NORTH ATLANTIC TREATY ORGANISATION

RESEARCH AND TECHNOLOGY ORGANISATION

SYMPOSIUM

INFORMATION ASSURANCE FOR EMERGING AND FUTURE MILITARY SYSTEMS

Sûreté de l'information pour les systèmes militaires futurs et émergeants

IST-076 / RSY-017

organised by the

Information Systems and Technology Panel

to be held in

LJUBLJANA, Slovenia

Monday 13 October 2008 - Tuesday 14 October 2008

This Symposium is open to citizens from NATO and Partner for Peace Nations

Latest Enrolment Dates

NATO Nations	**Wednesday, 1 October 2008**
PfP Nations	**Friday,22 September 2008**

Enrol Online at:

http://www.rto.nato.int

Once your enrolment is validated, you will receive a General Information Package (GIP) giving you further necessary details about the meeting.

If you are unable to enrol via the internet, please contact the IST Panel Assistant at: apaydina@rta.nato.int

All presentations and discussions will be held in either English or French, the official NATO languages. Simultaneous interpretation between the two languages will be provided.

Background

The mission of RTO is to conduct and promote co-operative research and information exchange. RTO consists of a three level organisation: the Research and Technology Board (RTB), the Panels and the Technical Teams. Information Systems Technology Panel (IST) is one of the seven Panels under the RTB and whose role it is to implement, on behalf of the R&T Board, the RTO Mission with respect to Information Systems Technology. The advancement and exchange of techniques and technologies to provide timely, affordable, dependable, secure and relevant information to war fighters, planners and strategists, as well as enabling technologies for modelling, simulation, and training are the focus of this Panel. The Information Systems Technology Panel covers the fields of Information Warfare and Assurance, Information and Knowledge Management, Communications and Networks and Architecture and Enabling Technologies.

Theme

The advance toward Network Centric Warfare is making NATO's IT infrastructure (i.e., its communication networks and the computer systems that connect to them) its most valuable asset and it most vulnerable point of attack. Military platforms are becoming more computer intensive, which means that software is becoming more complex and taking on larger and more important roles, and information systems are being increasingly interconnected, which means that vulnerability in a single program can put an entire infrastructure at risk. As a consequence, information systems security and defence against cyber attacks are major issues and major concerns, especially in joint/coalition operations. Hackers already regularly try to disrupt NATO coalitions' networks and computer assets. Emerging and future NATO systems will face even more serious security issues as NATO incorporates new functional technology (e.g., IPv6 and VoIP), determines the best way to employ new security technology (e.g., quantum key exchange and quantum cryptography), and expands the use of third party software and third party services to reduce costs.

This symposium will support the exchange of state-of-the-art knowledge related to security and assurance for military information systems and enhance the capability of the scientific and research community to respond adequately to new challenging military concepts and operational requirements. The symposium will also support IST efforts to formulate a research program in this area that will address these issues.

SYMPOSIUM TOPICS

Topics of interest include, but are not limited to:

1. Information Sharing in Dynamic Coalitions
2. IPv6 and Security
3. Information Sanitization
4. Real Time, Automated Incident Response
5. Assurance in Third Party Software & Services
6. Denial of Service Attacks
7. Security for COIP
8. Security for Disadvantaged Networks
9. Quantum Key Exchange
10. Quantum Cryptography QoS Architecture

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IST-076 Symposium on "Information Assurance for Emerging and Future Military Systems"

Programme

Monday 13 October 2008

08:30 REGISTRATION

08:45 Briefing (Authors,Session Chairmen,Interpreters)

09:00 OPENING CEREMONY:

Welcome Speech by
Host Nation Authority

Administrative Announcements by
Local Host

Introduction by Prof. Jürgen GROSCHE
IST Panel Chairman, DEU

Introduction by Dr. John McLEAN
Symposium Chairman, USA

09:40 KEYNOTE SPEECH: Cyberspace and the Changing Nature of Warfare
Kenneth GEERS, US Rep (NCIS), NATO Cooperative Cyber Defence Centre of Excellence in Tallinn

10:15 BREAK

SESSION 1 - NETWORK DEFENSE

10:45 **1** Defending Against Denial of Service in a Self-Aware Network: A Practical Approach
G. LOUKAS, G. OKE, E. GELENBE, Imperial College, GBR

