

**Fifth International Conference on
Intelligent Sensors, Sensor Networks and Information Processing
ISSNIP 2009**

*December 7-10, 2009
Langham Hotel, Melbourne, Australia*

Advance Program

7th December 2009 - Monday		
8:30 AM	Registration	
9:00 AM	ISSNIP Collaboration Day Opening + 2 talks (Ballroom 3)	
10:30 AM	Coffee/Tea Break	
11:00 AM	ISSNIP Collaboration Day 2 talks (Ballroom 3)	
12:00 PM	Lunch	
1:30 PM	ISSNIP Collaboration Day Posters (Yarra)	
3:00 PM	Coffee/Tea Break	
3:30 PM	Conference opening Dr. D. Nandagopal (DSTO) Executive Chair of the ARC Research Network on ISSNIP Opening Key Note Prof David Karoly (University of Melbourne) (Ballroom 1 & 2)	
5:30 PM	Program Closes	
6:00 PM	Welcome Reception - Alto Room, Langham Hotel	

8th December 2009 – Tuesday

8:00 AM	Registration		
8:30 AM	Key Note - 1 Prof Guanrong (Ron) Chen (City University of Hong Kong) (Ball Room 1 & 2)		
9:30 AM	Coffee/Tea Break		
10:00 AM	Key Note - 2 Prof Anthony Burkitt (University of Melbourne) (Ball Room 1 & 2)		
11:00 AM	Session 1A: Middleware for Sensor Systems - 1 (4 Papers) (Ball Room 3)	Session 1B: Radio Frequency identification (RFID) Technology (4 Papers) (Yarra 1 & 2)	
12:20 PM	Lunch		
1:20 PM	Key Note - 3 Prof Mohan Kumar (University of Texas, Arlington, USA) (Ball Room 1 & 2)		
2:20 PM	Session 2A: Theoretical and practical aspects of large-scale WSN - 1 (3 Papers) (Ball Room-3)	Session 2B: Adaptive Sensing, Control and Optimization in Sensor Networks - 1 (3 Papers) (Yarra 1 & 2)	
3:20 PM	Coffee/Tea Break		
3:50 PM	Session 3A: Control theory and optimization for mobile adhoc networks (5 Papers) (Ball Room 3)	Session 3B: Autonomous Systems (5 Papers) (Yarra 1 & 2)	
5:30 PM	Program Closes		

9th December 2009 - Wednesday

8:00 AM	Registration		
8:10 AM	Session 4A: Information Driven Spatial Representation - 1 (4 Papers) (Ball Room 3)	Session 4B: Adaptive Sensing, Control and Optimization in Sensor Networks - 2 (4 Papers) (Yarra 1 & 2)	
9:30 AM	Key Note - 4 Prof S. S. Iyengar (Louisiana State University, USA) (Ball Room 1 & 2)		
10:30 AM	Coffee/Tea Break		
11:00 AM	Session 5A: Theoretical and practical aspects of large-scale WSN - 2 (4 Papers) (Ball Room 3)	Session 5B: Information Processing and Sensor Technologies in Healthcare (4 Papers) (Yarra 1 & 2)	
12:20 PM	Lunch		
1:20 PM	Key Note - 5 Prof Paul Havinga (University of Twente, Netherlands) (Ball Room 1 & 2)		
2:20 AM	Session 6A: Middleware for Sensor Systems - 2 (4 Papers) (Ball Room 3)	Session 6B: Multimedia Processing in Sensor Networks (4 Papers) (Yarra 1 & 2)	
3:40 PM	Coffee/Tea Break		
3:40 PM	Conference Poster Session (Along with coffee and tea) Ballroom 1 and 2		
5:30 PM	Program Closes		
7:00 PM	<p align="center">Conference Dinner Eureka89</p>		

