

# IGNSS2024 PROGRAM OUTLINE

Updated on 5/02/2024

WEDNESDAY 7 FEBRUARY			
	COLOMBO THEATRE A	COLOMBO THEATRE B	COLOMBO THEATRE C
	<b>WELCOME</b>		
9:00am	<b>Introduction &amp; Welcome to IGNSS2024 from the IGNSS Association</b> <i>Presented by Craig Roberts, UNSW &amp; Matt Higgins, IGNSS Association</i>		
	<b>KEYNOTES</b> <i>Chaired by Matt Higgins, IGNSS Association</i>		
9:15am	<b>50th Anniversary of GPS</b>	<b>Brad Parkinson [remote]</b>	
9:45am	<b>Satellite navigation from Low Earth Orbit</b>	<b>Bryan Chan, Xona</b>	
10:15am	<b>GNSS Denial in the South China Sea</b>	<b>David Garigen, Safran</b>	
10:45am	<b>Morning Tea Break</b>		
	<b>KEYNOTE</b> <i>Chaired by Anna Riddell, GA</i>		
11:15am	<b>Machine Learning for GNSS Remote</b>	<b>Jade Morton, University of Colorado</b>	
<b>Technical Sessions</b>			
	<b>Atmosphere &amp; Ionosphere</b> <i>Chaired by Geoscience Australia</i>	<b>Autonomous Systems</b> <i>Chaired by Hayden Assmussen, DELWP Vic</i>	<b>Precise Positioning</b> <i>Chaired by Martin Nix, Aptella</i>
11:45am	Solar Cycle 25 and Potential Implications for GNSS <i>Zahra Bouya, The Bureau Of Meteorology</i>	Autonomous Road Trains – Revolutionising the economics of the Australian Mining Industry <i>Simon Stone, Hexagon Mining</i>	Precise GNSS positioning with smartphones: on the instantaneous, dual-frequency, multi-GNSS precise cm-level positioning performance using Google Pixel4 and Samsung Galaxy S20 smartphones <i>Robert Odolinski, University Of Otago</i>
12:00pm	An Analysis of Ionospheric Time Variation using LS-VCE Applied to the Process Noise of PPP-RTK Corrections <i>Parvaneh Sadegh Nojehdeh, University Of Melbourne</i>	Positioning Solution Investigation for Cooperative Intelligent Transport Systems (C-ITS) and Connected Automated Vehicle (CAV) <i>Ada Lin, Lexus Australia</i>	Performance of SSR for Typical Mass Market Applications <i>Nam Huynh, Position Partners</i>
12:15pm	Neutral Atmosphere and Ionosphere GNSS Processing and Applications at the COSMIC Data Analysis and Archive Center <i>Jan-peter Weiss, University Corporation For Atmospheric Research</i>	UNSW Redback Racing <i>Haylee Hulbert, Unsw Redback Racing</i>	<b>Townhall Discussion: Emerging RTK ecosystems</b> <b>Facilitated by Martin Nix</b>
12:30pm		GNSS sensor fusion and the impact of autonomous workflows on vital industries <i>Yamila Fernandez, Position Partners</i>	
