

Time	UNSW Room 1	UNSW Room 2	UNSW Foyer	Crowne Plaza Coogee Beach
<b>Tuesday, November 17</b>				
16:00-16:30	W1: Opening			
16:30-18:00	W2: Welcome Celebration			
<b>Wednesday, November 18</b>				
09:00-10:00	K1: Keynote 1			
10:00-10:30			B1: Morning Tea 1	
10:30-12:30	S1: Session 1: General	S2: Session 2: Internet Technologies		
12:30-13:30			B4: Lunch 1	
13:30-14:30	K2: Keynote 2			
14:30-15:30	S3: Session 3: IPv6 Mobility, Vehicular and Wireless Networks	S4: Session 4: Mobile Cellular and Wireless Networks		
15:30-16:00			B7: Afternoon Tea 1	
16:00-18:30	S5: Session 5: Cellular, Wireless and Wireless Sensor Networks	S6: Session 6: Applications and Management		
<b>Thursday, November 19</b>				
09:00-10:00	K3: Keynote 3			
10:00-10:30			B2: Morning Tea 2	
10:30-12:30	S7: Session 7: Cellular, Wireless and Wireless Sensor Networks	S8: Session 8: Cellular, Wireless and Wireless Sensor Networks		
12:30-13:30			B5: Lunch 2	
13:30-14:30	K4: Keynote 4			
14:30-15:30	S9: Session 9: General	S10: Session 10: General		
15:30-16:00			B8: Afternoon Tea 2	
16:00-18:00	S11: Session 11: General	S12: Session 12: General		
18:30-22:00				D1: ITNAC 2015 Dinner

Friday, November 20				
09:00-10:00	K5: Keynote 5			
10:00-10:30			B3: Morning Tea 3	
10:30-12:30	S13: Session 13: General	T1: Simulation Workshop		
12:30-13:30			B6: Lunch 3	
13:30-15:30	S14: Session 14: General	S15: Session 15: General		
15:30-16:00			B9: Afternoon Tea 3	

## Tuesday, November 17

**16:00 - 16:30**

**W1: Opening**

Room: UNSW Room 1

**16:30 - 18:00**

**W2: Welcome Celebration**

Room: UNSW Room 1

## Wednesday, November 18

**09:00 - 10:00**

### **K1: Keynote 1**

Networking the Internet of Things: Challenges and Exploration  
**Professor Huadong Ma**

Room: UNSW Room 1

Chair: Mark A. Gregory (RMIT University, Australia)

Internet of Things (IoT), as the trend of future networks, begins to be used in many aspect of daily life. It is great significant to recognize the networking problem behind developing IoT. In this talk, we first analyze and point out the key problem of IoT from the perspective of networking: how to interconnect large-scale heterogeneous network elements and exchange data efficiently. We also summarize the challenges on networking of Internet of Things. Combing our on-going works, we present some research progresses on three main aspects: the basic model of IoT architecture, the internetworking model, and the sensor networking mode. Finally, we discuss some open issues and future work in this area.

**10:00 - 10:30**

### **B1: Morning Tea 1**

Room: UNSW Foyer

**10:30 - 12:30**

### **S1: Session 1: General**

Room: UNSW Room 1

Chair: Mark A. Gregory (RMIT University, Australia)

#### **10:30 Simplified Swarm Optimization Algorithm for Reliability Redundancy Allocation Problems**

Wei-Chang Yeh (National Tsing Hua University, Taiwan)

#### **11:00 Predictive Data Mining for Converged Internet of Things: A Mobile Health Perspective**

James Kang, Sasan Adibi and Henry Larkin (Deakin University, Australia); Tom H. Luan (School of Information Technology & Deakin University, Australia)

#### **11:30 Cost modelling and validation in network optimization**

Ronald G. Addie (University of Southern Queensland, Australia); Yu Peng (City University of Hong Kong, Hong Kong); Mostfa Albdair (Misan University, Iraq); Chang Xing (City University of Hong Kong, Hong Kong); David Fatseas (University of Southern Queensland, Australia); Moshe Zukerman (City University of Hong Kong, Hong Kong)