10th December 2009 - Thursday			
8:00 AM	Registration		
8:10 AM	Session 7A: Information Driven Spatial Representation - 2 (4 Papers) (Ball Room 3)	Session 7B: Sensor Network Security (4 Papers) (Yarra 2)	I-CREOS Workshop (Yarra 1)
9:30 AM	Key Note - 6 Prof John Langford (University of Melbourne) (Ball Room 1 & 2)		I-CREOS Workshop (Yarra 1)
10:30 AM	Coffee/Tea Break		
11:00 AM	Session 8A: Theoretical and practical aspects of large-scale WSN - 3 (5 Papers) (Ball Room 3)	Session 8B: Integration of the digital and physical world in the network of the future (5 Papers) (Yarra 2)	I-CREOS Workshop (Yarra 1)
12:40 PM	Lunch		
1:40 PM	PhD/ECR Forum - Panel Session (Ball Room 2)		I-CREOS Workshop (Yarra 1)
2:50 PM	Session 9A: Theoretical and practical aspects of large-scale WSN - 4 (4 Papers) (Ball Room 3)	Session 9B: PhD Forum - Poster presentation (20 posters) (Ball Room 1)	I-CREOS Workshop (Yarra 1)
4:10 PM	Coffee/Tea Break		
4:40 PM	Program Closes		

7th December, 2009 – Monday

8.30 am: Registration

9.00am-10.30am

Session name: ISSNIP Collaboration Day (Opening & 2 Talks)

Speakers: TBA

Room: Ballroom 3

10.30am- 11.00am: Coffee Break

11.00am-12.00pm

Session name: ISSNIP Collaboration Day (2 Talks)

Speakers: TBA

Room: Ballroom 3

12.00pm-1.30pm: Lunch

1.30pm-3.00pm

Session name: ISSNIP Collaboration Day (Posters)

Presenters: TBA

Room: Ballroom 3

3.00pm- 3.30pm: Coffee Break

3.30pm-4.00pm: Conference Opening

Dr. D. Nandagopal, DSTO, Executive Chair of the ARC Research Network on ISSNIP

4.00pm-5.30pm

Session name: Opening Key Note

Speaker: Prof. David Karoly (University of Melbourne)

Room: Ballroom 1-2

5.30pm: Program Closes

6.00pm: Welcome Reception, Venue: Alto Room, Langham Hotel

8th December, 2009 – Tuesday

8.00 am: Registration

8.30am-9.30am

Session name: Key Note 1

Speaker: Prof. Guanrong (Ron) Chen (City University of Hong Kong)

Room: Ballroom 1-2

9.30am- 10.00am: Coffee Break

10.00am-11.00am

Session name: Key Note 2

Speaker: Prof. Anthony Burkitt (The University of Melbourne)

Room: Ballroom 1-2

Parallel Session 1

Session Name: Middleware for Sensor Systems - I

Session Chair: TBA

Room: Ballroom 3

11.00am-11.20am

A Metaheuristic Algorithm for Wireless Sensor Network Design in Railway Structures

11.20am-11.40am

Evolutionary design of wireless sensor networks based on complex networks

11.40am-12.00pm

Digital Moorea Cyberinfrastructure for Coral Reef Monitoring

12.00pm-12.20pm

TB-MAC: Efficient MAC-Layer Broadcast for Underwater Acoustic Sensor Networks

Session Name: Radio Frequency identification

(RFID) Technology

Session Chair: TBA

Room: Yarra I

11.00am-11.20am

Design of Short Range Chipless RFID Reader Prototype

11.20am-11.40am

A Fusion of Data Analysis and Non-Monotonic Reasoning to Restore Missed RFID Readings

11.40am-12.00pm

Virtualisation of RFID supply chain

12.00pm-12.20pm

Tyrell: A RFID Simulation Platform

12.20pm-1.20pm: Lunch

1.20pm-2.20pm

Session name: Key Note 3

Speaker: Prof. Mohan Kumar (University of Texas, Arlington, USA)

Room: Ballroom 1-2

Parallel Session 2

Session Name: Theoretical and practical aspects of large-scale WSN - I
Session Chair: TBA
Room: Ballroom 3