12:45pm - 1:30pm	<b>Lunch</b>		
	<b>KEYNOTE</b> <i>Chaired by Matt Higgins, IGNSS Association</i>		
1:30pm - 2:00pm	<b>A World of Boiling Frogs</b>	<b>Nunzio Gambale, Locata</b>	
<b>Technical Sessions</b>			
	<b>Alternative PNT</b> <i>Chaired by Matt Higgins, IGNSS Association</i>	<b>Geoscience Australia</b> <i>Chaired by Chris Marshall, FrontierSI</i>	
2:00pm	VDES Sat constellation for Maritime Navigation and Digital Transformation <i>Daichi Nakamura, Arkedge Space Inc.</i>	Foreword from Lockheed Martin <i>Bob Jackson, Lockheed Martin</i>	Southern Positioning Augmentation Network (SouthPAN) - Year 1 Review <i>Vincent Rooke, Geoscience Australia</i>
2:15pm	An Innovative Asynchronous One-Way Range Measurement and its Development Status <i>Junichiro Kawaguchi, Australian National University</i>	What is Australia's reliance on the International GNSS Service <i>Ryan Ruddick, Geoscience Australia</i>	
2:30pm	Quantum PNT Technologies: Advancing Position, Navigation, and Timing Beyond GNSS <i>Andrew Gumtree, RMIT University</i>	Position Verification activities (Reg13 certificates) at Geoscience Australia <i>Anna Riddell, Geoscience Australia</i>	
2:45pm	Chip-based diamond magnetometer for quantum-assured PNT <i>James Rabeau, deteQI</i>	A Update on the National Positioning Infrastructure Capability <i>Ryan Ruddick, Geoscience Australia</i>	
3:00pm	ACES - The Jewel in the Crown of the ISS <i>Simon Weinberg, ESA</i>	An MQTT endpoint for the National Positioning Infrastructure Capability <i>Brandon Owen, Geoscience Australia</i>	
3:15pm	<b>Afternoon Tea Break</b>		
	<b>KEYNOTE</b> <i>Chaired by Eldar Rubinov, FrontierSI</i>		
3:45pm	<b>Trusted, privacy compliant and introspective positioning systems</b>	<b>Michael Milford, Queensland University of Technology</b>	
4:10pm - 5:30pm	<b>PANEL: Positioning and Navigation for Autonomous Systems</b> <i>Facilitated by Eldar Rubinov, FrontierSI</i>		<b>Safran Platinum Sponsor Demonstration</b> <b>Skydel GNSS Simulation Software</b>
	Featuring: - Michael Milford (QUT) - Simon Stone (Hexagon) - Karen Van Dyke (US DoT) - Martin Nix (Aptella, formerly Position Partners)		
7:15pm - 10:30pm	<b>IGNSS2024 Harbour Cruise Dinner</b> King St Wharf, Sydney Boarding commences at 7:15pm for 7:30pm departure		

