

**FINAL PROGRAM
TABLE OF CONTENTS**

Purpose2
Conference Venue2
ICCST Executive Committee3
International Advisory Committee3
Further Information4
2006 IEEE ICCST5

FINAL PROGRAM

PURPOSE

This international conference is directed towards the research and development aspects of electronic security technology. It establishes a forum for the exchange of ideas and dissemination of information on both new and existing technology. Conference participants are encouraged to consider the impact of their work on society. The Carnahan Conference also provides a basis for long-range support and assistance to authorities and agencies responsible for security, safety and law enforcement in the use of available and future technology. A conscious effort will be made to communicate the significance of developments to other interested groups. Liaison is maintained with professional societies and information media not especially related to engineering.

CONFERENCE VENUE

Located at the heart of Central Kentucky's famed scenic Bluegrass Region, Lexington is known around the world for champion racehorses and fine bourbon.

Lexington is the center of the world's Thoroughbred horse industry and is where the top racehorses are bred, born, trained, officially registered, bought and sold, retired to stud and buried. In the Bluegrass, you can meet previous Derby champions - or perhaps catch a glimpse of a future winner on the world's most famous horse farms. Keeneland Race Course, a beautiful park reminiscent of those in England, holds race meets annually in April and October and sales throughout the year. The Kentucky Horse Park, a 1,200 acre park dedicated to all breeds of horse, offers visitors a chance to interact with horses and will be the first North American host of the World Equestrian Games in 2010. Lexington truly is the Horse Capital of the World!

Nearly 100% of the world's bourbon is produced in Kentucky! Visit the home of true Kentucky bourbon where time-honored methods developed in the early 19th century are still used today. Woodford Reserve, Buffalo Trace, Four Roses & Wild Turkey offer tours that unlock the mysteries and heritage of the United States only native spirit.

Lexington's beauty and activities span the four seasons. Meet past and future Kentucky Derby winners and get a behind-the-scenes look at the multi-billion-dollar Thoroughbred industry on personalized horse farm tours. Visit The Kentucky Horse Park the world's only state park dedicated to the horse. Get a taste of the racing industry with Keeneland Race Course's early morning workouts and breakfast at the Track Kitchen. Arrange a hub-and-spoke tour to nearby Shaker Village community. Enjoy afternoon teas and garden tours while exploring a herb farm or historic homes. Explore the area's Civil War sites or take an educational distillery tour and learn the history of bourbon. Plan an antique shopping excursion among over 200 area stores.

ICCST EXECUTIVE COMMITTEE

Alfonso Bilbao, Security Consultant, Cuevayaliente, S.L., SPAIN

Pong-Fui Chang, NEW ZEALAND

Hsia-Ling Chiang, Taiwan, ROC

Ron Clifton, International Datacasting, CANADA

Nigel Custance, Home Office, UK

Gene Greneker, Georgia Tech Research Institute, USA

Nigel Grist, Canberra, AUSTRALIA

Michael Jonckheere, Consultant, Ottawa, CANADA

Rick Lazarick, CSC Identity Labs, USA

Daniel A. Pritchard, Sandia National Laboratories, USA

Brian G. Rich, Senstar-Stellar, CANADA

Larry Sanson, Consultant, USA

Clifton Smith, Edith Cowan University, AUSTRALIA

G. Dan Smith, TSWG, USA

Mark Stroud, HOSDB, UK

Adrian Swaniger, University of Zurich, Switzerland

Gordon Thomas, Consultant, UK

Robert Trebits, AESS Board of Governors, USA

John D. Veatch, SAIC, USA

Thomas M. Wood, Department of Homeland Security, USA

So-Lin Yen, Ministry of Justice, Taiwan, ROC

International Advisory Committee

Pieter de Bruyne, Consultant, SWITZERLAND

Miguel Angel Ferrer, E.S.T.I., GRAN CANARIA, SPAIN

Milős Klima, Czech Technical University, CZECH REPUBLIC

Gerald Levett, G. Levett and Associates, CANADA

Max Robinson, The Nottingham Trent University, UK

CARNAHAN CONFERENCE ON SECURITY TECHNOLOGY

For Further Information

Within the United States

Larry D. Sanson, Chairperson

Chairman, IEEE ICCST
186 Woodwalk Court
Nicholasville, KY 40356, USA
TEL: (859) 223-9840 FAX: (859) 224-3225
lsanson@infionline.net

Daniel A. Pritchard

Sandia National Laboratories
Security Systems and Technology Center
P.O. Box 5800 MS 0780
Albuquerque, NM 87185-0780, USA
TEL: (505) 844-7444 FAX: (505) 844-5569
dpritch@sandia.gov

Gene Greneker

Georgia Tech Research Institute
SEAL, CCRF
225 N. Avenue, NW
Atlanta, GA 30332, USA
TEL: (770) 528-7728 FAX: (770) 528-7744
gene.greneker@gtri.gatech.edu

Rick Lazarick

8 Blackwood Drive
West Trenton, NJ 08628
TEL: (609) 883-6767; (717)-909-5105;
809-883-1234 FAX: (609) 883-6767
rlazarick@csc.com

