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BLUEPRINT COLOR MAP FOR RELIABILITY

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Blueprint color map for reliability

Abstract

This invention is for LFP Design Page Wide XL 5000/8000 Blueprint which is a Page Wide XL SKU designed for blueprint peak users. Typically blueprint plots are printed with cyan and magenta, but additionally Page Wide includes black to allow blueprint customers print in black and white as well. The most intensive blueprint users print in “digital blue” (cyan and magenta) and hardly ever in black and white. This very low black usage could cause reliability problems in black ink channel.

For that case those users hardly ever use black to avoid reliability problems is very recommended exercises black nozzles. The new idea is adding black dots in blueprints to increases black nozzles usage preventing reliability issues. This new way to combine inks to print in blue, provide higher optical density and increases nozzle robustness against reliability issues.

Problems Solved

Page Wide Blueprint SKUs peak users are more prone to see reliability issues on black nozzles than the KCMY color users.

Printing digital blueprints only use cyan and magenta nozzles. The very low usage of black nozzles is causing reliability problems. To prevent reliability issues is better to exercise nozzles from time to time.

For that reason, the new idea is a new color map for blueprints that uses black a part of cyan and magenta. Increasing the black nozzle usage through the new color map is helping to maintain the nozzle health. So, the new color map is more robust against reliability problems for those customers.



Figure 1 This is a plot from a customer that suffer this problem with black on the edges. The issue on the edges comes because they didn't use black nozzles in these areas at all.



Figure 2 This is another case, where the user was only print in “digital blue”. They never used black nozzles.

Description of the proposed idea

The invention consists in adding black drops in the color map. To get “digital blue” color we used cyan and magenta drops for printing. In average we used 70% of cyan and 30% of magenta. The solution that we develop is adding 5% of black and remove 5% of the cyan in the color map in average, the final balance of the inks is 65% cyan, 30% magenta and 5% of black.

We optimize the color resources to deliver the closest “digital blue” color of before. In addition, the optical density is a bit higher due to black ink added and is helping to deliver higher contrast with the background.

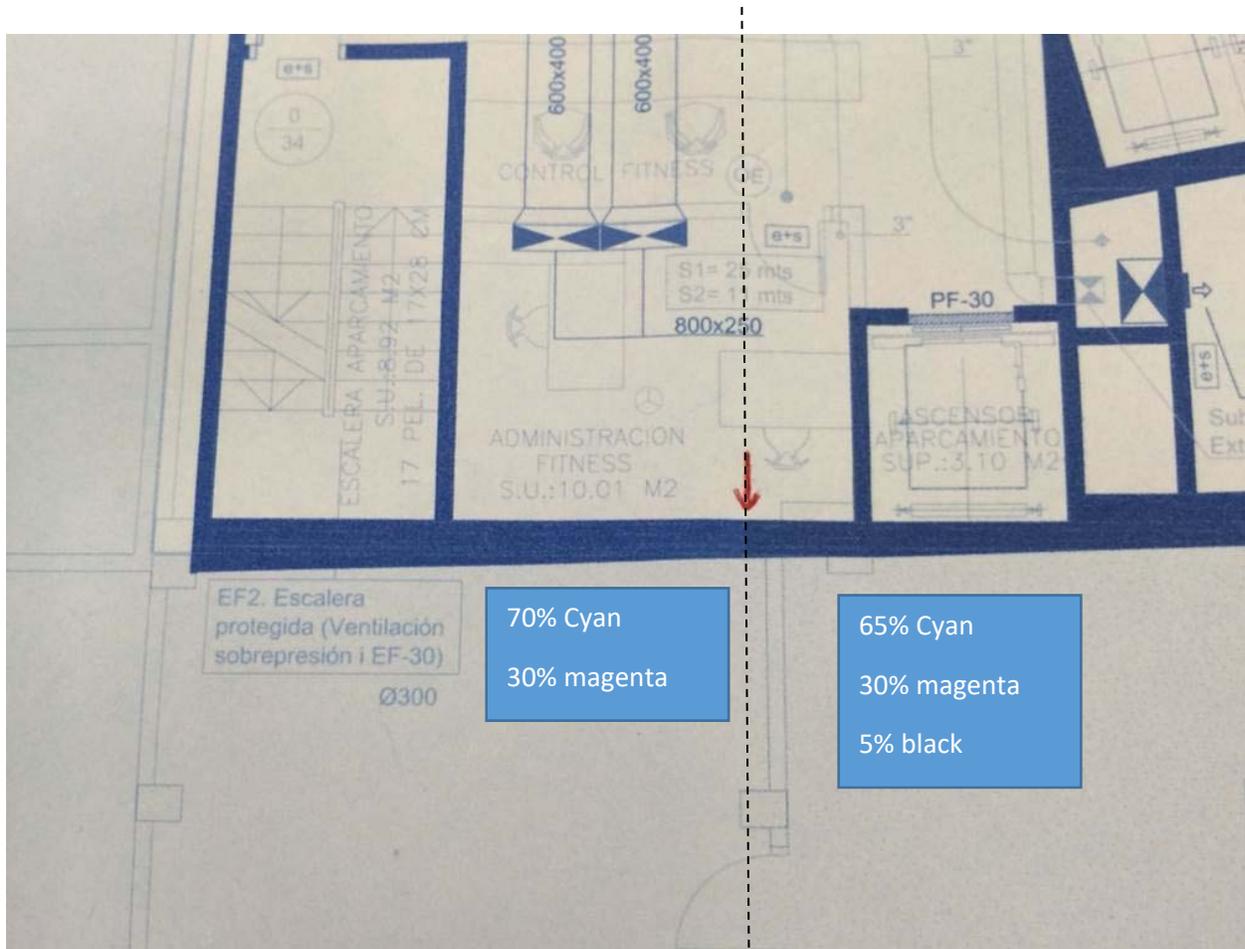


Figure 3 This is an example where we can see the difference in color. The new color map (on the right) delivers higher optical density and is more robust in terms of nozzle health.

Finally, these black dots added in the color map solved the problem in the field and customers they have not seen the problem anymore.

Advantages

The main advantages of the new blueprint color map are:

1. PH reliability, the new color map is more robust against reliability issues.
2. Customers have not seen the problem anymore.
3. Higher blue optical density, using black in the new color map delivers higher contrast between “digital blue” and background.

Disclosed by Jordi Bas, HP Inc.

