

# Introduction

By Professor Robert Chung

## Concepts and goals

*Test Targets 3.0* is an RIT School of Print Media publication. It is a collection of test targets and their applications in color matching, color image reproduction, and process control in a color-managed print production environment. *Test Targets 3.0* serves as a test bed for teaching and learning digital imaging technologies in the course, Test Targets for Graphic Arts Imaging, that Franz Sigg and I co-teach. It provides us with a platform to experiment and to realize new digital imaging paradigms. Contents, design, and pre-publishing of this publication were carried out as a group project in the class with print production support from RIT Printing Applications Laboratory.

We published *Test Targets 2.0* in 2002 with the use of the Indigo UltraStream 2000 digital press at RIT. *Test Targets 3.0* furthered our methodologies for process capability studies and extended the scope in ICC-based color management practices. Images in *Test Targets 3.0* were color managed in Photoshop 7 using Macintosh G4 computers. Contents were paginated in Quark 5, imposed in Preps, and plated by Creo CTP using Harlequin RIP and KPG plates. The document was printed on 80 lb. IP Velocity #3 coated paper using Heidelberg M-1000B web offset press. Four press runs were scheduled: the first for press calibration and profiling, the second and third for color management testing without text and pagination, and the fourth for the publication.

## In this issue

*Test Targets 3.0* focuses on the integration and analysis of a number of input devices, color image renderings with the use of a robust CTP system and a full-fledged web offset press. The first section is a collection of test forms. Some test forms, e.g., IT8.7/3 basic data set and profiling targets, were used as building blocks in this publication; some test forms were included for exploratory purposes. The second section is a compilation of color management practices by the class. Starting from the input side, Michael Meyerhofer studied the effect of lighting on the image rendering aspect of digital camera profiles.

Using Photoshop API, Gregory Firestone evaluated the colorimetric accuracy of digital camera profiles. Nilay Patel demonstrated how digital camera profiles enable tone and color rendering of digital cameras from consumer-level to professional-level.

On the output side, Vikaas Gupta compared color matching performance and Ryan Testa evaluated color image rendering of different profiling software packages. Tiago Costa examined the effect of AM and FM screening and the use of transfer curves for tonal rendering reconciliation. Because of differences in bit depths and addressability of many digital printers, Franz Sigg explained the use of the contrast resolution target to evaluate the tonal rendering ability of these output devices. Chao-yi Hsu examined color matching performance between a generic SWOP profile and a custom profile from the Heidelberg M-1000B calibrated press run.

Taking color reproduction as a system, Hemachand Kolli followed the work of Pearson, Pobboravsky, and Yule (ISCC, 1971) to compare the relationship between the source image and its ICC-based reproduction by means of colorimetry. Gregory Firestone described the use of color management from cover design to print production using a Heidelberg Speedmaster sheetfed press. I documented the importance of press run analysis, press profiling, and process control in a color-managed workflow.

## In closing

*Test Targets 3.0* represents a voice from design, digital media, and print production communities. It reminds us of the importance of standard operating procedures and densitometry in press calibration. It speaks of the importance of graphic arts technology standards and colorimetry in device profiling. The voice tells many success stories how color-managed imaging workflows enable both design and print production. We also learned that results from our experiments may not necessarily be what we planned. Positioned in the middle of all these excitements, *Test Targets 3.0* helps amplify these messages.