



**Mako Core™** accelerated StealthColor's<sup>®</sup> move to fully embrace PDF in their workflow, increasing functionality and enhancing performance in StealthColor's<sup>®</sup> totally unique and ground-breaking digital printing color management software.

## THE CHALLENGE

StealthColor's<sup>®</sup> ground-breaking color management software, Color Beyond Human<sup>®</sup>, designed for wide-format digital presses mainly for dye sublimation printing, has been helping printers print beautiful color successfully for years, but the StealthColor<sup>®</sup> development team knew a move from using TIFF to PDF files would enhance its customers' productivity and turn its great product into a fantastic product.

The development team comments: "Color Beyond Human<sup>®</sup> was already easy to use and fast, but we knew our customers would benefit greatly from a change from using TIFF files to PDF: TIFF files are large and slow down the raster image processor (RIP). We knew that PDF would solve this problem. The challenge for us was finding a PDF library that we were confident wouldn't slow down the RIP and affect our product negatively. We didn't want to take that risk."

## KEY INFORMATION

- StealthColor<sup>®</sup> – Color Beyond Human<sup>®</sup> allows operators with no color management skills to quickly produce profiles with a larger gamut, use less ink and with more accurate color output.
- The software is designed for use on wide-format digital presses using dye sublimation.
- Color Beyond Human<sup>®</sup> does not use ICC profiling: it produces over 40,000 data points used in profiling speed and color accuracy never before available in the current ICC profiling workflows.

Mike Ruff, StealthColor's® VP of sales and marketing explains further: "We have to work with other companies' RIPs and turn the color management off. It's important that our color management is faster and more accurate than the color management software already in the RIP because we're using our unique Color Management Module to manage that color – so we can't fail. When looking for a PDF library we had some important boxes to check in terms of functionality: as well as being fast and accurate, we wanted to include the dieline in the PDF, which wide-format printing separates. It was also important that our development team were comfortable using the solution we chose."

## THE SOLUTION

"We had been looking for a PDF engine for over six years. We looked at open-source libraries and found them inadequate and not well supported. We also looked at other PDF engines, but they were expensive," continues Mike.

StealthColor® then discovered Mako Core, the software development kit for print industry developers. It uses an intelligent Document Object Model to RIP several Page Description Language documents including PDF at speed and high quality.

"We spoke to a lot of people about Mako and every report was positive and convinced us we should investigate it further. It was clear when speaking with the Global Graphics Software team that they understood our unique needs and that gave us confidence to go ahead with the project."

*"Implementing Mako was effortless and Global Graphics responded to our questions and queries quickly."*

*Mike Ruff, VP Sales and Marketing, StealthColor®*

David Stevenson, product manager for Mako Core comments: "We were able to create some sample code very quickly for Jesse to get him started. His team embraced Mako and got to grips with the API incredibly quickly. The engagement with StealthColor® was a pleasure from the start."

*"We love the speed and accuracy and have had no functionality issues."*

*Mike Ruff, VP Sales and Marketing, StealthColor®*

With Mako, StealthColor® developers were able to solve a particular issue very quickly concerning PDFs with a vector contour intended to drive a cutting machine (a dieline). While they knew how to render the content without the dieline's spot color, it was important to retain the dieline as a vector for downstream processing. Using Mako, they were able to do reconstruct a PDF page with the color-corrected raster produced by StealthColor® and restore the saved vector dieline in exactly the right position.

*"StealthColor® with Mako produces flawless files for processing faster than we can print."*

*John Whitt, Chief Operating Officer, Just Vision It, a large-format digital dye-sublimation company in Lone Jack, Missouri, USA.*

## THE RESULT

Mike says: "Mako delivered what we wanted as a perfect workflow: it solved our problems and for us the greatest benefit is enhanced performance - Color Beyond Human® is now even faster and better. We've received great feedback from our customers!"



Joel Tentori, Production Manager, Just Vision It, with an 8ft x 12ft print on fabric processed through StealthColor®.

## JUST VISION IT

Just Vision It, a customer of StealthColor®, is a large-format, digital dye-sublimation company based in Missouri, USA. Chief operating officer, John Whitt, says: "Since integrating StealthColor® with Mako we are having great success. We print on over 15 different fabrics for signage and use multiple wide-format print devices. The time to characterize a machine with StealthColor® technology and get into production on a new characterization of a print device (ICC calls it a profile) is about 30 minutes."

John continues: "Building custom color characterization is fast and accurate because by using StealthColor's® color technology to produce a configuration it doesn't require an IT8 or TC1617 patch set - it just builds a configuration with over 40,000 data points. Mako handles the StealthColor® configuration beautifully. The output configuration is already set with correct individual ink limits and total ink limits. It is also automatically gray balanced; StealthColor® sets everything to maximize the gamut without over saturating the paper and match machine to machine with no problems."

## ABOUT STEALTHCOLOR®

StealthColor® is a color software provider based near Atlanta, Georgia, USA. The company includes some of the world's most knowledgeable experts in color management, fabric manufacturing/finishing and chemistry, and works with wide-format digital printers in the dye sublimation sector using highly optical brightener material.

The company's Color Beyond Human® software was developed using algorithms based on the original Kubelka-Munk theory,

a fundamental approach to modeling the appearance of paint films published in 1931. Many color scientists have adapted the theory for use in different applications, but the color science community was unable to produce consistent and accurate color control for use in digital color management until StealthColor® created Color Beyond Human®. Originally created for those producing fabric color recipes requiring color to be produced under 1 ΔE in minutes rather than hours or days, the software is now also available for digital inkjet printing applications.



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