John D. "Jack" Veatch

Science Applications International Corporation
8301 Greensboro Drive, MS 8-6
McLean, VA 22102, USA
TEL: (703) 676-6439 FAX: (703) 676-6429
john.d.veatch@saic.com

North and South America (Except USA)

Brian G. Rich

Senstar-Stellar Corporation
119 John Cavanaugh Drive
Carp, Ontario, CANADA K0A 1L0
TEL: (613) 839-5572 FAX: (613) 839-5830
brich@sentarstellar.com

Western Europe

Gordon Thomas

30 Tudor Avenue
Worchester Park
Surrey, ENGLAND KT4 8TY
TEL: 44-208-337-3707
gordonl.thomas@virgin.net

Eastern Europe

Pieter de Bruyne

Pfadhagstrasse 2
CH8304 Wallisellen, SWITZERLAND
TEL/FAX: 1011 (411) 830-4239
pbryne@bluewin.ch

Asia

So-Lin Yen

Deputy Director
The Computer Center
Ministry of Justice Investigation Bureau
P.O. Box 340 Taipei, TAIWAN ROC
TEL: 011 (886) 2-2911-2241 Ext. 2900
FAX: 011 (886) 2-2915-4358
solin.yen@msa.hinet.net

Australia/South Pacific

Clifton Smith

Edith Cowan University
100 Joondalup Drive
Joondalup, WESTERN AUSTRALIA 6027
TEL: 61-8-9400-5027 FAX: 61-8-9400-5811
clifton.smith@ecu.edu.au

2006 IEEE ICCST Program-Final

Monday, October 16, 2006

6:00–8:00pm

Registration and Reception (Radisson Hotel, Mezzanine floor)

Tuesday, October 17, 2006

8:00am–5:00pm

Registration

8:30–10:00am

Welcome Address – Mayor Teresa Ann Isaac

ICCST Opening Address – Mr. Larry Sanson,
Conference Chairman, ICCST

Keynote Address : Mr Roger Hagengruber, Chief Security Officer, Los Alamos National Laboratory

10:00–10:30am

Coffee Break

10:30–12 noon

Session 1: Sensors I

Session Chairman: Mr. Gordon Thomas

Proximity Detection and Ranging Using a Modified Fluorescent Lamp for Security Applications
John Cooley, Al Avestruz, Steven Leeb

A Proposed Motionless Laser Scanning Architecture for Perimeter Security
Kaveh Sahba, Kamal E. Alameh, Clifton Smith

Power Options for Wireless Sensor Networks
Bradley C. Norman

Practical High -Frequency Sonar for Intruder Detection in Very Shallow Environments
Steven Younghouse

12:00–1:30pm

Lunch

1:30–3:00pm

Session 2: Sensors 2

Session Chairman: Mr. Brian Rich

*A System and Method for Enhanced Psychophysiological Detection Of
Deception, Assured Client Verification with Remote Processing*
Colonel(USA-Ret) William I. Ames Jr., Jean Louis Gouin

CARNAHAN CONFERENCE ON SECURITY TECHNOLOGY

Mobile RAVIN: Intrusion Detection and tracking with organic airport radar and video systems
Ann Barry, David Mazel

Force Protection Sensor Selector
Lindamae Peck, Richard Bates

Security Simulation for Vulnerability Assessment
Brian Hennessey, Bradley Norman, Robert B. Wesson

3:00-3:30pm

Break

3:30-5:00pm

Session 3: Video Advances

Session Chairman: Mr. Daniel Pritchard

Considerations for Implementing an IP Based, Video Assessment and Surveillance System
Cole Shaw, Jack Connell, Robert M. Riley

Quality Enhancement of Security Image Information
Milos Klima, Karel Fliegel, Jan Svihlik

Illegal Entrant Detection at a Restricted Area in an Open Space Using Color Features
Chin-Chuan Han, Jau-Ling Shi, Kai-Chiun Yan

*Imagery Library for Intelligent Detection Systems (i-LIDS)
A Standard for Testing Vision Based Detection Systems*
Paul Hosmer

Wednesday October 18, 2006

8:30-10:00am

Session 4: Biometrics I

Session Chairman: Mr. Rick Lazarick

Keynote Speaker: Mr Tom Hewett, Professor Drexel University

Biometric Access Control and Crisis Management for Athletic Events
Christos K. Dimitriadis, Despina Polemi

*Implementing Ergonomic Principles in a Biometric System:
A look at the Human Biometric Sensor Interaction(HBSI)*
Eric Kukula, Stephen J. Elliott

Multimodal Biometric System Based on Hand Geometry and Palm-Print Texture
Miguel A. Ferrer, Carlos M. Travieso, Jesús B. Alonso

Face Recognition Using a Radial Basis Function Classifier
Marcos Faundez-Zanuy, Enric Monte-Moreno

CARNAHAN CONFERENCE ON SECURITY TECHNOLOGY

10:00–10:30am

Break

10:30–12:00noon

Session 5: Biometrics II

Session Chairman: Mr. Michael Jonckheere

Architecture of a Search Engine for Massive Comparison in an Iris Biometric System
Judith Liu-Jimenez, Raul Sanchez-Reillo, Almudena Lindoso, John G. Daugman

