

# FOGRA Multicolor Event 2019

## How we solved the tasks

- ▶ Using our standard GMG solutions (latest development versions):  
GMG **OpenColor**, GMG **ColorServer**, GMG **ColorProof** and GMG **ColorPlugin**.
- ▶ For each spectral input data set, GMG OpenColor characterizations and projects were created.  
**Process** (offset, digital), **substrate** (paper, film), and **ink printing sequence** are important!
- ▶ CIELAB data of predictions: exported by an internal tool (since we use our own profile format)
- ▶ Proofing on Epson SC-P 7000 with GMG ColorProof on GMG premium OBA semiMatte 250
- ▶ PDF conversions with GMG OpenColor separation profiles and GMG ColorServer
- ▶ Image separations from RGB to 7c with GMG ColorPlugin in Photoshop

# FOGRA Multicolor Event 2019: step-by-step

**case 1** import CxF in GMG OpenColor, calculate proof profile, proof testform PDF.

**case 2** create separation profiles in OpenColor based on case 1, convert/flatten PDFs by ColorServer.

**case 3** import 7c data, calculate proof and separation profiles, separate images with ColorPlugin.

**case 4** use project from case 3, proof testform PDF.

**case 5** use Offset and Digital preset to predict the full grid data, once with SW, once with SWO.

we extracted the single-ink-wedge (SW) data from the provided SWO data manually.

comparing SW and SWO results, we suspected a wrong ink sequence for ID 6.

**case 6** import CxF for blue ink, add this new characterization to the project from case 3, calculate CMYKOGB profile (with violet ink turned off).

**case 8** import CxF for the new coloration of O, G, B as a new characterization, read CIELAB values.

# FOGRA Multicolor Event 2019: compared to 2018

- ▶ Prediction technology: essentially the same, but new digital preset (for Indigo, ID 2)
- ▶ PDF Conversion technology: improved multicolor support in ColorServer
- ▶ Separation technology: preferences and algorithms changed to achieve more vivid images

AdobeRGB - Reference



2018 – GMG – RGB2ECG



2019 – GMG – RGB2ECG



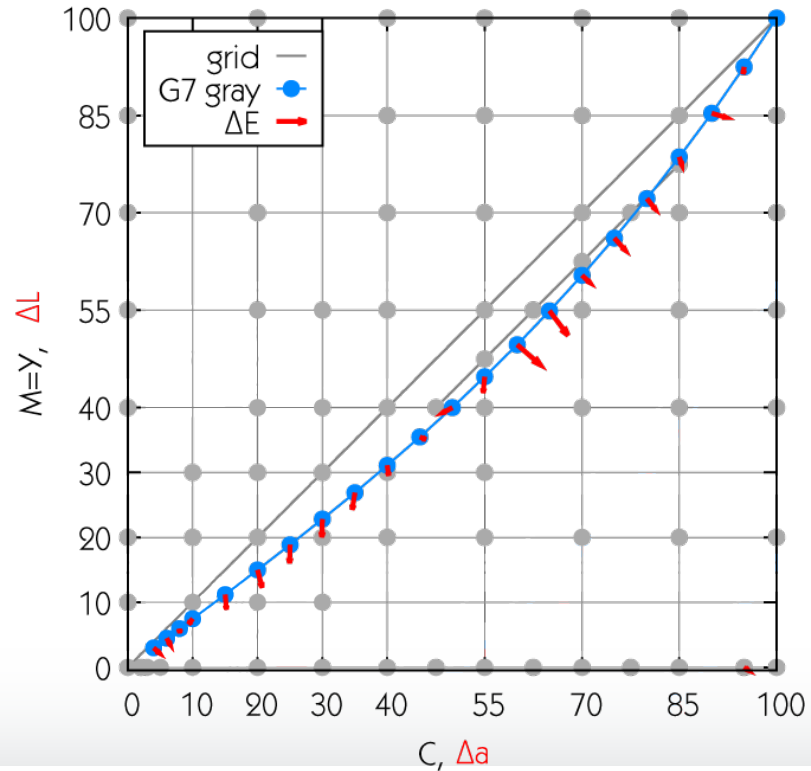
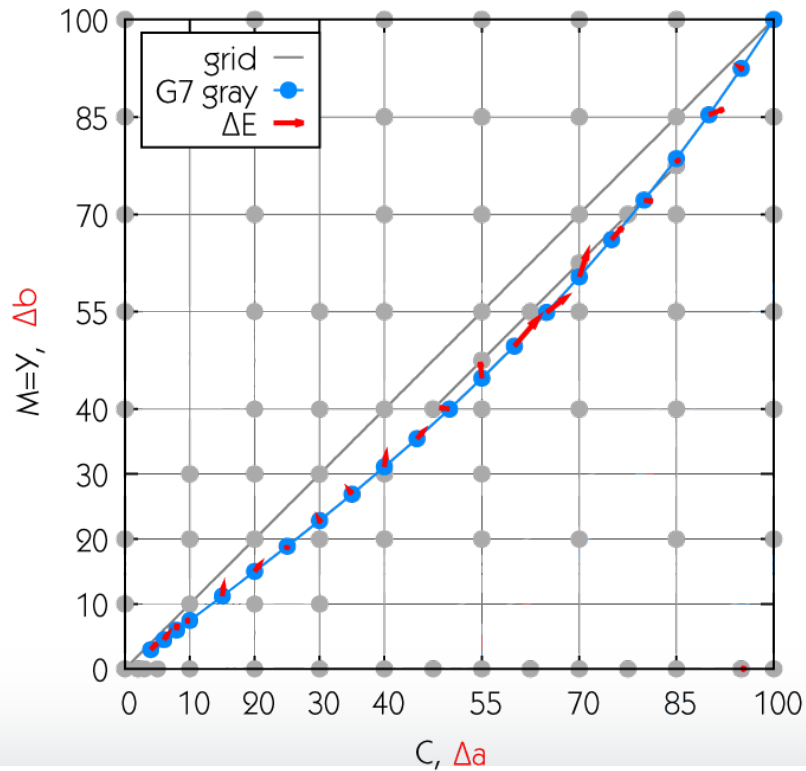
# FOGRA Multicolor Event 2019: compared to 2018

