



Australian International Aerospace Congress



ROYAL AERONAUTICAL SOCIETY AUSTRALIAN DIVISION

Australian International Aerospace Congress
27 February - 1 March 2023
Sofitel Melbourne on Collins - 25 Collins Street, Melbourne VIC 3000



MONDAY 27 FEBRUARY 2023

08:00	Registrations Open <i>Promenade, Sofitel Melbourne on Collins</i>					
Grand Ballroom <i>Chair: Prof Pier Marzocca (RMIT University)</i>						
08:45	Congress Opening Ben Main, Congress Chair (DST Group)					
09:05	Plenary Presentation: Growing Australia's Space Industry: From 2018 to Today Simon Barraclough (Australian Space Agency)					
09:35	Plenary Presentation: Environmental Impact Assessment of Future Aircraft Concepts Dr Dimitri Mavris (Georgia Institute of Technology)					
10:05	Plenary Presentation: Air and Space Platforms Resilience in Defence Dr Alex Shekhter (Defence Science and Technology Group)					
10:35	Morning Tea					
	Perth Room	Sydney Room	Brisbane Room	Latrobe Ballroom	Fitzroy Ballroom	Arthur Streeton Auditorium
	AAC: Structures and Materials <i>Chair: Ben Main (DST Group)</i>	AAC: Autonomous Systems/UAS <i>Chair: Dr Vincenzo Muscarello (RMIT University)</i>	AAC: New Technologies <i>Chair: Dr Jonathan Couldrick (Nova Systems)</i>	NSES <i>Chair: Dr Gail Iles (RMIT University)</i>	AAC: Aerodynamics and Propulsion <i>Chair: Dr Ross Antoniou (DST Group)</i>	HUMS <i>Chairs: Joanna Kappas (DST Group), Eric Bechhofer (GPMS, USA)</i>
11:00	Keynote Presentation: Advanced Structures Research in the US Air Force Research Laboratory Dr John Russell (Air Force Research Laboratory)	Keynote Presentation: A Blueprint for the Advancement of AAM in Australia – Lessons Learned from Global Experiences Grant Williams (Thales)	Keynote Presentation: Digital Transformation – A Behavioural Change Sarah McSwiney (Boeing Defence Australia), Luke Healey (Boeing Defence Australia)	Keynote Presentation: Space Solar Power for Australia: Affordable Net-Zero Energy and Global Opportunity John C. Mankins (Artemis Innovation Management Solutions LLC)	105: Status of the DART AE Hypersonic Technology Demonstrator Dr Alexander Ward (Hypersonic Launch Systems)	Keynote Presentation: How to Go from arXiv to an Aircraft Carrier Dr Katie Rainey (Naval Information Warfare Center Pacific)
11:30	88: Reviewing the Experimental setup of Ultra-High-Speed and Low-Speed 3D Digital Image Correlation for composite CAI testing Ms Claire Dunne (RMIT University)	139: Live, Virtual, Constructive and Autonomous: Human-in-the-loop Simulation in the Development of Concepts for Crewed-Uncrewed Teaming Mr Robert Bolia (Defence Science and Technology Group)	92: Use of XR in Aerospace at Airbus AP Mr Mark Schuhmacher (Airbus AP), Mr Emmanuel Gauvrit (Airbus AP)	134: Selecting the optimal propulsion system for a satellite mission Mr William De La Rue (Defence Science and Technology Group)	Leveraging digital engineering for the design of hypersonic vehicles Dr Valerio Viti (ANSYS)	31: Domain-driven Residual Useful Life Estimation Mr Navid Zaman (PHM Technology)
11:50	103: Multifunctional Structural Batteries and Supercapacitors Dr Nisa Salim (Swinburne University of Technology)	76: Prioritizing Paths: An Improved Cost Function for Local Path Planning for UAV in Medical Applications Mr Andreas Thoma (FH Aachen University of Applied Sciences)	96: Leveraging 5G Technologies for High-Performing PHM and Condition Monitoring: Risks and Rewards Dr Scott Clements (Lockheed Martin), Dr Romano Patrick (Lockheed Martin)	157: Atmospheric sounding rocket used as a microgravity platform for freefall experimentation in Australia Mr James Kirby (RMIT University)		77: Accelerated Gearbox Degradation Monitoring using a Combination of Vibration and Acoustic Emission Features Dr Ruiz-Carcel (Cranfield University)