#### **12:00 Path Based P-Cycles for Resilient MPLS Network Design**

Jing Zhang and Richard J Harris (Massey University, New Zealand)

### **S2: Session 2: Internet Technologies**

Room: UNSW Room 2

Chair: Vijay Sivaraman (University of New South Wales, Australia)

#### **10:30 Measuring Broadband Performance using M-Lab: Why Averages Tell a Poor Tale**

Xiaohong Deng, Jordan Hamilton, Jason Thorne and Vijay Sivaraman (University of New South Wales, Australia)

**11:00 Modeling Crowdsourcing Platforms to Enable Workforce Dimensioning**

Christian Schwartz, Kathrin Borchert, Matthias Hirth and Phuoc Tran-Gia (University of Wuerzburg, Germany)

**11:30 Verifiably Anonymous Data Collection on Web**

Huafei Zhu (Zhejiang University City College & School of Computer and Computing Science, P.R. China); Shuoping Wang and Peipei Tang (School of Computer and Computing Science, P.R. China)

**12:00 Enabling Efficient Publicly Verifiable Outsourcing Computation for Matrix Multiplication**

Hongwei Li and Shenmin Zhang (University of Electronic Science and Technology of China, P.R. China); Tom H. Luan (School of Information Technology & Deakin University, Australia); Hao Ren and Yuanshun Dai (University of Electronic Science and Technology of China, P.R. China); Liang Zhou (UESTC, P.R. China)

**12:30 - 13:30****B4: Lunch 1**

Room: UNSW Foyer

**13:30 - 14:30****K2: Keynote 2**

Secure and Private Proximity-Based Discovery of Common Factors in Social Networks  
**Professor Gene Tsudik**

Room: UNSW Room 1

Chair: Vijay Sivaraman (University of New South Wales, Australia)

The recent decade has witnessed a rapid increase in popularity of mobile personal devices (notably, smartphones) that function as all-purpose personal communication portals. Concurrently, On-line Social Networks (OSNs) have continued their impressive proliferation. Meanwhile, the notion of "OSN privacy" remains elusive and even self-contradictory. Centralized nature of prominent OSNs is unlikely to change, which does not bode well for OSN users' privacy. However, some user privacy can be gained from making certain OSN functionality available off-line, such as discovering common contacts and other features, as well as establishing affinity-based connections. OSNs stand to gain from this, since users could avail themselves of OSN functionality in scenarios where none currently exists, e.g., whenever Internet connectivity is unavailable, expensive or insufficient. At the same time, OSN users benefit from increased privacy because off-line interactions are invisible to OSN providers.

**14:30 - 15:30****S3: Session 3: IPv6 Mobility, Vehicular and Wireless Networks**

Room: UNSW Room 1

Chair: Shui Yu (Deakin University, Australia)

**14:30 Building High Capacity, Power Efficient and Survivable MANETs**

Robert Hunjet (DST Group, Australia)

**14:50 Innovative Route Maintenance Based on Link Failure Prediction for Mobile Ad Hoc Networks**

Mohammed M. Kadhum (Queen's University & Universiti Sains Malaysia, Canada)

**15:10 GradeTrust: A Secure Trust Based Routing Protocol For MANETs**

David Osemeojie Airehrou (Auckland University of Technology, New Zealand); Sayan Kumar Ray (Manukau Institute of Technology, New Zealand); Jairo A Gutierrez (Auckland University of Technology, New Zealand)

**S4: Session 4: Mobile Cellular and Wireless Networks**

Room: UNSW Room 2

Chair: Richard J Harris (Massey University, New Zealand)

**14:30 A True Bayesian Estimate Concept in LTE Downlink Scheduling Algorithm**

Khairul Anwar Kamarul Hatta, KuokKwee Wee and Wooi Ping Cheah (Multimedia University, Malaysia); YitYin Wee (MMU, Malaysia)

**14:50 Performance of Optical Receivers Using Photodetectors with Different Fields of View in an Indoor Cellular Communication System**

Cuiwei He, Thomas Wang, Md A Masum and Jean Armstrong (Monash University, Australia)

