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Program printed on April 13, 2017

Welcome Message

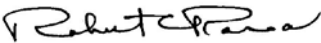
On behalf of the IEEE and officers of the IEEE Systems Council, I would like to extend a warm and cordial welcome to our attendees at the 11th Annual IEEE International Systems Conference here in the beautiful, historic city of Montreal. Among our attendee ranks are engineers and practitioners, academics and researchers, government folks and students from multiple countries around the globe, all with the common interest of systems engineering for complex systems.

We hope that the technical program we have planned for you is what you were anticipating, as it does covering all aspects of complex systems and systems of systems and the highly specialized systems engineering skills that accompany such systems. Our Technical Program Chair, Dr. Sidney Givigi, of the Royal Military College of Canada, has put in countless hours of his valuable time to select the most appropriate content from the truly outstanding candidate material submitted for presentation this week, and I ask you to help me in thanking him for his invaluable efforts.

I have stated in the past that the world around us is growing more complex by the day, and the systems we must design, build, put in service and maintain are ever increasing in complexity, not only because of the huge scope of our complex systems but also the ever-advancing technology that beckons to us with its promise of increased functionality and cleverness. From our communication systems to our entertainment systems, from energy generation and delivery systems to transportation systems, from exploration systems to manufacturing and production systems, from health care systems to safety and security systems, and from weapon systems to defense systems, all of these demand competent and effective engineering solutions, using the best minds in systems engineering that the world can produce.

This conference tries to explore this increased complexity and present new solutions to the myriad challenges that we face. We have application papers that address clever solutions to some of the problems we face, and we have academic/research papers that pose new concepts, new approaches, and new findings that might well help solve some of the challenges that are occurring. And we welcome your feedback on how well this conference is addressing the topics we cover as we only wish to improve our offerings to you, our customers.

So please enjoy your visit and partake of the technical content that we offer you. We hope you enjoy not only this conference but your stay in Montreal where there are many sights to see (in the evenings, of course!) If there is anything we can do to make your visit more comfortable, please do not hesitate to contact one of our helpful staff.



Bob Rassa
Conference Chair
Past President, IEEE Systems Council

Conference Committee

Conference Chair

Bob Rassa, Raytheon Company

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Bonnie Young, Naval Postgraduate School
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Jan Zibuschka, Robert Bosch GmbH
Armin Zimmermann, Ilmenau University of Technology

Conference Management

Conference Catalysts, LLC

Keynote Speaker

Tuesday, April 25, 08:30-09:30

Le Caf Conc

Patrick Champagne

Vice President, Engineering and R & D Esterline Avionics Systems

CMC Electronics

Bio:

Patrick Champagne has had a long career at Esterline CMC Electronics. He was appointed Vice President, Engineering and R & D, in November 2016. Previously, he held the positions of Vice President, Display Solutions, from 2015 to 2016; Vice President, Cockpits and Systems Integration, from 2010 to 2015; and Vice President of Engineering, from 1998 to 2009.

He started his career at CMC Electronics in 1986 as a design engineer. He subsequently held the positions of Project Engineer, from 1988 to 1993, and Engineering Manager for the Communications Group, from 1993 to 1998. Before joining CMC, he was an electronics designer at Nortel and Spar Aerospace, from 1982 to 1986.

Mr. Champagne holds a Bachelor of Electrical Engineering (1982) and a Master of Applied Science (1986) from École Polytechnique of Montréal as well as an MBA (1994) from McGill University. He is a member of the Order Of Engineers of Québec.

He is an important player in the aerospace community of Montreal. He is Vice President of the Board of Directors and a member of the Executive Committee as well as the Human Resources Committee of Aero Montreal. He is Vice President and a member of the executive committee of the SA2GE greener aircraft catalyst project.

In the past, he was a board member of the École de Technologie Supérieure from 2002 to 2009 and was Chairman of the Board of Directors, from 2004 to 2007. He continues to participate in advisory committees for the government and universities in the province of Quebec.

