SSPD2015 Wednesday 9th September

8:45 **Registration and Refreshments**

9:15 **Welcome and opening** Mike Davies, University of Edinburgh

9:25 Plenary Keynote: **Signal Processing for CBR Defence,** Branko Ristic, DSTO

Session 1: Target Tracking – Mike Davies, University of Edinburgh

10:25 1.1 **Sensor Management with Regional Statistics for the PHD Filter,** Marian Andrecki[1], Emmanuel D. Delande[1], Jeremie Houssineau[1] and Daniel E. Clark[1], [1]Heriot-Watt University.

10:50 Poster Session and Refreshments

12:05 1.2 Joint Navigation and Synchronization using SOOP in GPS-denied environments: Algorithm and Empirical Study, Mei Leng[1], François Quitin[1], Chi Cheng[1], Wee Peng Tay[1], Sirajudeen Gulam Razul[1] and Chong Meng Samson See[1], [1]Nanyang Technological University.

12:30 1.3 Variational Bayesian PHD filter with Deep Learning Network Updating for Multiple Human Tracking, Pengming Feng[1], Wenwu Wang[2], Syed Mohsen Naqvi[3], Jonathon A. Chambers[1], [1]Newcastle University, [2]University of Surrey, [3]Loughborough University.

12:55 Lunch

14:00 Plenary Keynote: **How Signal Processing Underpins Military Information Superiority,** Penelope Endersby, Dstl

Session 2: Target Detection – Chair – Jonathon Chambers, Newcastle University

15:00 2.1 GPU-Accelerated Gaussian Processes for Object Detection, Calum Blair[1], John Thompson[1] and Neil Robertson[2], [1]University of Edinburgh, [2]Heriot-Watt University.

15:25 2.2 Micro-Doppler based Recognition of Ballistic Targets using 2-D Gabor Filters, Adriano Persico[1], Carmine Clemente[1], Christos V. Ilioudis[1], Domenico Gaglione[1], Jianlin Cao[1] and John J Soraghan[1], [1]University of Strathclyde.

15:50 2.3 Maximum Likelihood Signal Parameter Estimation via Track Before Detect, Murat Uney[1], Bernard Mulgrew[1] and Daniel E Clark[2], [1]University of Edinburgh, [2]Heriot Watt University.

16:15 Refreshments

Session 3: Beamforming - – Chair – Jonathon Chambers, Newcastle University

16:30 3.1 Direction of Arrival Estimation Using a Cluster of Beams in a Cone-Shaped Digital Array Radar, Micaela Contu[1], Marta Bucciarelli[1], Pierfrancesco Lombardo[1], [1]University of Rome "La Sapienza".

16: 55 3.2 Low-Complexity Robust Adaptive Beamforming Algorithms Exploiting Shrinkage for Mismatch Estimation, Hang Ruan[1], Rodrigo C. de Lamare[1, 2], [1]University of York, [2]Pontifical Catholic University of Rio de Janeiro.

17:20 Close and End of Day 1

19:30 **Wine Reception and Meal (Library and Great Hall, Royal College of Physicians)**

SSPD2015 Thursday 10th September

8:30 **Registration and Refreshments**

Session 4: Signal Processing Challenges – Military User Perspective - Chair, Paul Thomas, Dstl

9:00 MOD Speakers and Panel Discussion

Session 5: Underwater Acoustics – Chair – Yvan Petillot, Heriot-Watt University

10:05 5.1 Normalised Multi-Stage Clustering Equaliser for Underwater Acoustic Channels, Rangeet Mitra[1] and Vimal Bhatia[1], [1]Indian Institute of Technology Indore.

10:30 5.2 Wideband CDMA waveforms for large MIMO sonar systems, Yvan Petillot[1] and Yan Pailhas[1], [1]Heriot-Watt University.

10:55 Poster Session and Refreshments

Session 6: MIMO – Chair – Yvan Petillot, Heriot-Watt University

12:10 6.1 Performance Analysis of Polynomial Matrix SVD-based Broadband MIMO Systems, Andre Sandmann[1], Andreas Ahrens[1] and Steffen Lochmann[1], [1]Hochschule Wismar.

12:35 6.2 Low Complexity Parameter Estimation for Off-the-Grid Targets, Seifallah Jardak[1], [1]Sajid Ahmed and [1]Mohamed-Slim Alouini, [1]King Abdullah University of Science and Technology.

13:00 Lunch

Session 7: Signal Processing Challenges – Industrial Perspective – Chair, Paul Thomas, Dstl

14:00 Industrial Speakers and Panel Discussion
Roke Manor Research, ATLAS Elektronik UK and Mathworks

15:00 Refreshments

Session 8: Synthetic Aperture Radar – Chair – John Soraghan, University of Strathclyde

15:20 8.1 Sparsity Based Ground Moving Target Imaging via Multi-Channel SAR, Di Wu[1], Mehrdad Yaghoobi[1] and Mike Davies[1], [1]University of Edinburgh.

