

APPLYING SITUATED COGNITIVE ENGINEERING FOR PLATFORM AUTOMATION IN THE 21st CENTURY

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ABSTRACT

Technical crews on board of modern naval vessels need excellent support to maximize performance under a large variety of circumstances. The drive to save costs and reduce manning even increases the need for such support systems. Future Dutch naval ships include ship control centers which are manned depending on the status of ship and system. This new way of working not only sets new requirements for the technical system, but it also sets new requirements for the human operations and the corresponding operator capacities. This human aspect has been insufficiently addressed during all development and implementation phases of our current ships. 'Old' design and ship building methods, including the way industrial partners are involved, can't answer these questions completely. This paper presents a new cognitive engineering method, consisting of three important parts. The first part is the analysis of operational demands, human factor knowledge and envisioned technology. In the second part requirements are specified for the three mentioned areas of the first stage, using scenarios, claims and core functions. The third part consists of reviewing and testing to refine the requirements in iterative loops. The method has been applied and shows how it can improve ship design for two future Dutch ships.