Technical Committee Meeting

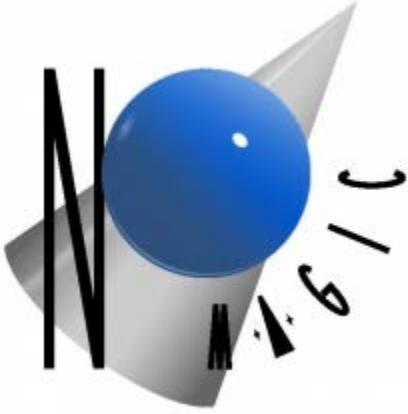
Tuesday, April 25, 18:30 - 19:00

Analytics and Risk Technical Committee Meeting

All SysCon 2017 conference attendees are invited to join for review and planning of the ARTC Committee activities in 2017-2018. Hosted by Desheng Dash Wu, ARTC Committee Chair, and James H. Lambert, S.M.IEEE. The ARTC enables growth and understanding of theory and best practices in analytics and risk. Risk analytics in business intelligence represents data-oriented techniques to supplement business systems for risk-based decision making. Risk performance analysis in manufacturing intelligence uses advanced data analytics, modeling, and simulation to produce a fundamental transformation to new product-based economics through internet-based service enterprises and demand-driven supply chains. Risk evaluation plays key roles in emerging areas such as biomanufacturing, nanotechnology, and energy. There is a dramatic increase in the use of predictive analytics in these and many other areas. The ARTC brings together scientists and engineers from a variety of backgrounds and disciplines, and provides opportunities to discuss these open issues and advance the related interests of the IEEE Systems Council.

Exhibitor

Thank you to our Exhibitor for their support.



Exhibits will be open Tuesday, April 25 and Wednesday, April 26.

PROGRAM SCHEDULE - Monday, April 24, 2017			
REGISTRATION – 36th Floor, Maisonneuve E			
Room	Maisonneuve B	Maisonneuve C	Maisonneuve F
07:00 - 17:00			
08:00 - 10:00	1A1 - Effective SE Communication through Models and Representations	1A2 - Services Science and Services Computing	
10:00 - 10:15	BREAK		
10:15 - 12:00	1B1 - Effective SE Communication through Models and Representations	1B2 - Services Science and Services Computing	
12:00 - 13:00	LUNCH - Maisonneuve E (Tutorial Attendees Only)		
13:00 - 15:00	1C1 - System Security Engineering	1C2 - Building Learning Experiences with the SERC SE Experience Accelerator	1C3: Future Communication Networks Modeling and Analysis Tools inspired by Complex Systems Science
15:00 - 15:15	BREAK		
15:15 - 17:00	1D1: System Security Engineering	1D2: Building Learning Experiences with the SERC SE Experience Accelerator	1D3: Future Communication Networks Modeling and Analysis Tools inspired by Complex Systems Science

PROGRAM SCHEDULE - Tuesday, April 25, 2017						
REGISTRATION – Level A Lobby						
07:00 - 17:00	Opening Remarks – Le Caf Conc					
08:15 - 08:30	Keynote Speaker: Patrick Champagne Vice President, Engineering and R & D Esterline Avionics Systems CMC Electronics					
08:30 - 09:30	Executive Plenary Panel: Le Caf Conc					
09:30 - 10:00	Panelists: Joe Cecil, Oklahoma State University, USA Paul C. Hershey, Raytheon, USA					
10:00 - 12:00	LUNCH - Salon de Bal, "A" Level of Marriott Hotel					
12:00 - 13:30	Salon Viger C	Salon Viger B	Salon Terrasse	Salon Neufchatel	Salle de Bal Foyer	Salon Viger A
13:30 - 15:00	2C1: Transportation Systems	2C2: Space and Communication Systems	2C3: Model-Based Systems Engineering I	2C4: Research in Systems Engineering I	2C5: Modeling and Simulation I	2C6: INCOSE
15:00 - 15:30	BREAK					
15:30 - 17:00	2D1: Medical Systems	2D2: Cloud Computing	2D3: Model-Based Systems Engineering II	2D4: Research in Systems Engineering II	2D5: Defense Systems	2D6: INCOSE
17:30 - 18:30	Welcome Reception – Le Caf Conc, "A" Level					
17:30 - 20:30	Young Professionals Networking Event – Salon Viger A					
18:30 - 19:30	Analytics and Risk Technical Committee Meeting					

PROGRAM SCHEDULE - Wednesday, April 26, 2017

REGISTRATION – Level A Lobby

07:00 - 17:00	Salon Viger C	Salon Viger B	Salon Terrasse	Salon Neufchatel	Salle de Bal Foyer	Salon Viger A
08:00 - 09:30	3A1 - System Architecture	3A2 - Decision Making Systems I	3A3 - Sensors Integration and Applications I	3A4 - Research in Systems Engineering II		3A6 - INCOSE
09:30 - 10:00	BREAK					
10:00 - 11:30	3B1 - Robotic Systems	3B2 - Decision Making Systems II	3B3 - Sensors Integration and Applications II	3B4 - Aerial Systems	3B5 - Systems Thinking	3B6 - INCOSE
11:30 - 13:00	Best Paper Awards Luncheon - Salon de Bal					
13:00 - 14:30	3C1: Cyber Security Issues	3C2: Decision Making Systems III	3C3: Sensors Integration and Applications III		3C5: Gaming, Entertainment and Sensor Systems	3C6: INCOSE
14:30 - 15:00	BREAK					
15:00 - 16:30	3D1: Autonomous Systems I	3D2: Systems Verification and Validation	3D3: Modeling and Simulation II	3D4: Energy Management and Sustainability II	3D5: Model-Based Systems Engineering III	3D6: THEFOSE