**15:10 Base Station Sleeping Mechanism Based on Traffic Prediction in Heterogeneous Networks**

Jinming Hu and Wei Heng (Southeast University, P.R. China); Guodong Zhang (South East University, P.R. China); Chao Meng (Jinling Institute of Technology & School of Networks and Telecommunications Engineering, P.R. China)

**15:30 - 16:00**

**B7: Afternoon Tea 1**

Room: UNSW Foyer

**16:00 - 18:30**

**S5: Session 5: Cellular, Wireless and Wireless Sensor Networks**

Room: UNSW Room 1

Chair: Leith Campbell (University of Melbourne, Australia)

**16:00 Fast and Energy Efficient Data Storage for Information Discovery in Multi-Dimensional WSNs**

Menik Tissera, Robin Doss and Gang Li (Deakin University, Australia); Lynn M Batten (Deakin University & Geelong, Australia)

**16:30 Adaptive Channel Utilisation In IEEE 802.15.4 Wireless Body Sensor Networks: Adaptive Phase-Shifting Approach**

Amirhossein Moravejosharieh (University of Canterbury, New Zealand); Ehsan Tabatabaei Yazdi (Harvest Electronics, New Zealand); Krzysztof Pawlikowski (University of Canterbury & University of Canterbury, New Zealand); Harsha R Sirisena (University of Canterbury, New Zealand)

**17:00 OTAP Arbitration Effects in Randomly Deployed WSN's**

Craig Walker (Auckland University of Technology & Walkertronics Ltd, New Zealand); Adnan Al-Anbuky (AUT University, New Zealand); Quan Bai (University of Wollongong, Australia)

**17:30 The Effect of Carrier Sensing Mechanisms on Wireless Mesh Network Goodput**

Ying Qu and Bryan Ng (Victoria University of Wellington, New Zealand)

**18:00 A Deterministic Node Mobility Model for Mobile Ad Hoc Wireless Network using Signum-Based Discrete-Time Chaotic Map**

Wimol San-Um, Patinya Ketthong and Jeerana Noymanee (Thai-Nichi Institute of Technology, Thailand)

**S6: Session 6: Applications and Management**

Room: UNSW Room 2

Chair: Richard J Harris (Massey University, New Zealand)

**16:00 Protecting Services from Security Mis-configuration**

Ronald G. Addie (University of Southern Queensland, Australia); Nabeel Hadaad (Southern Queensland, Australia)

**16:30 Green-PolyH: A Green Traffic Engineering Solution Over Uncertain Demands**

Alejandro Ruiz-Rivera and Kwan-Wu Chin (University of Wollongong, Australia); Sieteng Soh (Curtin University, Australia)

**17:00 FLEO: A Flow-Level Network Simulator for Traffic Engineering Analysis**

Gilbert Anggono and Tim Moors (University of New South Wales, Australia)

**17:30 Predicting the Region of Interest for Dynamic Foveated Streaming**

Ayub Bokani (University of New South Wales & Nation ICT Australia (NICTA), Australia); Mahbub Hassan (University of New South Wales, Australia); Salil S Kanhere (The University of New South Wales, Australia)

**18:00 Dimensioning Approach to Provision M2M Services on Legacy GPRS and UMTS Cellular Networks**

Hatim Al Abri and Kevin W Sowerby (The University of Auckland, New Zealand)

Thursday, November 19

**09:00 - 10:00**

**K3: Keynote 3**

Software Defined Networking and Smart ID Networks  
**Professor Hongke Zhang**

Room: UNSW Room 1

Chair: Mark A. Gregory (RMIT University, Australia)

The original design for the current Internet features three bindings, resource allocation, user and networks, and control and data. This 70-year-old mechanism is facing critical challenges to fit the significant changes and development of today's Internet. We have witnessed many effort in this aspects, such as the recently emergence of Software Defined Networks, which separates control and data compared with the original design. In this talk, we present our work in this field, Smart ID Network (SIN) architecture, which will further free the Internet from the three bindings. Moreover, we will also discuss the similarity and difference between SDN and SIN. We believe our work will shed light on the design of the next generation Internet.

