

	Colombo Theatre A	Colombo Theatre B	Colombo Theatre C
	<b>Keynotes</b> <i>Chair: Matt Higgins</i>		
9:00	Official Opening & Introduction		
9:30	<b>Alan Cameron</b> Journalist for GPS World and Geospatial Solutions "Driverless cars, UAVs and Consumer Location Data: Where GNSS Went Next"		
10:00	<b>Rod Bryant</b> Senior Director, Positioning Technology, u-blox "Positioning Challenges for Automation"		
10:30	<b>Morning Tea</b>		
	<b>Space Applications</b> <i>Chair: Ben Southwell</i>	<b>Interference</b> <i>Chair: Graeme Hooper</i>	<b>System Providers</b> <i>Chair: Matt Higgins</i>
11:00	Simulation of GPS-based Launch Vehicle Trajectory Estimation using UNSW Kea GPS Receiver Sanat Biswas, Australian Centre for Space Engineering Research (ACSER), UNSW Australia	RF Interference Types & Causes Graeme Hooper, GPSAT Systems Australia Pty Ltd	<ul style="list-style-type: none"> <li>GPS Civil Service Update and U.S. International GNSS Activities Mr Jeffrey M Auerbach, GNSS Senior Advisor, U.S. Department of State, Office of Space and Advanced Technology</li> <li>GLONASS Status and Performance Improvement Mr. Roman Muravyev, Head of the GLONASS General Designer Administration Information and Analysis Center for PNT Central Research Institute for Machine Building Roscosmos</li> <li>BeiDou Status and Plans Mr. Chang KEWU, Programme Director, China Satellite Navigation Office, P. R. China</li> </ul>
11:20	Multi-GNSS for Space Service Volume Arunkumar Rathinam, Australian Centre for Space Engineering Research (ACSER), UNSW Australia	Interference Detection and Geo-location Research and Development: Evolution of GEMS to Griffin 1000 Ediz Cetin, Australian Centre for Space Engineering Research (ACSER), UNSW Australia	
11:40	Results from Kea V4.1 Performance Testing Eamonn Glennon, Australian Centre for Space Engineering Research (ACSER), UNSW Australia	Updates on Griffin 1000: a GNSS Jammer/Spoofers Detection and Geolocation System Ryan James Richard Thompson, GPSAT Systems Australia Pty Ltd	
12:00	<b>Lunch</b>		
	<b>Multi GNSS</b> <i>Chair: Noor Raziq</i>	<b>CITS</b> <i>Chair: Andrew Dempster</i>	
13:00	Real-Time Cycle Slip Detection and Repair for Network Multi-GNSS, Multi-Frequency Data Processing Tao Li & Stavros Melachroinos, CRCSI, Geoscience Australia	Cooperative P2I Localization Using UWB and Wi-Fi Sallil Goel, The University of Melbourne	
13:20	Preserving Multi-GNSS Performance Rod MacLeod, NovAtel Inc.	Integrity Monitoring Methods for Co-operative Intelligent Transport Systems Elizabeth Smith, University of New South Wales	
13:40	Trimble RTX Orbit Determination and User Positioning Performance with BeiDou Satellites Nick Talbot, Trimble Navigation Australia	Cooperative Positioning in Urban Environments: Opportunities and Challenges Joon Cheong, Australian Centre for Space Engineering Research (ACSER), UNSW Australia	
14:00	Evaluation of Accuracy and Availability of ARNS Multi-Constellation Signals for Aviation Users in Australia Manoj Deo, Curtin University	Integration of IMU in Positioning Systems for Accurate Tracking in NLOS Environments Shenghong Li, CSIRO	
14:20	Positioning Infrastructure in a Multi-GNSS World James Millner, Position Partners	Trustworthy Positioning: Why we need to take it seriously Chris Rizos, UNSW Australia	
14:40		Quality of Service (QoS) and Bi-Directional Communication in LBS Using MQTT Izwan Idris, Charles Wang & Yanming Feng, Queensland University of Technology	
15:00	<b>Afternoon Tea</b>		
	<b>PANEL</b> <i>Moderator: Andrew Dempster</i>		
15:30	<b>Automated and Connected Vehicles</b> Leading experts from industry, government and academia will come together and discuss: "How to achieve 1m 95% for C-ITS?"  <ul style="list-style-type: none"> <li>Paul Alexander (Cohda)</li> <li>John Wall (Transport for NSW)</li> <li>Andrew Mehaffey (Roads and Maritime Services, NSW)</li> <li>Stewart Worrall (Australian Centre for Field Robotics)</li> <li>Vinayak Dixit (rCITI, UNSW Australia)</li> </ul>		
16:25	<i>Closing Remarks</i>		
16:30	Drinks and Trade Exhibition		
18:00	Day End		

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	<b>Keynotes</b> <i>Chair: Chris Rizos</i>		
