

# **2009 12th International Conference on Information Fusion (FUSION 2009)**

**Seattle, Washington, USA  
6 – 9 July 2009**

**Pages 1 - 570**



**IEEE Catalog Number: CFP09FUS-PRT  
ISBN: 978-0-9824-4380-4**

# Table of Contents

<b>TuPL</b>	Plenary Room
<b>The Real World, by Charles Morefield, DARPA (Plenary Session)</b>	
09:00-10:00	TuPL.1
<i>The Real World*</i> Morefield, Charles	DARPA
<b>TuA1</b>	Leonesia I
<b>Particle Filters and Monte Carlo Methods I (Regular Session)</b>	
Chair: Boers, Yvo	Thales Nederland B. V.
10:30-10:50	TuA1.1
Rao-Blackwellised Variable Rate Particle Filters, pp. 1-8. Morelande, Mark Richard Gordon, Neil	The Univ. of Melbourne DSTO
10:50-11:10	TuA1.2
Particle Filtering and Data Association Using Attribute Data, pp. 9-16. Ekman, Mats	Saab AB
11:10-11:30	TuA1.3
Road Target Tracking with an Approximative Rao-Blackwellized Particle Filter, pp. 17-24. Skoglar, Per Orguner, Umut Törnqvist, David Gustafsson, Fredrik	Linköping Univ. Linköping Univ. Linköping Univ. Linköping Univ.
11:30-11:50	TuA1.4
Wasserstein Distance for the Fusion of Multisensor Multitarget Particle Filter Clouds, pp. 25-32. Danu, Daniel Kirubarajan, Thia Lang, Thomas	McMaster Univ. McMaster Univ. General Dynamics Canada
11:50-12:10	TuA1.5
Point Estimation for Jump Markov Systems: Various MAP Estimators, pp. 33-40. Boers, Yvo Driessen, Hans Bagchi, Arunabha	Thales Nederland B. V. Thales Nederland BV Univ. of Twente
<b>TuA2</b>	Leonesia III
<b>Target Tracking I (Regular Session)</b>	
Chair: Bar-Shalom, Yaakov	Univ. of Connecticut
10:30-10:50	TuA2.1
Acoustic Inversion with Self Noise of an Autonomous Underwater Vehicle to Measure Sound Speed in Marine Sediments, pp. 41-47. van Leijen, Vincent Rothkrantz, Leon J.M. Groen, Frans C.A.	Defence Materiel Organisation Delft Univ. of Tech. Univ. of Amsterdam
10:50-11:10	TuA2.2
Monaural Sound-Source-Direction Estimation Using the Acoustic Transfer Function of an Active Microphone, pp. 48-53. Takashima, Ryoichi Takiguchi, Tetsuya Ariki, Yasuo	Kobe Univ. Kobe Univ. Kobe Univ.
11:10-11:30	TuA2.3
Toward Efficient Quality of Information Estimation in Simultaneous Acoustic Tracking and Classification of Multiple Targets, pp. 54-61. Damarla, Thyagaraju Thornley, David Gillies, Duncan Gentle, Ed	US Army Res. Lab. Imperial Coll. Department of Computing Imperial Coll. DSTL Land Battlespace Systems
11:30-11:50	TuA2.4
Target Tracking in Multi-Static Active Sonar Systems Using Dynamic Programming and Hough Transform, pp. 62-69. Eljaber, Mohammad Osman, Abdalla Mellema, Garfield Noureldin, Aboelmagd	Queen's Univ. Royal Military Coll. Defence Res. and Development Canada Royal Military Coll. of Canada
11:50-12:10	TuA2.5
Feature-Aided Localization of Ground Vehicles Using Passive Acoustic Sensor Arrays, pp. 70-77. Ravindra, Vishal Cholapadi Bar-Shalom, Yaakov Damarla, Thyagaraju	Univ. of Connecticut Univ. of Connecticut US Army Res. Lab.
<b>TuA3</b>	Pricessa I

**Sensor Management (Regular Session)**

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Chair: Krishnamurthy, Vikram	Univ. of British Columbia
10:30-10:50	TuA3.1
Computing Maximal Track Clusters for Sensor Resource Management, pp. 78-84.	
Schneider, Michael K	BAE Systems
10:50-11:10	TuA3.2
Geometric Factors in Target Positioning and Tracking, pp. 85-92.	
Yang, Chun	Sigtem Tech. Inc.
Blasch, Erik	AFRL/RVAA
Kadar, Ivan	Interlink Systems Sciences Inc.
11:10-11:30	TuA3.3
Integrating Distributed Bayesian Inference and Reinforcement Learning for Sensor Management, pp. 93-101.	
Grappiolo, Corrado	Univ. of Amsterdam
Whiteson, Shimon	Univ. of Amsterdam
Pavlin, Gregor	Thales Nederland BV
Bakker, Bram	Univ. of Amsterdam
11:30-11:50	TuA3.4
Distributed Greedy Sensor Scheduling for Model-Based Reconstruction of Space-Time Continuous Physical Phenomena, pp. 102-109.	
Huber, Marco F.	Intelligent Sensor-Actuator-Systems Lab. Univ. Karl
Kuwertz, Achim	Univ. Karlsruhe (TH)
Sawo, Felix	Univ. Karlsruhe (TH)
Hanebeck, Uwe	Univ. Karlsruhe
11:50-12:10	TuA3.5
Upper Bounds for the Sensor Subset Selection Problem, pp. 110-117.	
Ghassemi, Farhad	Univ. of British Columbia
Krishnamurthy, Vikram	Univ. of British Columbia

**TuA4**

Pricessa II

**Sensor Networks I (Regular Session)**

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Chair: Nedich, Angelia	Univ. of Illinois at Urbana-Champaign
10:30-10:50	TuA4.1
Real-Time Common Awareness in Communication Constrained Sensor Systems, pp. 118-125.	
van Foeken, Eelke	TNO Defence
Kester, Leon	TNO, Defence, Security and Safety
Iersel, Miranda	TNO Defence
10:50-11:10	TuA4.2
Cooperative Relative Localization Using Vehicle-To-Vehicle Communications (I), pp. 126-131.	
Richter, Eric	Chemnitz Univ. of Tech.
Obst, Marcus	Chemnitz Univ. of Tech.
Schubert, Robin	Chemnitz Univ. of Tech.
Wanielik, Gerd	Chemnitz Univ. of Tech.
11:10-11:30	TuA4.3
Data Fusion Techniques for Auto Calibration in Wireless Sensor Networks, pp. 132-139.	
Takruri, Maen	Univ. of Tech. Sydney
Challa, Subhash	National ICT Australia
Yunis, Ramah	Univ. of Tech. Sydney
11:30-11:50	TuA4.4
Multi-Hop Greedy Gossip with Eavesdropping (I), pp. 140-145.	
Ustebay, Deniz	McGill Univ.
Oreshkin, Boris	McGill Univ.
Coates, Mark	McGill Univ.
Rabbat, Michael	McGill Univ.
11:50-12:10	TuA4.5
Distributed Consensus Over Network with Noisy Links (I), pp. 146-154.	
Touri, Behrouz	Univ. of Illinois at Urbana-Champaign
Nedic, Angelia	Univ. of Illinois at Urbana-Champaign

**TuA5**

Discovery

**Situation Awareness I (Regular Session)**

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Chair: Schubert, Johan	Swedish Defence Res. Agency
10:30-10:50	TuA5.1
Analytic Network Process for Model Elicitation in Nation-Building Simulations, pp. 155-162.	
Zhang, Ying	Univ. at Buffalo (SUNY)
Nagi, Rakesh	Univ. at Buffalo (SUNY)
Sudit, Moises	UB/CUBRC
10:50-11:10	TuA5.2

Evaluation Methods for Distributed Multi-Platform Systems in Electronic Warfare and Information-Warfare Related Missions, pp. 163-170.	
Sambhoos, Kedar	CUBRC
Llinas, James	Univ. at Buffalo
11:10-11:30	TuA5.3
Evaluation of a Workshop to Capture Knowledge from Subject Matter Experts in Maritime Surveillance, pp. 171-178.	
van Laere, Joeri	Univ. of Skövde
Nilsson, Maria	Univ. of Skövde
11:30-11:50	TuA5.4
Situation Assessment for a Centralised Intelligence Fusion Framework for Emergency Services, pp. 179-186.	
Stampouli, Dafni	EADS
Vincen, Daniel	EADS
Powell, Gavin	EADS
11:50-12:10	TuA5.5
Threat Assessment Using Context-Based Tracking in a Maritime Environment, pp. 187-194.	
George, Jemin	The State Univ. of New York at Buffalo
Crassidis, John L.	Univ. at Buffalo, State Univ. of New York
Singh, Tarunraj	State Univ. of New York at Buffalo

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**TuA6** Portland

**Classification I (Regular Session)**

Chair: Varshney, Pramod	Syracuse Univ.
10:30-10:50	TuA6.1
Multi-View Fusion Based on Belief Functions for Seabed Recognition, pp. 195-202.	
Laanaya, Hicham	ENSIETA
Martin, Arnaud	Ensieta
10:50-11:10	TuA6.2
GMTI and IMINT Data Fusion for Multiple Target Tracking and Classification, pp. 203-210.	
Pannetier, Benjamin	Onera
Dezert, Jean	ONERA - The French Aerospace Lab.
11:10-11:30	TuA6.3
Maximizing Expected Gain in Supervised Discrete Bayesian Classification When Fusing Binary Valued Features, pp. 211-216.	
Lynch, Robert	Naval Undersea Warfare Center
Willett, Peter	Univ. of Connecticut
11:30-11:50	TuA6.4
Fusion Technologies for Radar Target Classification Using Dempster-Shafer Rules in Littoral Environment, pp. 217-223.	
Kouemou, Guy Leonard	EADS Deutschland GmbH
Opitz, Felix	EADS Deutschland GmbH
Neumann, Christoph	EADS Deutschland GmbH
11:50-12:10	TuA6.5
Fusing Similarities and Euclidean Features with Generative Classifiers, pp. 224-231.	
Cazzanti, Luca	Univ. of Washington
Gupta, Maya	Univ. of Washington
Srivastava, Santosh	Fred Hutchinson Cancer Res. Center

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**TuA7** Eliza Anderson

**Ontology-Based Reasoning (Regular Session)**

Chair: Kokar, Mieczyslaw	Northeastern Univ.
10:30-10:50	TuA7.1
Acoustic Vehicle Classification by Fusing with Semantic Annotation, pp. 232-239.	
Guo, Baofeng	Univ. of Southampton
Mark, Nixon	Univ. of Southampton
Damarla, Thyagaraju	US Army Res. Lab.
10:50-11:10	TuA7.2
Towards the Formal Representation of Temporal Aspects of Enemy/Threat Courses of Action, pp. 240-247.	
Matheus, Christopher	VISTology, Inc.
Ulichny, Brian	VISTology, Inc.
Kokar, Mieczyslaw	Northeastern Univ.
Powell, Gerald	US. Army RDECOM
11:10-11:30	TuA7.3
A Multi-Disciplinary Approach to High Level Fusion in Predictive Situational Awareness, pp. 248-255.	
Costa, Paulo Cesar	George Mason Univ.
Chang, KuoChu	George Mason Univ.
Laskey, Kathryn	George Mason Univ.
Carvalho, Rommel	George Mason Univ.
11:30-11:50	TuA7.4
Process Refinement Using Biosensor Location Problem, pp. 256-263.	

