

ST ELECT AT IMDEX UDT ASIA 2003

Singapore – 10 November, 2003 – Singapore Technologies Electronics (ST Elect) will showcase a wide range of its leading edge systems and products from communications to naval consoles, as well as training and simulation solutions tailored for varied Naval applications.

Navigation Safety & Tactical Performance Evaluation & Analysis

- **Navigation Scenario Evaluation & Analysis System (NavSEAS)**

NavSEAS, for use in the evaluation and analysis of a vessel's post-mission navigation scenario allows for the re-creation of a Vessel's past Navigation Scenario to facilitate the conduct of detailed evaluation and analysis of any past incidents and associated crew-responses during a specific trip or mission. Enhancing navigation safety, it allows Vessel Commanders to understand why and how incidents occur as well as crew responses. They review operational procedures and help prevent similar future recurrences.

NavSEAS allows for user-specified, high-resolution time/frame-based digital recording and playback of a vessel's navigation scenario and provides high-endurance long duration recording, ensuring that most critical navigation scenario information are captured properly throughout its trip or mission time. Its modular system architecture allows for flexible options.

- **Tactical Scenario Evaluation & Analysis System (TactSEAS)**

TactSEAS, for use in the evaluation and analysis of a vessel/fleet's post-mission tactical scenario, allows for past Mission Scenarios to be re-created for detailed evaluation and analysis of all the operational parameters and associated crew-responses. Vessel/Fleet Commanders can better understand of all relevant Mission Scenario parameters and information for debrief purposes or for operational procedure/doctrine reviews for a combat vessel or a fleet in their missions.

TactSEAS allows for user-specified high-resolution time/frame-based digital recording and playback of a Vessel's Mission Scenario. Its recording and play-back capabilities are capable of capturing the mission's tactical information via the vessel's data network interfaces – which normally serves as the network backbone for the operating consoles and weapon systems to share tactical data and to function in an integrated manner when supporting a mission.

TactSEAS' modular system architecture allows for flexibility Including Tactical-Data from the vessel's network backbone-interfaces which include Crew-Audio (voice communication, single/multiple channel).

- **Integrated NavSEAS & TactSEAS**

TactSEAS can be used independently or as an extension to the basic NavSEAS functionality. Both solutions are flexible enough to be deployed in an integrated or as standalone systems.

When integrated, the functionalities help re-create a tightly correlated Navigation and Mission scenario level information – data source, enabling Vessel/Fleet Commander with a complete and integrated picture of the combined competency levels of the navigation and combat crews in the overall handling of the vessel's mission control. This will be especially useful during live-firing exercises as information captured can help in producing improvement measures for future exercises and minimise re-runs and wastage of expensive support resources (eg, logistic support, manpower, time and cost) during such live exercises.

The solution also offers great flexibility for design and customisation to suit specific vessel needs contributing to enhanced Tactical Performance and Navigation Safety of a Vessel and Crew Members.

STANDARD OPERATING COMMON CONSOLE

- **COBALT Series - Standard Operating Common Console**

The COBALT Series is a generic intelligent Standard Operating Common Console (SOCC) that provides user interfaces for weapon and sensor systems, command and control and other mission critical systems, incorporating the latest high-resolution flat panel displays with optional touch screens for specific needs and is ideally suited to all naval applications from radar to ship control and monitoring data.

The console which is light, modular and configurable to either single or dual head systems is designed to operate in harsh environments experienced on naval and land platforms, the system runs on the Combat Application Software and performs key functions like command and control, weapon control, equipment control, situation awareness and monitoring control. The console is based on the Standard Message Exchange Protocol (SMEP) which projects data from multi-sensor systems simultaneously. OSI Communications Layers, its operating system, enables these various data to be displayed on the flat panel screens at any one time enabling highly accurate presentation of various sources of data simultaneously. Consoles can operate independent of each other, allowing for redundancies and reducing the user count.

COMMUNICATIONS SOLUTIONS

- **SuperneT ST2300/ST2600**

SuperneT ST2300/ST2600 Shipboard Integrated Communication System (SICS) meets the mission-critical needs of today's navies. The state-of-the-art SICS integrates a variety of communication system such as radio, public address/alarm, PABX, telephone recorder, data terminals and SATCOMS to provide voice and data services from fixed and wireless intelligent user terminals. The compact and lightweight wireless terminals allow operators the convenience to roam freely while in constant communications. The feature-rich system is not only designed for ease of operation, but also ensures high survivability and availability due to its distributed and fault tolerant architecture.

The modular and expandable system can be easily configured or customised to offer the most cost-effective solution to fulfill the communication needs of small, medium and large naval platforms.