THURSDAY 8 FEBRUARY					
COLOMBO THEATRE A		COLOMBO THEATRE B		COLOMBO THEATRE C	
<b>KEYNOTE</b> <i>Chaired by Matt Higgins, IGSS Association</i>					
9:00am	Evaluation of SouthPAN corrections with Android Smartphones	Frank van Diggelen, Google [remote]			
<b>US Perspectives on PNT - CGSIC International Information Subcommittee (I)</b> <i>Chaired by Rick Hamilton, US Coast Guard Navigation Center</i>					
9:30am	Introduction	Scott Calhoun, U.S. Coast Guard Navigation Center, Deputy Chair, Civil GPS Service Interface Committee (CGSIC)			
9:35am	DOT Update	Karen Van Dyke, Director, PNT & Spectrum Management, US Department of Transportation (DOT)			
10:05am	GPS Program Update	Col. Andrew S. Menschner, Commander, PNT Delta, Space Operations Command, US Space Force			
10:35am	US National Space-Based PNT Policy	Harold (Stormy) Martin, National Coordination Office for Space-Based Positioning, Navigation and Timing)			
11:00am <b>Morning Tea Break</b>					
<b>US Perspectives on PNT - CGSIC International Information Subcommittee (II)</b> <i>Chaired by Mr Rick Hamilton, US Coast Guard Navigation Center</i>		<b>Technical Sessions</b>			
		<b>Geodesy &amp; PPP</b> <i>Chaired by Robert Odolinski, Otago University</i>	<b>GNSS Reflectometry</b> <i>Chaired by Zahra Bouya, Bureau of Meteorology</i>		
11:30am	<b>Alternative PNT</b> David Allen, Aerospace Corporation, supporting the Office of the Assistant Secretary of the Air Force, U.S. Space Force	A new approach for separability of multiple outliers in GPS single point positioning	All Almagbile, Yarmouk University		Precision Spaceborne GNSS-R Applications Jade Morton, University of Colorado Boulder
11:45am		Enhancing vehicle positioning accuracy during GNSS signal outages using GBDT and LSTM methods	Wenzong Gao, Queensland University Of Technology		Methods and Challenges in Multifrequency TEC Estimation with GNSS-R Angus Sutherland, ACSER UNSW
12:00pm	<b>GPS International Activities</b> Jeff Auerbach, Office of Space and Advanced Technology, U.S. Department of State	Low-cost GNSS IoT Sensors' Benefit: Better Visualisation Performance	Jun Wang, Kurloo Technology Pty Ltd		Design of software-defined GNSS reflectometry receiver on Harry v3 payload Ignatius Rivaldi, ACSER UNSW
12:15pm		Addressing the challenges of precise positioning and navigation in urban environments for mobility, safety and robotic applications	James Millner, Aptella		A study of LEO constellations for signals of opportunity (SoOp) in Earth remote sensing Rozaine Wijekularatne, Purdue University   ACSER UNSW
12:30pm	<b>US Process for GPS Testing and Interference Investigations</b> Rick Hamilton, GPS Information Analysis Team Lead, U.S. Coast Guard Navigation Center	Urban Geopositioning on cm-level: Introducing Fixposition's visual PPK platform	Lukas Meier, Fixposition Ag		An Approach for GPS/GNSS Expert Witness Assessments Andrew Dempster, ACSER UNSW
12:45pm					
1:00pm <b>Lunch</b>					
<b>Resilient PNT &amp; the Australian Government</b> <i>Chaired by Chris Rizos, UNSW</i>		<b>Technical Sessions</b> <i>Chaired by James Millner, Aptella</i>			
2:00pm	<b>Overview of PNT in the Australian Government</b> Martine Woolf, Branch Head National Positioning Information at Geoscience Australia	25 years of GPSnet CORS	Hayden Asmussen, DTP		<b>Safran Platinum Sponsor Demonstration</b> <b>Skydel GNSS Simulation Software</b>
2:15pm		FAIR GNSS data and metadata	Chris Marshall, FrontierSI		
2:30pm	<b>PNT Vulnerability</b> Eloise Claire, Australian Government Department of Home Affairs	Regional L-Band Space Spectrum Situation Awareness	Ming Zhu, Gpsat Systems Australia		
2:45pm		Optimal Satellite Placement Using Pseudo-Range Measurements	Hatem Hmam, DSTG		
3:00pm	<b>UK Perspectives on PNT</b> <i>Chaired by Chris Rizos, UNSW</i>				
	<b>UK National Framework for PNT Resilience: A System of Systems Approach</b> Mark Brammer, UK Department for Science, Innovation & Technology				
3:30pm <b>Afternoon Tea Break</b>					
<b>Keynote Speakers:</b> <i>Chaired by Craig Roberts, UNSW</i>					
4:00pm	<b>A Perspective of GNSS and MGUE Technology and Integration Today</b> Justin Yakura, L3Harris Technologies				
4:30pm	<b>European Radionavigation Plan and the future EU C-PNT ecosystem</b> Łukasz K Bonenberg, European Commission Joint Research Centre (JRC) [remote]				
<b>Service Provider Updates</b> <i>Chaired by Craig Roberts, UNSW</i>					
4:50pm	<b>QZSS</b> Takashi Yamane, Cabinet Office, Government of Japan [remote]				
5:10pm	<b>Galileo</b> Dominic Hayes, European Commission [remote]				
5:30pm <b>Short Break</b>					
5:35pm	<b>Industry Session</b> <i>Chaired by Craig Roberts</i>				
6:30pm - 8:00pm	<b>Exhibitor's Networking Drinks</b>				