12:10	26: 3D Printed Continuous Fibre Composites: Fabricating and Evaluating Topology Optimised Component Dr Mathew Joosten (Deakin University)	14: Flight Test for Determination of Manoeuvring and Atmospheric Disturbance Data for Application in A/C Condition Monitoring System Development Mr Philipp Schildt (Rolls-Royce Electrical, RMIT University, FH Aachen University of Applied Sciences)	133: Machine Learning Model Measuring Future User Experience of Mixed Reality Systems for Aircraft Maintenance Mr Vlado Kekoc (Defence Science and Technology Group)	100: Inertial Morphing (IM) of Spacecraft for Efficient Swift Detumbling or Orthogonal Inversions Prof Pavel Trivailo (RMIT University)	86: Reduced Order Model for Transonic Shock Buffet based on Compressed Measurements Mr Arpan Das (RMIT University)	161: In-service recalibration of the 737-AEW&C Wedgetail Operational Loads Monitoring System Mr David Craze (Boeing Defence Australia), Flight Lieutenant Owen Hamilton (Royal Australian Air Force)
12:30	28: Improvements in pseudo ductility by post-processing 3D printed continuous hybrid composites Miss Harper Huang (Deakin University)	112: A Trajectory-Oriented Unmanned Traffic Planning Assistant in Multi-Purpose Urban Air Environment Ms Yuting Xi (RMIT University)	35: A Mixed Reality Framework for Aircraft Fatigue Damage 'hotspot' Evaluation Mr Michael Scott (RMIT University)	108: Prototype of the Smart System with Inertial Morphing Capabilities for Manipulations with its Attitude Motion in Space Mr Suraj Aranha (RMIT University)	136: Aeroelastic Stability of Transonic/Supersonic Aircraft using Generalized Aerodynamic Forces Obtained by CFD Based Methods Mr Errol Hale (RMIT University)	52: Data-driven Prognostics and Diagnostics for Turbofan engine Dr Emmanuel Blanchard (MathWorks)
12:50	Lunch					
Grand Ballroom						
13:30	Panel Discussion: Unlocking value through diversity <i>The Diversity and Inclusion Panel will share and highlight different perspectives, as well as advice on how we can work together towards a more diverse, equitable, and inclusive industry. The Panel will feature the voices of leaders from some of Australia's most respected aerospace businesses. They will discuss practical, case-based insights into advancing and innovating within their own organisations, and how others can align diversity, equity and inclusion initiatives with regards to talent management and business strategy.</i> Liesl Haris (Talking Leads) Julia Lang (RMIT University) Sarah McSwiney (Boeing Defence Australia) Dr Katie Rainey (Naval Information Warfare Center Pacific) Moderator: Lea Vesic (RMIT University)					
	Perth Room	Sydney Room	Brisbane Room	Latrobe Ballroom	Fitzroy Ballroom	Arthur Streeton Auditorium
	AAC: Structures and Materials <i>Chair: Prof Simon Barter (RMIT University)</i>	AAC: Autonomous Systems/UAS <i>Chair: Dr Matt Marino (RMIT University)</i>	AAC: New Technologies <i>Chair: GPCAPT Greg Lamb (RAAF)</i>	NSES <i>Chair: Dr David Lingard (DST Group)</i>	HUMS: Data Challenge <i>Chair: Dr Wenyi Wang (DST Group)</i>	HUMS: Sensors/SHM <i>Chair: Prof Nick Lieven (University of Bristol, UK)</i>
14:10	110: Multi-functional Shape Memory Alloy Tufted Composite Joints Technology Mr Tim Cooper (QinetiQ Australia), Dr Anil Ravindran (RMIT University)	49: Drone Ultrasonic Detection Dr Joni Sytma (NER, RPEQ)	101: Digital technologies for rapid design and production of replacement aircraft components Mr Akesh Senanayake (RMIT University)	81: Australian Lunar Experiment Promoting Horticulture Dr Graham Dorrington (RMIT University)	63: DSTG Planet Gear Rim Crack Propagation Test Dr David Blunt (Defence Science and Technology Group)	17: Using accurate online oil condition monitoring sensor data to improve HUMS Mr Greg Horwich (Gastops Ltd)

Please note: The program is current at the time of publication, subject to change.

