

Navy Multiband Terminal

PROGRAM DESCRIPTION

The Navy Multiband Terminal (NMT) is the U.S. Navy's next generation system for providing secure, protected, survivable, Advanced Extremely High Frequency (AEHF) and wideband satellite communications to Navy platforms such as ships, submarines, and shore stations worldwide.

HSI CHALLENGE

The NMT operator interface needs to provide superior situation awareness for hardware and communications status and effective operator interaction. The HSI challenge was to improve usability, operator performance, and minimize the risk of error.



APPROACH

PSE performed several HSI analyses on the NMT user interface, including a heuristic evaluation, a cognitive task analysis, and a usability study with trained operators. The analyses were used to identify problematic interface designs and quantify observed user errors resulting from those designs.

SOLUTION

PSE identified more than 100 interface design issues in areas including alert presentation, information availability, representation effectiveness, situation awareness, and operator workload. PSE prioritized each issue based on its likelihood of occurrence and severity of impact on operator performance. We then formulated task-centered redesign recommendations to address the highest priority issues, in consultation with program experts.

BENEFITS

A number of key recommendations were adopted by the program for resolution in near-term software builds. The changes will enhance operator situation awareness and workflow while also reducing the potential for errors.

This effort was performed during the Engineering & Manufacturing Development phase and sponsored by the Program Executive Office for Command, Control, Communications, Computers, and Intelligence (PEO C4I), Satellite Communications Program Office (PMW 170). Results from this systems engineering effort supported U.S. Navy operational forces.