**10:00 - 10:30**

**B2: Morning Tea 2**

Room: UNSW Foyer

**10:30 - 12:30**

**S7: Session 7: Cellular, Wireless and Wireless Sensor Networks**

Room: UNSW Room 1

Chair: Robert Hunjet (DST Group, Australia)

**10:30 Cross Layer Rendezvous in Cognitive Radio Ad-Hoc Networks**

Akbar Hossain and Nurul I Sarkar (Auckland University of Technology, New Zealand)

**11:00 Detection of Intelligent Malicious User in Cognitive Radio Network by Using Friend or Foe (FoF) Detection Technique**

Saifur Rahman Sabuj, Masanori Hamamura and Shogo Kuwamura (Kochi University of Technology, Japan)

**11:30 A closed-form expression for coverage probability of random cellular network in composite Rayleigh-Lognormal fading channels**

Sinh Cong Lam (University of Technology, Sydney, Australia); Roshanak Heidary (University of Technology Sydney, Australia); Kumbesan Sandy Sandrasegaran (University of Technology, Sydney, Australia)

**12:00 The Role of ICT Services on Indonesian Small to Medium Enterprise Productivity**

Susanti Rachman (RMIT, Australia); Mark A. Gregory (RMIT University, Australia)

**S8: Session 8: Cellular, Wireless and Wireless Sensor Networks**

Room: UNSW Room 2

Chair: Adnan Al-Anbuky (AUT University, New Zealand)

**10:30 Disaster Detection by Group Learning Using SVDD for Emergency Rescue Evacuation Support System**

Ken Komaki, Hiroko Higuchi, Haruka Iwahashi, Tomohiro Kitamura, Toshiki Yamasaki and Tomotaka Wada (Kansai University, Japan); Kazuhiro Ohtsuki (Kobe University, Japan)

**11:00 Traffic Dynamics Based Model of Performance Reliability for Communication Network**

Juan Zhao and Ping Guo (Logistical Engineering University Chongqing, P.R. China)

**11:30 How RTT Between the Control and Data Plane on a SDN Network Impacts on the Perceived Performance**

Hung D Vu (Swinburne University of Technology, Australia); Jason But (Swinburne University, Australia)

**12:00 Design and Implementation of Microstrip Antenna Array on Ku-Band for Satellite TV Reception**

Adit Kurniawan (ITB, Indonesia); Rahyanditya Ilham (Institut Teknologi Bandung, Indonesia)

**12:30 - 13:30****B5: Lunch 2**

Room: UNSW Foyer

**13:30 - 14:30****K4: Keynote 4**

Powering Cellular Networks with Renewable Energy Sources  
**Professor Marco Marsan**

Room: UNSW Room 1

Chair: Mark A. Gregory (RMIT University, Australia)

Power consumption has become one of the key issues for today's mobile network operators. The use of renewable energy sources is emerging as one of the most promising approaches to drastically reduce the carbon footprint and the energy cost of their networks, and in particular of base stations. The development of innovative base station technologies will bring during the next decade important improvements, with a positive impact on the reduction of the power consumption of base stations, as reflected in a recent power model of next-generation LTE base stations. This fact, coupled with expected improvements in renewable energy technologies will make powering cellular networks with renewable energy sources both feasible and cost-effective. In this talk, the dimensioning of photovoltaic (PV) systems to power LTE macro base stations is discussed, quantifying the achievable carbon footprint and cost benefits.

**14:30 - 15:30****S9: Session 9: General**

Room: UNSW Room 1

Chair: Adnan Al-Anbuky (AUT University, New Zealand)

**14:30 FPGA-Based Efficient Modular Multiplication for Elliptic Curve Cryptography**

MD Hossain and Yinan Kong (Macquarie University, Australia)

**14:50 Throughput Comparison of IEEE 802.11ac and IEEE 802.11n in an Indoor Environment with Interference**

Zawar Shah and Siddarth Rau (Whitireia Community Polytechnic, Auckland, New Zealand); Adeel Baig (National University of Sciences and Technology, Pakistan)

**15:10 Promoting Cooperation in Mobile Ad Hoc Networks**

Anthony Krzesinski (Stellenbosch University, South Africa)