2.20pm-2.40pm

Trade-off Between Mobile Node Density and Detection Performance in Hybrid Sensor Networks with Random Node Mobility

2.40pm-3.00pm

COM-LOC: A Distributed Range-Free Localization Algorithm in Wireless Networks

3.00pm-3.20pm

A Novel Approach Towards Source-to-Destination Distance Estimation in Wireless Sensor Networks

Session Name: Radio Frequency identification (RFID) Technology
Session Chair: TBA
Room: Yarra I

2.20pm-2.40pm

Algorithms for closed-loop feedback based distributed adaptive beamforming in wireless sensor networks

2.40pm-3.00pm

An Adaptive Algorithm for Sensor Activation in Renewable Energy based Sensor Systems

3.00pm-3.20pm

Sensor Scheduling for Bearings-Only Tracking with A Single Sensor

3.20pm-3.50pm: Coffee Break

Parallel Session 3

Session Name: Control theory and optimization for mobile adhoc networks
Session Chair: TBA
Room: Ballroom 3

3.50pm-4.10pm

A Graph-Theory Approach to Network Synchronizability Analysis (Invited Talk)

4.10pm-4.30pm

Delivery Packets Reliably and Efficiently over Error Prone Channel of WSNs

4.30pm-4.50pm

Compensating for the Latency of Data Acquisition for Localization in Mobile Wireless Sensor Networks

4.50pm-5.10pm

Bounded Degree Energy Aware Topology Discovery and Reconfigurations in Ad hoc Wireless Sensor Networks

5.10pm-5.30pm

Resource Allocation in Adhoc Networks using Markov Random Fields

Session Name: Autonomous Systems
Session Chair: TBA
Room: Yarra I

3.50pm-4.10pm

TBA (Invited Talk)

4.10pm-4.30pm

Centralized Path Planning for Unmanned Aerial Vehicles with A Heterogeneous Mix of Sensors

4.30pm-4.50pm

Mutual Information Based Data Association

4.50pm-5.10pm

Detection of the tau-margin and application to autonomous control of a flying robot

5.10pm-5.30pm

Multiple Sensors and Artificial Neural Networks in a Cognitive Technical System for Laser Welding

5.30pm: Program Closes

9th December, 2009 – Wednesday

8.00 am: Registration

Parallel Session 4

Session Name: Information Driven Spatial Representation - I
Session Chair: TBA
Room: Ballroom 3

8:10am-8.30am
TBA (Invited Talk)

8.30am-8.50am
Collinearity Problems in Passive Target Localization Using Direction Finding Sensors

8.50am-9.10am
An Optimality Analysis of Sensor-Target Geometries for Signal Strength Based Localization

9.10am-9.30am
Designing Sensor Networks for Spatial Interpolation

Session Name: Adaptive Sensing, Control and Optimization in Sensor Networks - II
Session Chair: TBA
Room: Yarra I

8:10am-8.30am
Formation Control of Robotic Swarms Based on Sonar Sensing

8.30am-8.50am
Control of Unmanned Aerial Vehicles Performing Multiple Target Passive Detection and Tracking

8.50am-9.10am
Exploring Energy-Efficient Human Probes for High-Fidelity Sensing in Urban Environments

9.10am-9.30am
PMHT for Multiple Platform Path Exploration Planning

9.30am-10.30am

Session name: Key Note 4
Speaker: Prof. S. S. Iyengar (Louisiana State University, USA)
Room: Ballroom 1-2

10.30am- 11.00am: Coffee Break

Parallel Session 5

Session Name: Theoretical and practical aspects of large-scale WSN - II
Session Chair: TBA
Room: Ballroom 3

11:00am-11.20am
Error Analysis for Optimal Distributed Detection in Multi-Hop Sensor Networks

11.20am-11.40am
An Efficient Approach Using Domain Knowledge for Evaluating Aggregate Queries in WSN

11.40am-12.00pm

Use of Event Detection Approaches for Outlier Detection in Wireless Sensor Networks

