

WCEAM/VETOMAC 2017 DRAFT PROGRAM

(Subject to Change)

Wednesday 2 August 2017

8.00am	Registration Opens Boulevard Level, Brisbane Convention & Exhibition Centre			
9.00am	Opening CHAIR: Joseph Mathew, Asset Institute, Australia Boulevard Auditorium Welcome Addresses Adjunct Professor Joseph Mathew, Congress Chair, Asset Institute, Australia Professor Joe Amadi-Echendu, ISEAM Chair, University of Pretoria, South Africa Professor C W Lim, City University of Hong Kong, China (VETOMAC) Professor Arun Sharma, Deputy Vice Chancellor, Queensland University of Technology Opening Address: The Lord Mayor Graham Quirk, Lord Mayor of Brisbane, Australia			
9.45am	Opening Address by Platinum Sponsor Delivering Operational Effectiveness in Asset Intensive Industries through Asset Intelligence Darren Covington, Mainpac, Australia			
10.10am	Plenary 1 Sponsored by Mainpac CHAIR: Darren Covington, Mainpac, Australia Intelligent Integration and Interoperability of Critical Infrastructure and Assets Alan Johnston, MIMOSA (Machinery Information Management Open Systems Architecture), & Standards Leadership Council, USA Jess B. Kozman, Professional Petroleum Data Management (PPDM) Association, Singapore Boulevard Auditorium			
10.45am-11.15am	Morning Tea & Exhibition Boulevard Concourse			
CONCURRENT SESSION 1 Wednesday				
	SESSION 1.1 Building Information Modelling Sponsored by Queensland University of Technology CHAIR: Robin Droegemuller, Queensland University of Technology, Australia Boulevard Auditorium	SESSION 1.2 Sustainability & Climate Change Adaptation of Infrastructure 1 CO-CHAIRS: Dr Fahim Tonmoy and Dr David Rissik, NCCARF, Australia Boulevard Room 1	SESSION 1.3 Intelligent & Automatic Fault Diagnosis & Prognosis 1 CHAIR: Peter W. Tse, City University of Hong Kong, China Boulevard Room 2	SESSION 1.4 Reliability Modelling & Maintenance Decision Support 1 CHAIR: Lin Ma, Queensland University of Technology, Australia Boulevard Room 3
11.15am	BIM, the Next Steps for Queensland, is it that Simple? LEAD SPEAKER: Andrew Curthoys, Department of Infrastructure, Local Government and Planning, Queensland, Australia	Adaptive Capacity of Australian infrastructure to future climate change risks LEAD SPEAKER: David Singleton, Infrastructure Sustainability Council of Australia (ISCA), Australia	A Smart and Big-Data System for Predicting the Remaining Useful Life of Real Industrial Machines LEAD SPEAKER: Peter W. Tse, City University of Hong Kong, China	Overhaul decision of repairable systems based on the power-law model fitted by a weighted parameter estimation method LEAD SPEAKER: Renyan Jiang, Changsha University of Science and Technology, Changsha, China
11.30am				
11.45am	Innovation in BIM for Emergency Management and Response in High Risk Environments Peter W Beven, Queensland University of Technology, Senior Advisor, Queensland Health, Australia	Climate Change Impacts for Asset Managers Adjunct Professor David Hood, Long Future Foundation, Australia	The feature analysis for fault diagnosis of rotating machine Hyeontak Yu, Byunghyun Ahn, Jungpil Noh, Hyomin Jeong and Byeongkeun Choi , GyeongSang National University, Republic of Korea	Statistical analysis for wood poles using sound wood measurements data Allen Tam, Iris Kwan and Mark Halton, Relken Engineering, Australia

12.00pm	BIM in FM: The Real Deal Malcolm Foort, ZUUSE, Australia		Centrifugal Compressor Diagnosis Using Kernel PCA and Fuzzy Clustering X. Liang, F. Duan, D. Mba, B. Ian, Cranfield University, UK	Enablers and barriers of smart data-based asset management services in industrial business networks Toni Ahonen, Jyri Hanski, Helena Kortelainen, Teuvo Uusitalo, Matti Hyvärinen, Henri Vainio, Susanna Kunttu and Kari Koskinen, VTT Technical Research Centre, Finland
12.15pm	Localization of Bluetooth Smart Equipped Assets Based on Building Information Models Mahtab Nezhadasl, Curtin University, Australia	Climate Change and Coastal Transport Infrastructure – How Do We Keep Australia Moving? Greg Fisk, BMT WBM, Australia Fahim Tonmoy and David Rissik, NCCARF, Australia	Automated and Predictive Monitoring and Diagnosis in the Energy and Natural Resources Sector Yvonne Power, IMPower Technologies, Australia	Optimal Group Preventive Maintenance Policy for Multiple Identical Leased Devices with Weibull Lifetime Distributions by Using Failure Rate Reduction Yu-Tzu Cheng, Ruey-Huei Yeh, Yu-Hong Chen and Wei-Chun Chen, National Taiwan University of Science and Technology, Taiwan
12.30pm	Applying the COBie approach to Linear Infrastructure Robin Drogemuller, Queensland University of Technology, Australia			
12.45pm - 1.45pm	Lunch & Exhibition Boulevard Concourse			
1.45pm	Keynote Engineering Asset Management: Understanding the Management Element Professor Kerry Brown, Edith Cowan University, Australia <i>CHAIR: Joe Amadi-Echendu, University of Pretoria, South Africa</i> Boulevard Auditorium			
CONCURRENT SESSION 2 Wednesday				
	SESSION 2.1	SESSION 2.2	SESSION 2.3	SESSION 2.4
	Governance & Planning 1	Sustainability & Climate Change Adaptation of Infrastructure 2	Intelligent & Automatic Fault Diagnosis & Prognosis 2	Reliability Modelling & Maintenance Decision Support 2
	CHAIR: Kerry Brown, Edith Cowan University	CO-CHAIRS: Dr Fahim Tonmoy and Dr David Rissik, NCCARF, Australia	CHAIR: Peter W. Tse, City University of Hong Kong	CHAIR: Ming Zuo, University of Alberta, Canada
	Boulevard Auditorium	Boulevard Room 1	Boulevard Room 2	Boulevard Room 3
2.30pm	The role of the board in Asset Management: An integrated approach to Governance LEAD SPEAKER: Monique Beedles, Teak Yew, Australia	Seawalls for coastal protection and climate change adaptation: A case study from the Gold Coast Rodger Tomlinson and Leslie Angus Jackson, Griffith Centre for Coastal Management, Australia	Creating Smart Ways of Using Smart Technologies for Asset Management: Challenges, Opportunities, and Future Trends LEAD SPEAKER: Xiangyu Wang, Curtin University, Australia	Coordination between Maintenance and Production by means of Auction Mechanisms for Increased Efficiency of Production Systems Günther Prof. Dr.Ing. Schuh and Michael Kurz, FIR e. V. an der RWTH Aachen / Institute for Industrial Management, Germany
2.45pm				Integrated modelling and decision support of continuous production systems Samuel Patterson, Paul Hyland and Talara Berry, Queensland University of Technology & Synengco, Australia

