



FOR IMMEDIATE RELEASE

ST TRAINING & SIMULATION AT ASIAN AEROSPACE 2004 **MAXIMISING REALISM IN LIVE TRAINING AT SEA**

Singapore – 18 February 2004 – ST Training & Simulation Pte Ltd (STTS), a subsidiary of Singapore Technologies Electronics Limited (ST Elect), has developed and implemented a system that enables forces at sea to literally “train as they will fight”. This system will also allow friendly or coalition forces of different nations that are geographically separated, to train seamlessly together in exercises.

In November 2003, during the IMDEX 2003 exhibition, this capability was demonstrated through the conduct of an exercise between the Republic of Singapore Navy and the United States Navy. The system virtually brought all forces together in a common virtual scenario in the South China Sea although ships from the two navies were geographically separated in Singapore and the US.

STTS has since extended this concept of live simulation to include training for aircraft, unmanned airborne vehicles, as well as armoured fighting vehicles. Live training may also be integrated with virtual and constructive simulators to provide a complete hierarchical system, to prepare line personnel from commanders to operators, for their roles in joint operations.

Highlights of STTS’ exhibits are:

a) Live and Networked Training

The key feature highlighted in STTS’ system is the ability to conduct live training at sea and coalition training networked through simulators that are geographically separated ashore. An integrated view of the progress of such an exercise will be displayed at the ST Engineering booth.

The integrated view comprises:

- Stealth view – a 3D perspective of the scenario.
- Tactical Situation Picture – a 2D plan view, providing a common representation of the tactical scenario.
- Live Video Feed – This is a replayed video feed of the exercise that was conducted at sea.

Interoperability between dissimilar types of simulators is achieved through the use of standardised protocols. Three dissimilar standards were used in the displayed system – an older Distributed Interactive Simulation (DIS) protocol used by the USN, and a more modern state-of-the-art High Level Architecture (HLA) used by the DMFS and FISTS. STTS' protocol engine provides a framework for converting and routing messages between the three systems, to ensure seamless interaction between the systems.

b) Fleet Instrumented Sea Training System (FISTS)

FISTS provides the means for naval forces to train with operational equipment in virtual environments – ie “training as you will fight!”, as training and operational equipment are one and the same.

c) Advanced Combat Emulator

ACE is new addition to STTS. The system provides cost-effective emulated simulation solutions for the training of operators in the handling of shipboard combat systems. For the exhibition, ACE will be configured to show the local operations plot of an RSN ASW patrol vessel, and a Harpoon SSM operator's console.

d) Distributed Mission Fighter Station

Developed as part of a larger mission training system, the DMFS exhibited is a single station from a multi-station networked simulator. DMFS provides military pilots with the means to train in the execution of a specific mission with multiple participants – e.g. an squadron. Use of the High Level Architecture allows interoperability with other like simulators to realise larger-scale multi-entity training.

e) Unmanned Airborne Vehicle Simulator

The UAV simulator can interoperate with other systems. The simulator trains UAV pilots as well as ground crews on the operation of the vehicle. Besides actual control of the vehicle, the system also trains operators in the launch and recovery of the UAV.

Visit us at : AA2004, Singapore Technologies Engineering Pavillion, Changi Exhibition Centre.

For more details on the exhibits and scenario, please refer to the attached information sheet.

About STTS

STTS was incorporated in 1996 as a subsidiary of ST Electronics. With its team of 230 engineers and subject matter experts, STTS offers one-stop solutions, from software applications and development of new innovative training systems to providing maintenance and upgrade of legacy training systems. With over two decades of experience, STTS is a recognised leader in the field of simulation and training in both the military and commercial sectors. The company is currently focusing on growing its market in the region.

STTS' product range includes fixed-wing and rotary wing aircraft simulators, as well as ground and commercial simulators (such as crane and train cab simulators). All simulators ride on STTS' proven High Level Architecture-compliant protocol and may be linked together to provide seamless joint operations training.

ST Elect is the electronics arm of public listed Singapore Technologies Engineering Ltd (ST Engg). ST Elect delivers innovative system solutions to defence, commercial and industrial customers worldwide. It specialises in the design, development and integration of advanced electronics systems, such as broadband RF and microwave communication, rail and traffic management, real-time command and control, training and simulation, intelligent building management, and information security and m-commerce solutions. ST Electronics applies leading edge technologies and design methodologies to meet the stringent requirements of customised electronics systems and solutions. It undertakes continuing research and development to help create cost-effective proprietary products at system and component levels providing quality solutions to customers.

ST Engg is an integrated engineering group providing solutions and services in the aerospace, electronics, land systems and marine sectors. Headquartered in Singapore, the Group reported revenues of S\$2.82 billion in FY2003. Its market capitalisation of about S\$6 billion ranks it among the ten largest companies listed on the Singapore Exchange. ST Engg has 12,000 employees worldwide, and over 100 subsidiaries in 15 countries and 22 cities.

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STTS AT AA2004 – INFORMATION SHEET

Introduction

Large-scale military conflicts today are fought by coalitions of sovereign states rather than by a single country. While such heterogeneous coalitions have political and other benefits, the associated command and control requirements are significantly more complex.

This complexity has been further exacerbated with the use of computer technology in command and control processes. Unlike the past where command and control was realized through analog voice and signal communications, current operations dictate a need for more sophisticated combat management systems to be deployed. The requirement to share a common situation picture, by itself, demands an exchange of large amounts of data among forces deployed. The situation is further aggravated by the use of differing combat management systems between nations, and even between services within a single defence establishment. The need therefore arises for a system to facilitate interoperability between a variety of combat management systems for coalition operations.

ST Training and Simulation, Pte Ltd (“STTS”), a subsidiary of Singapore Technologies Electronics Limited (“ST Elect”), the premier simulation solution provider in the region, recognizes this need, and has developed solutions to enhance coalition training and operations. Such a solution has been provided to the Republic of Singapore Navy.

The exhibit at AA2004 IMDEX show will feature the implementation of this solution on a large scale, involving RSN ships at sea and in Singapore, as well as USN forces in Virginia, USA.

In order to demonstrate to utilization of both naval, air and intelligence assets within the coalition exercise, STTS has extended the training scenario to encompass emulated flight and unmanned airborne vehicle simulators. This demonstrates a capacity to integrate major types of simulators (live, virtual and constructive), to provide complete hierarchical training for joint operations at all levels.

Exhibition

STTS will present a mix simulators and products within its repertoire.

- **FISTS**

FISTS provides the means for naval forces to train with operational equipment in virtual environments – ie “training as you will fight!”, as training and operational equipment are one and the same.

- Advanced Combat Emulator

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- Distributed Mission Fighter Station

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- Unmanned Airborne Vehicle Simulator

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Conclusion

STTS will be exhibiting a rich display of live, virtual and constructive training systems at AA2004. The systems demonstrate operational interoperability using infrastructure developed by STTS.
