

**HASE 2017 Programme**  
**11 to 14 January 2016**  
**Venue: Grand Copthorne Waterfront (Level 3), Singapore**

11 January 2017 (Wednesday)		
Time	Event	Venue
1900 – 2030	Pre-conference Banquet	Galleria Ballroom
12 January 2017 (Thursday)		
Time	Event	Venue
0800 – 1700	Registration	Galleria Ballroom
0800 – 0900	Morning Reception	
0900 – 0910	Welcome Address	
0910 – 1010	<b>Keynote Speaker:</b> <b>High System Reliability Through Design Innovation</b> Tan Guan Hong <i>Senior Director (Smart Nation Systems &amp; Solutions), Government Technology Agency of Singapore</i>	
1010 – 1040	Morning Break	
1040 – 1210	<u>Session 1: Dependability</u> <ul style="list-style-type: none"> <li><b>Analyzing SWaT: Challenges and Ideas</b> <i>Invited Speaker: Sun Jun, Associate Professor, Singapore University of Technology and Design</i></li> <li><b>Architecting Holistic Fault Tolerance</b> <i>Rem Gensh, Ashur Rafiev, Alessandro Garcia, Fei Xia, Alexander Romanovsky and Alex Yakovlev</i></li> <li><b>Majority Is Not Always Supreme: Less Can Be More When Voting with Compromised Nodes</b> <i>Danielle Tarraf, Charles Kamhoua, Kevin Kwiat and Laurent L. Njilla</i></li> <li><b>Is My Software Consistent With the Real World?</b> <i>Jian Xiang, John Knight and Kevin Sullivan</i></li> </ul>	Galleria Ballroom
1210 – 1340	Lunch	
1340 – 1510	<u>iTrust-sponsored Panel Discussion I:</u> <b>High Assurance for Interdependent Critical Infrastructures</b> <i>Chair: Robert Kooij, Delft University of Technology and TNO, The Netherlands</i> <i>Panellists: Dhiradj Djairam, Head of R&amp;D, SIM-CI</i> <i>Bruce McMillin, Professor of Computer Science, Missouri University of Science and Technology</i> <i>Christopher Monterola, Capability Group Manager, A*STAR/NTU</i> <i>Roeland van Zeijst, Global Cybersecurity Strategist, INTERPOL</i>	Galleria Ballroom
1510 – 1540	Afternoon Break	
1540 – 1700	<u>Session 2A: Security &amp; Safety I</u> <ul style="list-style-type: none"> <li><b>Evaluating a Corpus of Root Causes and Measures to Guide RCA Processes in Critical Software</b> <i>Nuno Silva, Marco Vieira, Joao Carlos Cunha and Ram Chillarege</i></li> <li><b>Quantitative Security and Safety Analysis with Attack-fault Trees</b> <i>Rajesh Kumar and Marielle Stoelinga</i></li> <li><b>Formal Predictive Analysis of Communication Deadlocks in Web Service Protocols</b> <i>El Habib Daho Hocine and Mustapha Kamel Abdi</i></li> </ul>	<u>Session 2B: Cyber Physical System I</u> <ul style="list-style-type: none"> <li><b>Cyber-Physical Security of a Chemical Plant</b> <i>Prakash Rao Dunaka and Bruce McMillin</i></li> <li><b>Integrating Six-Step Model with Information Flow Diagrams for Comprehensive Analysis of Cyber-Physical System Safety and Security</b> <i>Giedre Sabaliauskaite and Sridhar Adepu</i></li> <li><b>Cyber Security Resource Allocation: A Markov Decision Process Approach</b> <i>Laurent L. Njilla, Charles Kamhoua, Kevin Kwiat, Patrick Hurley and Niki Pissinou</i></li> </ul>
1700 – 1800	Networking Session (sponsored by TNO South East Asia)	
1800	End of Day 1	
1830 – 2030	Conference Dinner	Galleria Ballroom

