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Symbology Optimization and Display Assessment Studies

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The results of two research studies are presented. The first study hypothesizes that current shipboard display limited coding dimensions do not provide adequate support for information required in many navy mission environments. Further, human factors research on the use of compound codes and the theory of selective attention suggest that compound codes could be used to facilitate complex tactical display information transfer and reduce the effects of screen clutter. A symbol coding scheme, called Variable Coded Symbology (VCS) was developed and tested using NATO STANAG 4420 color-filled symbols and Naval Tactical Data System (NTDS) symbols with various coding dimensions. Usability test results indicated a strong preference for the use of VCS, a taxonomy for information classification, and a substantial perceived benefit for tactical display information extraction tasks. The second study investigated the use of two types of de-clutter tools to aid in information extraction from tactical displays with high track densities. Results indicated the most favorable tool for either NATO or NTDS symbol formats.

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