Sambhoos, Kedar	CUBRC
Temel, Melih	State Univ. of New York at Buffalo
Pan, Feng	State Univ. of New York at Buffalo
Sudit, Moises	UB/CUBRC
11:50-12:10	TuA7.5
Information Evaluation in Fusion Using Information Correlation, pp. 264-269.	
Nimier, Vincent	ONERA
Cholvy, Laurence	ONERA

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**TuB1** Leonesia I

**Particle Filters and Monte Carlo Methods II** (Regular Session)

Chair: Morelande, Mark Richard	The Univ. of Melbourne
13:10-13:30	TuB1.1
Gaussian Mixtures Proposal Density in Particle Filter for Track-Before-Detect, pp. 270-277.	
Straka, Ondrej	Univ. of West Bohemia
Simandl, Miroslav	Univ. of West Bohemia in Pilsen
Dunik, Jindrich	Univ. of West Bohemia
13:30-13:50	TuB1.2
Particle Based MAP State Estimation: A Comparison, pp. 278-283.	
Saha, Saikat	Univ. of Twente
Boers, Yvo	Thales Nederland B. V.
Driessen, Hans	Thales Nederland BV
Mandal, Pranab Kumar	Univ. of Twente
Bagchi, Arunabha	Univ. of Twente
13:50-14:10	TuB1.3
Contour Extraction from Ultrasound Images Viewed As a Tracking Problem, pp. 284-291.	
Angelova, Donka	Bulgarian Acad. of Sciences
Mihaylova, Lyudmila	Lancaster Univ.
14:10-14:30	TuB1.4
Joint Data Association Using Importance Sampling, pp. 292-299.	
Morelande, Mark Richard	The Univ. of Melbourne

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**TuB2** Leonesia III

**Target Tracking II** (Regular Session)

Chair: Vo, Ba-Ngu	Univ. of Melbourne
13:10-13:30	TuB2.1
Performance Evaluation of MHT and GM-CPHD in a Ground Target Tracking Scenario, pp. 300-307.	
Svensson, Daniel	Chalmers Univ. of Tech.
Wintenby, Johannes	Saab Microwave Systems
Svensson, Lennart	Chalmers Univ. of Tech.
13:30-13:50	TuB2.2
PHD Intensity Filtering Is One Step of a MAP Estimation Algorithm for Positron Emission Tomography, pp. 308-315.	
Streit, Roy	Metron
13:50-14:10	TuB2.3
Multitarget Tracking Algorithm - Joint IPDA and Gaussian Mixture PHD Filter, pp. 316-323.	
Chakravorty, Rajib	National ICT Australia
Challa, Subhash	National ICT Australia
14:10-14:30	TuB2.4
Combining PMHT with Classifications to Perform SLAM, pp. 324-331.	
Cheung, Brian	DSTO, Australia
Davey, Samuel	DSTO, Australia
Gray, Douglas	Univ. of Adelaide
14:30-14:50	TuB2.5
A Look at the PMHT, pp. 332-339.	
Crouse, David	Univ. of Connecticut
Guerriero, Marco	Univ. of Connecticut
Willett, Peter	Univ. of Connecticut
Streit, Roy	Metron
Dunham, Darin	Vectraxx Inc.

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**TuB3** Pricessa I

**UAV Planning** (Regular Session)

Chair: Li, X. Rong	Univ. of New Orleans
13:10-13:30	TuB3.1
A GOOGLE-Earth Based Test Bed for Structural Image-Based UAV Navigation, pp. 340-346.	
Michaelsen, Eckart	FGAN-FOM Forschungsinstitut für Optronik und Mustererkennung
Jäger, Klaus	FGAN-FOM Forschungsinstitut für Optronik und Mustererkennung

13:30-13:50		TuB3.2
Co-Evolutionary Information Gathering for a Cooperative Unmanned Aerial Vehicle Team, pp. 347-354.		
Berger, Jean	Defence R&D Canada - Valcartier	
Jens, Happe	MacDonald Dettwiler & Associates Ltd.	
13:50-14:10		TuB3.3
Decentralized Geolocation and Optimal Path Planning Using Limited UAVs, pp. 355-362.		
Semper, Sean	Univ. at Buffalo, State Univ. of New York	
Crassidis, John L.	Univ. at Buffalo, State Univ. of New York	
14:10-14:30		TuB3.4
Tracking with UAV Using Tangent-Plus-Lyapunov Vector Field Guidance, pp. 363-372.		
Chen, Hongda	Intelligent Automation Inc	
Chang, KuoChu	George Mason Univ.	
Agate, Craig	Toyon Res. Corp.	
14:30-14:50		TuB3.5
Performance Analysis and Correlation Selection with Doppler Measurements, pp. 373-379.		
Yuan, Xianghui	Xi'an Jiaotong Univ.	
Han, Chongzhao	Xian Jiaotong Univ.	
Duan, Zhansheng	Univ. of New Orleans	

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**TuB4** Pricessa II

**Sensor Networks II (Regular Session)**

Chair: Rao, Nageswara	Oak Ridge National Lab.	
13:10-13:30		TuB4.1
A Decentralized Gauss-Seidel Approach for In-Network Sparse Signal Recovery, pp. 380-387.		
Ling, Qing	Michigan Tech. Univ.	
Tian, Zhi	Michigan Tech. Univ.	
13:30-13:50		TuB4.2
Average-Consensus with Switched Markovian Network Links, pp. 388-395.		
Topley, Kevin	Univ. of British Columbia	
Krishnamurthy, Vikram	Univ. of British Columbia	
Yin, George	Wayne State Univ.	
13:50-14:10		TuB4.3
Estimation of Crowd Behavior Using Sensor Networks and Sensor Fusion, pp. 396-403.		
Andersson, Maria	Swedish Defence Res. Agency	
Rydell, Joakim	Swedish Defence Res. Agency	
Ahlberg, Jörgen	Swedish Defence Res. Agency	
14:10-14:30		TuB4.4
Shooter Localization in Wireless Sensor Networks, pp. 404-411.		
Lindgren, David	Swedish Defence Res. Agency	
Gustafsson, Fredrik	Linkoping Univ.	
Wilsso, Olof	Swedish Defence Res. Agency	
Habberstad, Hans	FOI	
14:30-14:50		TuB4.5
Bi-Target Tracking within a Binary Sensor Network, pp. 412-419.		
Ickowicz, Adrien	IRISA/CNRS	
Le Cadre, Jean-Pierre	IRISA / CNRS Rennes	

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**TuB5** Discovery

**Situation Awareness II (Regular Session)**

Chair: Laskey, Kathryn	George Mason Univ.	
13:10-13:30		TuB5.1
Joint Threat Assessment with Asset Profiling and Entity Bayes Net, pp. 420-427.		
Lampinen, Timo Petri	Inst. DefSec	
Ropponen, Janne	Inst. DefSec Oy	
Laitinen, Tommi	Finnish Defence Forces	
13:30-13:50		TuB5.2
System Prediction Combining State Estimation with an Evidential Influence Diagram, pp. 428-435.		
Schubert, Johan	Swedish Defence Res. Agency	
Svenson, Pontus	Swedish Defence Res. Agency	
Mirtenson, Christian	Swedish Defence Res. Agency	
13:50-14:10		TuB5.3
Signature-Based Activity Detection Based on Bayesian Networks Acquired from Expert Knowledge, pp. 436-443.		
Fooladvandi, Farzad	Saab Microwave Systems	
Brax, Christoffer	Univ. of Skövde	
14:10-14:30		TuB5.4

Intention Recognition for Partial-Order Plans Using Dynamic Bayesian Networks (I), pp. 444-451.

Krauthausen, Peter  
Hanebeck, Uwe

Univ. Karlsruhe (TH)  
Univ. Karlsruhe

14:30-14:50

TuB5.5

Incremental Graph Matching for Situation Awareness (I), pp. 452-459.

Stotz, Adam  
Nagi, Rakesh  
Sudit, Moises

CUBRC  
Univ. at Buffalo (SUNY)  
UB/CUBRC

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## TuB6

Portland

### Classification II (Regular Session)

Chair: Gupta, Maya

Univ. of Washington

13:10-13:30

TuB6.1

Fusion of Dimensionality Reduction Methods: A Case Study in Microarray Classification, pp. 460-465.

Deegalla, Sampath  
Boström, Henrik

Stockholm Univ.  
Univ. of Skövde

13:30-13:50

TuB6.2

The ROC Manifold of Fused Independent Classification Systems, pp. 466-473.

Oxley, Mark  
Thorsen, Steven  
Schubert, Christine

Air Force Inst. of Tech.  
US Air Force Acad.  
Virginia Commonwealth Univ.

13:50-14:10

TuB6.3

Fusing Similarities and Kernels for Classification, pp. 474-481.

Chen, Yihua  
Gupta, Maya

Univ. of Washington  
Univ. of Washington

14:10-14:30

TuB6.4

Embedded Realtime Feature Fusion Based on ANN, SVM and NBC, pp. 482-489.

Starzacher, Andreas  
Rinner, Bernhard

Klagenfurt Univ.  
Klagenfurt Univ.

14:30-14:50

TuB6.5

A Novel Feature Line Segment Approach for Pattern Classification, pp. 490-497.

Yang, Yi  
Han, Chongzhao  
Han, Deqiang

Xi'an Jiaotong Univ.  
Xian Jiaotong Univ.  
Xi'an Jiaotong Univ.

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## TuB7

Eliza Anderson

### Belief Functions, Theory (Regular Session)

Chair: Martin, Arnaud

Ensieta

13:10-13:30

TuB7.1

Belief Assignment on Compound Hypotheses within the Framework of the Transferable Belief Model, pp. 498-505.

Veremme, Alexandre  
Lefevre, Eric  
Dupont, Daniel  
Mercier, David

Univ. d'Artois  
Univ. d'Artois  
HEI  
Univ. of Artois

13:30-13:50

TuB7.2

A State Estimation Method for Multiple Model Systems Using Belief Function Theory, pp. 506-513.

Nassreddine, Ghali  
Abdallah, Fahed  
Denoëux, Thierry

UTC - Univ. de Tech. Compiègne  
Utc  
Compiègne Univ. of Tech.

13:50-14:10

TuB7.3

Theory of Belief Functions for Information Combination and Update in Search and Rescue Operations., pp. 514-521.

DorÉ, Pierre-Emmanuel  
Martin, Arnaud  
Abi-Zeid, Irène  
Jousselle, Anne-Laure  
Maupin, Patrick

ENSIETA  
Ensieta  
Faculté des Science de l'Administration  
DRDC, Defence Res. and Development  
DRDC, Defence Res. and Development

14:10-14:30

TuB7.4

Dempster-Shafer Theory: Combination of Information Using Contextual Knowledge, pp. 522-528.

Florea, Mihai Cristian  
Bosse, Eloi

Thales Canada Inc.  
Defence R&D Canada-Valcartier

14:30-14:50

TuB7.5

Reliability and Combination Rule in the Theory of Belief Functions, pp. 529-536.

Martin, Arnaud

Ensieta

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## TuC1

Leonesia I

### Distributed Fusion I (Regular Session)

Chair: Chang, KuoChu	George Mason Univ.
15:20-15:40	TuC1.1
Exact Algorithms for Four Track-To-Track Fusion Configurations: All You Wanted to Know but Were Afraid to Ask, pp. 537-544.	
Tian, Xin	Univ. of Connecticut
Bar-Shalom, Yaakov	Univ. of Connecticut
15:40-16:00	TuC1.2
Decentralised Data Fusion: A Graphical Model Approach, pp. 545-554.	
Makarenko, Alexei	Univ. of Sydney
Brooks, Alex	Univ. of Sydney
16:00-16:20	TuC1.3
Generalized Chernoff Fusion Approximation for Practical Distributed Data Fusion, pp. 555-562.	
Farrell, William	Adaptive Methods, Inc.
Ganesh, Chidambar	NAVSEA
16:20-16:40	TuC1.4
Optimal Distributed Estimation Fusion with Compressed Data, pp. 563-570.	
Duan, Zhansheng	Univ. of New Orleans
Li, X. Rong	Univ. of New Orleans
16:40-17:00	TuC1.5
A Fast and Fault-Tolerant Convex Combination Fusion Algorithm under Unknown Cross-Correlation, pp. 571-578.	
Wang, Yimin	Xi'an Jiaotong Univ.
Li, X. Rong	Univ. of New Orleans

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**TuC2** Leonesia III

**Target Tracking III (Regular Session)**

Chair: Kirubarajan, Thia	McMaster Univ.
15:20-15:40	TuC2.1
Gaussian Filtering Using State Decomposition Methods, pp. 579-586.	
Beutler, Frederik	Univ. Karlsruhe (TH)
Huber, Marco F.	Intelligent Sensor-Actuator-Systems Lab. Univ. Karl
Hanebeck, Uwe	Univ. Karlsruhe
15:40-16:00	TuC2.2
Extension of the Sliced Gaussian Mixture Filter with Application to Cooperative Passive Target Tracking, pp. 587-594.	
Hoerst, Julian	Univ. Karlsruhe (TH)
Sawo, Felix	Univ. Karlsruhe (TH)
Klumpp, Vesa	Univ. Karlsruhe (TH)
Hanebeck, Uwe	Univ. Karlsruhe
Fraenken, Dietrich	EADS Deutschland GmbH
16:00-16:20	TuC2.3
Multitarget Tracking Using the Joint Multitrack Probability Density, pp. 595-602.	
Garcia-Fernandez, Angel F.	Univ. Pol. de Madrid
Grajal, Jesus	Tech. Univ. of Madrid
16:20-16:40	TuC2.4
A Scalable Method of Tracking Targets with Dependent Distributions, pp. 603-610.	
Horridge, Paul	QinetiQ
Maskell, Simon	QinetiQ
16:40-17:00	TuC2.5
Searching For, Initiating and Tracking Multiple Targets Using Existence Probabilities, pp. 611-617.	
Horridge, Paul	QinetiQ
Maskell, Simon	QinetiQ