15:40 8.2 A Location Scale Based CFAR Detection Framework for FOPEN SAR Images, Marco Liguori[1], Alessio Izzo[1] Carmine Clemente[2], Carmela Galdi[1], Maurizio Di Bisceglie[1] and John J Soraghan[2], [1]University of Sannio, [2]University of Strathclyde.

16:10 Closing Remarks and End of Conference

Poster Session - 9th September and 10th September

NB. All the posters will be on display in the morning session of both days of the Conference.

P01 Velocity Estimation of moving ships using C-band SLC SAR data, Andrea Radius[1], Paulo Marques[2], [1]Metasensing, Italy, [2]ISEL-IT Lisboa.

P02 On the Target Detection in OFDM Passive Radar Using MUSIC and Compressive Sensing, Watcharapong Ketpan[1], Seksan Phonsri[1], Rongrong Qian[1] and Mathini Sellathurai[1], [1]Heriot-Watt University.

P03 Radar Imaging With Quantized Measurements Based on Compressed Sensing, Xiao Dong[1] and Yunhua Zhang[1], [1]Chinese Academy of Sciences.

P04 Traffic Scheduling Algorithm for Wireless Mesh Networks based Defense Networks Incorporating Centralized Scheduling Architecture, Sidharth Shukla[1] and Vimal Bhatia[1]**,** [1]Indian Institute of Technology Indore.

P05 Outage Analysis of OFDM based AF Cooperative Systems in Selection Combining Receiver over Nakagami-m fading Channels with Nonlinear Power Amplifier, Nagendra Kumar[1] and Vimal Bhatia[1]**,** [1]Indian Institute of Technology Indore, India.

P06 A Novel Self Localization Approach for Sensors, Serap Karagol[1], Dogan Yildiz[1], Okan Ozgonenel[1], Marwan Bikdash[2] and Satish Tadiparthi[3], [1]Ondokuz Mayis University, [2]North Carolina Agricultural and Technical State University, [3]Prolifics New York.

P07 Quadrature Filters for Underwater Passive Bearings-Only Target Tracking, Rahul Radhakrishnan[1], Abhinoy Kumar Singh[1], Shovan Bhaumik[1] and Nutan Tomar[1], [1]Institute of Technology Patna.

P08 Fusion of Radar and Secondary Sensor Data Using Kinematic Models of Multiple Simultaneous Targets, Brian Karlsen[1], Esben Nielsen[1] and Morten Pedersen[1], [1]Terma A/S Denmark.

P09 Improved High-Degree Cubature Kalman Filter, Abhinoy Kumar Singh[1] and Shovan Bhaumik[1], [1]Indian Institute of Technology Patna.

P10 Shortening of Paraunitary Matrices Obtained by Polynomial Eigenvalue Decomposition Algorithms, Jamie Corr[1], Keith Thompson[1], Stephan Weiss[1], Ian Proudler[2] and John G McWhirter[3], [1]University of Strathclyde, [2]Loughborough University, [3]Cardiff University.

P11 Observing the Dynamics of Waterborne Pathogens for Assessing the Level of Contamination, Isabella McKenna[1], Francesco Tonolini[1], Rachael Tobin[1], Jeremie Houssineau[1], Helen Bridle[1], Craig McDougall[2], Isabel Schlangen[1], John S. McGrath[1] and Melanie Jimenez[1], Daniel E. Clark[1], [1]Heriot Watt, [2]University of Dundee.

P12 Distributed Implementation for Person Re-identification, Saurav Sthapit[1] and John Thompson[1], James R Hopgood[1] and Neil Robertson[2], [1]University of Edinburgh, [2]Heriot-Watt University.

P13 Extraction of Pulse Repetition Interval Based on Incomplete, Noisy TOA Measurements by the Moving Passive Receiver, Liu Yang[1], Fucheng Guo[1], Zhang Min[1] and Wenli Jiang[1], [1]National University of Defense Technology China.

P14 Removing Speckle Noise by Analysis Dictionary Learning, Jing Dong[1], Wenwu Wang[1] and Jonathon Chambers[2], [1]University of Surrey, [2]Newcastle University.

P15 Link-by-Link Coded Physical Layer Network Coding on Impulsive Noise Channels, Yuanyi Zhao[1], Martin Johnston[1], Charalampos C. Tsimenidis[1] and Li Chen[2], [1]Newcastle University, [2]Sun Yat-sen University.

P16 A New Asymmetric Correlation Kernel for GNSS Multipath Mitigation, Steven Miller[1], Xue Zhang[1] and Andreas Spanias[1], [1]Arizona State University.

P17 Fractional Cosine Transform (FrCT)-Turbo based OFDM for Underwater Acoustic Communication, Yixin Chen[1], Carmine Clemente[1], John J Soraghan[1] and Stephan Weiss[1], [1]University of Strathclyde.

P18 Practical Identification of Specific Emitters used in the Automatic Identification System, Takashi Iwamoto[1], [1]Mitsubishi Electric Corporation.