3.00pm	PANEL SESSION Better than Best Practice SAMP Preamble: Contemporary asset management reflects the general movement to move away from asset maintenance to focus on the bigger picture of life cycle asset assessment, including strategy, risk measurement, safety and environment and human factors. There is also increased awareness that infrastructure assets are the means to deliver services to fulfil citizens' and their communities' needs and requirements. Motivation: Strategic Asset Management Plans are at the forefront of these changes as they signal a shift from simply planning for asset acquisition and ongoing maintenance to a strategic view about determining the purpose and objectives of assets to support the objectives of the organisation. However, it is often unclear how to formulate and develop SAMPs from a strategic perspective and to generate a long-term perspective for assets and service delivery through those assets. This Panel will discuss next generation examples and latest thinking about SAMPs. CONVENOR: Kerry Brown, ECU, Australia PANELISTS Monique Beedles, Teak Yew, Australia Alan Rosser, Queensland Rail, Australia Christine Ip, Queensland Treasury Corporation, Australia	Adapting transport infrastructure to climate change: Who bears the risk and responsibility? Samantha Hayes, Griffith University, Australia	Indirect ship hull condition monitoring using speed and fuel consumption analysis Roar Adland, Pierre Cariou, Haiying Jia and Francois-Charles Wolff, Norwegian School of Economics (NHH), Norway	Joint Optimization of Preventive Maintenance and Spare Parts Logistics for Multi-echelon Geographically Dispersed Systems Keren Wang and Dragan Djurdjanovic, University of Texas at Austin, USA
3.15pm			Development of autonomous hammering test method for deteriorated concrete structures based on artificial intelligence and 3D positioning system Katsufumi Hashimoto, Tomoki Shiotani, Takahiro Nishida, Hideo Kumagai and Katsuhiko Kokubo, Kyoto University, Japan	Assess the Inter-related Impacts of Carbon Taxation, Electric Power Costs and Solar PV Installation Using System Dynamics Modeling Amy Trappey and Charles Trappey, National Tsing Hua University, Taiwan
3.30pm		Flood exposure and social vulnerability for prioritizing local adaptation of urban storm water systems Tanvir Ahmed, University of Sydney, Australia	Features analysis of vibration signal according to crack and leakage of heat exchanger tube Jongmyeong Lee, Hyeontak Yu, Jeongmin Ha, Hyomin Jeong and Byeongkeun Choi, GyeongSang National University, Republic of Korea	Decision-Making in Asset Management under Regulatory Constraints Dragan Komljenovic, Georges Abdul-Nour and Jean-François Boudreau, Hydro Quebec Research Institute, Canada.
3.45pm				
4.00pm - 4.30pm	Afternoon Tea Boulevard Concourse			
CONCURRENT SESSION 3 Wednesday				
	SESSION 3.1 Governance & Planning 2 CHAIR: Kerry Brown, Edith Cowan University, Australia Boulevard Auditorium	SESSION 3.2 Sustainability & Climate Change Adaptation of Infrastructure 3 CO-CHAIRS: Dr Fahim Tonmoy and Dr David Rissik, NCCARF, Australia Boulevard Room 1	SESSION 3.3 Intelligent & Automatic Fault Diagnosis & Prognosis 3 CHAIR: Peter W. Tse, City University of Hong Kong Boulevard Room 2	SESSION 3.4 Reliability Modelling & Maintenance Decision Support 3 CHAIR: Ming Zuo, University of Alberta, Canada Boulevard Room 3
4.30pm	E-trademark registration services to improve process performance and prevent trademark infringement LEAD SPEAKER: Amy Trappey, National Chiao Tung University, Taiwan	Climate change adaptation of infrastructure and CoastAdapt tool LEAD SPEAKERS: Fahim Tonmoy and David Rissik, NCCARF, Australia	MBVI (Model-based Voltage and Current) systems: a tool for optimising Asset Management Strategies? What they do, how they work and some case study examples Geoff Walker, Artesis LLP, UK	Predictive Models of Maintenance Needs for Power Distribution Wood Poles Using Machine Learning – A Conceptual Case Study Alexandre Cesa, Carla Boehl and Kecheng Shen, Curtin University, Australia
4.45pm				Modelling the Effect of Time-dependent Covariates on the Failure Rate of Wind Turbines Feixiang Wu, Yifan Zhou and Jingjing Liu, Southeast University, China

