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## **PART I:**

### **The History and Current Status of the Industrial HMI**

We begin with the origin and evolution of the industrial HMI. The positive and negative issues posed by the introduction of the Distributed Control System (DCS) are covered. The current status of industrial HMIs is characterized, along with clear justification for significant improvement.

## **PART II:**

### **Fundamentals of HMI Design and Best Practices**

The concepts and practices of proper HMI design are examined in detail. Good and bad practices are illustrated. Assessment methods for existing systems are provided. Methods for providing proper process overview, graphic hierarchy, and progressive exposure of detail are introduced, along with detailed design principles and examples. Proper physical console layout and other factors are covered in detail.

## **PART III:**

### **Design and Implementation of a High Performance HMI**

A straightforward methodology is provided for the development, implementation, and maintenance of a High Performance HMI. The methodology is useful for either new applications or for the improvement of existing HMIs.

## **PART IV:**

### **Control Rooms, Abnormal Situation Management, and the Future of the Industrial HMI**

The effect of the control room environment on operator effectiveness is detailed. Proper and improper practices and design considerations are covered. The principles of proper Abnormal Situation Management and human performance are explained. The future direction and capabilities of the industrial HMI are predicted.



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