13 January 2017 (Friday)			
Time	Event	Venue	
0800 – 1700	Registration	Galleria Ballroom	
0830 – 0900	Morning Reception		
0900 – 0910	Announcements		
0910 – 1010	<p><u>Keynote Speaker:</u></p> <p><b>Cyber Security and Design Philosophy for Cyber Attack Tolerant CPS</b>            J. Sukarno Mertoguno  <i>Program Officer, The Office of Naval Research</i></p>		
1010 – 1035	Morning Break		
1035 – 1205	<p><u>Industry Session</u></p> <ul style="list-style-type: none"> <li>• <b>Opening address: Resilience by Design</b> <i>Tan Ee Sin, Senior Principal Engineer, PUB (invited speaker)</i></li> <li>• <b>Defending Distributed Systems</b> <i>Budiman Tsjin, Senior Manager Sales Engineering, ASEAN &amp; Greater China, RSA</i></li> <li>• <b>Trusted Infrastructure with Comprehensive Information Flow Control with Efficient Desktop Management</b> <i>Jason Tay, Head of Lab, Rohde &amp; Schwarz Asia</i></li> <li>• <b>Design Innovation for a Cyber Resilient Nation</b> <i>Mark van Staalduinen, Innovation Manager, TNO South East Asia</i></li> </ul>	Galleria Ballroom	
1205 – 1305	Lunch		
1305 - 1435	<p><u>iTrust-sponsored Panel Discussion II:</u></p> <p><b>Assurance in the Context of Autonomous Vehicles</b>  <i>Chair: Giedre Sabaliauskaite, Singapore University of Technology and Design</i>  <i>Panellists: Niels de Boer, Energy Research Institute @ NTU (ERIAN)</i>  <i>Mario Gleirscher, Technical University of Munich</i>  <i>Bingbing Liu, Institute for Infocomm Research (I2R), A*STAR</i>  <i>Yang Liu, Nanyang Technological University</i>  <i>John McDermid, University of York</i></p>	Galleria Ballroom	
1435 - 1500	Afternoon Break		
1500 - 1630	<p><u>Session 3: Hazard Analysis</u></p> <ul style="list-style-type: none"> <li>• <b>Autonomous and Adaptive Systems: The Challenge of Hazard Analysis</b> <i>Invited Speaker: John McDermid, Professor of Software Engineering, University of York</i></li> <li>• <b>Arguing from Hazard Analysis in Safety Cases: A Modular Argument Pattern</b> <i>Mario Gleirscher and Carmen Carlan</i></li> <li>• <b>Verification of Interlocking Systems Using Statistical Model Checking</b> <i>Quentin Cappart, Christophe Limbrée, Pierre Schaus, Jean Quilbeuf, Louis-Marie Traonouez and Axel Legay</i></li> </ul>	Galleria Ballroom	
1630 - 1800	<p><u>Session 4A: Security &amp; Safety II</u></p> <ul style="list-style-type: none"> <li>• <b>Correlation Analysis Among Java Nano-patterns and Software Vulnerabilities</b> <i>Kazi Zakia Sultana, Ajay Deo and Byron Williams</i></li> <li>• <b>Enhancing OpenStack Fault Tolerance for Provisioning Computing Environments</b> <i>Ali Kanso, Nicolas Deixionne, Abdelouahed Gherbi and Fereydoun Farrahi Moghaddam</i></li> <li>• <b>Attack Graph Based Network Risk Assessment: Exact Inference vs Region-based Approximation</b> <i>Qi Cheng, Kevin Kwiat, Charles Kamhoua and Laurent Njilla</i></li> </ul>	<p><u>Session 4B: Software Engineering for Assurance</u></p> <ul style="list-style-type: none"> <li>• <b>Using Source Code Metrics and Multivariate Adaptive Regression Splines to Predict Maintainability of Service Oriented Software</b> <i>Lov Kumar, Santanu Kumar Rath and Ashish Sureka</i></li> <li>• <b>Detecting and Reducing Redundancy in Software Testing for Highly Configurable Systems</b> <i>Dusica Marijan and Sagar Sen</i></li> <li>• <b>Test Prioritization with Optimally Balanced Configuration Coverage</b> <i>Dusica Marijan and Marius Liaaen</i></li> </ul>	<p><u>Session 4A:</u> Galleria Ballroom</p> <p><u>Session 4B:</u> Cardinal Room</p>
1800	End of Day 2		

