Process Industries are hazardous in nature. They require good instrumentation support for control and monitoring various parameters like pressure, flow, level, temperature, speed, vibration, displacement, etc. Sensors are to be installed at remote fields and measured variables are brought to the operator station for further processing. Initially separate TVs are installed at operator station to view the remote field images (Photographs) taken through analog (conventional) cameras. By viewing both the computer monitor and separate TVs, control signals are generated for abnormalities in the plant by human intervention, which may lead to errors due to human fatigue, sleeplessness in the night, etc. In the present days the signals from sensors are compared and control action is initiated. This also is not full proof method due to errors in sensors. Now due to the invent of digital cameras, analog cameras are replaced by digital cameras at remote fields and the digital signals of real time field images can be directly integrated in to the computer. With the help of emerging DIP(Digital Image Processing)technology these digital images are compared with already stored standard images of remote field and control action is initiated by computer automatically for abnormalities for parameters like level, flow, speed etc by matching the images. Reliability is very high.
Concept of Integrating Real Time Field Images in Computer in Process Industries by Removing Separate TVs compared to previous methods. This system gives real time display of various field images super imposing on the animated mimic diagrams in computer monitor, which is not possible in the old environment with analog sensors. MATLAB is extensively used. JPEG image files are used.

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Index Terms

Computer Science

Image Processing
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