ABSTRACT – 30 minute presentation
Technical Session "508: ISA Alarm Management for Operators"
Highlights of the 2015 ISA water/wastewater and automatic controls symposium" at WEFTEC 2015 – Chicago, Illinois

The Art of the HMI is Changing

Migrating an Existing HMI Application for Situational Awareness

Kevin Patel, P.E.[1]*

[1]Signature Automation, 14679 Midway Road, Suite 205, Addison, TX 75001
(*Email: knpatel@sig-auto.com and Phone: 469-619-1241)

KEYWORDS

Managing Change, HMI, Human Factors Engineering, Situational Awareness, Alarm Management

ABSTRACT

The design, implementation and maintenance of the human-machine interface (HMI) is undergoing a major transformation for operators. ISA is about to release a new standard for the industry in ANSI/*ISA-101.01, Human Machine Interfaces for Process Automation Systems*, which defines a new HMI lifecycle and describes some of the benefits of human factors engineering and ergonomics as it pertains to the HMI.

The concepts presented in the standard are of a general nature, but as the industry has shown with numerous examples of alarm recognition and operational response to abnormal situations, the push for situational awareness has grown tremendously. Human factors engineering takes into account operator sensory limits, graphic color and animation, control room design, and how information is presented to the operator. When taking into account situational awareness as the HMI is being designed along with alarm management techniques, operator response time to abnormal conditions in the facility can be greatly reduced.. By reducing response times to abnormal situations, can lead to significant savings in term of preventative maintenance, environmental impact, reduced operator stress, and reducing the number of safety related incidents.

This presentation will focus on the ISA 101 standards and how situational awareness was implemented for an existing SCADA HMI. During the implementation, we will discuss the reasons for change, how the change was managed, and the process that was used for the conversion.

ABOUT THE AUTHOR

Kevin Patel, P.E. *is a Texas-Registered Professional Engineer and Vice President of Signature Automation. Mr. Patel received a Bachelor of Science in Computer Engineering from Texas A&M University and an MBA from the University of Texas at Dallas. He has more than 14 years experience in automation planning, design, programming and commissioning of water treatment, water distribution, pumping stations, and wastewater treatment facilities. He is a current member of ISA101, ISA105, ISA106, and ISA18 related to HMI, testing, automation, and alarming. Contact: knpatel@sig-auto.com.*