PROGRAM SCHEDULE - Thursday, April 27, 2017

REGISTRATION – Level A Lobby

07:00 - 12:00

Room	Salon Viger C	Salon Viger B	Salon Neufchatel	Salle de Bal Foyer	Salon Viger A
08:00 - 09:30	4A1: Autonomous Systems II	4A2: Complex Systems Issues I		4A3: Engineering Systems-of-Systems I	4A4: THEFOSE
09:30 - 10:00	BREAK				
10:00 - 11:30	4B1: Large-Scale Systems Integration	4B2: Complex Systems Issues II		4B3: Engineering Systems-of-Systems II	4B4: INCOSE

Monday, April 24

07:00 - 17:00

Registration

Room: 36th Floor, Maisonneuve E

08:00 - 10:00

1A1: Tutorial: Effective SE Communication through Models and Representations

Room: Maisonneuve B

Presenter: Ronald Kratzke, Vitech Corporation, USA

08:00 - 10:00

1A2: Tutorial: Services Science and Services Computing

Room: Maisonneuve C

Presenter: Shrishia Rao, International Institute of Information Technology, Bangalore, India

10:00 - 10:15

Break

10:15 - 12:00

1B1: Tutorial: Effective SE Communication through Models and Representations

Room: Maisonneuve B

Presenter: Ronald Kratzke, Vitech Corporation, USA

10:15 - 12:00

1B2: Tutorial: Services Science and Services Computing

Room: Maisonneuve C

Presenter: Shrishia Rao, International Institute of Information Technology, Bangalore, India

12:00 - 13:00

Lunch – for Tutorial Attendees Only

Room: Maisonneuve E

13:00 - 15:00

1C1: Tutorial: System Security Engineering

Room: Maisonneuve B

Presenter: Logan Mailloux, United States Air Force, USA

13:00 - 15:00

1C2: Tutorial: Building Learning Experiences with the SERC SE Experience Accelerator

Room: Maisonneuve C

Presenters: Richard Turner, Stevens Institute of Technology, USA

Doug Bodner, Georgia Institute of Technology, USA

Yvette Rodriguez, Defense Acquisition University, USA

Jon Wade, Stevens Institute of Technology, USA

Peizhu Zhang, Stevens Institute of Technology, USA

Monday, April 24

13:00 - 15:00

1C3: Future Communication Networks Modeling and Analysis Tools inspired by Complex Systems Science

Room: Maisonneuve F

Presenters: M. Majid Butt, Trinity College Dublin, Ireland
Irene Macaluso, Trinity College Dublin, Ireland
Nicola Marchetti, CTVR Trinity College, Ireland

15:00 - 15:15

Break

15:15 - 17:00

1D1: Tutorial: System Security Engineering

Room: Maisonneuve B

Presenter: Logan Mailloux, United States Air Force, USA

15:15 - 17:00

1D2: Tutorial: Building Learning Experiences with the SERC SE Experience Accelerator

Room: Maisonneuve C

Presenters: Richard Turner, Stevens Institute of Technology, USA
Doug Bodner, Georgia Institute of Technology, USA
Yvette Rodriguez, Defense Acquisition University, USA
Jon Wade, Stevens Institute of Technology, USA
Peizhu Zhang, Stevens Institute of Technology, USA

15:15 - 17:00

1D3: Future Communication Networks Modeling and Analysis Tools inspired by Complex Systems Science

Room: Maisonneuve F

Presenters: M. Majid Butt, Trinity College Dublin, Ireland
Irene Macaluso, Trinity College Dublin, Ireland
Nicola Marchetti, CTVR Trinity College, Ireland

07:00 - 17:00

Registration

Room: Level A Lobby

08:15 - 08:30

Opening Remarks

Room: Le Caf Conc

08:30 - 09:30

Keynote: Patrick Champagne, Vice President, Engineering and R & D Esterline Avionics Systems, CMC Electronics

Room: Le Caf Conc

09:30 - 10:00

Coffee Break

Room: Le Caf Conc

10:00 - 12:00

Panel: Executive Plenary Panel

Room: Le Caf Conc

Panelists:

Joe Cecil, Oklahoma State University, USA

Paul C. Hershey, Raytheon, USA

More to be announced

12:00 - 13:30

Lunch

Room: Salon de Bal, "A" Level of Marriott Hotel

13:30 - 15:00

2C1: Transportation Systems

Room: Salon Viger C

Session Chair: Aldo Fabregas (Florida Institute of Technology, USA)

Segmented Arrival Graph based Evacuation Plan Assessment Algorithm Using Linear Programming

Manki Min (South Dakota State University, USA)