9:00	<b>Joseph Winter</b> Head of AIS Innovation, R&D, Australian Institute of Sport "Testbed for Wearable Electronic Sensors"		
9:30	<b>Mike Terkildsen</b> Ionospheric Prediction Service, Australian Bureau of Meteorology "Ionospheric Space Weather: Monitoring, modelling and mitigation"		
10:00	<b>Greg Gutt</b> Chief Technical Officer, Satelles "A New Robust System for Assured PNT - Satellite Time and Location - Hosted on Iridium"		
10:30	<b>Morning Tea</b>		
	<b>Australia's Next Generation Multi-GNSS Analysis Capability</b> <i>Chair: Allison Kealy</i>	<b>Alternatives to GNSS</b> <i>Chair: Salil Goel</i>	<b>Algorithms and Methods I</b> <i>Chair: Joon Wayn Cheong</i>
11:00	Multi-GNSS PPP-RTK network processing: achieving the accuracy <i>Peter Teunissen, CRCSI</i>	Locata: Serving those Positioning, Navigation & Timing (PNT) Applications that GNSS can not <i>Chris Rizos, School of Civil &amp; Environmental Engineering, UNSW</i>	Seamless Train Localization Based on Beidou/INS/Odometer Multi-Sensor Navigation System <i>Wei Jiang, Beijing Jiaotong University</i>
11:20	Development of the Multi-GNSS Analysis Centre Software <i>Stavros Melachroinos, Geoscience Australia</i>	GNSS-based Positioning Schemes & Applications in Safety-critical Systems of Rail Transport <i>Chengming Jin, Beijing Jiaotong University/ University of Melbourne</i>	Systematic Errors in UAS Aerial Photogrammetry <i>Yincai Zhou, University of New South Wales</i>
11:40	BeiDou solar radiation pressure and attitude modelling <i>Stavros Melachroinos, Geoscience Australia</i>	Inter-Pseudolite Range Augmented GNSS PPP Navigation for Airborne Pseudolite Systems <i>Panpan Huang, UNSW Australia</i>	Dual GNSS / INS / Odometer post-processing <i>Michael Reichman, Advanced Navigation</i>
12:00	<b>Lunch</b>		
	<b>Construction, Mining and Structural Monitoring</b> <i>Chair: Nick Talbot</i>	<b>SBAS/PPP I</b> <i>Chair: Suelynn Choy</i>	<b>Algorithms and Methods II</b> <i>Chair: Yanming Feng</i>
13:00	BELS: GNSS Bridges between Europe and South East Asia <i>La The Vinh, Hanoi University of Science and Technology</i>	A LEX-only QZSS LEX Signal Demodulation Scheme for LEX-PPP services <i>Huiben Zhang, Queensland University of Technology</i>	Quantifying Mis-Modelling Effects in the GNSS Yaw-Attitude Determination <i>Thomas Papanikolaou &amp; Stavros Melachroinos, CRCSI, Geoscience Australia</i>
13:20	Developing an Integrated Wi-Fi-Based Positioning System and GIS for Improving Productivity Analysis of Construction Projects <i>Samad Sepasgozar &amp; Sara Shirowzhan, Faculty of Built Environment, UNSW Australia</i>	Biases in Multi-Constellation Triple-frequency PPP Models with a Float Ambiguity Solution <i>Manoj Deo, Curtin University</i>	A Geometry-Free Approach for Estimation of Uncalibrated Signal Delays in GPS Triple Frequency Signals <i>Yanming Feng &amp; Yongchao Wang, Queensland University of Technology</i>
13:40	Third Generation of Positioning Systems for Underground Mine Environments, the Latest Progress <i>Binghao Li, University of New South Wales</i>	Local Augmentation to Wide Area PPP Systems: a Case Study in Victoria, Australia <i>Suelynn Choy, RMIT University</i>	Efficient Processing of Long Duration GNSS Signal Observations <i>Md Sohrab Mahmud, University of New South Wales, Canberra</i>
14:00	Accuracy of stockpile volume determination using UAS photogrammetry <i>Luke Chidzey, Yincai Zhou, Craig Roberts, UNSW Australia</i>	The Performance of Precise Point Positioning (PPP) using Triple-frequency GPS Measurements <i>Viet Tuan Duong, RMIT University</i>	Influence of Individual GPS Antenna Calibrations on High Precision Geodetic Positioning, Case Study: Northern Surat Basin Queensland 2015 GPS Campaign <i>Guorong Hu &amp; Michael Moore, Geoscience Australia</i>
14:20	AeroPoints: Low-cost, Automated Ground Control Points for Aerial Surveying <i>Propeller</i>	SBAS Update <i>Jack Scott</i>	IRNSS/NavIC L5 Attitude Determination <i>Safoora Zaminpardaz, Curtin University</i>
14:40		Comparison of Different Precise Point Positioning Ambiguity Resolution (PPP-AR) Methods <i>Shuyang Cheng, UNSW Australia</i>	Assessment of the Variation of Covariance Matrices of Triple-Frequency GNSS Measurements and its Impact on Positioning Results <i>Yongchao Wang &amp; Yanming Feng, Queensland University of Technology</i>