14:30	87: Coupled thermo-mechanical numerical modelling of carbon fibre reinforced composites impacted with different projectile configurations Mr Alessandro Polla (Politecnico di Torino, RMIT University)	94: Using automated drone to detect and repulse cattle Mr Aaron Sew (RMIT University)	36: A Structural PHM Framework for Aircraft Control Surface Free-play Mr Michael Scott (RMIT University)	64: Establishment of a Space Simulation Laboratory Replicating Low Earth Orbit Environmental Conditions Mr Matthew Pelosi (Defence Science and Technology Group)	<i>HUMS: Data Challenge</i>	18: Distributed Fibre Optic Sensing and Adhesion Strategies for Strain Evaluation of an Aircraft Structure Mr Gerard Natividad (Defence Science and Technology Group)
14:50	34: Design and modelling of cellular material heatsinks: a parametric study of TPMS structures Mr Sean Samson (RMIT University)	129: Air-to-air detection of a UAS and an on-board payload using visual and thermal imagery fusion Mr Jesse Ramsay (Defence Science and Technology Group), Dr Prajakta Desai (Defence Science and Technology Group)	MBSE is the Empennage of the Digital Aerospace Enterprise Mr Sam Mancarella (MEMKO)	150: Promoting STEM Space Engineering Education and Awareness using Interactive Video Games Mr Thomas Bellier (RMIT University)		113: Photonic integrated circuit compatible interrogation methods for low SWaP optical fibre strain sensing Dr Luke Broadley (RMIT University)
15:10	33: The effects of positional instability on a machine learning based detection method for sub-surface defects in composite materials Mr Mark Richards (Defence Science and Technology Group)	99: UAS aviation safety rigour - a comparative analysis of Triton vs Shadow 200 Mr Teddy Zvidza (Royal Australian Air Force)	24: An Integrated Aviation Safety Management System for Army's Aviation Command Mr Adam Kurylewski (Headquarters Aviation Command)	152: Astronaut Training in Australia on board Parabolic Flights in preparation for human spaceflight in Earth and Lunar orbit Dr Gail Iles (RMIT University), Mr Kieran Blair (Beings Systems)		55: An Innovative High-Fidelity Approach to Structural Health Monitoring Dr Oleg Levinski (Defence Science and Technology Group)
15:30	119: Mechanical behaviour of 3D printed continuous fibre reinforced composite auxetic structures Mr Varnith Diwakar (Swinburne University of Technology)	74: Multi-input Autonomous Analyst for dynamic planning under fundamental uncertainty Mr Bernardo Moreira Coelho (RMIT University)	83: The airline financial losses after aviation accident: a case study for UIA Dr Iryna Heiets (RMIT University)	156: Design and Testing of a Deployable Composite Boom for Small Satellite application in a Low Earth Orbit Ms Zoe Janes (RMIT University)		43: Potential uses for the Fatigue Damage Spectrum (FDS) in test specification and Health and Usage Monitoring Systems (HUMS) Mr Mark Warren (SoftWire Systems)
15:50	Afternoon Tea					
	Perth Room	Sydney Room	Brisbane Room	Latrobe Ballroom	Fitzroy Ballroom	Arthur Streeton Auditorium
	AAC: Structures and Materials <i>Chair: Dr Xiaobo Yu (DST Group)</i>	AAC: Autonomous Systems/UAS <i>Chair: Prof Jennifer Palmer (RMIT University)</i>	AAC: New Technologies <i>Chair: Dr Chris Wallbrink (DST Group)</i>	NSES <i>Chair: Simon Barraclough (Australian Space Agency)</i>	HUMS: Data Challenge <i>Chair: Dr David Blunt (DST Group)</i>	HUMS: Diagnostics and Prognostics <i>Chair: Dr Wade Smith (UNSW)</i>
16:10	8: Durability Analysis Of WAAM 18Ni 250 Maraging Steel Prof Rhys Jones (Swinburne University of Technology)	25: Certification and Recognition in the Context of the DASR Specific Type-A UAS Mr Joshua Vicino (Royal Australian Air Force), Mr Keirin Joyce (Royal Australian Air Force)	98: Urban e-copter design to address traffic congestions Dr Andrew Danylec (Swinburne University of Technology), Mr Joel Robinson (Swinburne University of Technology)	147: Recent Advances in Satellite Formation Flying Guidance, Navigation and Control Mr Angus Manning (Defence Science and Technology Group)	<i>HUMS: Data Challenge</i>	159: Enhanced multi-order probabilistic approach for rotation speed estimation using the short-time Iterative Adaptive Approach Mr Cédric Peeters (Vrije Universiteit Brussel)
16:30	61: A comparison of length scale dependent classical crystal plasticity models for modelling the deformation of additively manufactured Ti-6Al-4V Mr Christos Dionyssopoulos (RMIT University)	46: Rapid, iterative development of flying wing lateral departure recovery techniques Mr Jonathan Dansie (Defence Science and Technology Group)	13: Energy Harvesting at Elevated Temperature Using a Thermoset Epoxy Mr Matthew Schipper (Department of Defence Science and Technology Group)	89: Distributed Satellite Systems for Maritime Domain Awareness Mr Kathiravan Thangavel (RMIT University)		137: Meaningful prognostics of degraded rolling element bearings Dr Andrew Becker (Defence Science and Technology Group)
16:50	30: Additively manufactured pearlitic titanium-copper alloys: the effect of copper concentration on the microstructure and mechanical properties Miss Maria Popovski (RMIT University, Defence Science and Technology Group)	95: Theory-of-Mind for selective communication and enhanced situational awareness Dr Prajakta Desai (Defence Science and Technology Group), Dr Ronal Singh (University of Melbourne)	130: Process Modelling of an Aero-grade Hyperelastic Membrane for Double Diaphragm Forming Operations Mr George Miris (Swinburne University of Technology) 132: Mechanical Characterisation of Influencing Material Properties of Dry Carbon Fibre Reinforcement in a Double Diaphragm Forming Process Dr Victoria Zinnecker (Swinburne University of Technology)	72: Artificial Intelligent Methods for Satellite Resilience and Autonomous Manoeuvring Dr Andoh Michael Afful (RMIT University)		125: Comparison of vibration and transmission error in gear crack diagnostics Dr Wade Smith (UNSW)
17:10		104: An event-based clustering strategy for predicting the intent of an unknown UAS Dr Prajakta Desai (Defence Science and Technology Group), Dr Chatura Nagahawatte (Defence Science and Technology Group)	143: Double Diaphragm Forming of banded unidirectional dry fibre tapes: Experimental analysis of forming temperature Mr Nils Widmaier (Swinburne University of Technology)	135: Machine Learning and Autonomous Space Systems: A Review Ms Dyana Szibbo (Defence Science and Technology Group)	DSTG Benchmark Analysis Dr Wenyi Wang (Defence Science and Technology Group)	71: The Application of an Inductive Wear Debris Sensor System to Diesel Engines Dr James Harris (Australian Department of Defence)
17:30	END OF DAY 1					
18:30-22:30	HUMS Dinner <i>The Bank on Collins - 394 Collins Street, Melbourne VIC 3000</i>					