Sunho Lim (Texas Tech University, USA)

A High-Speed Color-Based Object Detection Algorithm for Quayside Crane Operator Assistance System

Xiang Gao (California State University, Long Beach, USA)

Hen-Geul Yeh (California State University, Long Beach, USA)

Panadda Marayong (California University, Long Beach, USA)

Application-Driven Traffic Sensor System Acceptance Tests for Intelligent Transportation Systems

Thiago Mendonca (Florida Institute of Technology, USA)

Aldo Fabregas (Florida Institute of Technology, USA)

Troy Nguyen (Florida Institute of Technology, USA)

13:30 - 15:00

2C2: Space and Communication Systems

Room: Salon Viger B

Session Chair: Paul C. Hershey (Raytheon, Inc., USA)

System for Small Satellite Onboard Processing

Paul C. Hershey (Raytheon, USA)

William Wolpe (Raytheon, USA)

Jeffery Klein (Raytheon, USA)

Charlotte Dekeyrel (Raytheon, USA)

Battlespace Communications Network-of-Network Interface Modeling

Mansoor Syed (Capability, Acquisition and Sustainment Group (CASG), Australia)

Peter Pong (Jacobs Australia, Australia)

Bob Hutchinson (Capability, Acquisition and Sustainment Group (CASG), Australia)

Inter-Satellite Communication MBSE Design Framework for Small Satellites

Awele I AnyanHun (North Carolina A&T State University, USA)

William W Edmonson (North Carolina A&T State University, USA)

13:30 - 15:00

2C3: Model Based Systems Engineering I

Room: Salon Terrasse

Session Chairs: Thomas A. McDermott, Jr (Georgia Tech Research Institute, USA); Cody Fleming (University of Virginia, USA)

Approximation Effects and User-Controllable Design Space Exploration

Haifeng Zhu (United Technologies Research Center, USA)

Reuse of SysML Model to Support Innovation in Mechatronic Systems Design

Mizuki Shinozaki (University of Electro-Communications, Japan)

Faida Mhenni (SUPMECA, France)

Jean-Yves Choley (SUPMECA, France)

Aiguo Ming (University of Electro-Communications, Japan)

Web Notebooks as a Knowledge Management Tool for System Engineering Trade Studies

Jack Zentner (Georgia Tech Research Institute, USA)

Tom McDermott, Jr (Georgia Tech Research Institute, USA)

13:30 - 15:00

2C4: Research in Systems Engineering I

Room: Salon Neufchatel

Session Chair: Alberto Sols (HSN, Spain)

Applications of an Emulation Model towards the Preservation of Modern Computing Systems

Darin Jamraj (Florida Atlantic University, USA)

Shihong Huang (Florida Atlantic University, USA)

Perambur Neelakanta (Florida Atlantic University, USA)

Bassem Alhalabi (Florida Atlantic University, USA)

Tuesday, April 25

A Standard Based Adaptive Path to Teach Systems Engineering: 15288 and 29110 Standards Use Cases

Mohammed BOUGAA (Eisti Cergy, CentraleSupélec, France)

Stefan BORNHOFEN (EISTI Cergy, France)

Rory V. O'Connor (Dublin City University, Ireland)

Alain Riviere (Quartz Laboratory EA 7393, France)

Receding Capabilities in Systems of Systems

Alberto Sols (University College of South-East Norway, Spain)

13:30 - 15:00

2C5: Modeling and Simulation I

Room: Salle de Bal Foyer

Session Chair: Joe Cecil (Oklahoma State University, USA)

Test-driven modeling and development of cloud-enabled cyber-physical smart systems

Allan Munck (Technical University of Denmark, Denmark)

Jan Madsen (Technical University of Denmark, Denmark)

A Next Generation Collaborative System for Micro Devices Assembly

J. Cecil (Oklahoma State University & Cyber Tech, USA)

Raviteja Gunda (Oklahoma State University, USA)

Aaron Cecil-Xavier (Soaring Eagle Program, USA)

Performance of Constant Envelope DCT Based OFDM System with M-ary PAM Mapper in AWGN Channel

Rayan H. Alsisi (The University of Western Ontario, Canada)

Raveendra K. Rao (The University of Western Ontario, Canada)

13:30 - 15:00

2C6: INCOSE

Room: Salon Viger A

Session Chair: Claude Laporte (Ecole de Technologies Supérieure, Canada)

Learning from Research about CASs operating as Enterprises

Vernon Ireland (The University of Adelaide, Australia)

Larissa Statsenko (University of Adelaide, Australia)

Indra Gunawan (The University of Adelaide, Australia)

Carmen Reaiche (The University of Adelaide, Australia)

Systems Engineering and Management Processes for Small Organizations with ISO/IEC 29110 An implementation in a Small Public Transportation Company