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**TuC3** Pricessa I

**Detection and Tracking (Regular Session)**

Chair: Willett, Peter	Univ. of Connecticut
15:20-15:40	TuC3.1
Track-Before-Detect for Sensors with Complex Measurements, pp. 618-625.	
Davey, Samuel	DSTO, Australia
Cheung, Brian	Defence Science and Tech. Organisation
Rutten, Mark	DSTO
15:40-16:00	TuC3.2
Non-Parametric Laser and Video Data Fusion: Application to Pedestrian Detection in Urban Environment, pp. 626-632.	
Gidel, Samuel	Blaise Pascal Univ.
Blanc, Christophe	UBP
Chateau, Thierry	Lasmea
Checchin, Paul	Blaise Pascal Univ.
Tassoudaine, Laurent	Univ. of Clermont-Ferrand
16:00-16:20	TuC3.3



Improved SPRT Detection Using Localization with Application to Radiation Sources, pp. 633-640.	Oak Ridge National Lab. Oak Ridge National Lab. Oak Ridge National Lab. Purdue Univ. Purdue Univ. Purdue Univ. Univ. of Illinois at Urbana Champaign Univ. of Florida
Rao, Nageswara Glover, Charles Shankar, Mallikarjun Chin, Jren-Chit Yau, David Ma, Chris Yang, Yong Sahni, Sartaj	
16:20-16:40	TuC3.4
Sequential Bayesian Estimation of the Probability of Detection for Tracking, pp. 641-648.	Univ. of Washington Univ. of Washington Applied Physics Lab. Univ. of Washington
Jamieson, Kevin Gupta, Maya Krout, David	
16:40-17:00	TuC3.5
Adaptive Target Tracking for Wideband Sources in Near Field, pp. 649-655.	National Taiwan Ocean Univ. National Taiwan Ocean Univ.
Chang, Lena Cheng, Ching-Min	

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**TuC4** Pricessa II

**Sensor Networks III (Regular Session)**

Chair: Cetin, Mujdat	Sabanci Univ.
15:20-15:40	TuC4.1
Dynamic Clustering and Belief Propagation for Distributed Inference in Random Sensor Networks with Deficient Links, pp. 656-663.	Lancaster Univ. Lancaster Univ.
Amadou Gning, El Hadji Mihaylova, Lyudmila	
15:40-16:00	TuC4.2
Cooperative Training for Attribute-Distributed Data: Trade-Off between Data Transmission and Performance, pp. 664-671.	Princeton Univ. Princeton Univ. Princeton Univ.
Zheng, Haipeng Kulkarni, Sanjeev R. Poor, H. Vincent	
16:00-16:20	TuC4.3
Dynamic Coalition Formation for Efficient Sleep Time Allocation in Wireless Sensor Networks Using Cooperative Game Theory, pp. 672-677.	Univ. of British Columbia Univ. of British Columbia
Namvar Gharehshiran, Omid Krishnamurthy, Vikram	
16:20-16:40	TuC4.4
Fusing Spatially and Temporally Separated Single-Point Turbulent Plasma Flow Measurements into Two-Dimensional Time-Resolved Visualizations, pp. 678-685.	The Univ. of Michigan Univ. of Michigan
Lobbia, Robert B. Gallimore, Alec	
16:40-17:00	TuC4.5
A Maximum Likelihood Approach to Joint Registration, Association and Fusion for Multi-Sensor Multi-Target Tracking, pp. 686-693.	Univ. of Calgary Univ. of Calgary Defence R&D Canada-Valcartier
Chen, Siyue Leung, Henry Bosse, Eloi	

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**TuC5** Discovery

**Situation Awareness III (Regular Session)**

Chair: Jakobson, Gabriel	Altusys Corp.
15:20-15:40	TuC5.1
An Ensemble Approach for Increased Anomaly Detection Performance in Video Surveillance Data, pp. 694-701.	Univ. of Skövde Univ. of Skövde Saab AB & Univ. of Skövde, Sweden
Brax, Christoffer Niklasson, Lars Laxhammar, Rikard	
15:40-16:00	TuC5.2
Decision Based Uncertainty Propagation Using Adaptive Gaussian Mixtures, pp. 702-709.	Univ. at Buffalo Univ. at Buffalo State Univ. of New York at Buffalo Univ. at Buffalo
Terejanu, Gabriel Alin Singla, Puneet Singh, Tarunraj Scott, Peter	
16:00-16:20	TuC5.3
Uncertainty Propagation in Puff-Based Dispersion Models Using Polynomial Chaos, pp. 710-716.	Univ. at Buffalo State Univ. of New York at Buffalo Univ. at Buffalo Univ. at Buffalo
Konda, Umamaheswara Singh, Tarunraj Singla, Puneet Scott, Peter	

16:20-16:40 TuC5.4  
 Solving Disagreements in a Multi-Agent System Performing Situation Assessment, pp. 717-724.  
 Settembre, Giuseppe Paolo "Sapienza" Univ. of Rome  
 Farinelli, Alessandro Univ. of Verona  
 Nardi, Daniele Univ. "Sapienza" of Rome  
 Pigliacampo, Roberta Finmeccanica  
 Rossi, Mirco Finmeccanica

16:40-17:00 TuC5.5  
 Context-Sensitive Data Fusion Using Structural Equation Modeling, pp. 725-731.  
 Steinberg, Alan Alan N. Steinberg, Independent Consultant

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**TuC6** Portland

**Anomaly Detection (Regular Session)**

Chair: Jilkov, Vesselin Univ. of New Orleans

15:20-15:40 TuC6.1  
 Fault Detection for Systems with Multiple Unknown Modes and Similar Units - Part I, pp. 732-739.  
 Bashi, Anwer Computrols, Inc.  
 Jilkov, Vesselin Univ. of New Orleans  
 Li, X. Rong Univ. of New Orleans

15:40-16:00 TuC6.2  
 Fault Detection for Systems with Multiple Unknown Modes and Similar Units - Part II: Application to HVAC, pp. 740-747.  
 Bashi, Anwer Computrols, Inc.  
 Jilkov, Vesselin Univ. of New Orleans  
 Li, X. Rong Univ. of New Orleans

16:00-16:20 TuC6.3  
 Real World Implementation of Belief Function Theory to Detect Dislocation of Materials in Construction, pp. 748-755.  
 Razavi, Saiedeh Univ. of Waterloo  
 Haas, Carl Univ. of Waterloo  
 Vanheeghe, Philippe Ec. Centrale de Lille  
 Duflos, Emmanuel Ec. Centrale de Lille

16:20-16:40 TuC6.4  
 Anomaly Detection in Sea Traffic - a Comparison of the Gaussian Mixture Model and the Kernel Density Estimator, pp. 756-763.  
 Laxhammar, Rikard Saab AB & Univ. of Skövde, Sweden  
 Falkman, Göran Univ. of Skövde  
 Sviestins, Egils Saab AB

16:40-17:00 TuC6.5  
 Information Fusion Based Decision Support Via Hidden Markov Models and Time Series Anomaly Detection, pp. 764-771.  
 Barker, Jonathan Edward Dstl  
 Green, Richard John Dstl  
 Thomas, Paul UK Ministry of Defence  
 Brown, Gavin Dstl  
 Salmond, David DSTL

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**TuC7**

**Issues and Challenges in Higher Level Fusion: Threat/Impact Assessment (Panel Discussion)**

Chair: Salerno, John RIEA  
 Co-Chair: Kadar, Ivan Interlink Systems Sciences Inc.

15:00-17:40 TuC7.1  
*Issues and Challenges in Higher Level Fusion: Threat/Impact Assessment\**.  
 Kadar, Ivan Interlink Systems Sciences Inc.  
 Salerno, John RIEA

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**WePL**

**The Urban Challenge, by Chris Urmson, Carnegie Mellon University (Plenary Session)** Plenary Room

09:00-10:00 WePL.1  
*The Urban Challenge and the Promise of Autonomous Vehicles\**.  
 Urmson, Chris Carnegie Mellon Univ.

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**WeA1**

**Distributed Fusion II (Regular Session)** Leonesia I

Chair: Mori, Shozo BAE Systems

10:30-10:50 WeA1.1  
 Estimation of the Degree of Independent Information in Distributed Data Fusion Systems, pp. 772-779.  
 Julier, Simon J. Univ. Coll. London

10:50-11:10 WeA1.2  
 Distributed Estimation with Data Association: Is the Nearest Neighbor the Most Informative?, pp. 780-785.  
 Braca, Paolo Univ. of Salerno

Guerrero, Marco	Univ. of Connecticut
Marano, Stefano	Univ. of Salerno
Matta, Vincenzo	Univ. of Salerno
Willett, Peter	Univ. of Connecticut
11:10-11:30	WeA1.3
<b>Performance Evaluation of Decentralized Estimation Systems with Uncertain Communication, pp. 786-793.</b>	
Gelfand, Andrew	Decisive Analytics Corp.
Smith, Christopher	Decisive Analytics Corp.
Colony, Mike	Decisive Analytics Corp.
Bowman, Christopher	DF&NN
11:30-11:50	WeA1.4
<b>Towards the Understanding of Information Dynamics in Large-Scale Networked Systems, pp. 794-801.</b>	
Glinton, Robin	Carnegie Mellon Univ.
Scerri, Paul	Carnegie Mellon Univ.
Sycara, Katia	Carnegie Mellon Univ.
11:50-12:10	WeA1.5
<b>Distributed Target Tracking with Propagation Delayed Measurements, pp. 802-809.</b>	
Orguner, Umut	Linkoping Univ.
Gustafsson, Fredrik	Linkoping Univ.
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<b>WeA2</b>	Leonesia III
<b>Target Tracking IV (Regular Session)</b>	
Chair: Streit, Roy	Metron
10:30-10:50	WeA2.1
<b>Unifying Bayesian Networks and IMM Filtering for Improved Multiple Model Estimation, pp. 810-817.</b>	
Schubert, Robin	Chemnitz Univ. of Tech.
Wanielik, Gerd	Chemnitz Univ. of Tech.
10:50-11:10	WeA2.2
<b>Suboptimal JPDA for Tracking in the Presence of Clutter and Missed Detections, pp. 818-825.</b>	
Aoki, Edson Hiroshi	Embraer
Kienitz, Karl Heinz	Inst. Tecnologico de Aeronautica
11:10-11:30	WeA2.3
<b>An Efficient Message Passing Algorithm for Multi-Target Tracking, pp. 826-833.</b>	
Chen, Zhexu (Michael)	MIT
Chen, Lei	MIT
Cetin, Mujdat	Sabanci Univ.
Willsky, Alan S.	MIT
11:30-11:50	WeA2.4
<b>A Tree Search Approach to Target Tracking in Clutter, pp. 834-841.</b>	
Nelson, Jill	George Mason Univ.
Roufarshbaf, Hossein	George Mason Univ.
11:50-12:10	WeA2.5
<b>An Alternative Derivation of a Bayes Tracking Filter Based on Finite Mixture Models, pp. 842-849.</b>	
Liu, Weifeng	Xian Jiaotong Univ.
Han, Chongzhao	Xian Jiaotong Univ.
Lian, Feng	Xi'an Jiaotong Univ.
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<b>WeA3</b>	Pricessa I
<b>Fusion Evaluation Over Dynamic Data and Intelligent Targets I (Special Session)</b>	
Chair: Blasch, Erik	AFRL/RYAA
Co-Chair: Chen, Genshe	DCM Res. Res. LLC
10:30-10:50	WeA3.1
<b>Performance-Driven Resource Management in Layered Sensing (I), pp. 850-857.</b>	
Yang, Chun	Sigtem Tech. Inc.
Kadar, Ivan	Interlink Systems Sciences Inc.
Blasch, Erik	AFRL/RYAA
10:50-11:10	WeA3.2
<b>Impact of HRR Radar Processing on Moving Target Identification Performance (I), pp. 858-865.</b>	
Kahler, Bart	GD
Blasch, Erik	AFRL/RYAA
11:10-11:30	WeA3.3
<b>Challenges for IF Performance Evaluation in Practice (I), pp. 866-873.</b>	
van Laere, Joeri	Univ. of Skövde
11:30-11:50	WeA3.4
<b>Information Theoretic Measures for Performance Evaluation and Comparison (I), pp. 874-881.</b>	
Chen, Huimin	Univ. of New Orleans

Chen, Genshe	DCM Res. Res. LLC
11:50-12:10	WeA3.5
Approaches to Validation of Information Fusion Systems, pp. 882-889.	
Kott, Alexander	Army Res. Lab.
Wes, Milks	Lockheed Martin Corp.

