

2011 IEEE International Conference on Technologies for Homeland Security

(HST 2011)

Papers with Book of Abstracts

**Waltham, Massachusetts, USA
15-17 November 2011**



**IEEE Catalog Number: CFP11THS-PRT
ISBN: 978-1-4577-1375-0**

TABLE OF CONTENTS

Cyber Security Track

Co-Chair: **Terry Benzel**, *USC-ISI*
Co-Chair: **Dave Balenson**, *JHU APL*

Privacy

Chair: **Hilarie Orman**, *Purple Streak Software*

Separating the Baby from the Bathwater: Toward a Generic and Practical Framework for Anonymization	1
<i>Stuart S. Shapiro</i>	
Towards a Privacy Management Framework for Distributed Cybersecurity in the New Data Ecology	6
<i>Travis D. Breaux, Catherine B. Lotrionte</i>	
Quantum Cryptography: An Emerging Technology in Network Security	13
<i>Mehrdad S. Sharbaf</i>	

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems Engineering and Development Institute (MITRE)*

Situational Awareness and Information Sharing

Chair: **Mike French**, *MITRE*

Integrated PMR-Broadband-IP Network for Secure Realtime Multimedia Information Sharing	20
<i>Sebastian Subik, Christian Wietfeld</i>	
Information Sharing for Situational Understanding and Command Coordination for Emergency Management and Disaster Response	26
<i>Robert I. Desourdis, Jr., John M. Contestabile</i>	
Digital Television for Homeland Security: Broadband Datacast for Situational Awareness and Command Coordination	33
<i>Robert I. Desourdis, Jr., Kevin F. Vest, Mark O'Brien, David J. Mulholland</i>	

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*

Co-Chair: **Rich Moro**, *Raytheon Company*

Border Security Architectures

Chair: **Dan Cousins**, *MIT Lincoln Laboratory*

Effective Maritime Domain Awareness based on Persistent Active Surveillance using Long-Range Ground based Radars to Cue Reconnaissance and Enforcement Assets n/a
Anthony Ponsford, Guy Germana, Peter Willett

Modeling and Simulation in Support of Understanding Maritime Security and Defense Capabilities and Requirements (The Maritime Timeline and Analysis Requirements Toolset (M-TART)) 43
Neil Carson

Visual Analytics for Maritime Domain Awareness 49
Valérie Lavigne, Denis Gouin, Michael Davenport

Biometrics, Forensics, and Physical Security Track

Co-Chair: **Dr. Joseph Campbell**, *MIT Lincoln Laboratory*

Co-Chair: **Dr. Jeffrey Salyards**, *US Army Criminal Investigation Laboratory*

DoD Biometrics

Chair: **Joseph Campbell**, *MIT Lincoln Laboratory*

Person Attribute Search for Large-Area Video Surveillance 55
Jason Thornton, Jeanette Baran-Gale, Daniel Butler, Michael Chan, Heather Zwahlen

Cyber Security Track

Co-Chair: **Terry Benzel**, *USC-ISI*

Co-Chair: **Dave Balenson**, *JHU APL*

Posters

Chair: **Gerardo Garcia**, *MITRE*

Assuring Software and Hardware Security and Integrity throughout the Supply Chain 62
C. Warren Axelrod

Biometrics Assisted Secure Network Transactions 69
V. Oliyil. Kunnil, A. Pillai, S. Milshtein

An Integrated Machine Learning and Control Theoretic Model for Mining Concept-Drifting Data Streams 75
Sachin Shetty, Sai Kiran Mukkavilli, L.H. Keel

Visualization, Modeling and Predictive Analysis of Cyber Security Attacks against Cyber Infrastructure-Oriented Systems 81
Jessie J. Walker, Travis Jones, Roy Blount