Claude Laporte (Ecole de Technologie Supérieure, Canada)

Nicolas Tremblay (Ecole de Technologie Supérieure, Canada)

Jamil Menaceur (CSiT, Canada)

Denis Poliquin (CSiT, Canada)

Ronald Houde (Mannarino Systems & Software, Canada)

Developing a System ConOp for Complex Infrastructure Upgrade Programmes

Ali G Hessami (Vega Systems, UK)

15:00 – 15:30

Break

15:30 – 17:00

2D1: Medical Systems

Room: Salon Viger C

Session Chair: Joe Cecil (Oklahoma State University, USA)

Systems Thinking and Predictive Analytics to Improve Veteran Healthcare Scheduling

N. Peter Whitehead (The MITRE Corporation, USA)

Stephen C. Adams (The University of Virginia, USA)

William T. Scherer (The University of Virginia, USA)

Hyojung Kang (The University of Virginia, USA)

Matthew Gerber (The University of Virginia, USA)

A Distributed Collaborative Simulation Environment for Orthopedic Surgical Training

Joe Cecil (Oklahoma State University & Cyber Tech, USA)

Avinash Gupta (Oklahoma State University, USA)

Parmesh Ramanathan (University of Wisconsin at Madison, USA)

Miguel Pirela-Cruz (Texas Tech Health Sciences Center, USA)

Network of Wireless Medical Devices to Assess the Gait of Rehabilitation in Patients for Walking and Running

A. Beaulieu (Royal Military College of Canada, Canada)

A. Lapointe (Royal Military College of Canada, Canada)

S. Givigi (Royal Military College of Canada, Canada)

K. Sillins (Royal Military College of Canada, Canada)

A. Lavoie (Royal Military College of Canada, Canada)

K. Tilley (Royal Military College of Canada, Canada)

N. Le Bel (Royal Military College of Canada, Canada)

15:30 – 17:00

2D2: Cloud Computing

Room: Salon Viger B

Session Chair: Paul Rad (Rackspace, USA)

Transmitter Beam-forming Techniques for Indoor Millimeter wave Communication

Pravinkumar Shanmugam (California State University Long Beach, USA)

Hen-Geul Yeh (California State University Long Beach, USA)

Joe Lee (Spatial Digital Systems, USA)

Donald Chang (Spatial Digital Systems, USA)

Resource Usage Prediction Algorithm Using Weighted Linear Regression for Virtual Machine Live Migration in Cloud Data Centers

Mohammad Ali Khoshkholghi (University Putra Malaysia, Malaysia)

Performance Evaluation of Cloud Object Storage for Big Data

Swanand Mhalagi (University of Texas at San Antonio, USA)

Lide Duan (University of Texas at San Antonio, USA)

Paul Rad (University of Texas at San Antonio, USA)

15:30 – 17:00

2D3: Model Based Systems Engineering II

Room: Salon Terrasse

Session Chair: Pierre de Saqui-Sannes (ISAE-SUPAERO, France)

Feasibility study of a multispectral camera with automatic processing onboard a 27U satellite using Model Based Space System Engineering

André Pierre Mattei (Senai Innovation Institute for Embedded Systems, Brazil)

Luis Loures (Aeronautics Institute of Technology, Brazil)

Pierre de Saqui-Sannes (ISAE-SUPAERO, France)

Benedicte Escudier (ISAE-SUPAERO, France)

Can ontologies prevent MBSE models from becoming obsolete?

Uri Shani (IBM Research-Haifa, Israel)

Model-Based Dynamic Reliability Engineering for Hybrid Electric Vehicle Design

Armin Zimmermann (Ilmenau University of Technology & Systems and Software Engineering, Germany)

Thomas Dietrich (Ilmenau University of Technology & Systems and Software Engineering, Germany)

Paulo Maciel (Federal University of Pernambuco, Brazil)

Andreas Hildebrandt (Pepperl+Fuchs GmbH, Germany)

15:30 – 17:00

2D4: Research in Systems Engineering II

Room: Salon Neufchatel

Session Chair: Martin Malchow (Hasso Plattner Institute, Germany)

Embedded Smart Home - Remote Lab Grading in a MOOC with over 6000 Participants

Martin Malchow (Hasso Plattner Institute, Germany)

Jan Renz (Hasso Plattner Institute, Germany)

Matthias Bauer (Hasso Plattner Institute, Germany)

Christoph Meinel (Hasso Plattner Institute, Germany)

A systematic and practical method for selecting systems engineering tools

Allan Munck (Technical University of Denmark)

Jan Madsen (Technical University of Denmark)

Model based QFD method with the integrated sensitivity Analysis

Seyed Sina Shabestari (Ruhr Universität Bochum, Germany)

Beate Bender (Ruhr Universität Bochum, Germany)

