



**SYSTEMS ENGINEERING TEST & EVALUATION CONFERENCE 2022 - PROGRAM**

Effective as of 11 September 2022 | Subject to change

**Monday 12 September - Tutorial Day**

0800 – 1700	<b>Registrations open</b>				
0900 – 1030	<p>TUTORIAL: Systems 101 - An Introduction to Systems Thinking and Systems Engineering</p> <p>Jawahar Bhalla, Andrew Madry (Studio 1)</p>	<p>TUTORIAL: Engaging Non-Engineering Executives in Systems Engineering Using a Learning Framework</p> <p>Richard Hodge (Studio 2)</p>	<p>TUTORIAL: The Beginner's Guide to Model-Based Systems Engineering (MBSE)</p> <p>Dan Spencer (Studio 3)</p>	<p>TUTORIAL: Cyberworthiness Evaluation and Management Toolkit (CEMT): A model-based approach to cyberworthiness assessments</p> <p>Stuart Fowler, Keith Joiner, Elena Sitnikova, Siqi Ma (Studio 4)</p>	
1030 – 1100	Morning tea				
1100 – 1230	Sessions above continued				
1230 – 1300	Lunch				
1300 – 1430	<p>TUTORIAL: Machine Learning and Systems Thinking</p> <p>Andrew Madry, Jawahar Bhalla (Studio 1)</p>	<p>TUTORIAL: Design of Public Transport Systems Using Thread-based MBSE Techniques</p> <p>Mark Egglar, Daniel Egglar (Studio 2)</p>	<p>TUTORIAL: Lethal Autonomy and a human-centric view of complex military and safety critical systems – FLAWS vs Human CLAWS</p> <p>Malcolm Tutty (Studio 3)</p>	<p>TUTORIAL: Designing a digitally enabled T&amp;E program for a collaborative system of systems.</p> <p>Tim Grabert, Bernie O'Neill, Jamie Smith, Rob Starbuck (Studio 4)</p>	<p>SITE VISIT: NASA - Canberra Deep Space Communication Complex (Tidbinbilla) 1330-1715</p>
1430 – 1500	Afternoon Tea				
1500 – 1630	Sessions above continued				
1630 – 1730	SESA General Meeting (Studio 2+3 combined)				
1730 – 1830	SETE 2022 Welcome Reception (QT Lounge - Level 15)				<p>SITE VISIT: Advanced Instrumentation Technology Centre (Mt Stromlo Observatory, ANU) 1815-2030</p>