12.00pm-12.20pm
Free Space Optical Sensor Networking for Underwater Sensing Applications

Session Name: Information Processing and Sensor Technologies in Healthcare

Session Chair: TBA

Room: Yarra I

11:00am-11.20am

A Versatile Body Sensor Network for Health Care Applications

11.20am-11.40am

Lateral Decubitus Posture during Sleep: Sub-Groups of Obstructive Sleep Apnea Patients -

Positional Therapy for Most But Not for All OSA Patients

11.40am-12.00pm

Soft Clustering Support Vector Machine for the Classification of Abnormalities in Digital Mammograms

12.00pm-12.20pm

Wearable Biosensor for Monitoring Tear Glucose on Rabbit Eye as Novel Device of Body Sensor Network

12.20pm-1.20pm: Lunch

1.20pm-2.20pm

Session name: Key Note 5

Speaker: Prof. Paul Havinga (University of Twente, Netherlands)

Room: Ballroom 1-2

Parallel Session 6

Session Name: Middleware for Sensor Systems - II

Session Chair: TBA

Room: Ballroom 3

2:20pm-2.40pm

Fusing Sensors with Uncertain Detection Performance

2.40pm-3.00pm

A Flexible Binding Mechanism for ZigBee Sensors

3.00pm-3.20pm

Passive House Sensor Networks: Human Centric Thermal Comfort Concept

3.20pm-3.40pm

Sensewrap: A Service Oriented Middleware with Sensor Virtualization and Self-Configuration

Session Name: Multimedia Processing in Sensor Networks

Session Chair: TBA

Room: Yarra I

2:20pm-2.40pm

Power Aware Communication in Wireless Pervasive Smart Camera Networks

2.40pm-3.00pm

Characterization of a Neuromorphic Motion Detection Chip Based On Insect Visual System

3.00pm-3.20pm

A 3D Laser and Vision Based Classifier

3.20pm-3.40pm

Camera Calibration in Wireless Multimedia Sensor Networks

Poster Session (Along with Coffee & Tea)

3.40pm-5.30pm

Room: Ballroom B

Evolving discriminative features robust to sensor displacement for activity recognition in body area sensor networks

Adaptive synchronization for duty-cycling in environmental wireless sensor networks

An Improved Cluster-head Selection Approach in Wireless Sensor Networks

Sensor network for real-time vehicle tracking on road networks

Distributed Control of Triangular Sensor Formations with Angle-Only Constraints

Robocentric Mapping and Localization in Modified Spherical Coordinates with Bearing Measurements

Data Monitoring Sensor Network for BigNet Research Testbed

Low Cost ECG Monitor for Developing Countries

Simulink-based Sleep Apnea Screening Model for Portable Diagnosis

Cardiac Abnormalities Detection from Compressed ECG in Wireless Telemonitoring using Principal Components Analysis (PCA)

S-Sensors: Integrating Physical World Inputs with Social Networks using Wireless Sensor Networks

Optimized Network Layer Protocol for Sensor Driven Autonomous Real-Time Data Fusion in a Star BSN

Accurate Estimation of Indoor Occupancy using Gas Sensors

A Multi-Scale Strategy in Wireless Sensor Networks for Structural Health Monitoring

WSN-HM: Energy-Efficient Wireless Sensor Network for Home Monitoring

Distributed Optical Fibre Smart Sensors for Structural Health Monitoring: A Smart Transducer Interface Module

An Energy Efficient Wireless Communication Mechanism for Sensor Node Cluster Heads

Dynamic Collaboration in Energy Constraint Networks of Chemical Sensors

5.30pm: Program Closes

10th December, 2009 – Thursday

8.00 am: Registration

Parallel Session 7

Session Name: Information Driven Spatial Representation - II
Session Chair: TBA
Room: Ballroom 3

8:10am-8.30am

The effect of data collection geometry on radiological source localisation

8.30am-8.50am

Experimental Verification of Evolutionary Estimation algorithms for Radioactive Source localisation