5.00pm	An approach to quantify assets value according to the ISO 55000 concept Vicente González-Prida Díaz, Adolfo Crespo Márquez, Antonio Guillén, Juan Francisco Gómez Fernández and Antonio De La Fuente, University of Seville, Spain	PANEL SESSION Increasing climate resiliency of Australia's infrastructure sector: Challenges and Opportunities CONVENOR: Fahim Tonmoy, NCCARF PANELISTS David Singleton, Infrastructure Sustainability Council of Australia (ISCA), Australia Rodger Tomlinson, Griffith Centre for Coastal Management, Australia David Rissik, NCCARF, Australia Greg Fisk, NCCARF, Australia	Reciprocating compressor valve leakage detection under varying load conditions Panagiotis Loukopoulos, George Zolkiewski, Ian Bennett, Suresh Sampath, Pericles Pilidis, Fang Duan and David Mba, Cranfield University, UK	Predictive modelling the Downer way Phillipa O'Shea, Hui Chen and Hamish Featonby, Downer New Zealand, New Zealand
5.15pm	Investments Portfolio Optimal Planning Jerome Lonchamp, EDF, France		Configuring and Optimizing the Maintenance Support Resource Based on a double layer Algorithm, National University of Defence Technology Xiwen Wu, Bo Guo, Ping Jiang and Shiyu Gong, National University of Defense Technology, China	
5.30pm	Value of Asset Management: Investigation into its determination and measurement Ernst Krauss and Carla Boehl, WA School of Mines, Curtin University, Australia		Method to determine internal leakage of aircraft's hydraulic servo Jouko Laitinen and Kari Koskinen, Tampere University of Technology, Finland	Theory of Testability Oriented Equipment Health Management Shuming Yang, Xiaofei Zhang and Xiaoyu Wen, National University of Defense Technology, China
5.45pm	Tools to support value for money asset investment outcomes Lloyd Arnott, Aurecon, Australia			
6.00pm - 8.00pm	Welcome Reception Boulevard Concourse, Brisbane Convention & Exhibition Centre			
8:00pm - 9:00 pm	ISEAM Members' Briefing			

Thursday 3 August 2017

8.30am	Registration Opens Boulevard Level, Brisbane Convention & Exhibition Centre			
9.00am	Keynote The 4th Industry Revolution: Reflecting on the Opportunities, Barriers and Risk for Asset Management Professor Marco Macchi, Politecnico di Milano, Italy <i>CHAIR: Helena Kortelainen, VTT Technical Research Centre, Finland</i> Boulevard Auditorium			
CONCURRENT SESSION 4 Thursday				
	SESSION 4.1 Public Assets CHAIR: David Edgerton, APV Valuers and Asset Management, Australia Boulevard Auditorium	SESSION 4.2 Maintenance Strategies CHAIR: Moray Kidd, The University of Manchester, UK Boulevard Room 1	SESSION 4.3 NDT & AE in Condition Monitoring 1 Sponsored by NMEMS CHAIR: Andy C.C. Tan, Universiti Teknologi Abdul Rahman, Malaysia Boulevard Room 2	SESSION 4.4 WORKSHOP: Long Future Sustainability for Asset Managers FACILITATORS: David Hood & Guy Lane, Long Future Foundation, Australia Boulevard Room 3
9.45am	Insights into Queensland's Public Assets LEAD SPEAKER: Patrick Flemming, Queensland Audit Office (QAO), Australia	Maintenance Strategies for Next Generation Industry, LEAD SPEAKER: Moray Kidd, The University of Manchester, UK	Advanced NDT contributing performance evaluation of civil structures LEAD SPEAKER: Tomoki Shiotani, Kyoto University, Japan CO-AUTHORS: Takahiro Nishida, Katsufumi Hashimoto	ABSTRACT: Long Future Sustainability is a short intensive workshop that seeks to redefine sustainability in the light of current threats to life on Earth. It will empower Asset Managers with knowledge, passion and drive to deliver better outcomes that not only assist you in your business role but help transform society to a better world that we all deserve.
10.15am	Sustaining public assets for local communities – the role of innovation and partnerships LEAD SPEAKER: Roland McMillan, Local Government Association of Queensland, Australia	Maintenance Footprints Phillipa O'Shea, Downer, New Zealand	The design of a novel line-array type of laser source for non-contact guided waves to inspect the integrity of plates Peter W. Tse and Jingming Chen, City University of Hong Kong	The workshop consists of three parts. Each part contains short presentations, interactive participant activities, videos, and some unique audio/visual content and music. Whether you are new to the conversation about sustainability, or not, this workshop has content that many people have never considered part of the dialogue about sustainability. Participating in Long Future Sustainability will help you: - Identify hidden and future risks to your organisation; - Learn about exciting new business opportunities; - See new frameworks to apply to your products & services; - See exciting – and sometimes scary – new ideas to share with colleagues; and - Gain new knowledge, passion and drive to contribute to a Long Future for life on Earth
10.30am		NextGen Forward Works Programme Development and Management Phillipa O'Shea, Downer, New Zealand	Novel nondestructive technique of internal deterioration in concrete deck with elastic wave approaches Kazuo Watabe, Hidefumi Takamine, Takahiro Nishida and Tomoki Shiotani, Toshiba Corp., Japan	
10.45am		Partners in maintenance – benefits and barriers in using partnering-based maintenance contracts Anders Ingwald and Mirka Kans, Linnaeus University, Sweden	Evaluation of condition and damage in reinforced concrete by elastic wave method Takeshi Watanabe, Hayato Fukutomi, Kohei Nishiyama, Akari Suzuki and Chikanori Hashimoto, Tokushima University, Japan	
11.00am	Land Bank for National Strategic Projects in Indonesia Rahayu Puspasari, Ministry of Finance, Republic of Indonesia	Configuration Management – Why Asset Management can't do without it Greg Wilcock and Peter Knights, University of Queensland, Australia	Quantification of valve severity in reciprocating compressor by using acoustic emission technique Hoi-Yin Sim, Rahizar Ramli, Ahmad-Saifizul Abdullah and Ming-Foong Soong, University of Malaya, Malaysia	Attendees will come away feeling that the world suddenly makes sense, confident that they have an edge over their competitors, and more than ever able to see the elephants in their own Board rooms.