Biometrics, Forensics, and Physical Security Track

Co-Chair: **Dr. Joseph Campbell**, *MIT Lincoln Laboratory*

Co-Chair: **Dr. Jeffrey Salyards**, *US Army Criminal Investigation Laboratory*

Posters

Chair: **Gerardo Garcia**, *MITRE*

Common Framework to Evaluate Modern Embedded Systems against Side-Channel Attacks	86
<i>Youssef Souissi, Sylvain Guilley, Sihvam Bhasin, Jean-Luc Danger</i>	
Constrained Classification for Infrastructure Threat Assessment	92
<i>Kristin P. Lennox, Lee Glascoe</i>	
Risk based Screening and Explosive Detection at the Passenger Screening Checkpoint	98
<i>Douglas Mook, Elan D. Scheinman</i>	
Validation of HADES-Based Simulations of Radiographic Experiments	104
<i>Haiyin Chen, Maurice B. Aufderheide, III, W. Travis White, III, G. Patrick Roberson, Lee G. Glascoe</i>	

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*

Co-Chair: **Rich Moro**, *Raytheon Company*

Posters

Chair: **Gerardo Garcia**, *MITRE*

A Stochastic Game Model on Container Security	110
<i>N. Onur Bakır, Erim Kardes</i>	
Local Reconfiguration for Simultaneous Coverage and Tracking in a Large Scale Camera Network	117
<i>Bryan Lemon, Vinod Kulathumani</i>	
Non-Lethal Ballistic System with Point Accuracy for Facility and Border Security	123
<i>Jeffrey Widder, James Rascoe, Christopher Pherhala</i>	
MIST: An Operational Ground Surveillance Camera	129
<i>Jay P. Wilhelm, Mridul Gautam, Shai Ronen</i>	
Integrated Aviation Security for Defense-in-Depth of Next Generation Air Transportation System	136
<i>Winston Li, Pan Kamal</i>	

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems
Engineering and Development Institute (MITRE)*

Posters

Chair: **Gerardo Garcia**, *MITRE*

The use of Vulnerability Maps for Natural Disaster Vulnerability Analysis and Mitigation Planning for Rural Communities	n/a
<i>Gordon Skelton, Joy Parikh, Catherine Lee</i>	
Next Generation RASR TALON™: A Remote Robotic Rapid Area Sensitive Site Reconnaissance Platform	143
<i>Peter Wells, Ted Lobb, Howard LaValley, Jeremy Rezac, Thomas H. Chyba, Doug Few</i>	
HOMEbase™: An Operational Concept for Collaborative Disaster Response	150
<i>Peter C. Hitt, Karl Zollinger</i>	
Managed Attributes, Not Standards, Lead to Interoperability	156
<i>Thomas W. Connell, II</i>	
CHANNELS: An Information Flow Modeling System to Support Planning and Interoperability	161
<i>Jean-François Cloutier, Robert I. Desourdis, Jr., David Kamien</i>	
Common Operational Data (COD) Through UICDS – Key to Effective ConOps for Disparate Operating Entities	n/a
<i>James Morentz</i>	
Articulating Homeland Security Technology Requirements	n/a
<i>Mitchell Erickson</i>	

Cyber Security Track

Co-Chair: **Terry Benzel**, *USC-ISI*
Co-Chair: **Dave Balenson**, *JHU APL*

Eval and Assess

Chair: **Jeff Moulton**, *Georgia Tech Research Institute*

Automated Computer Network Defence Technology Demonstration Project (ARMOUR TDP): Concept of Operations, Architecture, and Integration Framework	167
<i>Reginald E. Sawilla, Douglas J. Wiemer</i>	
Do Security Certifications Work? Evidence from Common Criteria Certification	n/a
<i>Rahul Telang, Yubao Yang</i>	
The Community Cyber Security Maturity Model	173
<i>Gregory B. White</i>	

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems
Engineering and Development Institute (MITRE)*

Attack Preparedness and Response

Chair: **Kenneth Crowther**, *MITRE*

Hazard Mitigation, Materiel and Equipment Restoration (HaMMER)