Please note: The program is current at the time of publication, subject to change.



Australian International Aerospace Congress



ROYAL AERONAUTICAL SOCIETY
AUSTRALIAN DIVISION

Australian International Aerospace Congress
27 February - 1 March 2023
Sofitel Melbourne on Collins - 25 Collins Street, Melbourne VIC 3000



TUESDAY 28 FEBRUARY 2023

08:00	Registrations Open <i>Promenade, Sofitel Melbourne on Collins</i>				
	Grand Ballroom <i>Chair: Prof Cees Bil (RMIT University)</i>				
09:00	Welcome to Day 2 Ben Main, Congress Chair (DST Group)				
09:05	Plenary Presentation: Sustainable Lifecycle in Contemporary Air Vehicles Dr Phil Crothers and Heidi Hauf (Boeing)				
09:35	Plenary Presentation: Contemporary Challenges Facing a Military Aviation Safety Regulator Air Commodore Joe Medved (Defence Aviation Safety Authority)				
10:05	Plenary Presentation: Making the Aerospace Future Real! Dan Dumbacher (American Institute of Aeronautics and Astronautics)				
10:35	Morning Tea				
	Perth Room	Sydney Room	Brisbane Room	Fitzroy Ballroom	Arthur Streeton Auditorium
11:00	AAC: Structures and Materials <i>Chair: Ross Stewart (QinetiQ)</i>	AAC: Autonomous Systems/UAS <i>Chair: Dr Kent Rosser (DST Group)</i>	NSES <i>Chair: Dr Brian Faizon (RMIT University)</i>	HUMS <i>Chair: Prof Konstantinos Gryllias (KU Leuven, Belgium)</i>	
11:00	70: On the unrelenting search for sub-optimum solutions in the aerospace industry, and elsewhere Dr Leonard John Hart-Smith (Retired from Boeing)	Keynote Presentation: Emerging Technologies in Uncrewed Aviation Jackie Dujmovic (Hover UA)	Keynote Presentation: Increasing Access to Space: Sierra Space and the Commercialization of Low-Earth Orbit Miguel Pereira (Sierra Space)	4: Application of data analytics to support structural life of type extension of the RAAF KC-30A MRTT Mr Laurie Dart (Northrop Grumman Australia)	
11:30	66: Nucleating Small Fatigue Cracks Reliably and Repeatably Mr Michael Jones (RMIT University)	Acquiring high-resolution aerial imagery from the stratosphere Mr Mark Rocket (Kea Aerospace)	The M-missions: an immersive deep tech capability and skills & training program Prof Russell Boyce (UNSW)	22: Natural language processing for identification of ground truth events in data curation Mr Nathan Rigoni (Lockheed Martin US)	
11:50		126: Noise modelling for Low Flying Aircraft Design and Operations Dr Rohan Kapoor (RMIT University)		21: A Process for Calculating the Remaining Useful Life of the HUMS2023 Challenge Problem Dr Eric Bechhoefer (GPMS)	
12:10	128: Assembly and systems integration of a full-scale helicopter fatigue test demonstrator Mr Geoff Swanton (Defence Science and Technology Group)	111: Forced flow analysis using IRT and pitot tube Mr Ryan Tsao (RMIT University)	Lunar Exploration: some opportunities and challenges Dr Graham Dorrington (RMIT University)	160: Signal processing informed deep learning for failure detection in a fleet of multi-stage planetary gearboxes with limited knowledge about characteristic frequencies Mr Jan Helsen (Vrije Universiteit Brussel)	
12:30	47: Oxidation Resistance of Silicon-Boron Coatings on TZM Molybdenum Alloy Dr Miriem Santander Borrego (Defence Science and Technology Group)	116: Sensitivity Analysis and Optimization of a Bimodal Propeller for Underwater/Air Operations Mr Zhe Yang (RMIT University)	97: Improving the Physical Resilience of Spacecraft to Micrometeoroid and Orbital Debris Impact A/Prof Shannon Ryan (Deakin University)	27: Knowledge extraction and inference made better through Digital and AI technologies Dr Behrouz Khabbaz Beheshti (Avanade), Mr Matthew Thomson (Accenture)	
12:50	Lunch				
	Grand Ballroom				
13:30	Panel Discussion: Flight path for AAM <i>The Advanced Air Mobility (AAM) industry is seen as the new and emerging sector of aviation and will ultimately transform our way of travel. What does this emerging industry offer us and why should the community care? The panel will foster a thoughtful discussion about the opportunities and challenges of planning, integrating, scaling, and governing advanced air mobility to create a path for the future that this industry demands.</i> Dr Reece Clothier (RMIT University) Dr Adriano Di Pietro (Swinburne University of Technology) Liesl Haris (Talking Leads) Prof Jennifer Palmer (RMIT University) Moderator: Dr Matt Marino (RMIT University)				



Australian International Aerospace Congress



ROYAL AERONAUTICAL SOCIETY AUSTRALIAN DIVISION

Australian International Aerospace Congress
27 February - 1 March 2023
Sofitel Melbourne on Collins - 25 Collins Street, Melbourne VIC 3000



