

1st Comprehensive Study of Display Color in Process Control

Center for Operator Performance looking beyond just grey backgrounds

Dayton Ohio, April 7, 2015 – Dr. Dirk Beer and Dr. Harvey Smallman of Pacific Science & Engineering are undertaking the first comprehensive, controlled study of display color in process industries. The use of color affects an operators' ability to successfully perform tasks related to warning, identification, and scene segregation, but color coding resources are limited. Research exists on determinants of text legibility and color discriminability, with color models and contrast calculations that can be used to ensure good visibility. However, there is little objective data on performance impact and interactions between glare, illumination level, background color, and palette color contrast polarity (dark on light vs. light on dark).

A set of experiments will be designed and conducted, the results of which can be used to make evidence-based recommendations for background and palette colors over a wide range of process control displays and viewing conditions. The deliverable of the project will be software tools that will help designers develop more effective HMI displays utilizing optimal background colors based on current viewing conditions, and will allow designers or engineers to validate new colors by checking for good visibility and discriminability of the color.

The Center for Operator Performance is a collaboration of operating companies and DCS suppliers that researches operator performance issues. For more information on the research or how to become involved in the Center, we invite you to attend our June 2015 meeting in Dayton, Ohio.

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