Advanced Technology Demonstration (ATD) 179

Mark Saxon, Richard Rossman, Kevin Yontosh, Gregory Merboth

A Counter-IED Preparedness Methodology for Large Event Planning 185

Patricia W. Payne, Daniel B. Koch

Improvised Nuclear Device Case Study: An Analytic Framework for Disaster Management 190

Brooke Buddemeier, Nancy Suski

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*

Co-Chair: **Rich Moro**, *Raytheon Company*

Land Sensors

Chair: **John Vivilecchia**, *MIT Lincoln Laboratory*

Polarization-cum-Energy Metric for Footstep Detection using Vector-Sensor 196

Divya Venkatraman, Vinod V. Reddy, Andy W.H. Khong, B.P. Ng

Optimal Placement of Ground Sensors: Mathematical Modeling and Field Implementation n/a

Alireza Dibazar, Hyung Park, Theodore Berger

**Aggregating Seismic, Acoustic and Vibration Sensor Outputs for Enhancing
Threat Detection Performance and Estimating Threat-Level** 202

Ali Yousefi, Alireza A. Dibazar, Theodore W. Berger

Biometrics, Forensics, and Physical Security Track

Co-Chair: **Dr. Joseph Campbell**, *MIT Lincoln Laboratory*

Co-Chair: **Dr. Jeffrey Salyards**, *US Army Criminal Investigation Laboratory*

Security and Surveillance

Chair: **Garold Warner**, *U.S. Army Criminal Investigation Laboratory (USACIL)*

**CSharp: Surreptitious Standoff Tagging and Tracking System using
Passive Nanotechnical Transponders** 208

Stephen W. Leibholz, Michael J. Maston

Criterra Automatic Location Planning 213

Lawrence Cassenti, Peter Leed

IntentFinder: A System for Discovering Significant Information Implicit in Large, Heterogeneous Document Collections	219
<i>Lyle Ungar, Stephen Leibholz, Carole Chaski</i>	

Cyber Security Track

Co-Chair: **Terry Benzel**, *USC-ISI*
Co-Chair: **Dave Balenson**, *JHU APL*

System and Architecture for CIP

Chair: **Greg Shannon**, *CERT at CMU/SEI*

System-Aware Security for Nuclear Power Systems	224
<i>Rick A. Jones, Troy V. Nguyen, Barry M. Horowitz</i>	

Measuring the Human Factor of Cyber Security	230
<i>Brian M. Bowen, Ramaswamy Devarajan, Salvatore Stolfo</i>	

Cyber Resilience for Mission Assurance	236
<i>Harriet Goldman, Rosalie McQuaid, Jeffrey Picciotto</i>	

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems Engineering and Development Institute (MITRE)*

Detection and Event Sensing

Chair: **Mike French**, *MITRE*

A Calibration Free Hybrid RF and Video Surveillance System for Reliable Tracking and Identification	242
<i>Xunyi Yu, Aura Ganz</i>	

Systems Engineering Approach to Chemical Biological and Radiological Detection System Design	248
<i>James Risser, Mark Saxon</i>	

A Framework for Real-Time Monitoring of Acoustic Events using a Wireless Sensor Network	254
<i>Akankshu Dhawan, Ramprasad Balasubramaniam, Vinod Vokkarane</i>	

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*
Co-Chair: **Rich Moro**, *Raytheon Company*

Maritime Sensors

Chair: **Karen Panetta**, *Tufts University*

Use of Small Imaging Sonars for Diver Identification	262
<i>Anna Crawford, Aaron Percival, Vance Crowe</i>	

Submerged Explosives Detection Platforms using Immunosensing Technology 267
*Scott P. Veitch, Anne W. Kusterbeck, Robert J. Fratantonio, Paul T. Charles, Peter J. Egli,
Jeffrey R. Deschamps, Alfred K. Hanson, Andre A. Adams*