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**WeA4** Pricessa II

**Finite Set Statistics (FISST): Theory and Applications I (Special Session)**

Chair: Mahler, Ronald	Lockheed Martin MS2 Tactical Systems
10:30-10:50	WeA4.1
Bayesian Multi-Object Estimation from Image Observations (I), pp. 890-898.	
Vo, Ba-Ngu	Univ. of Melbourne
Vo, Ba-Tuong	Univ. of Western Australia
Pham, Nam Trung	IRISA/INRIA
Suter, David	Univ. of Adelaide
10:50-11:10	WeA4.2
Forward-Backward Sequential Monte Carlo Smoothing for Joint Target Detection and Tracking (I), pp. 899-906.	
Clark, Daniel	Heriot-Watt Univ.
Vo, Ba-Ngu	Univ. of Melbourne
Vo, Ba-Tuong	Univ. of Western Australia
11:10-11:30	WeA4.3
Convoy Detection Processing by Using the Hybrid Algorithm (GMCPHD/VS-IMMC-MHT) and Dynamic Bayesian Networks (I), pp. 907-914.	
Pollard, Evangeline	ONERA
Pannetier, Benjamin	Onera
Rombaut, Michčle	GIPSA-Lab.
11:30-11:50	WeA4.4
PHD Filters for Nonstandard Targets, I: Extended Targets (I), pp. 915-921.	
Mahler, Ronald	Lockheed Martin MS2 Tactical Systems
11:50-12:10	WeA4.5
PHD Filters for Nonstandard Targets, II: Unresolved Targets (I), pp. 922-929.	
Mahler, Ronald	Lockheed Martin MS2 Tactical Systems

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**WeA5** Discovery

**Data Fusion on Networks (Special Session)**

Chair: Stone, Lawrence	Metron Inc
10:30-10:50	WeA5.1
Group Tracking on Dynamic Networks (I), pp. 930-937.	
Ferry, Jim	Metron, Inc.
10:50-11:10	WeA5.2
Non-Classical Markov Logic and Network Analysis (I), pp. 938-947.	
Wojtowicz, Ralph	Metron, Inc.
11:10-11:30	WeA5.3
Likelihood-Based Optimization of Threat Operation Timeline Estimation (I), pp. 948-953.	
Godfrey, Greg	Metron, Inc.
Miffin, Tom	Metron, Inc.
11:30-11:50	WeA5.4
Detection Theory on Random Graphs (I), pp. 954-959.	
Miffin, Tom	Metron, Inc.
11:50-12:10	WeA5.5
Distributed Terrain Estimation Using a Mixture-Model Based Algorithm, pp. 960-967.	
Schoenberg, Jonathan	Cornell Univ.
Campbell, Mark E.	Cornell Univ.

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**WeA6** Portland

**Hybrid Techniques for Adaptation of Data Fusion Systems (Special Session)**

Chair: Garcia Herrero, Jesus	Univ. Carlos III de Madrid
Co-Chair: Molina, Jose	Univ. Carlos III de Madrid
10:30-10:50	WeA6.1
Organization Based System for Oceanographic Monitoring (I), pp. 968-975.	
Mata, Aitor	Univ. of Salamanca
Pérez-Lancho, Belén	Univ. of Salamanca
Corchado, Emilio	Univ. de Burgos
Bajo, Javier	Univ. of Salamanca
10:50-11:10	WeA6.2
Agent/Source Characterization for Exploitation of Human-Generated Intelligence, pp. 976-983.	

Steinberg, Alan	Alan N. Steinberg, Independent Consultant
11:10-11:30	WeA6.3
Hybrid Neuro-Bayesian Spatial Contextual Reasoning for Scene Content Understanding, pp. 984-989.	
Garagic, Denis	BAE Systems
11:30-11:50	WeA6.4
Ovamah: Multiagent-Based Adaptive Virtual Organizations (I), pp. 990-997.	
Rodríguez, Sara	Univ. of Salamanca
Pérez-Lancho, Belén	Univ. of Salamanca
De Paz, Juan Francisco	Univ. of Salamanca
Bajo, Javier	Univ. of Salamanca
Corchado, Juan Manuel	Univ. of Salamanca
11:50-12:10	WeA6.5
Agent-Based Simulation Fusion for Improved Decision Making for Service Operations, pp. 998-1005.	
Hilletoft, Per	Univ. of Skövde
Ujvari, Sandor	Univ. of Skövde
Johansson, Ronnie	Univ. of Skövde
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<b>WeA7</b>	Eliza Anderson
<b>Extended Object and Group Tracking I (Special Session)</b>	
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Chair: Hanebeck, Uwe	Univ. Karlsruhe
Co-Chair: Baum, Marcus	Univ. Karlsruhe (TH)
10:30-10:50	WeA7.1
Model-Based Integrated HRR Object Tracking and Classification (I), pp. 1006-1013.	
Fasoula, Angie	Thales Nederland BV
Driessen, Hans	Thales Nederland BV
van Genderen, Piet	TU Delft
10:50-11:10	WeA7.2
Robust Kernel-Based Object Tracking with Multiple Kernel Centers (I), pp. 1014-1021.	
Zhang, Shuo	Univ. of Connecticut
Bar-Shalom, Yaakov	Univ. of Connecticut
11:10-11:30	WeA7.3
Using Lateral Length Measurements in GMTI Convoy Tracking (I), pp. 1022-1028.	
Mertens, Michael	FGAN-FKIE
Ulme, Martin	FGAN-FKIE
Klemm, Richard	FGAN-FHR
Koch, Wolfgang	German Defence Res. Establishment
11:30-11:50	WeA7.4
Advances on Tracking of Extended Objects and Group Targets Using Random Matrices (I), pp. 1029-1036.	
Feldmann, Michael	FGAN e.V.
Fraenken, Dietrich	EADS Deutschland GmbH
11:50-12:10	WeA7.5
Hybrid Cramer–Rao Lower Bound on Tracking Ground Moving Extended Target, pp. 1037-1044.	
Xu, Linfeng	Xian Jiaotong Univ.
Li, X. Rong	Univ. of New Orleans
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<b>WeB1</b>	Leonesia I
<b>Image Processing/Fusion I (Regular Session)</b>	
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Chair: Toet, Alexander	TNO Defense, Security and Safety
13:10-13:30	WeB1.1
Total Variation Regularization-Based Pixel Level Image Fusion, pp. 1045-1052.	
Kumar, Mrityunjay	Eastman Kodak Company
13:30-13:50	WeB1.2
Automatic Optical and IR Image Fusion for Plant Water Stress Analysis, pp. 1053-1059.	
Yang, Weiping	National Univ. of Defense Tech.
Wang, Xuezhi	Univ. of Melbourne
Wheaton, Ashley	The Univ. of Melbourne
Cooley, Nicola	Univ. of Melbourne
Moran, William	The Univ. of Melbourne
13:50-14:10	WeB1.3
Multi-Scale Fusion Algorithm Comparisons: Pyramid, DWT and Iterative DWT, pp. 1060-1067.	
Zheng, Yufeng	Alcorn State Univ.
14:10-14:30	WeB1.4
Animated Movie Activity Characterization by Image and Text Information Fusion, pp. 1068-1075.	
Pad's, Grégory	Univ. de savoie
14:30-14:50	WeB1.5

Diffuse Prior Monotonic Likelihood Ratio Test for Evaluation of Fused Image Quality Metrics, pp. 1076-1083.

Wei, Chuanming  
Kaplan, Lance  
Burks, Stephen  
Blum, Rick

Lehigh Univ.  
ARL  
Night Vision and Electronic Sensors Directorate  
Lehigh Univ.

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**WeB2**

Leonesia III

**Target Tracking V (Regular Session)**

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Chair: Koch, Wolfgang German Defence Res. Establishment  
13:10-13:30 WeB2.1

Maximum Likelihood Approach to HF Radar Performance Characterization, pp. 1084-1091.

Carthel, Craig  
Coraluppi, Stefano  
Willett, Peter  
Maratea, Marco  
Maguer, Alain

NATO Undersea Res. Centre  
NURC  
Univ. of Connecticut  
Univ. degli Studi di Genova  
NURC

13:30-13:50 WeB2.2

Performance Analysis of Data Fusion for Ground Target Tracking Using GSM Networks, pp. 1092-1099.

Zhang, Miao  
Knedlik, Stefan  
Loffeld, Otmar

Univ. of Siegen  
Univ. of Siegen  
Univ. of Siegen

13:50-14:10 WeB2.3

A New Performance Metric for Search and Track Missions, pp. 1100-1107.

Li, X. Rong  
Pitre, Ryan  
Jilkov, Vesselin  
Chen, Huimin

Univ. of New Orleans  
Univ. of New Orleans  
Univ. of New Orleans  
Univ. of New Orleans

14:10-14:30 WeB2.4

A New Performance Metric for Search and Track Missions 2: Design and Application to UAV Search, pp. 1108-1114.

Pitre, Ryan  
Li, X. Rong  
DelBalzo, Donald

Univ. of New Orleans  
Univ. of New Orleans  
Planning Systems Inc.

14:30-14:50 WeB2.5

Information Analysis in Passive Radar Networks for Target Tracking, pp. 1115-1122.

Soysal, Gokhan  
Bozdogan, Ali Onder  
Efe, Murat

Ankara Univ.  
Ankara Univ.  
Ankara Univ.

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**WeB3**

Pricessa I

**Fusion Evaluation Over Dynamic Data and Intelligent Targets II (Special Session)**

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Chair: Blasch, Erik AFRL/RYAA  
Co-Chair: Chen, Genshe DCM Res. Res. LLC  
13:10-13:30 WeB3.1

A Performance Evaluation Tool for Multi-Sensor Classification Systems, pp. 1123-1130.

Carvalho, Rommel  
Chang, KuoChu

George Mason Univ.  
George Mason Univ.

13:30-13:50 WeB3.2

Sensor Attack Avoidance: Linear Quadratic Game Approach (I), pp. 1131-1138.

Li, Dongxu  
Chen, Genshe  
Blasch, Erik  
Pham, Khanh

Ohio State Univ.  
DCM Res. Res. LLC  
AFRL/RYAA  
THE UNITED STATES AIR FORCE Res. Lab.

13:50-14:10 WeB3.3

Modeling ATR Processes to Predict Their Performance by Using Invariance, Robustness and Self-Refusal Approach (I), pp. 1139-1146.

Kovalerchuk, Boris

Central Washington Univ.

14:10-14:30 WeB3.4

Track-Centric Metrics for Track Fusion Systems, pp. 1147-1154.

Canavan, Robert  
McCullough, Claire  
Farrell, William

Univ. of Tennessee at Chattanooga  
Univ. of Tennessee at Chattanooga  
Adaptive Methods, Inc.

14:30-14:50 WeB3.5

A Geometric Feature-Aided Game Theoretic Approach to Sensor Management (I), pp. 1155-1162.

Li, Xiaokun  
Chen, Genshe  
Blasch, Erik  
Patrick, James  
Yang, Chun

DCM Res. Res. LLC  
DCM Res. Res. LLC  
AFRL/RYAA  
AFRL  
Sigtem Tech. Inc.