## Fogra B1 prediction error and printing variation in CMY gray balance

Plot with M=Y versus C,  $\Delta\text{Lab}$  (scaled by 4)

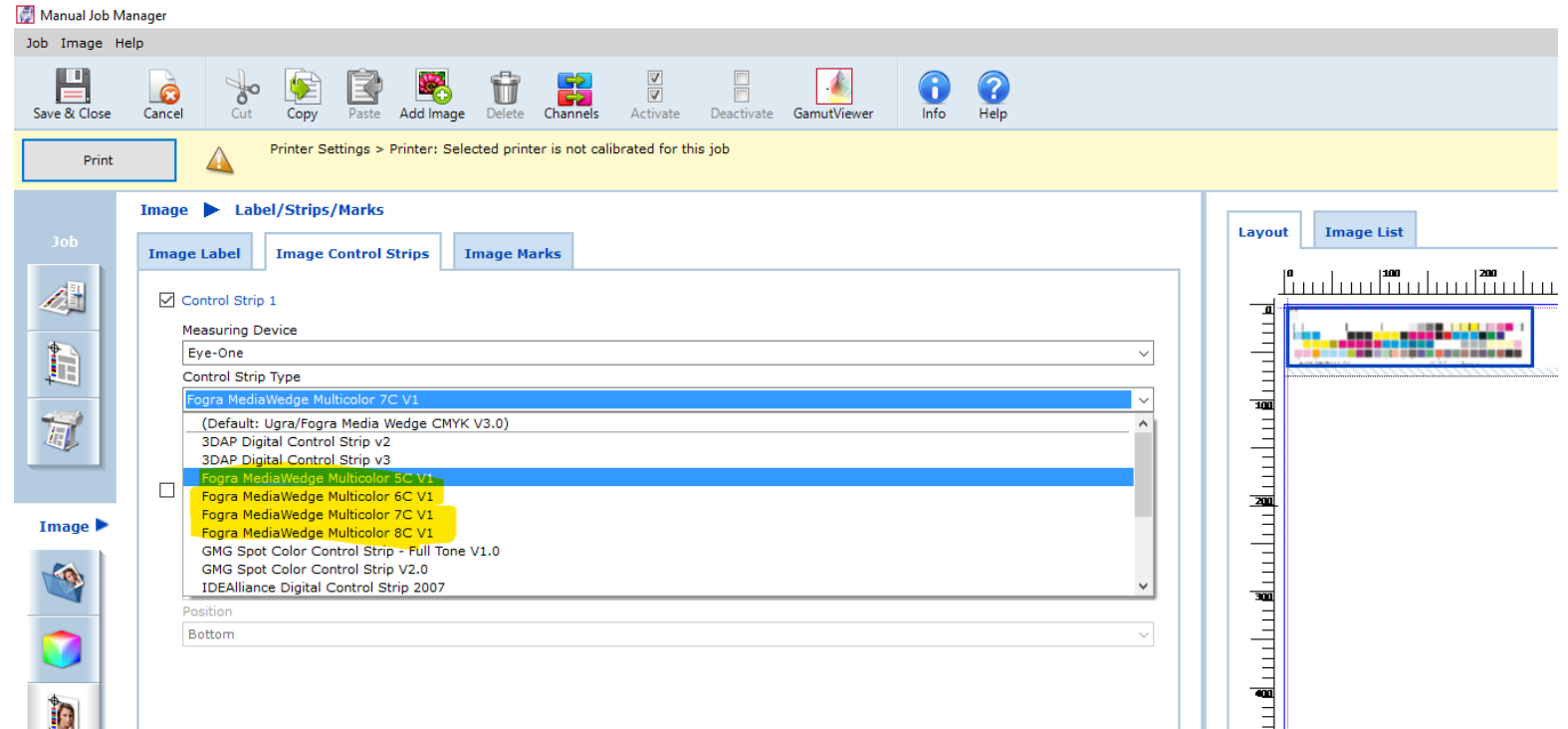
ECG v4 grid: 0, 10, 20, 30, 40, 55, 70, 85, 100 + half-grid gray steps at 47.5, 62.5, 77.5

G7 gray patches are not on the grid. If the model is made exact on the grid, it has errors of up to  $2 \Delta E_{00}$  for G7 patches.



# Fogra MediaWedge Multicolor 5C-8C

- ▶ Can be printed with a job
- ▶ Automatic evaluation coming soon



# Use Cases 6 B2 & 8 B3: Comments

- ▶ In our submission for B2, Pantone Reflex Blue is a completely new characterization
- ▶ Therefore it is unrelated to the CMYKOGV print and its printing characteristics
- ▶ When comparing B3 relative to B2, results are good
- ▶ Our physical modelling of the colorization change yields realistic results