15:30 – 17:00

2D5: Defense Systems

Room: Salle de Bal Foyer

Session Chair: George L. Ball (Raytheon, Inc., USA)

Research on weapon system portfolio selection based on combat network modeling

Cheng Cheng (National University of Defense Technology, P.R. China)

Jichao Li (National University of Defense Technology, P.R. China)

Qingsong Zhao (National University of Defense Technology, P.R. China)

Jiang Jiang (National University of Defense Technology, P.R. China)

Lixin Yu (Beijing Simulation Center, P.R. China)

Huilin Shang (National University of Defense Technology, P.R. China)

Tuesday, April 25

Research on Development Strategy of Weapon Equipment in Antagonistic Environment

Chunqi Wan (National University of Defense Technology, P.R. China)

Weitao Xiong (National University of Defense Technology, P.R. China)

Yanqing Ye (National University of Defense Technology, P.R. China)

Qingsong Zhao (National University of Defense Technology, P.R. China)

Kewei Yang (National University of Defense Technology, P.R. China)

Simulation and Exploration of High-Density Unmanned Aerial Vehicle Systems

Tim Nysetvold (Brigham Young University, USA)

John Salmon (Brigham Young University, USA)

15:30 – 17:00

2D6: INCOSE

Room: Salon Viger A

Session Chair: Inas S. Khayal (Geisel School of Medicine at Dartmouth, USA)

The Application of Model-Based Systems Engineering to the Practice of Clinical Medicine

Inas S. Khayal (Geisel School of Medicine at Dartmouth, USA)

Amro M. Farid (Thayer School of Engineering at Dartmouth, USA)

A Holistic Approach for Virtual Commissioning of Intelligent Systems: Model-Based Systems Engineering for the Development of a Turn-Milling Center

Christian Henke (Fraunhofer-Institute for Mechatronic Systems Design, Germany)

Jan Michael (Fraunhofer-Institute for Mechatronic Systems Design, Germany)

Christopher Lankeit (Fraunhofer-Institute for Mechatronic Systems Design, Germany)

Ansgar Trächtler (Fraunhofer-Institute for Mechatronic Systems Design, Germany)

The future of Engineering - Scenarios of the future way of working in the engineer-to-order business

Jan Vollmar (Siemens AG, Germany)

Michael Gepp (Siemens AG, Germany)

Andreas Schertl (Siemens AG, Germany)

17:30 - 18:30

Welcome Reception

Room: Le Caf Conc, "A" Level

17:30 - 20:30

Young Professionals Networking Event

Room: Salon Viger A

18:30 - 19:30

Analytics and Risk Technical Committee Meeting

Registration

07:00 - 17:00

Room: Level A Lobby

08:00 - 09:30

3A1: System Architecture

Room: Salon Viger C

Session Chair: Arash Khabbaz Saberi (TNO, The Netherlands)

A Centralized Enterprise Chef System and Architecture

Jianwen Chen (IBM, Australia)

Choong Thio (IBM, Australia)

Gopal Pingali (IBM, Australia)

George Africa (IBM, Australia)

Chris Freeman (IBM, Australia)

Analysis Sharing Method by Managing Provenance of Query

Hirimitsu Nakagawa (Hitachi. Ltd., Japan)

Keiro Muro (Hitachi. Ltd., Japan)

An Architecture Pattern for Safety Critical Automated Driving Applications: Design and Analysis

Yaping Luo (Eindhoven University of Technology, Netherlands, The Netherlands)

Arash Khabbaz Saberi (Eindhoven University of Technology, The Netherlands)

Tjerk Bijlsma (Eindhoven University of Technology, The Netherlands)

Johan J. Lukkien (Eindhoven University of Technology, The Netherlands)

Mark van den Brand (Eindhoven University of Technology, The Netherlands)

08:00 - 09:30

3A2: Decision Making Systems I

Room: Salon Viger B

Session Chair: Steven Hoffenson (Stevens Institute of Technology, USA)

Robust System Portfolio Selection with Multi-Function Requirements and System Instability

Boyuan Xia (National University of Defense Technology, China)

Yajie Dou (National University of Defense Technology, China)

Qingsong Zhao (National University of Defense Technology, China)

Bingfeng Ge (National University of Defense Technology, China)

Yang Zhang (National University of Defense Technology, China)

Goal-Seeking framework to empower Personal Wellness Management

Mukesh Chippa (The University of Akron, USA)

Shivakumar Sastry (The University of Akron, USA)

Using Agent-Based Modeling to Understand Stakeholder Interactions in the Rollout of NextGen by the Federal Aviation Administration

Matthew Mosca (Stevens Institute of Technology, USA)

Steven Hoffenson (Stevens Institute of Technology, USA)