14 January 2017 (Saturday)		
Time	Event	Venue
0800 – 1300	Registration	Galleria Ballroom
0830 – 0900	Morning Reception	
0900 - 0910	Announcements	
0910 – 1040	<p style="text-align: center;"><u>Session 5: Cyber Physical Systems II</u></p> <ul style="list-style-type: none"> <li>• <b>Towards A Resilient Infrastructure</b> <i>Lim Soon Chia, Cyber Security Agency of Singapore (Invited speaker)</i></li> <li>• <b>High Assurance Code Generation for Cyber-Physical Systems</b> <i>Tze Meng Low and Franz Franchetti</i></li> <li>• <b>Defining Risk States in Autonomous Road Vehicles</b> <i>Mario Gleirscher and Stefan Kugele</i></li> </ul>	Galleria Ballroom
1040 – 1110	Morning Break	
1110 – 1240	<p style="text-align: center;"><u>Session 6: Student Paper Session</u></p> <ul style="list-style-type: none"> <li>• <b>Impact of Using Static-type System in Computer Programming</b> <i>Ismail Rizky Harlin, Hironori Washizaki and Yoshiaki Fukazawa</i></li> <li>• <b>Verification of SGAC Access Control Policies using Alloy and ProB</b> <i>Nghi Huynh, Marc Frappier, Amel Mammam and Régine Laleau</i></li> <li>• <b>Effectiveness of Association Rules Mining for Invariants Generation in Cyber-Physical Systems</b> <i>Koyena Pal, Sridhar Adepu and Jonathan Goh</i></li> <li>• <b>Multi-Level Indoor Navigation Ontology for High Assurance Location-Based Services</b> <i>Sanya Khruahong, Xiaoying Kong, Kumbesan Sandrasegaran and Li Liu</i></li> <li>• <b>Acquisition of Virtual Machines for Tiered Applications with Availability Constraints</b> <i>Praneeth Sakhamuri and Olivia Das</i></li> <li>• <b>Multiple Security Domain Nondeducibility Air Traffic Surveillance Systems</b> <i>Anusha Thurdimilla and Bruce McMillin</i></li> </ul>	
1240 – 1330	Lunch	
1330	End of Symposium	
1400 – 1500	<p style="text-align: center;">Tour of iTrust Testbeds</p> <p style="text-align: center;"><i>Transport is provided; departure time from hotel is 1320 hrs, please be at hotel lobby 10 mins before departure time</i></p>	SUTD

## Workshop on Security issues in Cyber Physical Systems (SecCPS)

14 January 2017 (Saturday)		
Time	Event	Venue
0800 – 1300	Registration	Cardinal Room
0830 – 0900	Morning Reception	
0900 - 0910	Announcements	
0910 – 1010	<u>Keynote Speaker:</u> <b>Security in CPS: Challenges and the road ahead</b> Martin Ochoa <i>Assistant Professor, Singapore University of Technology and Design</i>	
1010 – 1040	Morning Break	
1040 - 1230	<p style="text-align: center;"><u>Session 2: Cyber Physical System Security</u></p> <ul style="list-style-type: none"> <li>• <b>Anomaly Detection in Cyber Physical Systems using Recurrent Neural Networks</b> <i>Jonathan Goh, Sridhar Adepu, Marcus Tan and Zi Shan Lee</i></li> <li>• <b>Overview of the Evasion Resilience Testing Technology for Network Based Intrusion Protecting Devices</b> <i>Xiong Qi</i></li> <li>• <b>A Proxy-Based Security Solution for Remote Desktop Connections in Mission-Critical Systems</b> <i>Ron Bitton, Clint Feher, Asaf Shabtai and Yuval Elovici</i></li> <li>• <b>String Stability Analysis of Cooperative Adaptive Cruise Control Under Jamming Attacks</b> <i>Amir Alipour-Fanid, Monireh Dabaghchian, Hengrun Zhang and Kai Zeng</i></li> <li>• <b>Can You See Me: On Performance of Wireless Fingerprinting in a Cyber Physical System</b> <i>Jay Prakash and Chuadhry Mujeeb Ahmed</i></li> </ul>	Cardinal Room
1230 – 1330	Lunch	
1330 - 1500	Session 3: Discussion: Challenges and Research Opportunities in Securing Cyber Physical Systems	Cardinal Room
1500 – 1510	Closing Remarks	
1510 – 1540	Afternoon Break	
1540	End of Workshop	