<b>WeB4</b>		Prizzera II
<b>Finite Set Statistics (FISST): Theory and Applications II (Special Session)</b>		
Chair: Mahler, Ronald	Lockheed Martin MS2 Tactical Systems	
13:10-13:30	Multitarget Tracking Via Joint PHD Filtering and Multiscan Association (I), pp. 1163-1170.	WeB4.1
Francesco, Papi		Univ. di Firenze
Battistelli, Giorgio		Univ. of Firenze
Chisci, Luigi		Univ. di Firenze
Morrocchi, Stefano		Univ. di Firenze
Farina, Alfonso		Selex - Sistemi Integrati
Graziano, Antonio		Selex - Sistemi Integrati
13:30-13:50	GM-PHD Filters for Multi-Object Tracking in Uncalibrated Aerial Videos (I), pp. 1171-1178.	WeB4.2
Pollard, Evangeline		ONERA
Plyer, Aurelien		Onera
Pannetier, Benjamin		Onera
Champagnat, Frédéric		ONERA
Le Besnerais, Guy		ONERA
13:50-14:10	The Gaussian Mixture MCMC Particle Algorithm for Dynamic Cluster Tracking (I), pp. 1179-1186.	WeB4.3
Carmi, Avishy		Cambridge Univ.
Septier, François		Cambridge Univ.
Godsill, Simon		Cambridge Univ.
14:10-14:30	Set JPDA Algorithm for Tracking Unordered Sets of Targets (I), pp. 1187-1194.	WeB4.4
Svensson, Lennart		Chalmers Univ. of Tech.
Svensson, Daniel		Chalmers Univ. of Tech.
Willett, Peter		Univ. of Connecticut
14:30-14:50	Comparative Performance Evaluation of GM-PHD Filter in Clutter (I), pp. 1195-1202.	WeB4.5
Juang, Radford		Johns Hopkins Univ. Applied Physics Lab.
Burlina, Philippe		Johns Hopkins Univ. Applied Physics Lab.
<b>WeB5</b>		Discovery
<b>Advances and Applications of DSMT for Information Fusion (Special Session)</b>		
Chair: Dezert, Jean	ONERA - The French Aerospace Lab.	
Co-Chair: Smarandache, Florentin	Univ. of New Mexico	
13:10-13:30	Refined Labels for Qualitative Information Fusion in Decision-Making Support System (I), pp. 1203-1210.	WeB5.1
Smarandache, Florentin		Univ. of New Mexico
Dezert, Jean		ONERA - The French Aerospace Lab.
Li, Xinde		Southeast Univ.
13:30-13:50	DSm Theory for Fusing Highly Conflicting ESM Reports (I), pp. 1211-1217.	WeB5.2
Valin, Pierre		Defence R&D Canada
Djiknavorian, Pascal		Laval Univ.
Grenier, Dominic		Univ. Laval
13:50-14:10	An Application of DSMT in Ontology-Based Fusion Systems (I), pp. 1218-1225.	WeB5.3
Krenc, Ksawery		OBR Centrum Tech. Morskiej S.A.
Kawalec, Adam		MILITARY Univ. OF Tech.
14:10-14:30	Modeling Evidence Fusion Rules by Means of Referee Functions (I), pp. 1226-1233.	WeB5.4
Dambreville, Frederic		Delegation Generale pour L Armement
14:30-14:50	Evidence Based Evaluation Method for Grid Based Environmental Representation, pp. 1234-1240.	WeB5.5
Grabe, Baerbel		Univ. of Applied Sciences and Arts Hannover
Ike, Thorsten		Univ. of Applied Sciences and Arts Hannover
Hoetter, Michael		Univ. of Applied Sciences and Arts Hannover
<b>WeB6</b>		Portland
<b>Integrating the Human Analyst into Hybrid Sensing (Special Session)</b>		
Chair: Hall, David		Penn State Univ.
Co-Chair: van Laere, Joeri		Univ. of Skövde
13:10-13:30		WeB6.1

Monitoring of Reliability in Bayesian Identification (I), pp. 1241-1248.	
Krueger, Max	IABG Industrieanlagen-Betriebsgesellschaft mbH
Kratzke, Nane	IABG
13:30-13:50	WeB6.2
Using Humans As Sensors in Robotic Search (I), pp. 1249-1256.	
Lewis, Michael	Univ. of Pittsburgh
Wang, Huadong	Univ. of Pittsburgh
Velagapudi, Prassana	Carnegie Mellon Univ.
Scerri, Paul	Carnegie Mellon Univ.
Sycara, Katia	Carnegie Mellon Univ.
13:50-14:10	WeB6.3
A Cyber Infrastructure for Evaluating the Performance of Human Centered Fusion (I), pp. 1257-1264.	
Hall, David	Penn State Univ.
McNeese, Michael	Penn State Univ.
Hellar, Ben	The Pennsylvania State Univ.
Panulla, Brian	Pennsylvania State Univ.
Shumaker, Wade	Pennsylvania State Univ.
14:10-14:30	WeB6.4
Incorporating the Human Analyst into the Data Fusion Process by Modeling Situation Awareness Using Fuzzy Cognitive Maps (I), pp. 1265-1271.	
Jones, Rashaad	SA Tech. Inc.
Connors, Erik	SA Tech. Inc.
Endsley, Mica	SA Tech. Inc.
14:30-14:50	WeB6.5
Implication of Culture: User Roles in Information Fusion for Enhanced Situational Understanding (I), pp. 1272-1279.	
Blasch, Erik	AFRL/RYAA
Valin, Pierre	Defence R&D Canada
Bosse, Eloi	Defence R&D Canada-Valcartier
Nilsson, Maria	Univ. of Skövde
van Laere, Joeri	Univ. of Skövde
Shahbazian, Elisa	OODA Tech.
<b>WeB7</b>	Eliza Anderson
<b>Extended Object and Group Tracking II (Special Session)</b>	
Chair: Hanebeck, Uwe	Univ. Karlsruhe
Co-Chair: Baum, Marcus	Univ. Karlsruhe (TH)
13:10-13:30	WeB7.1
Tracking of Multiple Contaminant Clouds (I), pp. 1280-1287.	
Septier, François	Cambridge Univ.
Carmi, Avishy	Cambridge Univ.
Godsill, Simon	Cambridge Univ.
13:30-13:50	WeB7.2
Extended Object Tracking Based on Combined Set-Theoretic and Stochastic Fusion (I), pp. 1288-1295.	
Baum, Marcus	Univ. Karlsruhe (TH)
Hanebeck, Uwe	Univ. Karlsruhe
13:50-14:10	WeB7.3
Permutation Invariance in Bayesian Estimation of Two Targets That Maneuver in and Out Formation Flight (I), pp. 1296-1303.	
Blom, Henk A.P.	National Aerospace Lab. NLR
Bloem, Edwin A.	National Aerospace Lab. NLR
<b>WeC1</b>	Leonesia I
<b>Image Processing/Fusion II (Regular Session)</b>	
Chair: Leung, Henry	Univ. of Calgary
15:20-15:40	WeC1.1
MutanT: A Modular and Generic Tool for Multi-Sensor Data Processing, pp. 1304-1309.	
Hawe, Simon	Univ.
Kirchmaier, Ulrich	Tech. Univ. München
Diepold, Klaus	Univ.
15:40-16:00	WeC1.2
Noise Reduction for Tiny Contours in Image Sequence, pp. 1310-1316.	
Ming, Zhai	Shanghai Jiao Tong Univ. Shanghai, P.R.China
Shan, Fu	Shanghai Jiao Tong Univ.
16:00-16:20	WeC1.3
Sonar Image Registration Based on Conflict from Belief Function Theory, pp. 1317-1324.	
Rominger, Cedric	ENSIETA
Martin, Arnaud	Ensieta
Khenchaf, Ali	ENSIETA



Laanaya, Hicham	ENSIETA
16:20-16:40	WeC1.4
An EM-CI Based Approach to Fusion of IR and Visual Images, pp. 1325-1330.	
Chen, Siyue	Univ. of Calgary
Leung, Henry	Univ. of Calgary

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<b>WeC2</b>	Leonesia III
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<b>Intelligent Transportation (Regular Session)</b>
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Chair: Mihaylova, Lyudmila	Lancaster Univ.
15:20-15:40	WeC2.1
Freeway Travel Time Forecast Using Artificial Neural Networks with Cluster Method, pp. 1331-1338.	
Lee, Ying	MingDao Univ.
15:40-16:00	WeC2.2
Multi Sensor Mapping of Rail Networks, pp. 1339-1346.	
Hensel, Stefan	Univ. Karlsruhe
Hasberg, Carsten	Univ. of Karlsruhe
16:00-16:20	WeC2.3
Integrated Probabilistic Approach to Environmental Perception with Self-Diagnosis Capability for Advanced Driver Assistance Systems, pp. 1347-1354.	
Jerhot, Jiri	Volkswagen AG
Meinecke, Marc-Michael	Volkswagen AG
Form, Thomas	Volkswagen AG
Nguyen, Thien-Nghia	Univ. of Magdeburg
Stanek, Ganymed	Volkswagen of America
Knaup, Jörn	Volkswagen AG
16:20-16:40	WeC2.4
Syntactic Inference for Highway Traffic Analysis, pp. 1355-1362.	
Wang, Alex	Univ. of British Columbia
Araujo, Jose	Royal Inst. of Tech.
Krishnamurthy, Vikram	Univ. of British Columbia
16:40-17:00	WeC2.5
Multi-Hypothesis Based Map-Matching Algorithm for Precise Train Positioning, pp. 1363-1369.	
Gerlach, Katrin	German Aerospace Center
Rahmig, Christian	German Aerospace Center

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<b>WeC3</b>	Pricessa I
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<b>Fusion &amp; Policy Issues and Capabilities for Coalition Operations (Special Session)</b>
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Chair: Pham, Tien	US Army Res. Lab.
Co-Chair: Kaplan, Lance	ARL
15:20-15:40	WeC3.1
Building Principles for a Quality of Information Specification for Sensor Information (I), pp. 1370-1377.	
Thornley, David	Imperial Coll. Department of Computing
Kaplan, Lance	ARL
Bisdikian, Chatschik	IBM Corp.
Srivastava, Mani	UCLA
Young, Robert	MOD
Verma, Dinesh	IBM TJ Watson Res. Center
15:40-16:00	WeC3.2
An End to End Life Cycle for ISR in Coalition Networks (I), pp. 1378-1384.	
Cirincione, Gregory	U.S. Army Res. Lab.
Verma, Dinesh	IBM TJ Watson Res. Center
Pham, Tien	US Army Res. Lab.
Pearson, Gavin	DSTL
16:00-16:20	WeC3.3
Technologies for Federation and Interoperation of Coalition Networks (I), pp. 1385-1392.	
Calo, Seraphin	IBM T.J. Watson Res. Center
Wood, David	IBM T.J. Watson Res. Center
Zerfos, Petros	IBM T.J. Watson Res. Center
Vyvyan, David	IBM United Kingdom Limited
Dantressangle, Patrick	IBM United Kingdom Limited
Bent, Graham	IBM United Kingdom Limited
16:20-16:40	WeC3.4
A Dynamic Infrastructure for Interconnecting Disparate ISR/ISTAR Assets (the ITA Sensor Fabric) (I), pp. 1393-1400.	
Bergamaschi, Flavio	IBM UK Limited
Gibson, Christopher	IBM UK Limited
Wright, Joel James	IBM UK
Whipps, Gene	US Army Res. Lab.