11.15am-11.45am	Morning Tea & Exhibition Sponsored by K2Fly Boulevard Concourse			
	CONCURRENT SESSION 5 Thursday			
	SESSION 5.1	SESSION 5.2	SESSION 5.3	SESSION 5.4
	Sustainable Property Assets	Technology & Management – Smart maintenance / Digitalization 1	NDT & AE in Condition Monitoring 2	WORKSHOP: Evaluating Data Management Maturity for Engineering Assets
	CHAIR: Tony Brasier, PRDnationwide, Australia	CHAIR: Marco Macchi, Politecnico di Milano, Italy	CHAIR: Andy C.C. Tan, Universiti Tunku Abdul Rahman, Malaysia	FACILITATOR: Jess B. Kozman, Professional Petroleum Data Management (PPDM) Association, Singapore
	Boulevard Auditorium	Boulevard Room 1	Boulevard Room 2	Boulevard Room 3
11.45am	Increasing Awareness and Adoption of Sustainability Features and Considerations in the Property Industry LEAD SPEAKER: Dr Diaswati Mardiasmo, PRDnationwide, Australia	Maintenance Analytics and Industrial Data Science LEAD SPEAKER: Professor Diego Galar, Luleå University of Technology, Sweden	Acoustic Emission technique for monitoring of common faults in diesel engines Andy C.C. Tan, University Tunku Abdul Rahman	PREAMBLE: As asset-intensive industries recognize engineering asset data from critical infrastructure and facilities as a corporate asset, many find themselves unprepared to support projects that manage engineering asset data to support business intelligence or analytics. The goal of this workshop is to understand the elements of asset management capability maturity that are important in industries with a focus on efficient and safe operations. MOTIVATION: The workshop builds on work done at the Asset Institute at the Queensland University of Technology to develop a cross-industry Asset Management Capability Maturity Model (AMCaMM), and applies survey and benchmarking techniques developed for analyzing information management capability and complexity in other asset-intensive industries over the last two decades. Participants will evaluate their own organization's capability maturity for the management of engineering asset data management, and the workshop facilitator will then lead an interactive workshop to learn how that evaluation can be used to benchmark against other organizations and industries, to select and define quick win projects for improving capability, to identify the best growth strategies for utilizing that data in support of business intelligence and analytics, and to find correlations with financial performance metrics that demonstrate the value of efficiently managed engineering asset data.
12.00pm			Avoidance of Generator outage by vibration monitoring R.S. Maurya, NTPC Ltd, India	
12.15pm	A Novel Approach to Sensor-less Daylight Harvesting in Commercial Office Buildings Brenden Harris, Fredon, Australia	From asset provider to knowledge company - transformation in the digital era Helena Kortelainen, Jyri Hanski and Ari Happonen, VTT Technical Research Centre of Finland	Efficient Evaluation of Internal Concrete Damage of Steel Plate-Bonded RC Slabs Norihiko Ogura, CORE Institute of Technology Corp. Hitoshi Yatsumoto, Hanshin Expressway Company Ltd. Takahiro Nishida and Tomoki Shiotani, Kyoto University	
12.30pm	Sustainable Housing Toolkit Connie Susilawati, Wendy Miller, Queensland University of Technology and Asti Mardiasmo, PRD Nationwide, Australia	Repair and Overhaul Supply System Integrated Planning at Roy Hill Agata Guzek, Indrasen Naidoo and Carla Boehl, Maintenance, Roy Hill, Australia	Feature analysis of ultrasound signal for diagnosis Jungpil Noh, Byunghyun Ahn, Donghee Park, Hyojung Kim and Byeongkeun Choi, Gyeongsang National University, Republic of Korea	
12.45pm	Employee engagement culture in green buildings: The role of managers in managing human assets to drive financial outcomes Subha Parida and Kerry Brown, Edith Cowan University, Australia	Data Quality in Asset Management – Creating and Maintaining a Foundation for data analytics Allen Tam and Iris Kwan, Relken Engineering, Australia	Ultrasonic Phased Array on Time-of-Flight Diffraction for Non-Destructive Testing via Numerical Modelling Tat-Hean Gan, Channa Nageswaran and Mario Kostan, Brunel University London, UK	
1.00pm	Improving Property Practitioners' Involvement in Information Flow of Sustainability Features of Residential Property Shi Yee Wong, Connie Susilawati, Wendy Miller, Queensland University of Technology and Asti Mardiasmo, PRD Nationwide, Australia	Predictive Maintenance is an integral part of Asset Life Cycle Maintenance Model Md Mahdi Hassan, Carla Boehl and Mahinda Kuruppu, Western Australian School of Mines, Curtin University, Australia		
1.15pm - 2.15pm	Lunch & Exhibition Sponsored by Schneider Electric / Fredon Boulevard Concourse			