- **Pop-Up Ambient Noise Data Acquisition System (PANDA)**

The increasing need for shallow water environmental monitoring requires extensive data collection in areas often encumbered with heavy vessel traffic and other conflicting activities in the area. Together with the National University of Singapore, CET has designed and built a new Pop-Up Ambient Noise Data Acquisition System (PANDA).

PANDA has extra electronics that allows time-release or acoustic-commanded release. Boasting increased sampling rate, it can also acquire data for up to a couple of months, depending on system set-up.

PANDA has been deployed in various local experiments and is proving itself to be an inexpensive, light-weight, robust, self-contained, highly integrated yet reconfigurable bottom-mounted data acquisition platform that is suitable for rapid deployment in shallow waters. It is also an ecologically friendly and unobtrusive system that has no surface expression and leaves no residue on the sea-bed after recovery. PANDA can be deployed and recovered easily by only two persons from a small vessel without using any specialised equipment.

- **Ruggedised Personal Digital Assistant (R-PDA)**

The new Ruggedised PDA (R-PDA) successfully combines the ruggedisation capabilities and expertise in mobile information communications appliances. This is an effective tool for mobile workers to stay connected to real-time information and networks for communication, navigation, reporting and database retrieval purposes.

Being weather-proof, water-proof and shock-proof, the R-PDA is also suitable for use by military and paramilitary personnel as it is designed to withstand harsh external environments. Its transfective colour and touch-screen LCD panel that allows for easy and comfortable reading even under the glaring sun.

- **DiTR1000B – Digital Intra Team Radio**

DiTR1000B is a unique radio designed for the complex tactical communication needs of critical operations of army, police, search & rescue team, fire bureau or sea patrol operations. The RiTR1000B is a proven and field-tested, highly reliable, light-weight, compact and robust digital voice radio designed to suit unique operation needs such as advanced features like - full duplex communication in a three-party conferencing and dual net monitoring.

ELECTRO-OPTIC SOLUTIONS

- **Automatic Detection Infra-Red System (ADIR)**

ADIR is an Uncooled Infrared Thermal Imaging device that is used for various surveillance and detection applications. It is an automatic detection system that allows the system to monitor multiple target settings and provide users with 24-hours site monitoring. ADIR is the state-of-the-art passive IR system that is used for counter-terrorist applications as well as a monitoring system for various key installations. The system also provides users with a panoramic warning and imaging capability that aids in monitoring and observation activities.

- **Video Surveillance System (VSS)**

VSS is a long-range Day Camera that is an ideal solution for paramilitary applications observation, identification and recording of suspicious activity. The system is mobile and portable with simple add-on features for easy maintenance. Its portable kit enables high-quality long distance surveillance – day or night. The VSS has a full remote control capability and a combination of colour CCD and ICCD, which can be simply operated by a turn of a knob. The internal optical arrangement enables three step zoom positions with maximum focal length of 2000mm. VSS also has an add-on illuminator for enhanced performance when used in total darkness.

- **E-Fence System**

The E-Fence system comprises of Taut wire system that makes use of Strain gauge sensors to provide superb noise filtering capabilities. This results in low false alarms while

maintaining a high level of security. The Microphonic Cable sensor system is a patent cable design which employs permanent magnets and a very low impedance signal cable to generate its own signal when the cable is disturbed. Its highly sensitive signal cable will be able to clearly distinguish between unwanted noises, caused by natural effects like small animals and wind, from infiltration signals like fence climbing and cutting. Users enjoy low maintenance and operational costs and it can be used with existing fence. Applications includes securing Air Bases, vehicle bases and military camps as well as protection of Strategic Compounds and key installations like Power Stations and Oil Refinery.

- **Marlin Thermal Imaging Camera**

Marlin TI Camera is an uncooled thermal imaging camera. Marlin TI Camera's TI engine can be implemented into a variety of applications ranging from Night surveillance applications to hand held systems. It is a lightweight, commercial TI Camera that can be easily integrated with any commercial surveillance / Motion detection software to provide a complete solution to the customer.

- **Helmet Mounted Display (HMD)**

Helmet Mounted Display is a light weight thermal imaging camera based on a state-of-the-art uncooled Microbolometer 8-12µm I.R detector. It is a lightweight head mounted / helmet mounted configuration, coupled to an integral miniature, high resolution LCD display. HMUV battery operated and designed for a completely hands-free operation, the HMD enables the user to pipe any analog TI signals into the system and transmit it onto the LCD Display for Command and Control usage.

- **Discus M320 Camera**

Discus TI Camera is a generic uncooled thermal imaging camera aimed at targeting, surveillance, predictive maintenance, process, non-destructive testing and vehicle's markets. Its key selling points are low cost, no-frill features with customised software to meet client's needs. Discus TI Camera can also be applied to various commercial applications such as intrusion detection capabilities for private home owners, medical thermography for hospitals and heat conduction analysis for various product development.

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