



**Klein Associates, Inc.**

L-3 Klein continues to work on the insertion of its advanced side scan sonar technologies into an ever increasing family of high performance sonar products, the most recent being the System 5900 Multi Beam Side Scan with Swath Bathymetry. The System 5900 has been developed for critical Port and Harbor Security applications as well as MCM and route clearance survey applications. This sonar uses advanced Interferometric signal processing to produce simultaneous estimates of the seabed topography and Side Scan data. The L-3 Klein System 5900 employs a higher number of acoustic channels and a higher frequency to produce superior images and along-track resolution. This is extremely advantageous when performing critical missions involving littoral waters (Ports & Harbors) and Rapid Area Assessments. In addition, due to shallow water requiring a short scope of tow cable, L-3 Klein's proprietary beam steering and image stabilization has been introduced to overcome angular perturbations and artifacts caused by motion.

The System 5900 is designed for use on unmanned Autonomous Surface Vessels and incorporates capabilities to allow remote control and real time data collection and transmission of image data to a land based operation center for evaluation and target identification. This basically means that an MCM mission can be accomplished without placing a man in a mine field. L-3 Klein has demonstrated that the images of the sea bed within a Port or Harbor can be transmitted over a wireless network to a Harbor or Port Operations and Security Center for assessment and action.

On 2 February 2010, the full capability of the new L-3 Klein System 5900 was successfully demonstrated to the US Office of Naval Research in the Portsmouth, New Hampshire harbor. The L-3 Klein System 5900 demonstrated that if an explosive device, whether it was a mine or an UIED (Underwater Improvised Explosive Device) were deployed in a Port or Harbor, it can be identified and the data is automatically transported, via a wireless RF link to the local Port Security Office. L-3 Klein teamed with Fidelity Comtech, Inc. a commercial-off-the-shelf (COTS) supplier of wireless local area network (WLAN) technology using their Phocus™ steerable phased array system to transmit the Side Scan Sonar imaging data from the moving vessel to the land based office. L-3 Klein then coupled this Side Scan technology with its commercially available HarborGuard® System which provides detection and tracking of all surface vessels and floating objects in the area of interest. The HarborGuard® system with its Small Target Detection Radar, combined with the remotely operated System 5900 sonar will provide detection and classification of surface and submerged mine or UIED objects and the systems command and control facilities will provide alerts to nearby vessel and direct any rapid response teams.

L-3 Klein is pleased to work with the US Office of Naval Research on projects such as this. This type of demonstration program allows L-3 Klein to validate its position in the market as the leading innovator in the Side Scan Sonar technology.

For more information please check out our web sites at [www.L-3klein.com](http://www.L-3klein.com) and [www.fidelity-comtech.com](http://www.fidelity-comtech.com).

**“THE DIFFERENCE IS IN THE IMAGE!!”**