Verma, Gunjan	Army Res. Lab.
Marcus, Kelvin	Army Res. Lab.
Pressley, Ryan	U.S. Army Res. Lab.
16:40-17:00	WeC3.5
Foundations for System Implementation a Centralised Intelligence Fusion Framework for Emergency Services, pp. 1401-1408.	
Vincen, Daniel	EADS
Stampouli, Dafni	EADS
Powell, Gavin	EADS

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**WeC4** Princessa II

**Color in Image and Information Fusion (Special Session)**

Chair: Toet, Alexander	TNO Defense, Security and Safety
Co-Chair: Nikolov, Stavri	Attentive Displays Ltd
15:20-15:40	WeC4.1
Evaluation of Image Fusion Methods (I), pp. 1409-1416.	
Klonus, Sascha	Univ. of Osnabrueck
Ehlers, Manfred	Univ. of Osnabrueck
15:40-16:00	WeC4.2
Towards an Optimal Color Representation for Multiband Nightvision Systems (I), pp. 1417-1423.	
Toet, Alexander	TNO Defense, Security and Safety
Hogervorst, Maarten Andreas	TNO Defense & Security
16:00-16:20	WeC4.3
A Convex Formulation for Color Image Segmentation in the Context of Passive Emitter Localization (I), pp. 1424-1431.	
Schikora, Marek	FGAN Res. Inst. for Communication, Information Processi
Häge, Miriam	FGAN Res. Inst. for Communication, Information Processi
Ruthotto, Eicke	FGAN-FKIE
Wild, Klaus	FGAN-FKIE
16:20-16:40	WeC4.4
Evaluation of a Color Fused Dual-Band NVG (I), pp. 1432-1438.	
Hogervorst, Maarten Andreas	TNO Defense & Security
Toet, Alexander	TNO Defense, Security and Safety
16:40-17:00	WeC4.5
Fused EO/IR Detection & Tracking of Surface Targets: Flight Demonstrations (I), pp. 1439-1443.	
Waxman, Allen	DARPA

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**WeC5** Discovery

**Boeing Special Session (Special Session)**

Chair: Lien, Steven	The Boeing Company
Co-Chair: Wang, Changzhou	Boeing
15:20-15:40	WeC5.1
Boeing Fusion Performance Analysis (FPA) Tool (I), pp. 1444-1450.	
Jackson, Paul, R	The Boeing Company
Musiak, Jeffery	The Boeing Company
15:40-16:00	WeC5.2
CMAP: A Flexible and Efficient Framework for Constraint-Based Mining of Activity Patterns (I), pp. 1451-1458.	
Wang, Changzhou	Boeing
Choi, Jai	Boeing Res. & Tech.
Kao, Anne	Boeing
Tjoelker, Rodney	Boeing
16:00-16:20	WeC5.3
Dynamic Resource Allocation and Management for Level 4 Fusion (I), pp. 1459-1466.	
Bradley, Thomas	Boeing Co.
16:20-16:40	WeC5.4
Boeing Phantom Works Fusion Architecture: A Flexible Approach for Multiple Projects and Domains (I), pp. 1467-1472.	
King, Jeffrey	Boeing Co.
Hartman, Brett	Boeing
16:40-17:00	WeC5.5
Characterizing the Tradeoffs between Different Sensor Allocation and Management Algorithms (I), pp. 1473-1480.	
Thunemann, Zack	The Boeing Company
Mattikalli, Raju	The Boeing Company
Arroyo, Sharon	The Boeing Company
Frank, Paul	The Boeing Company

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**WeC6** Portland

**Applications I (Regular Session)**

Chair: Chong, Chee-Yee	BAE Systems
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15:20-15:40		WeC6.1
Data Fusion Techniques Applied to Scenarios Including ADS-B and Radar Sensors for Air Traffic Control, pp. 1481-1488.		
Lana Roldao da Silva, Julio		EMBRAER
Brancalion, José		Embraer
Fernandes, David	Inst. Tecnológico de Aeronautica	
15:40-16:00		WeC6.2
Fusion for Modeling Wake Effects on Wind Turbines, pp. 1489-1496.		
Yan, Yanjun		Syracuse Univ.
Kamath, Ganapathi		Syracuse Univ.
Osadciw, Lisa		Syracuse Univ.
Benson, Glen		AWS Truewind, LLC
Legac, Paul		AWS Truewind, LLC
Johnson, Peter		AWS Truewind, LLC
White, Eric		AWS Truewind, LLC
16:00-16:20		WeC6.3
Unsupervised Learning and Fusion for Failure Detection in Wind Turbines, pp. 1497-1503.		
Ye, Xiang		Syracuse Univ.
Veeramachaneni, Kalyan		Syracuse Univ.
Yan, Yanjun		Syracuse Univ.
Osadciw, Lisa		Syracuse Univ.
16:20-16:40		WeC6.4
Fusing Correlated Data from Multiple Classifiers for Improved Biometric Verification, pp. 1504-1511.		
Srinivas, Nisha	Syracuse Univ. L.C Smith Coll. of Engineering	
Veeramachaneni, Kalyan		Syracuse Univ.
Osadciw, Lisa		Syracuse Univ.
16:40-17:00		WeC6.5
Simultaneous Estimation of Vehicle Dynamics and Lane Features for Road Safety Applications, pp. 1512-1519.		
Weigel, Hendrik		Chemnitz Univ. of Tech.
Wanielik, Gerd		Chemnitz Univ. of Tech.
<hr/>		
<b>WeC7</b>		Eliza Anderson
<b>Directions for Higher-Level Fusion Research: Needs and Capabilities (Panel Discussion)</b>		
Chair: Toth, Gary		ONR
Co-Chair: Kokar, Mieczyslaw		Northeastern Univ.
14:20-17:00		WeC7.1
<i>Directions for Higher-Level Fusion Research: Needs and Capabilities*.</i>		
Toth, Gary		ONR
Kokar, Mieczyslaw		Northeastern Univ.
Liggins, Marty		MITRE
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<b>ThPL</b>		Plenary Room
<b>Likelihood Ratio Detection and Tracking, by Lawrence Stone, Metron Inc. (Plenary Session)</b>		
09:00-10:00		ThPL.1
<i>Likelihood Ratio Detection and Tracking*.</i>		
Stone, Lawrence		Metron Inc
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<b>ThA1</b>		Leonesia I
<b>Nonlinear Filtering I (Regular Session)</b>		
Chair: Challa, Subhash		National ICT Australia
10:30-10:50		ThA1.1
Optimal Robust Hinfinitiy Fusion Filters for Time-Delayed Systems with Multiple Saturation Nonlinear Sensors, pp. 1520-1527.		
Liu, Meiqin		Coll. of Electrical Engineering, Zhejiang Univ.
Li, X. Rong		Univ. of New Orleans
10:50-11:10		ThA1.2
Conditional Posterior Cramer-Rao Lower Bounds for Nonlinear Recursive Filtering, pp. 1528-1535.		
Zuo, Long		Syracuse Univ.
Niu, Ruixin		Syracuse Univ.
Varshney, Pramod		Syracuse Univ.
11:10-11:30		ThA1.3
Gaussian Mixture Reduction Via Clustering, pp. 1536-1543.		
Schieferdecker, Dennis		Inst. for Theoretical Computer Science, Univ. of Karlsr
Huber, Marco F.		Intelligent Sensor-Actuator-Systems Lab. Univ. Karl
11:30-11:50		ThA1.4
A Multiresolution Approach for Modeling of Diffusion Phenomenon, pp. 1544-1551.		
Madankan, Reza		Univ. at Buffalo
Singla, Puneet		Univ. at Buffalo
Singh, Tarunraj		State Univ. of New York at Buffalo

<b>ThA2</b>		Leonesia III
<b>Multistatic Tracking I</b> (Special Session)		
Chair: Krout, David	Applied Physics Lab. Univ. of Washington	
10:30-10:50		ThA2.1
Multi-Stage Data Fusion and the MSTWG TNO Datasets (I), pp. 1552-1559.		
Coraluppi, Stefano		NURC
Carthel, Craig	NATO Undersea Res. Centre	
10:50-11:10		ThA2.2
An Assessment of Hierarchical Data Fusion Using SEABAR'07 Data (I), pp. 1560-1567.		
Lang, Thomas	General Dynamics Canada	
Dunne, Darcy	General Dynamics Canada	
Mellema, Garfield	Defence Res. and Development Canada	
11:10-11:30		ThA2.3
SPECSweb Multistatic Tracking on a Truth-Blind Simulated Scenario of the MSTWG (I), pp. 1568-1575.		
Grimmett, Douglas	SPAWAR Systems Center Pacific	
11:30-11:50		ThA2.4
Specular-Cued Multistatic Sonar Racking on the SEABAR'07 Dataset (I), pp. 1576-1583.		
Grimmett, Douglas	SPAWAR Systems Center Pacific	
11:50-12:10		ThA2.5
Use of Prior Information in Active Sonar Tracking (I), pp. 1584-1591.		
Aughenbaugh, Jason	Univ. of Texas at Austin	
La Cour, Brian	Univ. of Texas	
<b>ThA3</b>		Pricessa I
<b>Methods and Tools for Automated Support of Model and Context-Based Information Fusion in Intelligence</b> (Special Session)		
Chair: Biermann, Joachim	FGAN-FKIE	
Co-Chair: Lavery, John	Army Res. Office	
10:30-10:50		ThA3.1
Automated Support for Intelligence in Asymmetric Operations: Requirements and Experimental Results (I), pp. 1592-1599.		
Biermann, Joachim	FGAN-FKIE	
Hörling, Pontus	Swedish Defence Res. Agency (FOI)	
Snidaro, Lauro	Univ. of Udine	
10:50-11:10		ThA3.2
Model Based Fusion and Services Automation Support (I), pp. 1600-1603.		
Thomas, Mark	AMSRD-ARL-C-IC	
11:10-11:30		ThA3.3
The FOI C4ISR Demonstration 2008 (I), pp. 1604-1612.		
Andersson, Maria	Swedish Defence Res. Agency	
Dalberg, Eva	FOI Swedish Defence Res. Agency	
Grahn, Per	National Defense Res. Agency	
Gundmark, Thomas	FOI	
Hansson, Anders	FOI	
Lantz, Fredrik	Swedish Defence Res. Agency	
Kylesten, Birgitta	Swedish Defence Res. Agency	
Linder, Sara	Swedish Defence Res. Agency	
Lindgren, David	Swedish Defence Res. Agency	
Pihl, Jörgen	Swedish Defence Res. Agency	
Sjöberg, Eric	Swedish Defence Res. Agency	
Svenson, Pontus	Swedish Defence Res. Agency	
11:30-11:50		ThA3.4
How Certain Is Certain? Evaluation of Uncertainty in the Fusion of Information Derived from Diverse Sources (I), pp. 1613-1620.		
Rein, Kellyn	FGAN eV	
Schade, Ulrich	FGAN	
11:50-12:10		ThA3.5
Structuring Relations for Fusion in Intelligence (I), pp. 1621-1626.		
Ferrin, Giovanni	Univ. di Udine	
Snidaro, Lauro	Univ. of Udine	
Foresti, Gianluca	Univ. of Udine	

<b>ThA4</b>		Pricessa II
<b>Data Association</b> (Special Session)		
Chair: Ferry, Jim	Metron, Inc.	
10:30-10:50		ThA4.1
Improvement in Track-To-Track Association from Using an Adaptive Threshold (I), pp. 1627-1633.		
Stone, Lawrence	Metron Inc	

Tran, Thy M Williams, Mark L	Metron Inc BAE Systems
10:50-11:10	ThA4.2
Track Association and Fusion Using Janosky Measure Density Functions (I), pp. 1634-1641.	
Mori, Shozo Chong, Chee-Yee Chang, KuoChu	BAE Systems BAE Systems George Mason Univ.
11:10-11:30	ThA4.3
Exact Bias Removal for the Track-To-Track Association Problem (I), pp. 1642-1649.	
Ferry, Jim	Metron, Inc.
11:30-11:50	ThA4.4
Target Tracking in Multipath Environments - an Algorithm Inspired by Data Association, pp. 1650-1657.	
Sathyan, Thuraiappah Humphrey, David Hedley, Mark	Commonwealth Scientific and Industrial Res. Organization (CS CSIRO CSIRO
11:50-12:10	ThA4.5
A Robust Method for Computing Truth-To-Track Assignments, pp. 1658-1664.	
Silbert, Mark	NAVAIR

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**ThA5** Discovery

**Command and Control through Sensor Management and Picture Compilation (Special Session)**

Chair: Bolderheij, Fok Co-Chair: van Leijen, Vincent	Netherlands Defence Acad. Defence Materiel Organisation
10:30-10:50	ThA5.1
Applying the PCR6 Rule of Combination in Real Time Classification Systems (I), pp. 1665-1672.	
Scholte, Krispijn Norden, Wilbert van	Defence Materiel Organisation CAMS - Force Vision
10:50-11:10	ThA5.2
Unification of Radar and Sonar Coverage Modeling (I), pp. 1673-1678.	
van Leijen, Vincent Norden, Wilbert van Bolderheij, Fok	Defence Materiel Organisation CAMS - Force Vision Netherlands Defence Acad.
11:10-11:30	ThA5.3
Colour As an Attribute for Automated Detection in Maritime Environments (I), pp. 1679-1686.	
van Valkenburg-van Haarst, Tanja Y.C. van Leijen, Vincent Groen, Frans C.A.	Defence Materiel Organisation Defence Materiel Organisation Univ. of Amsterdam
11:30-11:50	ThA5.4
Performance-Based Sensor Selection for Optimal Target Tracking (I), pp. 1687-1694.	
Ramdaras, Umesh Bolderheij, Fok	Netherlands Defence Acad. Netherlands Defence Acad.
11:50-12:10	ThA5.5
Multi-Sensor Fault Recovery in the Presence of Known and Unknown Fault Types, pp. 1695-1703.	
Reece, Steven Roberts, Stephen Claxton, Christopher Nicholson, David	Univ. of Oxford Univ. of Oxford BAE Systems BAE Systems

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**ThA6** Portland

**Application II (Regular Session)**

Chair: Blair, William	Georgia Inst. of Tech.
10:30-10:50	ThA6.1
Hierarchical Information Fusion for Human Upper Limb Motion Capture, pp. 1704-1711.	
Zhang, Zhiqiang Zhipei, Huang Wu, Jiankang	Chinese Acad. of Sciences Gucas Graduate Univ. of Chinese Acad. of Sciences
10:50-11:10	ThA6.2
On Multi-Robot Map Fusion by Inter-Robot Observations, pp. 1712-1721.	
Andersson, Lars Nygards, Jonas	Linköping Univ. Swedish Defence Res. Agency
11:10-11:30	ThA6.3
Exploiting Human Steering Models for Path Prediction, pp. 1722-1729.	
Tastan, Bulent Sukthankar, Gita	Univ. of Central Florida Univ. of Central Florida
11:30-11:50	ThA6.4

Optimal Video Camera Network Deployment to Support Security Monitoring, pp. 1730-1736.