11:15 **2** Efficient Analysis Distribution for Intrusion Detection
S. SCHMERL, M. VOGEL, Brandenburg University of Technology at Cottbus, DEU

11:45 **3** Botnet Evolution and Proactive Botnet Defense System Modeling
K.J. HAN, Air Force Research Lab., J.C. KIEFFER, University of Minnesota, S. XU, University of Texas at San Antonio, C-T. HUANG, University of South Carolina, USA

12:15 LUNCH

SESSION 2 - PROTECTED CORE NETWORKS

13:30 **4** Real-Time Automated Risk Assessment in Protected Core Networking
K. WRONA, G. HALLINGSTAD, NATO C3 Agency, B. JASIUL, M. AMANOWICZ, Military Communication Institute, POL

14:00 **5** Provision of Multiple Levels of Traffic Flow Confidentiality -Service in Protected Core Networks
G. HALLINGSTAD, F. MICEVSKI SCHARF, NATO C3 Agency

14:30 **6** Policy Based Network Management in Protected Core Networking
C. VERKOELEN, TNO, NLD, S. OUDKERK, NATO C3 Agency

15:00 BREAK

SESSION 3 - PANEL DISCUSSION: Data Centricity - The Protection Model of the Future

Chair - Organisers: D. CHARLEBOIS, CAN and D. McCALLAM, USA

15:30 Data Centricity: The Protection Model of the Future
D. CHARLEBOIS, DRDC Ottawa, CAN, D. McCALLAM, USA

17:00 End of Day 1

18:15 HOST NATION RECEPTION
(for all participants and spouses/companions)

Tuesday 14 October 2008

SESSION 4 - MANET SECURITY

09:00 **8** MITE-MINET Intrusion Detection for Tactical Environments
M. JAHNKE, A. WENZEL, G. KLEIN, FGAN, N.ASCHENBRUCK, E. GERHARD-PADILLA, University of Bonn, P. EBINGER, S. KARSCH, Fraunhofer Inst. IGD, Cologne, University of Applied Sciences, DEU

09:30 **9** Efficient Signature-Management for Intrusion Detection in Mobile Ad-hoc Networks
S. KARSCH, F. ZAEFFERER, J. HAAG, M. JAHNKE, Cologne University of Applied Science, DEU

10:00 **10** Information Assurance Situation Awareness for Tactical MANET´s
S. WOLTHUSEN, Royal Holloway University of London, GBR, M. JAHNKE, FGAN, DEU

10:30 BREAK

SESSION 5 - ASSURANCE

11:00 **11** Identifying Critical Attack Assets in Dependency Attack Graphs
R. SAWILLA, X. OU, DRDC Ottawa, CAN

11:30 **12** Deriving Authentication for Pervasive Security
C. MEADOWS, NRL, D. PAVLOVIC, Kestrel Institute, CA, USA

12:00 **13** Arguing the Security of Network-Centric Systems
A. MILLER, K.M. MOLEYAR, Missouri University of Science and Technology, USA

12:30 LUNCH

SESSION 6 - INFORMATION SHARING

13:45 **14** MLWeb: Supporting Assured, Web-Based Collaboration in Dynamic Coalitions
T. MACKLIN, NRL, USA

14:15 **15** Fine-Grained Cryptographic Access Control for Classified Information Sharing
M. KIVIJARJU, The Finnish Defence Forces, Riijimaki, FIN

14:45 **16** Protecting SECRET While Sharing Information with Non-NATO Partners
I. STANIFORTH, QinetiQ Malvern, GBR

15:15 BREAK

SESSION 7 - HARDWARE ASPECTS

15:45 **17** CyberRadar: A Regression Analysis Approach to the Identification of Cyber-Physical Mappings in Process Control Systems
J.L. RRUSHI, K-D. KANG, State University of New York at Binghampton, USA

16:15 **18** Hardware-Accelerated Framework for Security in High-Speed Networks
J. NOVOTNY, CESNET z.s.p.o., P. CELEDA, Masryk University, Brno, M. ZADNIK, Brno University of Technology, CZE

16:45 **19** Assuring Security in Disadvantaged Networks Based on RFID Systems
D. TRCEK, University of Ljubljana, SLO

17:15 CLOSING CEREMONY
(including a Best Paper Award)