	Perth Room	Sydney Room	Brisbane Room	Fitzroy Ballroom	Arthur Streeton Auditorium
14:10	AAC: Structures and Materials <i>Chair: Robert Ogden (DST Group)</i>	AAC: Aerodynamics and Propulsion <i>Chair: Prof Pier Marzocca (RMIT University)</i>	NSES <i>Chair: Dr Andoh Michael Afful (RMIT University)</i>	HUMS: Data Science/Analytics <i>Chair: Daniel Wade (Lockheed Martin, USA)</i>	HUMS: System Diagnostics and Platform Asset Management <i>Chair: Prof Jan Helsen (VU Brussel, Belgium)</i>
14:10	20: Development of benchmark composite panels for ARH and MRH rotary wings platforms Non-Destructive Inspection Dr Philippe Blanloeuil (Airbus Australia Pacific)	91: Standards and open source software to enable digital engineering in aerospace Mr Robert Porter (Defence Science and Technology Group)	146: Deployable Optics Miss Franke Agenbag (Defence Science and Technology Group)	53: An industrial unsupervised Machine Learning model combined with a signal processing approach to detect failures in complex rotating assemblies Dr Michel Boussemart (IoT Consultants)	90: Health and Usage Monitoring System (HUMS) Certification under the Defence Aviation Safety Regulations (DASR) Dr Adrian Jackson (QinetiQ), Mr Nathan Poynor (Defence Aviation Safety Authority)
14:30		121: Scramjet nozzle design for engine-on and engine-off performance Mr Harry Hall (UNSW)	42: A Comparison of Metal Additive Structures to Polymer Composite Structures for Space Applications Mr Joshua Rodrigues (RMIT University)	38: Bringing together Data and Physics to detect and predict gear failures Dr Behrouz Khabbaz Beheshti (Avanade), Mr Matthew Thomson (Accenture)	57: Successful Predictive Maintenance Dr Peter Brady (MathWorks)
14:50	106: Functionally Graded Materials to Enhance the Flutter Characteristics of a Composite Sandwich Rocket Fin Mr Anthony Poletto (RMIT University)	79: Development of innovative movable surfaces for the next-generation civil tiltrotor aircraft Dr Vincenzo Muscarello (RMIT University)	32: Impact of life cycle assessment considerations on suborbital vehicle design Mr Thomas Bellier (RMIT University)	29: Aircraft fleet readiness optimisation using reinforcement learning: a proof of concept Mr Kilian Vos (UNSW)	120: Handling interconnected cascading Risks: an interoperable holistic Framework Dr Markus Stumptner (University of South Australia)
15:10	93: Application of thermal crack tracking for evaluation of fatigue crack growth rates within bolted aircraft structures Mr Lloyd Button (The University of Adelaide)	19: Aerodynamic pressure measurement using a novel thin-film fibre optic sensor Mr Max Cikoratic (Defence Science and Technology Group)	138: Atomic Oxygen Degradation of Materials in Low Earth Orbit Miss Cassandra Davey (Defence Science and Technology Group)	10: Change Detection for Improved Maintenance Notification and Remaining Useful Life Calculation Dr Eric Bechhoefer (GPMS)	85: Bearing-Fault Signature Generation for Equipment Health Monitoring using a seven degree-of-freedom Bearing-Vibration-Model under non-steady Conditions Mr Philipp Schildt (Rolls-Royce Electrical, RMIT University, FH Aachen University of Applied Sciences)