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### Tuesday 13 September

0700 – 1600	Registrations open			
0730 – 0815	Transport Advisory Board Breakfast (Closed Session)	Systems Thinking Round Table Topic: Enabling resilience through disruption. Host: Chris Browne (Studio 1)		
0830 – 0900	SETE 2022 Welcome and Opening of SETE 2022 - SESA President Jawahar Bhalla, ITEA Southern Cross Chapter President Peter Nikoloff Acknowledgement of Country Platinum Sponsor Address			
0900 – 0940	KEYNOTE 1: Andrew McNaughton [virtual] Systems Thinking in the Infrastructure sector			
0940 – 1020	KEYNOTE 2: Prof Emma Sparks Preparing for the Future			
1020 – 1050	Morning tea / Exhibition			
1050 – 1220	Concurrent Session 1			
	Cyber Resilience Chair: Thomas Manley (Ballroom 1)	Future Defence Capability Chair: Stuart Taylor (Ballroom 2)	Advances in Model Based Systems Engineering Chair: Lauren Fraser (Studio 2/3)	Modelling & Simulation Chair: Grace Kennedy (Studio 1)
1050 – 1120	An Overview of the upcoming Communications Systems Primer: A Systems Engineer's Guide to Communications Networks: Modeling Networks as Systems Thomas Manley, Susan Ronning, Keith Rothschild, William Scheible	Assessing the impacts of 'Evergreening' in establishing and maintaining the resilience of Space Domain Awareness systems David Culpin, Stuart Fowler		A causal factors analysis of flooding resilience for rail infrastructure systems Grace Kennedy, Nathanael Hutchison
1120 – 1150	PANEL: Cyber Resilience T&E Panel Panellists: Sarah Standard, Robert Di Pietro, Keith Joiner Moderator: Paul Harvey	Building resilient and agile systems through AI-driven model-based validation Viruben Watson	An improved approach for information management in the AEC industry using Linked Data and MBSE Wouter Lubbers, Sander Stolk, Niels Kooiman	Deriving Resilient Performance Requirements through Modelling and Simulation Garth De Visser, Stephanie Knight
1150 – 1220		Base Zero: Modelling Resource Flow Through a Base Stuart Taylor, Marcelline Overduin	Conceptual Application of Agile MBSE for Camouflage Field Experiment Ryan Messina	A tool to accelerate the accredited process for military flight simulators Tim Grabert
1220 – 1320	Lunch / Exhibition		SEP Gathering and Networking - open to ASEP, CSEP and ESEPs 12:40-13:10 (Ballroom 2)	
1320 – 1450	Concurrent Session 2			
	Autonomous Systems Chair: Kelly Lance (Ballroom 1)	SE in Infrastructure Chair: Ruben Welschen (Ballroom 2)	Future Capability Chair: Kerry Lunney (Studio 2/3)	SE & T&E in the Life Cycle Chair: Dan Spencer (Studio 1)
1320 – 1350	Navigating the legal and ethical issues of autonomous spectrum management systems Chris Hanna	Systems Architecture Development for Infrastructure Projects Danny Van Loon	Excelling through evolutions and disruptions, tomorrow's Vision for Systems Engineering Kerry Lunney	INCOSE Knowledge Exam (required for ASEP and CSEP Certification) 13:00-15:30 (Studio 4)
1350 – 1420	Assuring autonomy - An examination of the literature and directions for applied research. Stuart Taylor, Rachel Horne	The art of decision management in complex infrastructure Jonathan Luey	WORKSHOP: Preparing engineers to tackle increasing complexity and disruptions in our future Kerry Lunney, Kevin Robinson, Jane McMaster	
1420 – 1450	Challenges of testing maritime uncrewed robotics and autonomous systems (RAS) Kelly Lance	A Vision for Better Engagement of Systems Engineering in Infrastructure Ruben Welschen		
1450 – 1515	Afternoon Tea			
1515 – 1645	Concurrent Session 3			
	Autonomous Systems Chair: Jawahar Bhalla (Ballroom 1)	T&E Code of Practice Chair: Malcolm Tutty (Ballroom 2)	PM and SE Chair: David Orr (Studio 2/3)	Resilient Solutions Chair: Lauren Fraser (Studio 1)
1515 – 1545	The Challenges of Marine Autonomous Systems Test and Evaluation in Tropical Australia Melanie Olsen	Lethal Autonomy and a human-centric view of complex military and safety critical systems - FLAWS vs Human CLAWS Malcolm Tutty	WORKSHOP: Integration of Project Management and Systems Engineering on Transport Projects Presenters: David Orr, Siby Yohannan Workshop Participants: Nicole Waterman (Laing O'Rourke), Anthony Butler (CPB), Ron Thomas (CPB), Cheng Ni (Thales), Peter Munro (MTR Australia), Thomas Boxoen (TfNSW)	Tailoring system architecture approaches to benefit infrastructure design Simon Hutton
1545 – 1615	Fundamental Inputs to Developing a RAS-AI Capability Kevin Robinson, Ben Mashford, Jawahar Bhalla	PANEL: Experimentation and Test & Evaluation Code of Practice Panellists: Sarah Standard (US Department of Defense), Keith Joiner (UNSW), Paul Harvey (Defence), Tim Grabert (Nova Systems) Moderator: Malcolm Tutty (UNSW)		Review of a Mature Training System of Systems Design to Ensure Its Desired Performance and Resilience Characteristics Victoria Jnitova, Mahmoud Efatmaneshnik, Keith Joiner, Tim Ferris, David Wenzel
1615 – 1645	A Systems Framework for the Assurance of Maritime Autonomous Systems Jawahar Bhalla			Using Quality Function Deployment (QFD) to Evaluate High-Level System Solutions David Cropley
1645 – 1650	Break			
1650 – 1730	PANEL: A Systems Perspective into Challenges and Opportunities of Autonomous Systems Mr Jawahar Bhalla, WGC DR Michael Gan (Deputy Director Artificial Intelligence - Air Force), Rachel Horne (Director of Autonomy Accreditation, TASDCRC), Melanie Olsen (ReefWorks Project Director, AIMS), Clare East (Managing Director, East Consulting), CMDR Richard Austin (Deputy Director Navy Modelling & Simulation, Warfare Innovation Navy), Andreas Marouchos (Principal Engineering and Research Group Leader, CSIRO)			
1730 – 1830	Break			
1830 – 1900	Pre-Dinner Networking Dinner			
1900 – 2230	SETE Gala Dinner			