8.50am-9.10am

Multi-pass Maximum Likelihood Technique for Self Localisation in Wireless Sensor Networks

9.10am-9.30am

Tracking of Multiple Mobile Agents Using Single Frequency Continuous Wave Radar

Session Name: Sensor Network Security
Session Chair: TBA
Room: Yarra II

8:10am-8.30am

Anomaly Detection by Clustering Ellipsoids in Wireless Sensor Networks

8.30am-8.50am

A Low-Complexity Algorithm for Intrusion Detection in a PIR-Based Wireless Sensor Network

8.50am-9.10am

Secure Group Formation Protocol for a Medical Sensor Network Prototype

9.10am-9.30am

TinyIBE: Identity-Based Encryption for Heterogeneous Sensor Networks

Session Name: Towards the development of an Integrated Coral Reef Ecosystem Observing System (I-CREOS)

Session Chair: TBA

Room: Yarra I

9.30am-10.30am

Session name: Key Note 6

Speaker: Prof John Langford (University of Melbourne)

Room: Ballroom 1-2

10.30am- 11.00am: Coffee Break

Parallel Session 8

Session Name: Theoretical and practical aspects of large-scale WSN - III
Session Chair: TBA
Room: Ballroom 3

11:00am-11.20am

Reliable Data Collection in Wireless sensor networks Design of a low-overhead energy-efficient streaming reliable transport protocol (Invited Talk)

11.20am-11.40am

A Simplified Protocol for Energy Self-Sufficient Sensors in an IEEE 802.15.4/ZigBee WSN

11.40am-12.00pm

Impact of Link Quality Estimation Errors on Routing Metrics for Wireless Sensor Networks

12.00pm-12.20pm

Modeling and Throughput Analysis for SMAC with a Finite Queue Capacity

12.20pm-12.40pm

K-hop Statistics in Wireless Sensor Networks

Session Name: Integration of the digital and physical world in the network of the future

Session Chair: TBA

Room: Yarra I

11:00am-11.20am

SENSEI framework architecture and the key design solutions (Invited Talk)

11.20am-11.40am

SENSEI framework architecture and the key design solutions (Invited Talk)

11.40am-12.00pm

Sensor network testbed deployments and experiments (Invited Talk)

12.00pm-12.20pm

Passive Acoustic Sensing of Walking

12.20pm-12.40pm

Implementation and Evaluation of a Swarming Sensor Network for Intrusion Detection

Session Name: Towards the development of an Integrated Coral Reef Ecosystem Observing System (I-CREOS)

Session Chair: TBA

Room: Yarra I

12.40pm-1.40pm: Lunch

1.40pm-2.50pm

Session name: PhD Forum Panel Session

Speaker:

Prof. Mohan Kumar (University of Texas at Arlington)

Prof. Subhash Challa (The University of Melbourne)

Prof. Paul Havinga (The University of Twente)

Assoc. Prof. Richard Baker (Murdoch Childrens Research Institute)

Room: Ballroom 2

Parallel Session 9

Session Name: Theoretical and practical aspects of large-scale WSN - IV

Session Chair: TBA

Room: Ballroom 3

2:50pm-3.10pm

Throughput and Delay in Wireless Sensor Networks using Directional Antennas

3.10pm-3.30pm

Algorithmic approaches to distributed adaptive transmit beamforming

3.30pm-3.50pm

Feasible Bounds for Multi-hop Routing in Sensor Networks with Mobile Sinks

3.50pm-4.10pm

Limitations, performance and instrumentation of closed-loop feedback based distributed adaptive transmit beamforming in WSNs

Session Name: PhD posters

Session Chair: TBA

Room: Yarra I

Session Name: Towards the development of an Integrated Coral Reef Ecosystem Observing System (I-CREOS)

Session Chair: TBA

Room: Yarra I

4.10pm- 4.40pm: Cofee Break

4.40: Conference Close