Debaque, Benoit, Benoit Debaque

INO

11:50-12:10

ThA6.5

Visual Tracking Based on Adaptive Multi-Cue Integration, pp. 1737-1742.

Ma, Jiaqing  
Han, Chongzhao  
Yang, Yi

Xi'an Jiaotong Univ.  
Xian Jiaotong Univ.  
Xi'an Jiaotong Univ.

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**ThA7**

Eliza Anderson

**Beyond Classical Bayesian Estimation Theory (Special Session)**

Chair: Hanebeck, Uwe  
Co-Chair: Klumpp, Vesa

Univ. Karlsruhe  
Univ. Karlsruhe (TH)

10:30-10:50

ThA7.1

Reliable Hidden Markov Model Filtering through Coherent Lower Previsions (I), pp. 1743-1750.

Benavoli, Alessio  
Zaffalon, Marco  
Miranda, Enrique

Dalle Molle Inst. for Artificial Intelligence  
Dalle Molle Inst. for Artificial Intelligence  
Univ. de Oviedo

10:50-11:10

ThA7.2

State Estimation with Sets of Densities Considering Stochastic and Systematic Errors (I), pp. 1751-1758.

Noack, Benjamin  
Klumpp, Vesa  
Hanebeck, Uwe

Univ. Karlsruhe (TH)  
Univ. Karlsruhe (TH)  
Univ. Karlsruhe

11:10-11:30

ThA7.3

Bayesian Estimation with Uncertain Parameters of Probability Density Functions (I), pp. 1759-1766.

Klumpp, Vesa  
Hanebeck, Uwe

Univ. Karlsruhe (TH)  
Univ. Karlsruhe

11:30-11:50

ThA7.4

Multiple Model Tracking by Imprecise Markov Trees (I), pp. 1767-1774.

Antonucci, Alessandro  
Benavoli, Alessio  
Zaffalon, Marco  
de Cooman, Gert  
Hermans, Filip

Dalle Molle Inst. for Artificial Intelligence  
Dalle Molle Inst. for Artificial Intelligence  
Dalle Molle Inst. for Artificial Intelligence  
Ghent Univ.  
Ghent Univ.

11:50-12:10

ThA7.5

Evaluating the Bayesian Cramér-Rao Bound for Multiple Model Filtering, pp. 1775-1782.

Svensson, Lennart

Chalmers Univ. of Tech.

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**ThB1**

Leonesia I

**Nonlinear Filtering II (Regular Session)**

Chair: Singh, Tarunraj

State Univ. of New York at Buffalo

13:10-13:30

ThB1.1

Improving Self-Alignment of Strapdown INS Using Measurement Augmentation, pp. 1783-1789.

Acharya, Arunasish  
Sadhu, Smita  
Ghoshal, T.K.

Jadavpur Univ.  
Jadavpur Univ. Kolkata  
Jadavpur Univ.

13:30-13:50

ThB1.2

A Comparison of Several Filters for Maneuvering Targets, pp. 1790-1799.

Abeles, Peter

Intelligent Automation Inc.

13:50-14:10

ThB1.3

Two-Stage Tracking Algorithm for Passive Radar, pp. 1800-1806.

Malanowski, Mateusz  
Kulpa, Krzysztof  
Suchozebrski, Radoslaw

Warsaw Univ. of Tech.  
Warsaw Univ. of Tech.  
Warsaw Univ. of Tech.

14:10-14:30

ThB1.4

An Algorithm for Multitarget Tracking with Multiple Asynchronous Bearings-Only Sensors, pp. 1807-1814.

Sathyan, Thuraiappah  
Sinha, Abhijit

Commonwealth Scientific and Industrial Res. Organization (CS  
AUG Signals

14:30-14:50

ThB1.5

Adaptive UKF for Target Tracking with Unknown Process Noise Statistics, pp. 1815-1820.

Shi, Yong  
Han, Chongzhao  
Liang, Yongqi

Xi'an Jiaotong Univ.  
Xian Jiaotong Univ.  
Xi'an Jiaotong Univ.

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**ThB2**

Leonesia III

**Multistatic Tracking II (Special Session)**

Chair: Krout, David

Applied Physics Lab. Univ. of Washington

13:10-13:30		ThB2.1
<b>Bayesian Passive Sonar Tracking in the Presence of Known Interferers (I), pp. 1821-1829.</b>		
Yocom, Bryan		The Univ. of Texas at Austin
Yudichak, Thomas W.		Univ. of Texas at Austin
La Cour, Brian		Univ. of Texas
13:30-13:50		ThB2.2
<b>Performance Analysis of the Probabilistic Multi-Hypothesis Tracking Algorithm on the SEABAR Data Sets (I), pp. 1830-1836.</b>		
Hempel, Christian		NUWC
Pacheco, Jason		Naval Undersea Warfare Center
13:50-14:10		ThB2.3
<b>Multiframe Assignment Tracker for MSTWG Data (I), pp. 1837-1844.</b>		
Tharmarasa, Ratnasingham		McMaster Univ.
Sutharsan, Sivagnanam		McMaster Univ.
Kirubarajan, Thia		McMaster Univ.
Lang, Thomas		General Dynamics Canada
14:10-14:30		ThB2.4
<b>PDAFAI vs. PDAFAWTS: TNO Blind Dataset and SEABAR '07 (I), pp. 1845-1850.</b>		
Krout, David		Applied Physics Lab. Univ. of Washington
14:30-14:50		ThB2.5
<b>GM-CPHD and MLPDA Applied to the SEABAR07 and TNO-Blind Multi-Static Sonar Data (I), pp. 1851-1858.</b>		
Georgescu, Ramona		Univ. of Connecticut
Schoenecker, Steven		NUWC
Willett, Peter		Univ. of Connecticut

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**ThB3** Pricessa I

**Fusion of Networked Physical Sensor Data for Asymmetric, Urban Operations (Special Session)**

Chair: Lavery, John		Army Res. Office
13:10-13:30		ThB3.1
<b>Acoustic Source Localization and Discrimination in Urban Environments (I), pp. 1859-1866.</b>		
Kushwaha, Manish		ISIS, Vanderbilt Univ.
Koutsoukos, Xenofon		Vanderbilt Univ.
Volgyesi, Peter		ISIS, Vanderbilt Univ.
Ledecz, Akos		ISIS, Vanderbilt Univ.
13:30-13:50		ThB3.2
<b>Distributed Compression and Fusion of Nonnegative Sparse Signals for Multiple-View Object Recognition (I), pp. 1867-1874.</b>		
Yang, Allen		Univ. of California, Berkeley
Hong, Kirak		Univ. of California, Berkeley
Yan, Posu		Univ. of California, Berkeley
Sastry, Shankar		Univ. of California at Berkeley
13:50-14:10		ThB3.3
<b>Closed-Form Performance for Location Estimation Based on Fused Data in a Sensor Network (I), pp. 1875-1880.</b>		
Niu, Ruixin		Syracuse Univ.
Varshney, Pramod		Syracuse Univ.
14:10-14:30		ThB3.4
<b>Learning Dimensionality-Reduced Classifiers for Information Fusion (I), pp. 1881-1888.</b>		
Varshney, Kush R.		Massachusetts Inst. of Tech.
Willsky, Alan S.		MIT
14:30-14:50		ThB3.5
<b>Soft Data Analysis within a Decision Support System (I), pp. 1889-1896.</b>		
Laudy, Claire		THALES Res. & Tech.
Goujon, Benedicte		THALES Res. & Tech.

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**ThB4** Pricessa II

**High Level Fusion (Regular Session)**

Chair: Valin, Pierre		Defence R&D Canada
13:10-13:30		ThB4.1
<b>Mixed Initiative Soft Data Fusion Associate, pp. 1897-1902.</b>		
Gerken, Peter		Lockheed Martin
Belov, Nadya		Lockheed Martin
13:30-13:50		ThB4.2
<b>An Information Fusion Framework for Threat Assessment, pp. 1903-1910.</b>		
Beaver, Justin		Oak Ridge National Lab.
Treadwell, Jim		Oak Ridge National Lab.
Kerekes, Ryan		Oak Ridge National Lab.
13:50-14:10		ThB4.3

Fission of Opinions in Subjective Logic, pp. 1911-1918. Josang, Audun	Univ. of Oslo
14:10-14:30	ThB4.4
Toward Unsupervised Classification of Non-Uniform Cyber Attack Tracks, pp. 1919-1925. Du, Haitao Murphy, Christopher Bean, Jordan Yang, S. Jay	Rochester Inst. of Tech. RIT Rochester Inst. of Tech. Rochester Inst. of Tech.
14:30-14:50	ThB4.5
Belief Modeling for Maritime Surveillance, pp. 1926-1932. Hunter, Aaron	Simon Fraser Univ.

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<b>ThB5</b>	Discovery
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<b>Information Fusion in Socio-Cognitive and Communications Networks (Special Session)</b>	
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Chair: Ghanadan, Reza Co-Chair: Baras, John S.	BAE Univ. of Maryland
13:10-13:30	ThB5.1
Trust Management for Distributed Decision Fusion in Sensor Networks (I), pp. 1933-1941. Guan, Kyle Gharai, Ladan Dehnie, Sintayehu Ghanadan, Reza Kumar, Srikanta	BAE Systems BAE Systems BAE Systems BAE BAE Systems Inc
13:30-13:50	ThB5.2
Performance Improvements in Distributed Estimation and Fusion Induced by a Trusted Core (I), pp. 1942-1949. Somasundaram, Kiran Baras, John S.	Univ. of Maryland Univ. of Maryland
13:50-14:10	ThB5.3
A Composite Trust Model and Its Application to Collaborative Distributed Information Fusion (I), pp. 1950-1957. Matei, Ion Baras, John S. Jiang, Tao	Pol. Univ. of Bucharest Univ. of Maryland Univ. of Maryland
14:10-14:30	ThB5.4
Model Based Integration and Experimentation of Information Fusion and C2 Systems (I), pp. 1958-1965. Neema, Sandeep Bapty, Theodore Koutsoukos, Xenofon Neema, Himanshu Sztipanovits, Janos Karsai, Gabor	Vanderbilt Univ. Vanderbilt Univ. Vanderbilt Univ. Vanderbilt Univ. Vanderbilt Univ. Vanderbilt Univ.
14:30-14:50	ThB5.5
Sensor Localization Using Nonparametric Generalized Belief Propagation in Network with Loops, pp. 1966-1973. Savic, Vladimir Zazo, Santiago	Pol. Univ. of Madrid Pol. Univ. of Madrid

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<b>ThB6</b>	Portland
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<b>Application III (Regular Session)</b>	
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Chair: Lynch, Robert	Naval Undersea Warfare Center
13:10-13:30	ThB6.1
Fuzzy Estimation and Segmentation for Laser Range Scans, pp. 1974-1981. Reuter, Stephan Dietmayer, Klaus C.J.	Univ. of Ulm Ulm Univ.
13:30-13:50	ThB6.2
Recurrent Lobes Reduction of Stepped-Frequency LFM Pulse Train Using Ambiguity Function, pp. 1982-1988. Bao, Yunxia Zhou, Chi He, Peikun Mao, Erke	Illinois Institute of Tech. Illinois Institute of Tech. Beijing Institute of Tech. Beijing Inst. of Tech.
13:50-14:10	ThB6.3
Fusion of Doppler Radar and Video Information for Automated Traffic Surveillance, pp. 1989-1996. Roy, Arunesh Gale, Nicholas Hong, Lang	Wright State Univ. Wright State Univ. Wright State Univ.
14:10-14:30	ThB6.4
Two Laser Scanners Raw Sensory Data Fusion for Objects Tracking Using Inter-Rays Uncertainty and a Fixed Size Assumption., pp. 1997-2005.	