15:30	155: Investigating the Performance of Composite-Stuffed Aluminium Foam Sandwich Panels Under Hypervelocity Impact Mr Jarrod Moonen (RMIT University)	115: PROVING Skies: an Australian Australian Flight Test and Trials Capability for Aerospace and Advanced Air Mobility Dr Adriano Di Pietro (Swinburne University of Technology)	65: A Review of Atomic Oxygen Fluence Sensors for In-Space Experiments Mr Michael Jones (RMIT University)	162: Embedding signal processing knowledge in neural networks- An application to gear diagnostics Dr Pietro Borghesani (UNSW)	54: Diagnostics and tracking of bearing's degradation in a helicopter driveline using cyclostationary methods Mr Alexandre Mauricio (KU Leuven), Prof Konstantinos Gryllias (KU Leuven)
15:50	Afternoon Tea				
	Perth Room	Sydney Room	Brisbane Room	Fitzroy Ballroom	Arthur Streeton Auditorium
16:10	AAC: Structures and Materials <i>Chair: Michael Jones (RMIT University)</i>	AAC: Aerodynamics and Propulsion <i>Chair: Dr Matteo Giacobello (DST Group)</i>	NSES <i>Chair: Dr Graham Dorrington (RMIT University)</i>	HUMS: Data Science/Analytics <i>Chair: Dr Cédric Peeters (VU Brussel, Belgium)</i>	HUMS: Standards/Structures/Sensors <i>Chair: Dr Pietro Borghesani (UNSW)</i>
16:10	73: Fatigue life behaviour with CIC application depends on joint configuration: Experimental and FE study Dr John Codrington (University of Adelaide)	148: Data-Driven Flutter Flight Test Analysis Mr Arpan Das (RMIT University)	Overview of Naval Information Warfare Center Pacific (NIWC) Space portfolio Dr Jamie R Lukos CIV USN NIWC PACIFIC CA (USA)	3: A general Bayesian predictive maintenance methodology Dr Jane Cullum	Development of a standard data format for rotorcraft integrated vehicle health management Mr Dan Wade (Lockheed Martin), Mr Paul Marsden (Defence Science and Technology Group)
16:30	48: Preliminary design of a multiaxial structural element for assessing the damage tolerance of critical titanium to composite bonded joints Dr Alex Harman (Defence Science and Technology Group)	16: On the suitability of conventional methods for numerical aeroelastic analysis for novel aircraft with distributed propulsion systems Mr Nils Böhnisch (FH Aachen University of Applied Sciences, RMIT University)	Earth Observation – SmartSat CRC Nicola Sasanelli (SmartSAT CRC)	2: Automated feature selection for multi-channel anomaly detection Mr Leonard Whitehead (Defence Science and Technology Group)	23: Transfer Learning for Flight Load Estimation Mrs Halide Goknur Aydogan (RMIT University)
16:50	44: Effect of Using a Bounded Initial Crack Size Distribution in Probabilistic Risk Analysis of Fatigue Failure of Military Aircrafts Dr Ribelito Torregosa (Defence Science and Technology Group)	80: A novel method to minimise adverse thermal effects in flight test loads measurement Mr Mathew Nelson (Defence Science and Technology Group)	158: Electromagnetic interference of Ground Penetrating Radar antennae with a lunar rover Mr Matthew Auld (RMIT University)	56: Practical Predictive Maintenance Workflows Peter Brady (Mathworks)	<i>Presentation to be announced</i>
17:10	122: Secondary bending of lap joint designs using digital image correlation and finite element analysis Dr Stuart Wildy (Flinders University)	An Integrated Laboratory for Collaborative Design in the Air Transportation System Dr Arne Bachmann German Aerospace Centre (DLR)	153: Near real-time impact point prediction of launch vehicles using the Predicted Impact Point (PIP) tool Mr Albert Sands (RMIT University), Mr Nathan Drummond (Southern Launch)	HUMS Closing Ceremony <i>(in Arthur Streeton Auditorium)</i>	
17:30	END OF DAY 2				
18:30-22:30	Congress Dinner <i>RACV City Club - 501 Bourke Street, Melbourne VIC 3000</i>				



