

Offer Number: 14DOD-0038

Paper Title: Distance Communication Maintenance System (DCoMS) for remote maintenance and troubleshooting support

Author:

Chad Pasho

Mechanical Solutions Inc.

New Jersey

(973)326 9920

chad.pasho@mechsol.com

Abstract: The Distance Communication Maintenance System (DCoMS) is an audio, visual, and data communications platform developed specifically for remote maintenance and troubleshooting support within SPAWAR-specified very low bandwidth and high latency requirements. The Phase II SBIR project sponsor is PEO Carriers. DCoMS enables shore-site subject matter experts (SMEs) and engineers to actively support ship-based maintenance related activities. DCoMS benefits include: 1) increased mission readiness with minimal lost time waiting for SMEs and a lower threshold for SME engagement, 2) increased utilization of SMEs and 3) decreased costs and logistics burden associated with SME travel. As one example, the Phase I Option SBIR TPOC is a shore-site SME who traveled 3 million miles via commercial aircraft (i.e., not including transportation to the ship) over an 8 year period.

The portable DCoMS shipboard kit consists of a person-worn point-of-view (POV) camera, an inspection camera, an area camera, noise cancellation headphones and microphone, a laptop, and a portable machinery space server. The machinery space server connects to the ship's network, and to the shore-site SME via the Navy's Automated Digital Network System (ADNS). The shore-site SME is then able to access the interface via a secure webpage. This interface consists of video and images with SME selectable resolution, audio, and chat capability. A companion Historical Archive Library (HAL) module is a searchable and retrievable lessons learned maintenance activity library so lessons learned can be leveraged across the fleet.

Information Assurance (IA) requirements are being addressed for both a demonstration test aboard the Self Defense Test Ship (SDTS) at the Port Hueneme Division (PHD) of the Ventura Naval base in 2015 and for additional carrier based testing with SPAWAR involvement in latter 2015. The Year 1 demonstration test takes place in November 2014. The developer, Mechanical Solutions, Inc. (MSI), is a company that specializes in troubleshooting machinery, and has previous remote communication experience as part of its global troubleshooting practice. MSI plans to utilize the portable system beginning in early 2015 to change the commercial maintenance support and troubleshooting paradigm as well.