2.15pm	Keynote Asset Management Through Life Estimation Professor Romuald Rzakowski, Airforce Institute of Technology, Poland <i>CHAIR: Chee Wah Lim, City University of Hong Kong, China</i> Boulevard Auditorium			
CONCURRENT SESSION 6 Thursday				
	SESSION 6.1 Energy Assets 1	SESSION 6.2 Technology & Management – Smart maintenance / Digitalization 2	SESSION 6.3 Condition Monitoring of Machine Elements 1	SESSION 6.4 WORKSHOP: Recognition of Engineering Asset Management Programmes at Higher Educational Institutions
	CHAIR: Don Sands, Synengco, Australia	CHAIR: Marco Macchi, Politecnico di Milano, Italy	CHAIR: Robert B. Randall, University of New South Wales, Australia	CHAIR: Joe Amadi-Echendu, University of Pretoria, South Africa
	Boulevard Auditorium	Boulevard Room 1	Boulevard Room 2	Boulevard Room 3
3.00pm	Managing Electricity Assets in the 21st Century- Revolution Not Evolution LEAD SPEAKER: Stephen Saladine, Generator Property Management & Asset Institute, Australia	Deep Learning Paradigm for Asset Management LEAD SPEAKER: Nalinaksh Vyas, Indian Institute of Technology Kanpur & Technology Mission for Indian Railways, India	Use of cyclostationarity to detect changes in gear surface roughness using vibration measurements Xihao Zhang, Wade A. Smith, Pietro Borghesani, Zhongxiao Peng and Robert B. Randall, University of New South Wales, Australia Extracting the characteristic frequency of the weak fault signal of blade crack by using the underdetermined blind source separation algorithm based on SCA Hongkun Li, Changbo He and Xinwei Zhao, Dalian University of Tehnology, China	PREAMBLE: The International Society for Engineering Asset Management (ISEAM www.iseam.org) is a not-for-economic-profit organisation with a primary objective to “pursue charitable purposes, in particular the advancement of science and the advancement of education with a focus in the specific area of scientific knowledge known as integrated engineering asset management”. ISEAM is “...dedicated to the development and recognition of Engineering Asset Management (EAM) as an integrated and important body of knowledge” through “...liaising with national and international bodies to provide a global approach to” EAM. It is in this regard that ISEAM organises the WCEAM series, and particularly this 12th edition in conjunction with 13th VETOMAC 2017. This is the second instance of the workshop, and will include a presentation of the results of the survey conducted during the first workshop held in 2016. MOTIVATION: Engineering asset management encompasses all types of engineered assets including built environment, infrastructure, plant, equipment, hardware systems and components. This workshop will provide an opportunity to present and discuss ISEAM's ongoing initiative to recognise academic programs at higher educational institutions (HEI's). EAM covers a very wide multidisciplinary scope, thus, the key question is “what constitutes EAM body of knowledge (EAMBoK)?” ISEAM's recognition, rather than statutory accreditation, has two fundamental aims: - To provide assurance that “asset management” academic programs at HEIs address EAM body of knowledge; - To encourage pedagogical and structured development of educational curricula, as well as research and training programmes that advance the EAM body of knowledge.
3.30pm	Being Certain in Tomorrow's Uncertainty Ben Hayden, Stanwell, Australia	Forecast Model for Optimization of the Massive Forming Machine OEE Markus Ecker and Markus Hellfeier, SMS group GmbH, Germany	Research on the Effect of Meshing Impact on Noise Radiation in Planetary Gear Transmission Bau Heyun, Zhu Rupeng, Dai Lin, Li Fengbo, Nanjing University of Aeronautics and Astronautics, China	
3.45pm	Analysing an Industrial Safety Process through Process Mining: A Case Study Anastasiia Pika, Arthur H.M. Ter Hofstede, Robert K. Perrons, Georg Grossmann, Markus Stumptner and Jim Cooley, Queensland University of Technology, Australia	Bridge Management Integrating Big Data of Structural Health Monitoring Yunxia Xia , Chunwei Zhang, Qingdao University of Technology, China	Influence of tooth surface friction on dynamic transmission error of split torque transmission system G.H. Jin, H.Y. Yang, R.P. Zhu, S.M. Li, Nanjing University of Aeronautics and Astronautics, China	
4.00pm	Engineering Asset Management for various power generations: common concepts and specificities Jerome Lonchamp, EDF, France	A Data-driven Decision Model: A Case on Drawworks in Offshore Oil & Gas Industry Pengyu Zhu, University of Stavanger, Norway	A modified sideband energy ratio for fault detection of planetary gearboxes Mian Zhang, Dongdong Wei, Kesheng Wang and Ming J Zuo, University of Electronic Science and Technology, China	
4.15pm	Five Future-Proof Steps to Drive Reliability with IIoT Bill Steele, Emerson, USA		Automated bearing fault diagnostics with cost-effective vibration sensor Agusmian Partogi Ompusunggu, Bovik Kilundu Y'Ebondo, Ted Ooijevaar and Steven Devos, Flanders Make, Belgium	
4.30pm - 4.45pm	Afternoon Tea Boulevard Concourse			