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### Wednesday 14 September

0700 – 1600	Registrations open			
0700 – 0745	Systems Thinking Round Table Topic: Enabling resilience through disruption. Host: Chris Browne (Studio 1)			
0800 – 0825	SETE 2022 Welcome to Final Day SETE 2022 - SESA President Jawahar Bhalla, ITEA Southern Cross Chapter President Peter Nikoloff SESA Technical Director Corner – Thomas Manley			
0825 – 0905	KEYNOTE 3: Major-General Kath Toohey Force Integration			
0905 – 0945	KEYNOTE 4: Christopher Collins Developmental T&E in an Ever-Evolving Operational and Technological Context			
0945 – 1000	Invited Speaker Hon. Senator David Fawcett			
1000 – 1030	Morning tea / Exhibition			
1030 – 1230	Concurrent Session 4			
	T&E Strategy Chair: Malcolm Tutty (Ballroom 1)	Resilience & Integration Chair: Thomas Manley (Ballroom 2)	Case Studies and Applications Chair: Chris Browne (Studio 2/3)	Designing Intelligent Systems Chair: Grace Kennedy (Studio 1)
1030 – 1100	The Defence Test and Evaluation Strategy Steve Young	What Tesla can teach Systems Engineers about Engineering Thomas Manley	New Zealand's First Part 146 Aircraft Design Organisation: Lessons Observed on the Journey So Far Jessica Tucker, Patrick Lalor, Brian Feamley	Artificially Intelligent Sociotechnical Systems - Implications for Systems Engineering Kevin Robinson
1100 – 1130	Defence program level test and evaluation Steven Amey, Bill Welling	One Size Does Not Fit All: Tailoring Standards to Match Risk Appetite in Rail Systems Assurance Jessica Tucker, Nathan King	Harnessing systems engineering practises from automotive engineering to enhance the capability of sovereign defence industry Greg Horn	Models and mind-sets: Delivering a model-driven and tool-agnostic systems engineering digital transformation Mark Papinczak, Grant Parratt
1130 – 1200	PANEL: Integration of Land and Air Capabilities – industry and academia engagement Panellists: LTCOL George Georginas (Defence), WGCDR Peter Wooding (Defence), Sarah Standard (US Department of Defense), Peter Nikoloff (Nova Systems) Moderator: Malcolm Tutty (UNSW)	Route to Acceptance, the Integration story of Melbourne's Metro Tunnel rail project Marcus Chadwick	Revisiting Future Proofing for Large Scale Acquisitions Peter De Haan	Application of Machine Natural Language Processing for improving requirements authoring Chiang Lu
1200 – 1230		Human-Systems Integration during early design phase- A use case from Melbourne Airport Rail Victoria Valentinova	"If This, then That, then What?": A method for exploring Unintended Consequences Chris Browne	Towards the Validation of VR-HMDs for Medical Education – A Systematic Literature Review Shiva Pedram, Grace Kennedy, Sal Sanzone
1230 – 1330	Lunch / Exhibition		CAR Gathering (closed session for CARs) 13:00-13:20 (Studio 4)	
1330 – 1530	Concurrent Session 5			
	Strategy and Capability Chair: Chris Browne (Ballroom 1)	Imagining Resilient Systems Chair: Jawahar Bhalla (Ballroom 2)	Skills and Capability Chair: Ruben Welschen (Studio 2/3)	Application of SE Techniques Chair: Lauren Fraser (Studio 1)
1330 – 1400	System of System Test and Evaluation A Joint Force Perspective Obaid Rehman	Identifying and Reducing the Governance Gap in Complex Systems Richard Hodge, Joseph Bradley	WORKSHOP: Transport Skills and Capability Development Ruben Welschen, Carly Edwards, Thomas Boxoen, Alexandra Morey, Fiona Love, Grace Kennedy	Use of GSN in Interface Management Eric Li
1400 – 1430	Concepts in assuring complex systems Ben Luther	A Whole-Of-Life Systems Resilience Framework Jawahar Bhalla		Applied System Engineering on Emerging Transport Technologies Henry Wu
1430 – 1500	PANEL: How is T&E being managed and leveraged as a strategic tool to enable resilience in today's complex (contested and congested) warfighting environment? Panellists: Christopher Collins, Jane McMaster, Paul Harvey Moderator: Robert (Bill) Bunton	PANEL: COVID 19 Observations & Lessons Learned from a Systems, Data and Human Perspectives Panellists: Jawahar Bhalla, Grace Kennedy, Andrew Madry		Requirements schemas for large multidisciplinary projects John Welford
1500 – 1530				Risk assessment for passive level crossings- a review of the techniques Tieling Zhang
1530 – 1600	Afternoon Tea			
1600 – 1640	KEYNOTE: Enrico Palermo [virtual] Importance of SE and T&E in a highly evolutionary operational context			
1640 – 1720	PANEL: Space T&E Panel Panellists: Sarah Cannard, Courtney Bright, Danny Rutten, Andrew Guidi. Moderator: Peter Nikoloff			
1720 – 1730	Looking Back and Looking Forward Jawahar Bhalla and Peter Nikoloff			

SITE VISIT:  
Canberra Light Rail Depot  
1300-1535