**S10: Session 10: General**

Room: UNSW Room 2

Chair: Shui Yu (Deakin University, Australia)



**14:30 Link Capacity Estimation in Wireless Software Defined Networks**

Farzaneh Pakzad (The University of Queensland, Australia); Marius Portmann (University of Queensland, Australia); Jared Hayward (The University of Queensland, Australia)

**14:50 Third-party Customization of Residential Internet Sharing using SDN**

Hassan Habibi Gharakheili (University of New South Wales, Australia); Luke Exton (University of New South Wales (UNSW), Australia); Vijay Sivaraman (University of New South Wales, Australia); John Matthews and Craig L Russell (CSIRO, Australia)

**15:10 Flow Entry Conflict Detection Scheme for Software-Defined Network**

Chun-Chih Lo, Pei-Yu Wu and Yau Hwang Kuo (National Cheng Kung University, Taiwan)

**15:30 - 16:00****B8: Afternoon Tea 2**

Room: UNSW Foyer

**16:00 - 18:00****S11: Session 11: General**

Room: UNSW Room 1

Chair: Robert Hunjet (DST Group, Australia)

**16:00 Dynamic Access Point Association Using Software Defined Networking**

Keshav Sood, Shigang Liu, Shui Yu and Yong Xiang (Deakin University, Australia)

**16:30 An OCML-M Algorithm in OFDM Timing Synchronization**

Zhao Chen, Bin Chen and Ming-Hui Mao (China University of Geosciences, P.R. China)

**17:00 Global and Local Knowledge in SDN**

Matt Stevens, Bryan Ng, David Streader and Ian Welch (Victoria University of Wellington, New Zealand)

**17:30 Low Complexity Wireless Indoor Positioning Approaches based on Fingerprinting Techniques**

Kriangkrai Maneerat and Chutima Prommak (Suranaree University of Technology, Thailand)

**S12: Session 12: General**

Room: UNSW Room 2

Chair: Vijay Sivaraman (University of New South Wales, Australia)

**16:00 A Novel WiMAX Ranging Scheme for Periodic M2M Applications in Smart Grid**

Nazmus Shaker Nafi (RMIT University, Australia); Reduan H Khan (The University of Newcastle, Australia); Khandakar Ahmed, Manoj Datta and Mark A. Gregory (RMIT University, Australia)

**16:30 Generalized Model of Function based Collaboration in Smart Identifier Network**

Wei Quan (Beijing Jiaotong University, P.R. China); Zhongbai Jiang (Beijing University of Posts and Telecommunications, P.R. China); Fei Song (Beijing Jiaotong University, P.R. China); Mingchuan Zhang (Henan University of Science and Technology, P.R. China); Hongke Zhang (Beijing Jiaotong University, P.R. China)

**17:00 Multi-resource Schedulable Unit for Adaptive Application-driven Unified Resource Management in Data Centers**

David Gutierrez-Estevéz and Min Luo (Huawei Technologies, USA)

**17:30 LB-VoIP: Enhancing Access Control of VoIP for Secure Networks**

Bingjie Han and Jianfeng Guan (Beijing University of Posts and Telecommunications, P.R. China); Wei Quan (Beijing Jiaotong University, P.R. China); Changqiao Xu (Beijing University of Posts and Telecommunications, P.R. China)

**18:30 - 22:00****D1: ITNAC 2015 Dinner**

Annual Dinner

Room: Crowne Plaza Coogee Beach

Chair: Mark A. Gregory (RMIT University, Australia)

## Friday, November 20

**09:00 - 10:00**

### **K5: Keynote 5**

Current Trends in Software Defined Networking  
**Ms Elissa McCormick**

Room: UNSW Room 1

Chair: Mark A. Gregory (RMIT University, Australia)

Enterprises networks have not kept pace with industry advancements in virtualization nor innovation. Through separating the control and data planes SDN provides the industry with the ability to re-define networking - one that is based upon business policy rather than IP addresses. We'll discuss how SDN is evolving from feasibility / technology focused research to exploring how we accurately represent business policy to the infrastructure. We'll review organizations (Enterprise and Service Providers) that are benefiting from SDN today and the opportunity SDN presents for Application Developers.

