

Janus: Composable Displays for Supervision

PROGRAM DESCRIPTION

Janus is a suite of composable modules that display system summary information on the periphery of users' displays – one module for each system. Amplifying information provides context and trends. Janus supports rapid scanning and situation assessments to help supervisors identify issues and determine where to focus their attention. Janus uses a standardized engineering process to develop new modules, and Janus is equally effective for combat and IT.

OPERATIONAL GAP

Primary operator displays are too complex to support rapid scanning and assessment. System alerts are often low level and piecemeal, and dashboards are often too big or do not provide the information users actually need. Janus offers a systematic approach for identifying key situation indicators and developing effective rapid-assessment displays.

VALUE TO THE WARFIGHTER

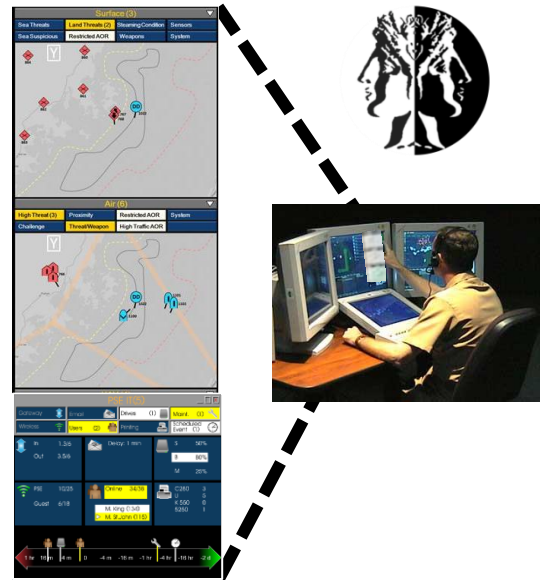
Janus improves multi-tasking supervision, rapid situation assessment, interruption recovery, and collaboration. Janus composability and empirical validation lowers programmatic risk and requires no change to primary systems.

APPROACH

Janus's design and functionality is based on cognitive science and human factors theories of supervision and multitasking. Design work begins by establishing user information requirements and then developing methods to pull relevant data from the primary system. Drill down provides access to primary system displays.

ACCOMPLISHMENTS

1) Empirical and computer modeling comparisons indicate a 72% reduction in assessment time for supervisors using Janus modules versus typical primary task displays, from approximately 16 seconds to 4 seconds. Faster assessments translate to more time to perform other activities while maintaining whole-system situation awareness. 2) Aegis combat system modules have been implemented, in partnership with Lockheed-Martin, in a high fidelity Aegis simulator. They have been received enthusiastically by Naval officers. 3) Modules for network operations monitoring are currently being designed and implemented for PMW Tactical Switching for use in Naval Computer and Telecommunications Area Master Stations.



This effort is a phase II Small Business Innovative Research award sponsored by the Space and Naval Warfare Systems Command, Human-System Integration component.