

## **5.6 Paper VI**

*“Compensation by Black - a New separation?”*

### **5.6.1 Introduction**

There are basically two types of separation: UCR and GCR. These separations can reduce or remove a gray component made up of yellow, magenta and cyan inks and replace it with a suitable amount of black ink. These separations are still a major cause of confusion, as very few users actually know what these separations mean and how the settings affect the final result.

### **5.6.2 Objective**

The aim of this paper was to examine the differences between UCR (Under Color Removal) and GCR (Gray Component Replacement).

### **5.6.3 Method**

This study explains the differences between GCR (Gray Component Replacement) and UCR (Under Color Removal) by testing these separation functions in three applications: Adobe Photoshop CS (an image editing application), Gretag Mactheth's Profile Maker 5.0 (profile maker), and Heidelberg's Print Open 4.0.5 (profile maker). The literature relating to the different types of separation was reviewed. An Internet search was also made to check what a prepress employee would find if he or she was to search for a definition of one of these types of separation.

### **5.6.4 Background - UCR and GCR**

Already in an article in the RIT T&E Center Bulletin (September-October 1984, vol.12, no 6) written by Franz Sigg and Patty Cost, it is possible to read: “The term UCR would therefore no longer be used, because its function would be fully covered by GCR”. Twenty-two years have passed since this article was written by Franz Sigg and Patty Cost, and nothing has happened since then. The situation has not been made easier for the users, and no attempt has been made to increase their understanding. Why not?

The original meaning of UCR was lost about 25 years ago when the third generation of electronic scanners targeted the lithographic printing industry. The first theoretical principles of UCR were developed by Yule, and his theories were first applied to

---