CONCURRENT SESSION 7 Thursday				
	SESSION 7.1	SESSION 7.2	SESSION 7.3	SESSION 7.4
	Energy Assets 2	Technology & Management – Smart maintenance / Digitalization 3	Condition Monitoring of Machine Elements 2	Education & Training
	CHAIR: Don Sands, Synengco, Australia	CHAIR: Marco Macchi, Politecnico di Milano, Italy	CHAIR: Robert B. Randall, University of New South Wales, Australia	CHAIR: Belle Upadhyaya, University of Tennessee, Knoxville, USA
	Boulevard Auditorium	Boulevard Room 1	Boulevard Room 2	Boulevard Room 3
4.45pm	Enterprise Risk Profiling using Asset Transaction History Robin Platfoot, Covaris, Australia	Assessing Total Cost of Ownership: Effective asset management along the supply chain Amir Noorbakhsh, Carla Boehl and Kerry Brown, Western Australian School of Mines, Curtin University, Australia	Acoustic signature based early fault detection in rolling element bearings Amir Najafi Amin, Kris McKee, Ilyas Mazhar, Arne Bredin, Ben Mullins and Ian Howard, Curtin University, Australia	Do we know we are competent? A controversial question for asset managers and their teams LEAD SPEAKER: Steve Pudney, Intrinsic Engineers, Australia
5.00pm	VME a tool for risk informed engineering asset management Jerome Lonchamp, EDF, France	Value-based opportunity management process for asset intensive organization Manuela Trindade, Nuno Almeida, Matthias Finger and Daniel Ferreira, IST - University of Lisbon, Portugal	Condition monitoring of rotating machinery with Acoustic Emission: a British-Australian collaboration Davide Crivelli, Simon Hutt, Alastair Clarke, Pietro Borghesani, Zhongxiao Peng and Robert Randall, Cardiff School of Engineering, Wales	Study of the identification and validation of multidisciplinary and specific competencies within a postgraduate program of asset and maintenance management Edward Johns, Simón Gómez, Tomás Grubessich, Raúl Stegmaier and Fredy Kristjanpoller, Universidad Técnica Federico Santa María, Chile
5.15pm	Managing Assets the Digital Way - Eye from Above Sanil C Namboodiripad, Sterlite Power, India	Predicting the remaining life of timber bridges Tane Abbott, Nirdosha Gamage, Sujeeva Setunge and Weena Lokuge, University of Southern Queensland, Australia	Vane Pump Damage Detection via Analysing Synchronously Averaged Vibration Signal Wenyi Wang, DST Group, Australia	Reliability and Maintainability Engineering Program at the University of Tennessee Belle Upadhyaya, Mingzhou Jin and Wesley Hines, University of Tennessee, Knoxville, USA
5.30pm	Smart Asset Management for Electrical Utilities: Big Data and Future Swasti R. Khuntia, Delft University of Technology, The Netherlands	Novel monitoring of offshore wind turbines supporting structure using acoustic emission technique Ángela Angulo, Tat-Hean Gan, Jamil Kanfoud and Slim Soua, TWI Ltd, UK	Vibration analysis of machine tools' spindle units Ali Rastegari, Volvo, Sweden	Successful Organisational Development of Asset Management Organisations Jasper Coetzee and Solly Nkosi, University of Pretoria, South Africa
5.45pm	An integrated approach to process safety Martin Sedgwick and Steven Rigby, Origin Energy, Australia	Structural Integrity Assessment of Ships and Ship-Shaped Offshore Structures Tat-Hean Gan and Subin Kumaran, Brunel University London, UK	Single-Sensor Identification of Multi-Source Vibration Faults based on Power Spectrum Estimation with Application to Aircraft Engines Shunming Li, Yu Xin and Xianglian Li, Nanjing University of Aeronautics and Astronautics, China	An evidence based approach to improving training and development in Critical Infrastructure and Engineering Asset Management Organisations Jeremy Novak, Centaur Institute, Australia
6.30pm - 10.00pm	<p align="center">Conference Dinner Boulevard Room</p> <p align="center">Dinner Speaker: Paul Simshauser, Director-General, Department of Energy and Water Supply, "Energy industry – challenges ahead" Announcement of Finalists for 2017 Global Business Challenge</p> <p align="center">Best Paper Awards ISEAM Lifetime Achievement Award VETOMAC 2018 Portugal Presentation WCEAM 2018 Stavanger, Norway Presentation</p> <p align="center">Entertainment: Chris Poulsen Trio</p>			

