

## Session - Design and Control I

**Title:** User Centered Design Approach to an Integrated Dynamic Positioning System

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### Abstract

Operating Dynamic Positioning (DP) Systems can be a challenge for operators especially when failures occur. Usability is a vital aspect of the system, especially in emergency situations. This paper presents a new development which emphasizes on the usability of a DP system. Advancements in modern User Interface design and technology have been incorporated in this effort to integrate full DP functionality into automation and navigation systems including radar, ECDIS, alarm, vessel and power management systems. With relatively few detailed requirements related to human factors from classification societies and owners, domain expertise and operator experiences have been heavily relied upon in the development.

This paper describes the development process from the conceptual stage to integration, through the design and development cycles, including several rounds of user feedback sessions. The concepts of usability and Situation Awareness (SA) are discussed and we illustrate with examples how human factors were translated into system requirements which ultimately affected the design. We will present results from the user feedback sessions, describe some of the challenges we met during the development and also describe the final software and hardware architectures. Design and implementation details related to touch screen interface will also be discussed.

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