**FRIDAY 9 FEBRUARY**

**8:00am** **IAC2025 & the Australian PNT Community**  
 Informal gathering for those interested in discussing ways that the PNT community can engage with IAC2025, which is to be hosted in Sydney.  
*Coffee on Campus, Ground Floor, Building J17, UNSW Kensington*

	COLOMBO THEATRE A		COLOMBO THEATRE B		COLOMBO THEATRE C	
<b>9:00am - 9:30am</b>	<b>IGNSS Association General Meeting</b> <i>Chaired by Craig Roberts, UNSW</i>					
<b>Technical Sessions</b>						
	<b>Navigating Our Future: Unlocking Australia's Positioning Potential, hosted by Geoscience Australia</b> <i>Chaired by Martine Woolf, Geoscience Australia</i>		<b>PNT In Space</b> <i>Chaired by Rozaine Wijekularatne</i>		<b>GNSS Algorithms &amp; Resilience</b> <i>Chaired by Safoora Zaminpardaz</i>	
9:30am	Investigating New Geodesy Tools for Surveyors - An Undergraduate Research Project at UNSW	Thomas Maile, UNSW	Using GNSS in CIS Lunar Space	Eamonn Glennon, ACSER, Unsw Sydney	Ensuring PNT Resilience: A Global Review of Navigation Policies and Roadmaps	Joshua Critchley-Marrows, FrontierSI
9:45am	Where are we at with SouthPAN?	Craig Roberts, UNSW	Studies on Lunar Communication and Navigation Infrastructure and Lunar Navigation Satellite System Demonstration Mission	Toshihiro Shibukawa, Arkedge Space, Inc.	Bounding of double-differenced correlated errors of multi-GNSS observations using RTK for AV positioning	Hassan Elsayed, Curtin University
10:00am	Propagation of mean sea level via uses of GNSS and AGQG.	William Payze, Northern Territory Government	Lunar Coordinate Systems and their Practice in Designing a Lunar Navigation Satellite System	Enbai Ji, UNSW	GNSS Interference - Impact, Detection, and Mitigation	Youssef Tawk, Leica Geosystems
10:15am	Ginan in action	Lachlan Ng, FrontierSI	Assessing In-Flight Performance of Commercial Off-The-Shelf GNSS Receivers for Low Earth Orbit Satellite Navigation	Li Qiao, UNSWCanberra	Authentication of GPS and Galileo signals through QZSS	Dinesh Manandhar, The University Of Tokyo
10:30am	Global ionospheric model for precise positioning using GINAN software.	Tam Dao, RMIT University	Integrity Monitoring for Launch Vehicle Dynamics	Sheikh Arif Raihan, UNSW	GLONASS ambiguity resolution with bias constraints	Amir Khodabandeh, The University Of Melbourne
10:45am	Ginan Supporting Future LEO-PNT	Amir Allahviridi-Zadeh, Curtin University	Autonomous Orbit Determination and Timing for LEO and Lunar Satellite Ranging Infrastructure	Joshua Critchley-Marrows, FrontierSI		
<b>11:00am</b>	<b>Morning Tea Break</b>					
	<b>Keynotes: PNT in Space</b> <i>Chaired by Andrew Dempster, UNSW</i>					
<b>11:30am</b>	<b>Secure GPS User Equipment beyond Low Earth Orbit (LEO)</b>	<b>Justin Yakura, L3Harris Technologies</b>				
<b>12:00pm</b>	<b>LiDAV: Advanced technologies for GNSS-denied navigation</b>	<b>Lyle Roberts, Advanced Navigation</b>				
<b>12:30pm</b>	<b>KAIROS-1: Space Clock Technology Demonstrator</b>	<b>Martin O'Connor, Quantxlabs</b>				
<b>1:00pm</b>	<b>Conference Wrap Up</b> <i>Chaired by Matt Higgins, IGNSS Association</i>					
<b>1:15pm - 2:15pm</b>	<b>BBQ Lunch</b>					