Analyzing User Password Selection Behavior for Reduction of Password Space
Roman V. Yampolskiy

Keystroke Dynamics Verification Using a Spontaneously Generated Password
Shimon Modi, Stephen J. Elliott

Aliveness Detection for Iris Biometrics
Andrezej Pacut, Adam Czajka

12:00–1:30pm

Lunch

1:30–3:00pm

Session 6: Biometrics III

Session Chairman: Mr. Alfonso Bilbao

On the Vulnerability of Fingerprint Verification Systems to Fake Fingerprint Attacks
J. Galbally-Herrero, J. Fierrez-Aguilar, F. Alonso-Fernandez, J. Ortega-Garcia, M. Tapiador

Improvement in Security Evaluation of Biometric Systems
Raul Sanchez-Reillo, Judith Liu-Jimenez, Michael G. Lorenz, Luis Entrena

Perceptions of Retinal Imaging Technology for Identifying Livestock Exhibits
Christine R. Blomeke, Brian M. Howell, Stephen J. Elliott

*Hill-Climbing and Brute-Force Attacks on Biometric Systems:
A Case Study in Match-on-Card Fingerprint Verification*
M. Martinez-Diaz, F. Alonso Fernandez, J. Fierrez-Aguilar, J. Ortega-Garcia, J. A. Siguenza

3:00–3:30pm

Break

3:50–5:00pm

Session 7: Biometrics IV

Session Chairman: Mr. Mark Stroud

An Instant Messaging Intrusion Detection System Framework:

Using character frequency analysis for authorship identification and validation

Angela Orebaugh

A Study to Develop a Consensual Map of Security Expert Knowledge Structure

David J. Brooks

Evaluation of Supervised versus Non-Supervised

Databases for Hand Geometry Identification

Miguel A. Ferrer, Marcos Faundez-Zanuy, Carlos Travieso, Joan Fabregas, Jesús B. Alonso

An Assessment of Dynamic Signature Forgery and Perception of Signature Strength

Stephen J. Elliott, Adam Hunt

6:00–11:00pm

Banquet

Thursday October 19, 2006

8:30–10:00am

Session 8: Information Protection and Assurance I

Session Chairman: Mr. Clifton Smith

CALEA Compliant Secure Voice Over IP System

Nagaraja Thanthry, Christopher Goodrich, Ravi Pendse

A Novel Mechanism for Improving Performance and Security of

TCP Flows over Satellite Links

Nagaraja Thanthry, M. Deshpande, Ravi Pendse

On-Board Encryption in Earth Observation Small Satellites

Roohi Banu, Tanya Vladimirova

Quantifiable Security Metrics for large Scale Heterogeneous Systems

Syed Naqvi, Prof. Michel Riguidel

10:00–10:30am

Break

10:30–12:00noon

Session 9: Information Protection and Assurance II

Session Chairman: Mr. So-Lin Yen

The Unexpected Value of Hybrid RMS Risk Management

Ross Paul Goeres

Asynchronous Cryptographic Hardware Design

John Teifel

An Architecture for Multi-Security Level Network Traffic

Edward L. Witzke, Steve Gossage, Dallas J. Wiener

A Product Based Security Model For Smart Home Appliances

Davar Pishva, Keiji Takeda

12:00–1:30pm

Lunch

1:30–3:00pm

Session 10: Networks

Session Chairman: Mr. Tom Wood

Security Threats in Wireless Sensor Networks

Hiren Kumar Deva Sarma, Avijit Kar

*Experimental Validation of an Intelligent Detection and Response Strategy
for Complex Infrastructure Attacks and False Positives Using Firewalls*

Emmanuel Hooper

Virtual Perimeter Security (VPS) in Physical Protection System

Bradley C. Norman, Douglas G. Adams

*Control of Perimeter Surveillance Wireless Sensor Networks Via Partially Observable
Markov Decision Process*

Lucas W. Krakow, Edwin K. P. Chong, Kenneth N. Groom, John Harrington
and Yun Li, Brian Rigdon

3:00–3:15pm

Break

3:15–4:45pm

Session 11: Analyses

Session Chairman: Mr. John D. Veatch

Maritime Vessel Stopping

Less than lethal means of stopping waterborne vessels

Simon Peaty MSc

Evaluating Risk from Acts of Terrorism with Belief and Fuzzy Sets

John Darby

Profiling Toolmarks on Forensic Ballistics Specimens: An Experimental Approach

Clifton L. Smith

The Study on Planning and Building a Cyber

Forensic Laboratory in MJIB, Taiwan R.O.C.

So-Lin Yen, Sou-Chan Chen

4:45–5:00pm

Conference Closing

Mr. Larry Sanson, Conference Chairman

Back-up Papers

Security and Information Systems for Air Company

Rudolf Volner, Vladimír Smrz

Intelligent Language Comprehension System for Automatic Data Analysis

Chung-Lung Tsai, Thomas Chiang Chuang