Friday 4 August 2017

8.30am	Registration Opens Boulevard Level, Brisbane Convention & Exhibition Centre			
9.00am - 9.45am	Keynote Systems Resilience: A Unifying Framework and associated Measures Professor Loon Ching Tang, Temasek Defence Systems Institute & National University of Singapore <i>CHAIR: Ming Zuo, University of Alberta, Canada</i> Boulevard Auditorium			
	CONCURRENT SESSION 8 Friday			
	SESSION 8.1 Water Assets Sponsored by K2Fly CHAIR: Nima Gorjian, SA Water, Australia Boulevard Auditorium	SESSION 8.2 Performance Measurement 1 CHAIR: Melinda Hodkiewicz, University of Western Australia Boulevard Room 1	SESSION 8.3 Vibration Engineering 1 CHAIR: Shunming Li, National University of Aeronautics and Astronautics, P R China, & Chee W. Lim, City University of Hong Kong Boulevard Room 2	SESSION 8.4 MINICOURSE: The Open Industrial Interoperability Ecosystem, A Supplier-Neutral Digital Ecosystem, Enabling Critical Infrastructure & Industrial Asset Management COURSE LEADER: Alan Johnston, MIMOSA Boulevard Room 3
9.45am	Water Asset Management is Fluid and Dynamic - A Utility of the Future Perspective LEAD SPEAKER: Abel Immaraj, Queensland Urban Utilities, Australia	Asset Management Performance Measurement Systems – Why they need to evolve and How LEAD SPEAKER: Rob Schoenmaker, Technical University Delft, The Netherlands CO-AUTHORS: Adolfo Crespo Marquez, Spain, Jayantha Prasanna Liyanage, Norway and Melinda Hodkiewicz, Australia	Thermo-acoustic radiation of free-standing nano-thin film in viscous fluid LEAD SPEAKER: Chee W. Lim, City University of Hong Kong	ABSTRACT: The entire industrial revolution was driven by massive gains in efficiency derived from systems which were designed, manufactured, assembled and repaired using interoperable components and spare parts. The Open Industrial Interoperability Ecosystem (OIIE) can provide similar gains in efficiency for industrial Information Technology and Systems associated with the entire life-cycle of complex physical assets and critical infrastructure management, while also enabling industry initiatives such as Industrie4.0 and the Industrial Internet of Things (IIOT). Individual suppliers of complex physical assets and related industrial IT solutions have begun to offer proprietary digital ecosystems, enabling their own systems and components to interoperate with each other with little need for traditional systems integration. The major challenge is that large industrial and public sector plants, facilities and platforms are highly heterogeneous systems of systems. This minicourse discusses how the OIIE addresses these challenges, supporting all key phases of the industrial physical asset life cycle, while enabling mutually beneficial cooperation between major industrial device and equipment manufacturers, IT platform and applications suppliers, EPC firms and asset owner/operators.
10.15am	Enhancing Water Treatment Plant Resilience using Reliability Block Diagram Modelling Craig Brydges, ARMS Reliability, Australia	Process characteristics and process performance indicators for analysis of process standardization Achim Kampker, Maximilian Lukas and Philipp Jussen, FIR e.V. an der RWTH Aachen, Germany	Semi-analytical approach to vibrations induced by oscillator moving on a beam supported by a finite depth foundation Zuzana Dimitrovová, Universidade Nova De Lisboa, Portugal	
10.30am	Next Generation Investment Planning & Management: Making Informed Decisions in a Changing World Dane Boers, ARMS Reliability, Australia	Combining reliability assessment with maintenance performance analysis using GAMM Adolfo Crespo Márquez, Antonio Sola Rosique, Antonio J. Guillén López, Asier Erguido and Antonio De La Fuente, University of Seville, Spain	Unsteady Rotor Blade Forces of 3D Transonic Flow Through Steam Turbine Last Stage and Exhaust Hood with Vibrating Blades Romuald Rzadkowski, Vitaly Gnesin and Ryszard Szczepanik, Polish Academy of Sciences, Poland	
10.45am	Quantitative Bowtie Risk Model: An Agile Tool in the Utility Toolkit Daniel Falzon, SA Water, Australia	Semiparametric valuation of heterogeneous assets Roar Adland and Sebastian Köhn, Norwegian School of Economics (NHH), Norway	A study on the torsional vibration response of a three dimensional crankshaft Tian Ran Lin and Xue Wen Zhang, Qingdao University of Technology	
11.00am	An Optimised Energy Saving Model for Pump Scheduling in Wastewater Networks, University of Adelaide Neda Gorjian Jolfaei, Bo Jin, Christopher Chow, Nima Gorjian and Flavio Bressan, SA Water, Australia	Modular-based framework of key performance indicators regulating maintenance contracts Mirka Kans and Anders Ingwald, Linnaeus University, Sweden		
11.15am-11.45am	Morning Tea & Exhibition Boulevard Concourse			

CONCURRENT SESSION 9 Friday					
SESSION 9.1		SESSION 9.2		SESSION 9.3	SESSION 9.4
Defence Assets		Performance Measurement 2		Vibration Engineering 2	MINICOURSE: Life estimation & exact time of failure of last stage steam turbine blades
CHAIR: Johann Aaserud, ASC		CHAIR: Melinda Hodkiewicz, University of Western Australia		CHAIR: Professor Romuald Rzadkowski, Airforce Institute of Technology, Poland	COURSE LEADER: Romuald Rzadkowski, Institute of Fluid-Flow Machinery, Polish Academy of Sciences, Poland
Boulevard Auditorium		Boulevard Room 1		Boulevard Room 2	Boulevard Room 3
11.45am	Optimising availability, capability and affordability across the fleet: a total lifecycle management approach for improving seaworthiness LEAD SPEAKER: Tobias Lemerande, ASC, Australia	Developing a Standard Framework for Improving Equipment Design based on Operational Performance Data Ahmed Khezam, The University of Manchester, UK		Calculation and Analysis of Anti-Shock of Turbocharger for Marine Diesel Engines Lei Hu, Jianguo Yang, Mingchao Zheng and Yonghua Yu, College of Energy and Power Engineering, Wuhan University of Technology, China	Despite standards some critical machines fail with very little warning due to excessive alternating stresses and related fatigue damage. This mini-course outlines theories of general fatigue failures particularly from strain-based conditions which originate from transient conditions such as electrical faults occurring in the field. The negative sequence of currents from short circuits induce severe torsional vibrations, coupling failures, bearing failures, blade rubbing and failures.
12.00pm		Risk Application on Infrastructure in Conventional Contract and Performance Based Contract from Perspective of Owner Mochammad Agung Wibowo, Evita Indrayanti, Bagus Hario Setiadji and Asri Nurdiana, Diponegoro University, Indonesia		Experimental Research on Monitoring Method of Journal Bearing Wear Based on Thermoelectricity for Diesel Engine Biao Wan, Wuhan University of Technology, China	
12.15pm	Implementing Asset Management in a Naval Environment LEAD SPEAKER: James Tziros, WAMA Alliance, Australia	PANEL SESSION How to improve Asset Management Performance Assessment Systems? Performance assessment systems are like the weather forecast: they start by telling us what the weather was today. Performance assessment systems tell us how we have done in yesterday's circumstances fulfilling yesterday's needs. These systems are frequently criticized for encouraging short-term behavior, lacking strategic focus, stimulating sub-optimization, creating a lack of ambition and influencing managers to minimize variances rather than seek to continually improve. How can we improve performance assessment systems to help us meet customer's needs in today's and tomorrow's dynamic world? In this session, we first introduce challenges we face. Next we will look at the possibilities to improve performance assessment systems. We propose and discuss six areas for improvement: #1 – Develop a whole of organisation approach #2 – Model causal effects using system dynamics #3 – Focus on customer value not the asset #4 – Build a dynamic and varied PMS #5 – Not all indicators need targets or consequences #6 – Avoid over-reliance on the PMS		Analysis of dynamic response of thin-walled structure subjected to thermal-acoustic loading Xianglian Li and Shunming Li, College of Science, Nanjing University of Aeronautics and Astronautics, China	In this course we will learn of torsional natural frequencies of the drive train. If the bearings fail, the drive train bending critical speeds would also change. The unbalance response of the rotors will become excessive and misalignment would exacerbate the situation. Fracture mechanics theories for crack initiation, propagation and final fracture and the time taken for this failure phenomenon to occur are presented. Based on rotor coast down conditions verified by the presence of new critical speeds, the exact time of unstable fracture can be estimated.
12.30pm		Application of Discrete Event Simulation to Maintenance and Availability Planning Peter Sanders, BMT Design & Technology, Australia		The design and performance of a novel vibration-based energy harvester adopted various machine rotational frequencies Peter W. Tse and Shilong Sun, City University of Hong Kong, China	
12.45pm		CONVENOR: Melinda Hodkiewicz, University of Western Australia PANELISTS Rob Schoenmaker, Delft University of Technology, The Netherlands Adolfo Crespo Marquez, University of Sevilla, Spain Jayantha P. Liyanage, University of Stavanger, Norway Darren Covington, Mainpac, Australia		Analysis of flexural vibration of V-shaped beam immersed in viscous fluids Lu Hu, Wen-Ming Zhang, Han Yan and Hong-Xiang Zou, Shanghai Jiao Tong University, China	With today's high performance computers these procedures can be combined with results that would lead to providing timely warning and stoppage of the machine to save it from catastrophic failure.
1.00pm		Study on the vibration reduction performance of smart spring Miaomiao Li, De Ni, Weiming Wu, Rupeng Zhu and Shunming Li, Nanjing University Of Aeronautics And Astronautics, China			
1.15pm - 2.15pm	Lunch & Exhibition Boulevard Concourse				

