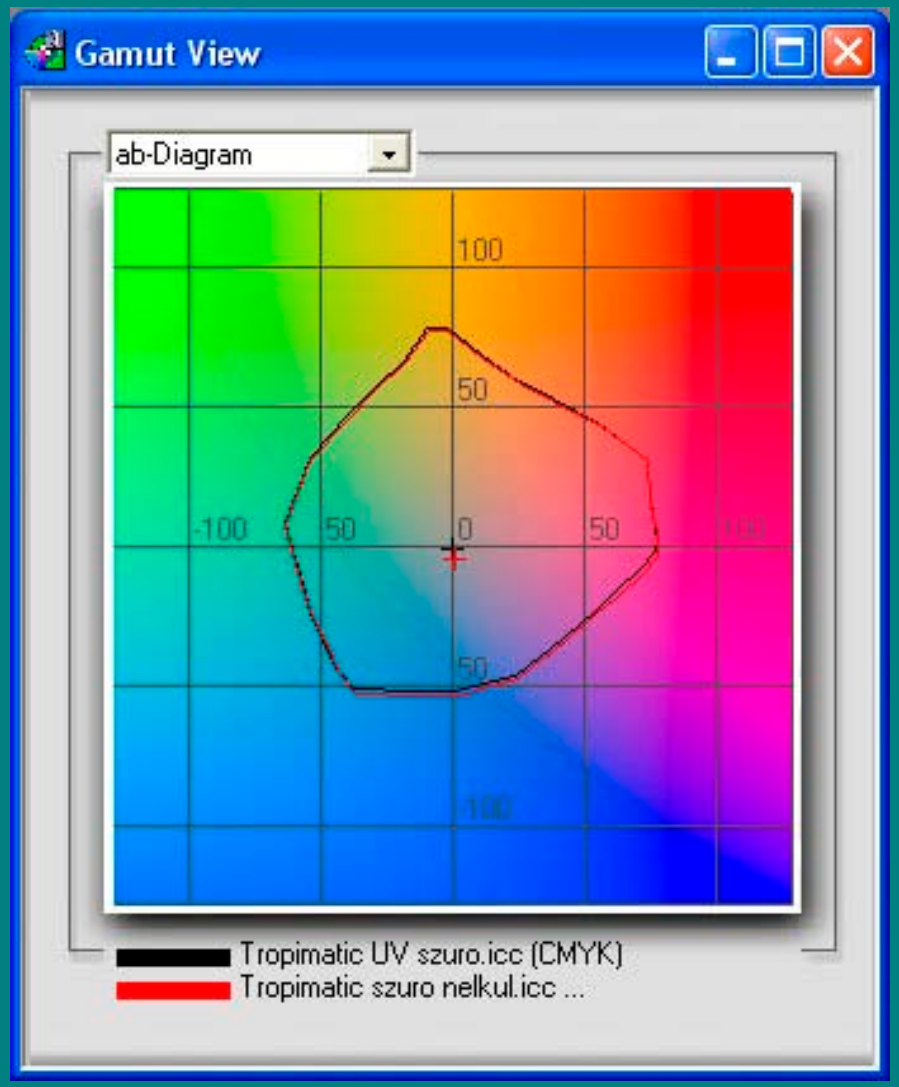




The colour difference dependence on the L* metric value of brightness, using Shil stamp paper (left) and Tropimatic stamp paper (right)

COLOUR GAMUT COMPARISON





Colour gamut sof Shil and Tropimatic paper's digital proof measured without UV-emission filter (black line) and with UV-emission filter (red line)

CONCLUSIONS

1. The Colour Management System requires constant maintenance
2. It is worth applying UV emission filter at calibration of proof printer
3. It is recommended to check the colour gamut deformation
4. Should use ProfileEditor to modify the colour profiles

Thank you for your attention!

Erzsébet Novotny PhD

State Printing Company / Óbuda University
Budapest, Hungary
novotny@any.hu