Harbor Shield Program Update: Underwater Acoustic Imaging of Moving Vessels 273
Rich Granger, Eric Rabe, Lynn Faulkner, Donald Steinbrecher

Biometrics, Forensics, and Physical Security Track

Co-Chair: **Dr. Joseph Campbell**, *MIT Lincoln Laboratory*

Co-Chair: **Dr. Jeffrey Salyards**, *US Army Criminal Investigation Laboratory*

Explosives

Chair: **Jeff Salyards**, *U.S. Army Criminal Investigation Laboratory (USACIL)*

The Development of an Aerodynamic Shoe Sampling System 276
Matthew Staymates, Jessica Grandner, Greg Gillen, Stefan Lukow

Tunable, Self-Curing Polymers for the Forensic Collection of Latent Signatures from within Porous Materials 282
*Joseph E. Chipuk, Carolyn L. Mazzitelli, J. Kirby Kendall, Stephen D. Straight,
Melissa A. Reaves, Sara C. Chamberlin*

Challenges of Small-Scale Safety and Thermal Testing of Improvised Explosives n/a
*Mary Sandstrom, Geoffrey Brown, Kirstin Warner, Daniel Sorensen, Daniel Remmers,
Timothy Shelley, Jose Reyes, Peter Hsu, John Reynolds*

Joint Cyber Security / Attack and Disaster Preparation, Recovery and Response Track

Bounding the Problem Space: Frameworks for Incident Preparedness and Response

Chair: **Michael Orosz**, *University of Southern California*

Operationalizing the Coordinated Incident Handling Model 287
Rose Daley, Thomas Millar, Marcos Osorno

Pervasive Readiness: Pipedream or Possible? A Practical Approach for Measuring Public Safety Readiness 295
Ari A. Vidali, Jason D. Hutchens, Mitch Javidi

Modeling Attacker-Technology System Interaction in Transportation Networks: P2I3-Model 306
*Sherif Tolba, Lance Fiondella, Reda Ammar, Nicholas Lownes,
Sanguthevar Rajasekaran, John Ivan, Qixing Wang*

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*

Co-Chair: **Rich Moro**, *Raytheon Company*

Radiological Nuclear Sensors (Part 1)

Chair: **Zane Bell**, *Oak Ridge National Laboratory*

Airborne Spectrometry: Extraction of Low Energy γ -Rays using Two or Three Spectral Windows 313

Nicolas Martin-Burtart, Ludovic Guillot, Abdel-Mjid Nourreddine

Nuclear Detection using Higher Order Learning 319

Christie Nelson, William M. Pottenger

Probabilistic Effectiveness Methodology: A Holistic Approach on Risk Assessment of Nuclear Smuggling 325

Leticia Cuéllar, Tim Cleland, Deborah Kubicek, Tim Kelton, Mark Mathis, Fred Roach, Randy Roberts, Phillip Stroud, Kevin J. Saeger, James P. Smith

Biometrics, Forensics, and Physical Security Track

Co-Chair: **Dr. Joseph Campbell**, *MIT Lincoln Laboratory*

Co-Chair: **Dr. Jeffrey Salyards**, *US Army Criminal Investigation Laboratory*

Forensics

Chair: **Jeff Salyards**, *U.S. Army Criminal Investigation Laboratory (USACIL)*

Scanning White Light Interferometry – A New 3D Forensics Tool 332

V. Heikkinen, I. Kassamakov, E. Hægström, S. Lehto, J. Kiljunen, T. Reinikainen, J. Aaltonen

Cyber Security Track

Co-Chair: **Terry Benzel**, *USC-ISI*

Co-Chair: **Dave Balenson**, *JHU APL*

Anonymity

Chair: **Alden Jackson**, *BBN*

Behavior-Based Network Traffic Synthesis 338

Yingbo Song, Salvatore J. Stolfo, Tony Jebara

Attribution Requirements for Next Generation Internets 345

Jeffrey Hunker, Carrie Gates, Matt Bishop

Double Blind Comparisons: Matching Database Records without Database Aggregation n/a