Kmiotek, Pawel	Univ. of Tech. of Belfort-Montbéliard - France
Ruichek, Yassine	Univ. of Tech. of Belfort-Montbéliard - France
14:30-14:50	ThB6.5
Calibration Factor Estimation Based on Statistical Modeling of Scattering Coefficient, pp. 2006-2011.	
Sun, Zengguo	Xi'an Jiaotong Univ.
Han, Chongzhao	Xian Jiaotong Univ.
Narayanan, Ram	The Pennsylvania State Univ.
Liu, Shigang	Xi'an Jiaotong Univ. Xi'an,China

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**ThB7** Eliza Anderson

**Sensor Bias Correction and Tracking** (Regular Session)

Chair: Blom, Henk A.P.	National Aerospace Lab. NLR
13:10-13:30	ThB7.1
Track-To-Track Association and Ambiguity Management in the Presence of Sensor Bias, pp. 2012-2019.	
Papageorgiou, Dimitri	The Raytheon Company
Holender, Michael	The Raytheon Company
13:30-13:50	ThB7.2
Bias Estimation for Evaluation of ATC Surveillance Systems, pp. 2020-2027.	
Besada, Juan	Univ. Pol. de Madrid
de Miguel, Gonzalo	Univ. Pol. de Madrid
Tarrío, Paula	Univ. Pol. de Madrid
Bernardos, Ana	Univ. Pol. de Madrid
Garcia Herrero, Jesus	Univ. Carlos III de Madrid
13:50-14:10	ThB7.3
Bias Correction Using Background Stars for Spaced-Based IR Tracking, pp. 2028-2035.	
Clemons, Thomas	George Mason Univ.
Chang, KuoChu	George Mason Univ.

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**ThC1** Leonesia I

**Nonlinear Filtering III** (Regular Session)

Chair: Julier, Simon J.	Univ. Coll. London
15:20-15:40	ThC1.1
Leg-By-Leg Bearings-Only TMA without Observer Maneuver, pp. 2036-2043.	
Jauffret, Claude	Univ. du Sud Toulon-Var
Pillon, Denis	Thales Underwater Systems
Pignol, Annie Claude	Univ. du sud Toulon-Var
15:40-16:00	ThC1.2
Nonlinear Fusion of Multi-Dimensional Densities in Joint State Space, pp. 2044-2051.	
Klumpp, Vesa	Univ. Karlsruhe (TH)
Hanebeck, Uwe	Univ. Karlsruhe
16:00-16:20	ThC1.3
Tracking of Targets with State Dependent Measurement Errors Using Recursive BLUE Filters, pp. 2052-2061.	
Stakkeland, Morten	Univ. Graduate Center
Overrein, R̥yvind	Applied Radar Physics
Brekke, Edmund	NTNU
Hallingstad, Oddvar	Univ. Graduate Center
16:20-16:40	ThC1.4
A New Nonlinear Filtering Method for Ballistic Target Tracking, pp. 2062-2067.	
Wu, Chunling	Xi'an Jiaotong Univ.
Han, Chongzhao	Xian Jiaotong Univ.
Sun, Zengguo	Xi'an Jiaotong Univ.
16:40-17:00	ThC1.5
Improved Divided Difference Filter Based on Newton-Raphson Method for Target Tracking, pp. 2068-2074.	
Shi, Yong	Xi'an Jiaotong Univ.
Han, Chongzhao	Xian Jiaotong Univ.
Liang, Yongqi	Xi'an Jiaotong Univ.

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**ThC2** Leonesia III

**Localization** (Regular Session)

Chair: Chen, Huimin	Univ. of New Orleans
15:20-15:40	ThC2.1
Continuous Mapping for Road Map Assisted Localization, pp. 2075-2082.	
Hasberg, Carsten	Univ. of Karlsruhe
Hensel, Stefan	Univ. Karlsruhe
15:40-16:00	ThC2.2
Information Fusion for Indoor Localization, pp. 2083-2090.	
Blanchart, Pierre	Telecom ParisTech

He, Liyun	INRIA
Le Gland, Francois	INRIA
16:00-16:20	ThC2.3
On-Road Target Tracking Using Radar and Image Sensor Based Measurements, pp. 2091-2098.	
Chen, Yangsheng	Univ. of New Orleans
Jilkov, Vesselin	Univ. of New Orleans
Li, X. Rong	Univ. of New Orleans
16:20-16:40	ThC2.4
Reducing Multipath Effects in Vehicle Localization by Fusing GPS with Machine Vision, pp. 2099-2106.	
Rae, Andrew	Univ. of Waterloo
Basir, Otman	Univ. of Waterloo
16:40-17:00	ThC2.5
Multistatic Tracking Using Bistatic Range - Range Rate Measurements, pp. 2107-2113.	
Bozdogan, Ali Onder	Ankara Univ.
Soysal, Gokhan	Ankara Univ.
Efe, Murat	Ankara Univ.

### ThC3

Pricessa I

#### Fusion of Hard and Soft Information for Asymmetric, Urban Operations (Special Session)

Chair: Lavery, John	Army Res. Office
Co-Chair: Llinas, James	Univ. at Buffalo
15:20-15:40	ThC3.1
Lessons Learned in the Creation of a Data Set for Hard/Soft Information Fusion (I), pp. 2114-2121.	
Pravia, Marco	BAE Systems
Babko-Malaya, Olga	BAE Systems
Schneider, Michael K	BAE Systems
White, James	BAE Systems
Chong, Chee-Yee	BAE Systems
Willsky, Alan S.	MIT
15:40-16:00	ThC3.2
A Dempster-Shafer Theoretic Conditional Approach to Evidence Updating for Fusion of Hard and Soft Data (I), pp. 2122-2129.	
Premaratne, Kamal	Univ. of Miami
Murthi, Manohar	Univ. of Miami
Zhang, Jinsong	Univ. of Tulsa
Scheutz, Matthias	Indiana Univ.
Bauer, Peter	Univ. of Notre Dame
16:00-16:20	ThC3.3
Aggregation Gisting (I), pp. 2130-2135.	
Young, Stanley	Overwatch Systems
Palmer, John	Overwatch Systems
16:20-16:40	ThC3.4
Ontological Representation of Context Knowledge for Visual Data Fusion (I), pp. 2136-2143.	
Gomez-Romero, Juan	Univ. Carlos III of Madrid
Patricio, Miguel A.	Univ. Carlos III of Madrid
Garcia Herrero, Jesus	Univ. Carlos III de Madrid
Molina, Jose	Univ. Carlos III de Madrid
16:40-17:00	ThC3.5
Estimation of Adversarial Social Networks by Fusion of Information from a Wide Range of Sources (I), pp. 2144-2152.	
Josephson, John	The Ohio State Univ.
Eckroth, Joshua	The Ohio State Univ.
Miller, Timothy	The Ohio State Univ.

### ThC4

Pricessa II

#### Feature-Aided Tracking (Regular Session)

Chair: Carthel, Craig	NATO Undersea Res. Centre
15:20-15:40	ThC4.1
Target Tracking in Heavy-Tailed Clutter Using Amplitude Information, pp. 2153-2160.	
Brekke, Edmund	NTNU
Hallingstad, Oddvar	Univ. Graduate Center
Glattetre, John	Kongsberg Maritime AS
15:40-16:00	ThC4.2
Flexible ID Association-Based Tracking Algorithm, pp. 2161-2168.	
Sinha, Abhijit	AUG Signals
Peters, Daniel J	Defence R&D Canada - Atlantic
16:00-16:20	ThC4.3
Meta Level Tracking with Multimode Space-Time Adaptive Processing of GMTI Data, pp. 2169-2176.	
Wang, Alex	Univ. of British Columbia

Balaji, Bhashyam Krishnamurthy, Vikram	Defence R & D Canada Univ. of British Columbia
16:20-16:40	ThC4.4
Efficient Multiple Hypothesis Tracking by Track Segment Graph, pp. 2177-2184.	
Chong, Chee-Yee Castanon, Greg Coopriker, Nathan Mori, Shozo Ravichandran, Ravi Macior, Robert	BAE Systems BAE Systems BAE Systems BAE Systems BAE Systems Air Force Res. Lab.
16:40-17:00	ThC4.5
Performance of PDAF-Based Tracking Methods in Heavy-Tailed Clutter, pp. 2185-2192.	
Brekke, Edmund Hallingstad, Oddvar Glattetre, John	NTNU Univ. Graduate Center Kongsberg Maritime AS

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**ThC5** Discovery

**Tracking Methods** (Regular Session)

Chair: Coraluppi, Stefano	NURC
15:20-15:40	ThC5.1
Best Linear Unbiased State Estimation with Noisy and Noise-Free Measurements, pp. 2193-2200.	
Duan, Zhansheng Li, X. Rong	Univ. of New Orleans Univ. of New Orleans
15:40-16:00	ThC5.2
On Accumulated State Densities with Applications to Out-Of-Sequence Measurement Processing, pp. 2201-2208.	
Koch, Wolfgang	German Defence Res. Establishment
16:00-16:20	ThC5.3
Exact Update Formulae for Distributed Kalman Filtering and Retrodiction at Arbitrary Communication Rates, pp. 2209-2216.	
Koch, Wolfgang	German Defence Res. Establishment
16:20-16:40	ThC5.4
The Optimal Searcher Path Problem with a Visibility Criterion in Discrete Time and Space, pp. 2217-2224.	
Morin, Michael Lamontagne, Luc Abi-Zeid, Irène Lang, Pascal Maupin, Patrick	Univ. Laval Univ. Laval Faculté des Science de l'Administration Univ. Laval DRDC, Defence Res. and Development
16:40-17:00	ThC5.5
The Track Repulsion Effect in Automatic Tracking, pp. 2225-2230.	
Coraluppi, Stefano Carthel, Craig Willett, Peter Dingboe, Maxence O'Neill, Owen Luginbuhl, Tod	NURC NATO Undersea Res. Centre Univ. of Connecticut N/A N/A NUWC

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**ThC6** Portland

**Applications IV** (Regular Session)

Chair: Mallick, Mahendra	Georgia Tech. Res. Inst.
15:20-15:40	ThC6.1
Algorithms and Performance Bounds for Chemical Identification under a Poisson Model for Raman Spectroscopy, pp. 2231-2238.	
Palkki, Ryan Lanterman, Aaron	Georgia Inst. of Tech. Georgia Inst. of Tech.
15:40-16:00	ThC6.2
Comparison of Raman Spectra Estimation Algorithms, pp. 2239-2246.	
Mallick, Mahendra Drake, Barry Park, Haesun Register, Andy Blair, William West, Phil Palkki, Ryan Lanterman, Aaron Emge, Darren	Georgia Tech. Res. Inst. Georgia Tech. Res. Inst. Georgia Inst. of Tech. Georgia Tech. Res. Inst. Georgia Inst. of Tech. Georgia Tech. Res. Inst. Georgia Inst. of Tech. Georgia Inst. of Tech. Edgewood Chemical Biological Center
16:00-16:20	ThC6.3
Radiation Field Estimation Using a Gaussian Mixture, pp. 2247-2254.	
Morelande, Mark Richard Skvortsov, Alex	The Univ. of Melbourne DSTO

16:20-16:40

ThC6.4

Biometric Liveness Detection Based on Cross Modal Fusion, pp. 2255-2262.

Chetty, Girija

Univ. of Canberra

16:40-17:00

ThC6.5

Evidence Based Analysis of Internal Conflicts Caused by Disparity Inaccuracy, pp. 2263-2268.

Ike, Thorsten  
Grabe, Baerbel  
Knigge, Florian  
Hoetter, Michael

Univ. of Applied Sciences and Arts Hannover  
Univ. of Applied Sciences and Arts Hannover  
Univ. of Applied Sciences and Arts Hannover  
Univ. of Applied Sciences and Arts Hannover

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**ThC7**

Eliza Anderson

**A Coalition Approach to Higher-Level Fusion (Panel Discussion)**

Chair: Lambert, Dale  
Co-Chair: Hinman, Michael

Defence Science and Tech.  
US Air Force Res. Lab.

14:20-17:00

ThC7.1

*A Coalition Approach to Higher-Level Fusion\**.

Lambert, Dale  
Hinman, Michael  
Bosse, Eloi  
Blackman, Clinton

Defence Science and Tech.  
US Air Force Res. Lab.  
Defence R&D Canada-Valcartier  
Defence Science and Tech. Lab.