2.15pm - 3.00pm	Keynote Technologies and Asset Management: What's Really Going on in Industry Professor Klaus Blache, Reliability and Maintainability Center & University of Tennessee – Tickle College of Engineering, USA <i>CHAIR: Stephen Saladine, Asset Institute, Australia</i> Boulevard Auditorium			
CONCURRENT SESSION 10 Friday				
	SESSION 10.1 Health Infrastructure	SESSION 10.2 Asset Criticality	SESSION 10.3	SESSION 10.4 MINICOURSE: Mine autonomous haul system: assessing the impact in asset management
	CHAIR: Ashantha Goonetilleke, QUT, Australia	CHAIR: Jayanta P. Liyanage, University of Stavanger, Norway	CHAIR:	COURSE LEADER: Carla Boehl, Curtin University & Mining Education Australia
	Boulevard Auditorium	Boulevard Room 1	Boulevard Room 2	Boulevard Room 3
3.00pm	Precinct-based Trigenation – the large hospital experience at Lady Cilento Children’s Hospital, Brisbane Queensland LEAD SPEAKER: Michael Campbell, Children’s Health Queensland, Australia	Strategic Asset Planning: Balancing Cost, Performance and Risk in an Aging Asset Ype Wijnia and John de Croon, AssetResolutions BV, The Netherlands	VETOMAC Meeting	ABSTRACT: Autonomous haulage system (AHS) is an intelligent management of a system using appropriate technology so that its operation can occur without direct human involvement. To remain competitive in the global mining industry this technology is being pursued in Australia as it is believed that AHS can boost productivity and to reduce mining costs. Even through big companies like Rio Tinto, BHP Billiton and Fortescue Metals Group are currently applying AHS into their daily mining activities, there are still some concerns about deploying AHS for other companies such as the cost and the general acceptance. This mini course will focus on the transformational impact in asset management.
3.15pm		A bibliographic review of trends in the application of ‘criticality’ towards the management of engineered assets Joel Adams, Ajith Parlikad and Joe Amadi-Echendu, University of Cambridge, UK		
3.30pm	Collaborative Asset Management for Health Care Don Sands, Synengco, Australia	Assessment of the Impact of Maintenance Integration within a Plant using MFD: A Case Study Hatem Algabroun, Basim Al-Najjar and Anders Ingwald, Linnaeus University, Sweden		
3.45pm	PANEL SESSION Utilising Data in Built Environments in Improving Health Care With massive investment in new hospitals and redeveloping existing hospitals, the opportunities for leveraging data and the potential impacts on standard and quality of healthcare is unprecedented. Medical equipment, building information, mobility with smart phones and the increased shift to medical devices all create a wealth of big data as a source of significant benefit in standard and quality of care for patients. This panel session will explore the opportunities afforded for hospitals and the potential impact for healthcare.	Key considerations when developing an Asset Criticality Assessment Framework Geoff Hales, Barnewall Resources Pty Ltd, Australia		
4.00pm	CONVENOR: Dr Peter W Beven, Queensland University of Technology, Senior Advisor, Queensland Health, Australia PANELISTS: Michael Campbell, Children’s Health Queensland, Australia Don Sands, Synengco, Australia Darren Covington, Mainpac, Australia	Asset critical equipment and decision optimization: An integrated research platform Pengyu Zhu and Jayantha Liyanage, University of Stavanger, Norway		
4.15pm		Risk prioritisation for Cultural and Arts Infrastructure Andrew Pham, Christine Soo and Melinda Hodkiewicz, University of Western Australia Derren Foster, Western Australia Department of Culture and the Arts		
4.30pm-4.45pm	Afternoon Tea Boulevard Concourse			
4.45pm	Closing Keynote High Risk Assets Under Uncertain Conditions: Strategic Imperatives and New Initiatives Towards Defensive Solutions in a Rapidly Changing Environment Professor Jayantha P. Liyanage, Cluster on Industrial Asset Management (CIAM) & University of Stavanger, Norway <i>CHAIR: Joseph Mathew, Asset Institute, Australia</i> Boulevard Auditorium			
5.15pm-5:30pm	Closing Ceremony Boulevard Auditorium			