08:00 - 09:30

3A3: Sensors Integration and Applications I

Room: Salon Terrasse

Session Chair: Allaa R. Hilal (University of Waterloo, Canada)

Context-Aware Source Reliability Estimation For Multi-Sensor Management

Allaa R. Hilal (University of Waterloo, Canada)

A Framework for Designing Active Pan-Tilt-Zoom (PTZ) Camera Networks for Surveillance Applications

Samer Hanoun (Deakin University, Australia)

James Zhang (Deakin University, Australia)

Vu Le (Deakin University, Australia)

Burhan Khan (Deakin University, Australia)

Michael Johnstone (Deakin University, Australia)

Michael Fielding (Deakin University, Australia)

Asim Bhatti (Deakin University, Australia)

Doug Creighton (Deakin University, Australia)

Saeid Nahavandi (Deakin University, Australia)

Low-Cost Wireless Intelligent Two Hand Gesture Recognition System

Aswin Natesh (Solarillion Foundation, India)

Gandhi Rajan Ramachandran (Solarillion Foundation, India)

Balasubramanian Thiagarajan (Sri Venkateswara College of Engineering, India)

Vineeth Vijayaraghavan (Solarillion Foundation, India)

08:00 - 09:30

3A4: Research in Systems Engineering II

Room: Salon Neufchatel

Session Chair: Jean C. Domerçant (Georgia Tech Research Institute, USA)

Automated Markov-chain based Analysis for Large State Spaces

Kaitlin N. Smith (Southern Methodist University, USA)

Michael A. Taylor (Southern Methodist University, USA)

Anna A. Carroll (Southern Methodist University, USA)

Theodore W. Manikas (Southern Methodist University, USA)

Mitchell A. Thornton (Southern Methodist University, USA)

Cloud-based Semantic Services for Pan-European Emergency Preparation and Planning

Christina Schäfer (University of Paderborn, Germany)

Torben Sauerland (Paderborn University, Germany)

Jens Pottebaum (Paderborn University, Germany)

Robin Marterer (Paderborn University, Germany)

Daniel Behnke (TU Dortmund University, Germany)

Christian Wietfeld (TU Dortmund University, Germany)

Peter Gray (CloudSigma, Germany)

Bogdan Despotov (CloudSigma, Bulgaria)

A Functional Modularization Approach for Architecting Defense Open Systems: In Support of Strategic Open Architecture Reuse

Jean Charles Domerçant (Georgia Tech Research Institute, USA)

08:00 - 09:30

3A6: INCOSE

Room: Salon Viger A

Session Chairs: Gina Guillaume-Joseph (The MITRE Corporation, USA)
Angela Robinson (INCOSE VSE WG, USA)

Modbus Monitoring for Networked Control Systems of Cyber-Defensive Architecture

Charles Kim (Howard University, USA)

Dayne Robinson (Howard University, USA)

Network Intrusion Detection through Artificial Immune System

Marzie Tabatabaefar (Institut National de la Recherche Scientifique (INRS), Canada)

Maryam Miriestahbanati (Concordia University, Canada)

Jean-Charles Grégoire (Institut National de la Recherche Scientifique (INRS), Canada)

Secure Solution: One Time Mobile Originated PKI

Zia Saquib (Centre for Development of Advanced Computing, Mumbai, India)

Manish Kumar (Centre for Development of Advanced Computing, India)

Kapil Kant Kamal (Centre for Development of Advanced Computing, India)

Bharat Varyani (Center for Development of Advanced Computing, India)

09:30 – 10:00

Break

10:00 – 11:30

3B1: Robotic Systems

Room: Salon Viger C

Session Chair: Aleksandr Sergeev (Michigan Technological University, USA)

Fuzzy Controlled Object Manipulation using a Three-Fingered Robotic Hand

Vinicius Prado da Fonseca (University of Ottawa, Canada)

Daniel John Kucherhan (University of Ottawa, Canada)

Thiago E. Alves de Oliveira (University of Ottawa, Canada)

Da Zhi (University of Ottawa, Canada)

Emil M. Petriu (University of Ottawa, Canada)

Promoting Industrial Robotics Education by Curriculum, Robotic Simulation Software, and Advanced Robotic Workcell Development and Implementation

A. Sergeev (Michigan Technological University, USA)

N. Alaraje (Michigan Technological University, USA)

S. Parmar (Michigan Technological University, USA)

S. Kuhl (Michigan Technological University, USA)

V. Druschke (Michigan Technological University, USA)

J. Hooker (Michigan Technological University, USA)

Secure communication for the Robot Operating System

Benjamin Breiling (JOANNEUM RESEARCH, Austria)

Bernhard Dieber (JOANNEUM RESEARCH, Austria)

Peter Schartner (Alpen-Adria Universität Klagenfurt, Austria)