Australian
International
Aerospace
Congress



ROYAL
AERONAUTICAL
SOCIETY
AUSTRALIAN DIVISION

Australian International Aerospace Congress
27 February - 1 March 2023
Avalon Airport - 80 Beach Road, Lara VIC 3212



WEDNESDAY 1 MARCH 2023

Room 2, Avalon Conference Centre

Chairs: Dr Madabhushi Janardhana (Defence Aviation Safety Authority), Dr Aaron Sudholz (BAE Systems Australia)

10:00

Welcome to Day 3

10:05

Keynote Presentation: Australia: A Resilient Space
Julia Dickinson (Lockheed Martin Space)

10:35

117: Common Autonomy Architectures
Dr Michael Crump (BAE Systems)

10:55

84: Rolls-Royce: Pathways to Net Zero Aviation
Mr Philipp Schidt (Rolls-Royce Electrical, RMIT University, FH Aachen University of Applied Sciences)

11:15

12: A Stress Imaging Capability for the Digital Enterprise
Dr Nik Rajic (Defence Science and Technology Group)

11:35

Augmented and Virtual Reality – Training Domain
Mr Mark Schuhmacher (Airbus AP), Mr Emmanuel Gauvrit (Airbus AP)

12:00

AMDA Air Display

12:30

Rapid Innovation – Submerged launch of UAVs
Mr Brent Poland (Babcock Australasia), Ms Karen Trezise (Babcock Australasia)

12:50

Fully Integrated SINAB Phoenix Pod
Mr Tony Landers (SiNAB Pty Ltd)

13:10

Electromechanical Actuation: Pros and Cons for Primary Flight Control Actuation
Mr Henrik Näslund (SAAB)

13:30

End of Congress / Air Display