15:00	<b>Afternoon Tea</b>		
15:30	<b>PANEL (Colombo Theatre A):</b> Two separate panels, Industry vs Academia, will battle it out one after the other on the topic of: "The rise of multi-GNSS: will GPS be the gold standard in five years?"  Industry Panel <i>Chair: Craig Roberts</i> <ul style="list-style-type: none"> <li>Nick Talbot (Trimble)</li> <li>Gary Johnston (Geoscience Australia)</li> <li>Nunzio Gambale (Locata)</li> <li>Rod Bryant (u-blox)</li> </ul> Academic Panel <i>Chair: Martin Nix</i> <ul style="list-style-type: none"> <li>Peter Teunissen (CRCSI)</li> <li>Suelynn Choy (RMIT)</li> <li>Andrew Dempster (UNSW ACSER)</li> <li>Chris Rizos (UNSW)</li> </ul>		
16:50	<i>Closing remarks</i>		
17:00	<i>Day End</i>		
19:00	<b>Embark on Harbour Cruise at King St Wharf Berth 9</b>		
19:30	<b>Cruise Departs at 7:30pm sharp</b>		
22:30	<i>Disembark, Evening End</i>		

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	<b>Datum Modernisation</b> <i>Chair: Matt Higgins</i>	<b>GNSS Hardware Design and Signal Processing I</b> <i>Chair: Elizabeth Smith</i>	<b>Alternatives to GNSS II</b> <i>Chair: Binghao Li</i>
<b>9:10</b>	<p>This session will explore how modern coordinate frameworks are moving away from traditional localised coordinate systems fixed to tectonic plates and instead relating to satellite based positioning systems through stable orbits. This transition will have challenging implications but will enable a kaleidoscope of new applications enabled by homogenous, global positioning systems.</p> <p><i>Featuring: Matt Higgins (DNRM QLD), John Dawson and more to be announced...</i></p>	<p>The Effect of the Sampling Frequency and the Front-End Bandwidth on the DLL Code Tracking Performance</p> <p>Vinh Tran, Australian Centre for Space Engineering Research (ACSER), UNSW Australia</p>	<p>ARTags</p> <p>Binghao Li, University of New South Wales</p>
<b>9:30</b>		<p>Improving Sensitivity on Kea CubeSat GPS Receivers</p> <p>Eamonn Glennon, Australian Centre for Space Engineering Research (ACSER), UNSW Australia</p>	<p>Coarse-time Positioning without Continuous GPS Signal Tracking</p> <p>Wonjae Yoo, Korea Aerospace University</p>
<b>9:50</b>		<p>RF Design for GNSS Receiver Front Ends</p> <p>Kevin Parkinson, General Dynamics Ltd</p>	
<b>10:10</b>			
<b>10:30</b>	<b>Morning Tea</b>		
	<b>GNSS Networks, Processing and Calibrations</b> <i>Chair: James Millner</i>	<b>GNSS Hardware Design and Signal Processing II</b> <i>Chair: Eamonn Glennon</i>	<b>SBAS/PPP II</b> <i>Chair: Peter Ramm</i>
<b>11:00</b>	<p>Recent IGS Analysis Centres Coordinator Activities</p> <p>Guorong Hu &amp; Michael Moore, Geoscience Australia</p>	<p>Integrated Techniques for Interference Source Localisation in the GNSS Band</p> <p>Joon Cheong, Australian Centre for Space Engineering Research (ACSER), UNSW Australia</p>	<p>Different Shades of GNSS SBAS</p> <p>Sue Lynn Choy, RMIT University</p>
<b>11:20</b>	<p>The Status of China's Proposed International GNSS Monitoring and Assessment System (IGMAS)</p> <p>Su Mudan, China Satellite Navigation Project Center (CSNPC)</p>	<p>An Ultra-Low-Cost Antenna Array Frontend for GNSS Application</p> <p>Vinh Tran, Australian Centre for Space Engineering Research (ACSER), UNSW Australia and Thuan Nguyen Dinh, HUST, Vietnam</p>	<p>Ambiguity resolved PPP a case study in NSW</p> <p>Thomas Grinter, Volker Janssen and Craig Roberts, UNSW Australia</p>
<b>11:40</b>	<p>Upgraded AUSPOS and Refined Solution Uncertainty</p> <p>Dr Minghai Jia, Geoscience Australia</p>	<p>Receiver Losses when using Quadrature Bandpass Sampling</p> <p>Andrew Dempster, Australian Centre for Space Engineering Research (ACSER), UNSW Australia</p>	<p>2nd Generation SBAS: Opportunities, Applications, and Issues</p> <p>Bob Jackson, Lockheed Martin Space Systems Company</p>
<b>12:00</b>	<p>Supporting Positioning in Australia through Open Access Multi-GNSS Data</p> <p>Ryan Ruddick, Geoscience Australia</p>	<p>Simulators, and their applications in developing and testing GNSS systems</p> <p>David Pearce, Vicom Australia &amp; New Zealand</p>	
<b>12:20</b>	<b>BBQ Lunch</b>		
<b>13:20</b>	<b>Event End</b>		