**10:00 - 10:30**

### **B3: Morning Tea 3**

Room: UNSW Foyer

**10:30 - 12:30**

### **S13: Session 13: General**

Room: UNSW Room 1

Chair: Shui Yu (Deakin University, Australia)

#### **10:30 Improved Detection of Primary User Emulation Attacks in Cognitive Radio Networks**

Fan Jin, Udaya Tupakula and Vijay Varadharajan (Macquarie University, Australia)

#### **11:00 Efficient Detection of Elephant Flows in Virtualized Data Centers**

Nadeem Ahmed (National University of Sciences and Technology (NUST), Pakistan);  
 Sadia Bashir (National University of Science and Technology, Pakistan)

#### **11:30 The double-edged sword: revealing the critical role of structural hole in forming trust for Securing Wireless Sensor Networks**

Ming Xiang and William Liu (Auckland University of Technology, New Zealand); Quan Bai (University of Wollongong, Australia); Adnan Al-Anbuky (AUT University, New Zealand)

#### **12:00 A New Method for Monitoring GPON Based on Optical Coding**

Huda Abbas and Mark A. Gregory (RMIT University, Australia)

**10:30 - 12:00**

### **T1: Simulation Workshop**

Room: UNSW Room 2

Chair: Vijay Sivaraman (University of New South Wales, Australia)

**12:30 - 13:30**

### **B6: Lunch 3**

Room: UNSW Foyer

**13:30 - 15:30**

**S14: Session 14: General**

Room: UNSW Room 1

Chair: Adnan Al-Anbuky (AUT University, New Zealand)

**13:30 A SINET-based Communication Architecture for Smart Grid**

Zhongbai Jiang (Beijing University of Posts and Telecommunications, P.R. China); Wei Quan (Beijing Jiaotong University, P.R. China); Jianfeng Guan (Beijing University of Posts and Telecommunications, P.R. China); Hongke Zhang (Beijing Jiaotong University, P.R. China)

**14:00 Clouds Selection for Network Appliances based On Trust Credibility**

Saurabh Garg (University of Tasmania, Australia); Longxiang Gao (Deakin University, Australia); James Montgomery (University of Tasmania, Australia)

**14:30 EHOPEs: Data-centered Fog Platform for Smart Living**

Jianhua Li, Jiong Jin and Dong Yuan (Swinburne University of Technology, Australia); Marimuthu Palaniswami (University of Melbourne, Australia); Klaus Moessner (University of Surrey, United Kingdom)

**15:00 State Analysis of Mobile Ad Hoc Network Nodes**

Lincy Jim and Mark A. Gregory (RMIT University, Australia)

**S15: Session 15: General**

Room: UNSW Room 2

Chair: Mark A. Gregory (RMIT University, Australia)

**13:30 An LQI Based Dual-channel Routing Protocol for Wireless Body Area Networks**

Sobia Omer, Rein Vesilo and Eryk Dutkiewicz (Macquarie University, Australia); Qi Zhang (Aarhus University, Denmark)

**14:00 Evaluation of Dynamic Circuit Switching to Reduce Congestion in Tor**

Timothy Girry Kale (University of Electro-Communications & UEC, Japan); Satoshi Ohzahata (The University of Electro-Communications & Graduate School of Information Systems, Japan); Celimuge Wu (The University of Electro-Communications, Japan); Toshihiko Kato (University of Electro-Communications, Japan)

**14:30 Caller Centrality: Identifying SPIT caller in a VoIP Network**

Muhammad Ajmal Azad (University of Porto & INESC TEC, Portugal); Tauseef Jamal (COPELABS/ University Lusofona, Portugal)

**15:00 Empirical Evaluation of MDP-based DASH Player**

Ayub Bokani (University of New South Wales & Nation ICT Australia (NICTA), Australia); Sayed Hoseini and Mahbub Hassan (University of New South Wales, Australia); Salil S Kanhere (The University of New South Wales, Australia)

**15:30 - 16:00**

**B9: Afternoon Tea 3**

Room: UNSW Foyer