William Lorimer, Michael Jacobson

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems
Engineering and Development Institute (MITRE)*

Gaming and Simulation

Chair: **Mike French**, *MITRE*

Integrating Equilibrium Assignment in Game-Theoretic Approach to Measure Many-to-Many Transportation Network Vulnerability 351

Qixing Wang, Lance Fiondella, Nicholas Lownes, John Ivan, Reda Ammar, Sanguthevar Rajasekaran, Sherif Tolba

Real-Time Online Game-Based Use-Case Engine for Validation of Interagency Doctrine in Emergency Operations: Research Exploring the use of Synthetic Environments to Augment Disaster Planning, Preparation, Response, and Recovery 358

Wendy Walsh, Curtis Blais, Lyla Englehorn, Perry McDowell

Anti-Terrorism Evacuation Model of a Magnetic Levitation Train in an Urban Environment n/a

Cecelia Wright Brown, Kofi Nyarko

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*

Co-Chair: **Rich Moro**, *Raytheon Company*

Radiological Nuclear Sensors (Part 2)

Chair: **Zane Bell**, *Oak Ridge National Laboratory*

Low Cost, Pervasive Detection of Radiation Threats 365

Gordon A. Drukier, Eric P. Rubenstein, Peter R. Solomon, Marek A. Wójtowicz, Michael A. Serio

Beyond He-3 Nuclear Sensors – TMFDs for Real-Time SNM Monitoring with Directionality 372

J.A. Webster, T.F. Grimes, B. Archambault, K. Fischer, N. Kostry, A. Lentner, J. Lapinskas, R.P. Taleyarkhan

Database of High-Z Signatures in Cargo 379

Ron Bentley

Cyber Security Track

Co-Chair: **Terry Benzel**, *USC-ISI*

Co-Chair: **Dave Balenson**, *JHU APL*

IDS/Vulnerabilities

Chair: **Kymie Tan**, *Jet Propulsion Laboratory*

Anomalous Spectrum Usage Attack Detection in Cognitive Radio Wireless Networks 384

CaLynna Sorrells, Paul Potier, Lijun Qian, Xiangfang Li

Data Intensive Architecture for Scalable Cyber Analytics 390

Bryan Olsen, John R. Johnson, Terence Critchlow

Defining Malware Families based on Analyst Insights	396
<i>Jeff Gennari, David French</i>	

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems
Engineering and Development Institute (MITRE)*

People and Resource Tracking

Chair: **Don McGary**, *MITRE*

Secure Scalable Disaster Electronic Medical Record and Tracking System	402
---	-----

*Gerard DeMers, Christopher Kahn, Colleen Buono, Theodore Chan, Paul Blair, William Griswold,
Per Johansson, Octav Chipara, Anders Nilsson Plymoth*

Real-Time Scalable Resource Tracking Framework (DIORAMA): System Description and Experimentation	407
---	-----

Aura Ganz, Xunyi Yu, James Schafer, Graydon Lord

Novel, Low-Cost Approaches to Enabling Buildings with Location-Tracking of Both Victims and Responders in Attacks and Disasters	n/a
--	-----

Paul Blair, Octav Chipara, Javier Rodriguez-Molina, Bill Griswold

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*
Co-Chair: **Rich Moro**, *Raytheon Company*

Sensor Networks (Part 1)

Chair: **Rich Moro**, *Raytheon*

Dense Radar Networks for Low-Flyer Surveillance	413
--	-----

D. Pepyne, D. McLaughlin, D. Westbrook, E. Lyons, E. Knapp, S. Frasier, M. Zink

Asynchronous and Self-Organizing Radiolocation System – AEGIR	419
--	-----

Slawomir J. Ambroziak, Ryszard J. Katulski, Jaroslaw Sadowski, Wojciech Siwicki, Jacek Stefanski

Multi-Agent Distributed Dynamic Scheduling for Large Distributed Critical Key Infrastructures and Resources (CKIR) Surveillance and Monitoring	426
---	-----

D.B. Megherbi, DongChao Xu

Biometrics, Forensics, and Physical Security Track

Co-Chair: **Dr. Joseph Campbell**, *MIT Lincoln Laboratory*

Co-Chair: **Dr. Jeffrey Salyards**, *US Army Criminal Investigation Laboratory*

Biometrics (Part 1)

Chair: **Joseph Campbell**, *MIT Lincoln Laboratory*

A Texture-Based Method for Identificaiton of Retinal Vasculature 434
Vikas Gottemukkula, Sashikanth Saripalle, Reza Derakhshani, Sriram Pavan Tankasala

Predicting Ethnicity and Gender from Iris Texture 440
Stephen Lagree, Kevin W. Bowyer

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems
Engineering and Development Institute (MITRE)*

Modeling and Simulation for Emergency Preparedness and Response

Chair: **Kenneth Crowther**, *MITRE*

**New Technologies and Processes for the Homeland Security Exercise and
Evaluation Program Toolkit** 446
*Charles J. John, Carmen M. Pancerella, Lynn Yang, Karim Mahrous, Gabriel R. Elkin, Adam S. Norige,
Keith Holtermann, Jalal Mapar*

Modeling and Simulation Capability for Consequence Management 451
Vic Baker

The use of Integrated Modeling and Simulation at FEMA for Emergency Preparedness Exercises n/a
*Steven Mier, Christine Yang, Lynn Yang, Zach Heath, Stephen Ng Mueller,
Keith Holtermann, Karim Mahrous, Jalal Mapar*

Land and Maritime Border Security Track

Co-Chair: **Dr. Dan Cousins**, *MIT Lincoln Laboratory*

Co-Chair: **Rich Moro**, *Raytheon Company*

Sensor Networks (Part 2)

Chair: **Rich Moro**, *Raytheon*

Smart Container Management: Creating Value from Real-Time Container Security Device Data 457
Julia Carn

Phenomenological Scattering Analysis of an RF Area Secure Perimeter 466
*Carey Rappaport, Waseem Naqvi, Yolanda Rodriguez-Vaqueiro, Jose A. Martinez-Lorenzo, Borja Gonzalez-
Valdes, John Beaty, Ann Morgenthaler*

Avoiding the Closure of Ports during a National Emergency 470
Gustavo Luis Bottan

Biometrics, Forensics, and Physical Security Track

Co-Chair: **Dr. Joseph Campbell**, *MIT Lincoln Laboratory*

Co-Chair: **Dr. Jeffrey Salyards**, *US Army Criminal Investigation Laboratory*

Biometrics (Part 2)

Chair: **Joseph Campbell**, *MIT Lincoln Laboratory*

Face Recognition Despite Missing Information 475
Charlie K. Dagli, Kevin J. Brady, Daniel C. Halbert

Cyber Security Track

Co-Chair: **Terry Benzel**, *USC-ISI*

Co-Chair: **Dave Balenson**, *JHU APL*

Technology Transition

Chair: **David Balenson**, *JHU/APL*

Technology Transition of Network Defense Visual Analytics: Lessons Learned from Case Studies 481
Brianne F. O'Brien, Anita D'Amico, Mark E. Larkin

Self-Organizing Resilient Network Sensing (SornS) with Very Large Scale Anomaly Detection 487
Rick Dove

Integrating Physical and Cyber Security Resources to Detect Wireless Threats to Critical Infrastructure 494
Anita D'Amico, Christina Verderosa, Christopher Horn, Timothy Imhof

Attack and Disaster Preparation, Recovery and Response Track

Chair: **Dr. Mike French**, *DHS S&T – Homeland Security Systems Engineering and Development Institute (MITRE)*

Geospatial Information for Preparedness and Response

Chair: **Gerardo Garcia**, *MITRE*

A Rapid Method for Detect Geographically Disconnected Areas after Disasters 501
Ling-Jyh Chen, Chia-Wei Li, Yu-Te Huang, Chi-Sheng Shih

Development of the Adaptable, GIS-Based, Multi-Threat Detection System 507
Joseph McClintock, Mark Saxon, Jennifer Forsythe, James Rascoe, James Risser

Enabling Distributed Command and Control with Standards-Based Geospatial Collaboration 512
Ray Di Ciaccio, Jared Pullen, Paul Breimyner

" 'Cwj qt u'kpf gz '...../3:

" Dqqm'qhi'Cdut cev'

Technical Program

Westin Hotel Room Layout.....	i
Technical Program	iii
Welcome Message from the Conference Chair.....	v
Welcome Message from the Technical Program Chairs	vi
Keynote Speaker: Mark S. Borkowski.....	viii
Keynote Speaker: Major General Joseph C. Carter.....	x
Keynote Speaker: Daniel M. Cotter	xii
Track Speaker: Lieutenant Colonel Scott A. Jackson	xiii
Track Speaker: Garold Warner.....	xiv
Organizational Committee	xv
Technical Program Track Committees.....	xvi
Thank You to Our Sponsors and Exhibitors.....	xviii
Technical Program	1
Cyber Security Track	3
Privacy	5
Attack and Disaster Preparation, Recovery and Response Track	13
Situational Awareness and Information Sharing.....	15
Land and Maritime Border Security Track	23
Border Security Architectures.....	25
Biometrics, Forensics, and Physical Security Track	33
DoD Biometrics	35
Cyber Security Track	39
Posters.....	41
Biometrics, Forensics, and Physical Security Track	51
Posters.....	53
Land and Maritime Border Security Track	63
Posters.....	65
Attack and Disaster Preparation, Recovery and Response Track	77
Posters.....	79
Cyber Security Track	95
Eval and Assess	97
Attack and Disaster Preparation, Recovery and Response Track	105
Attack Preparedness and Response.....	107
Land and Maritime Border Security Track	115
Land Sensors.....	117
Biometrics, Forensics, and Physical Security Track	125
Security and Surveillance	127
Cyber Security Track	135
System and Architecture for CIP	137

Attack and Disaster Preparation, Recovery and Response Track	145
Detection and Event Sensing	147
Land and Maritime Border Security Track	155
Maritime Sensors	157
Biometrics, Forensics, and Physical Security Track	165
Explosives	167
Joint Cyber Security / Attack and Disaster Preparation, Recovery and Response Track	175
Bounding the Problem Space: Frameworks for Incident Preparedness and Response	177
Land and Maritime Border Security Track	185
Radiological Nuclear Sensors (Part 1)	187
Biometrics, Forensics, and Physical Security Track	195
Forensics	197
Cyber Security Track	201
Anonymity	203
Attack and Disaster Preparation, Recovery and Response Track	211
Gaming and Simulation	213
Land and Maritime Border Security Track	221
Radiological Nuclear Sensors (Part 2)	223
Cyber Security Track	231
IDS/Vulnerabilities	233
Attack and Disaster Preparation, Recovery and Response Track	241
People and Resource Tracking	243
Land and Maritime Border Security Track	251
Sensor Networks (Part 1)	253
Biometrics, Forensics, and Physical Security Track	261
Biometrics (Part 1)	263
Attack and Disaster Preparation, Recovery and Response Track	269
Modeling and Simulation for Emergency Preparedness and Response	271
Land and Maritime Border Security Track	279
Sensor Networks (Part 2)	281
Biometrics, Forensics, and Physical Security Track	289
Biometrics (Part 2)	291
Cyber Security Track	295
Technology Transition	297
Attack and Disaster Preparation, Recovery and Response Track	305
Geospatial Information for Preparedness and Response	307
Tutorials	315
Author Index	337