10:00 – 11:30

3B2: Decision Making Systems II

Room: Salon Viger B

Session Chair: Jakob Axelsson (Mälardalen University & Swedish Institute of Computer Science, Sweden)

The tradeoffs between portfolios in multi-attribute project portfolio selection

Xiaoxiong Zhang (University of Waterloo, Canada)

Yajie Dou (National University of Defense Technology P.R., China)

Qingsong Zhao (National University of Defense Technology P.R., China)

Kai Zhao (University of Waterloo, Canada)

Towards the Architecture of a Decision Support Ecosystem for System Component Selection

Jakob Axelsson (Mälardalen University & Swedish Institute of Computer Science, Sweden)

Ulrik Franke (Swedish Institute of Computer Science, Sweden)

Jan Carlson (Mälardalen University, Sweden)

Séverine Sentilles (Mälardalen University, Sweden)

Antonio Cicchetti (Mälardalen University, Sweden)

A Threshold Based Airspace Capacity Estimation Method for UAS Traffic Management System

Vishwanath Bulusu (University of California, Berkeley, USA)

Valentin Polishchuk (Linköping University, Sweden)

10:00 – 11:30

3B3: Sensors Integration and Applications II

Room: Salon Terrasse

Session Chair: Andy Adler (Carleton University, Canada)

Decentralized Configuration of Embedded Web Services for Smart Home Applications

Arne Wall (University of Rostock, Germany)

Vlado Altmann (University of Rostock, Germany)

Johannes Müller (University of Rostock, Germany)

Hannes Raddatz (University of Rostock, Germany)

Dirk Timmermann (University of Rostock, Germany)

Biometric Permanence: Definition and Robust Calculation

Henry Harvey (Carleton University, Canada)

John Campbell (Bion Biometrics, USA)

Stephen Elliott (BSPA Laboratory, Purdue University, USA)

Andy Adler (Carleton University, Canada)

Energy Harvesting in Wireless Sensor Network with Efficient Landmark Selection using Mobile Actuator

Ahmad Shawahna (King Fahd University of Petroleum and Minerals, Saudi Arabia)

Md. Enamul Haque (University of Louisiana, Lafayette, USA)

Mehmet Engin Tozal (University of Louisiana, Lafayette, USA)

10:00 – 11:30

3B4: Aerial Systems

Room: Salon Neufchatel

Session Chair: Eddie E. Galarza (Universidad de las Fuerzas Armadas ESPE, Ecuador)

An Empirical Study on Generic Multicopter Energy Consumption Profiles

Thomas Dietrich (Technische Universität Ilmenau, Germany)

Silvia Krug (Technische Universität Ilmenau, Germany)

Armin Zimmermann (Technische Universität Ilmenau, Germany)

Control Algorithm for the Inertial Stabilization of UAVs

Eddie E. Galarza (Universidad de las Fuerzas Armadas ESPE, Ecuador)

Cesar A. Naranjo (Universidad de las Fuerzas Armadas - ESPE, Ecuador)

Octavio Guijarro (Universidad Técnica de Ambato, Ecuador)

David Basantes (Universidad Técnica de Ambato, Ecuador)

Victor Enriquez (CIDFAE - Centro de Investigación y Desarrollo FAE Ecuador, Ecuador)

Diego Paredes (CIDFAE - Centro de Investigación y Desarrollo FAE Ecuador, Ecuador)

Integrating UAS Swarming with Formation Drag Reduction

John Colombi (Air Force Institute of Technology, USA)

David R Jacques (Air Force Institute of Technology, USA)

Jacob L. Lambach (Air Force Institute of Technology, USA)

10:00 – 11:30

3B5: Systems Thinking

Room: Salle de Bal Foyer

Session Chair: William S. Devereux (JHU/APL, USA)

The Agile Manifesto, Design Thinking and Systems Engineering

M. Ann Garrison Darrin (The Johns Hopkins University Applied Physics Laboratory, USA)

William S. Devereux (The Johns Hopkins University Applied Physics Laboratory, USA)

Software Development Using Agile and Scrum in Distributed Teams

Youry Khmelevsky (Okanagan College, Canada)

Xitong Li (Ecole des Hautes Etudes, France)

Stuart Madnick (Massachusetts Institute of Technology, USA)

Attributable Design Trades: Reliability and Cost Implications for Unmanned Aircraft

John Colombi (Air Force Institute of Technology, USA)

Bryan Bentz (Air Force Institute of Technology, USA)

Ryan Recker (Air Force Institute of Technology, USA)

Brandon Lucas (Air Force Institute of Technology, USA)

Jason Freels (Air Force Institute of Technology, USA)

10:00 – 11:30

3B6: INCOSE

Room: Salon Viger A

Session Chair: Luc Fillion (Nuom Solutions inc, Canada)

Fulfilling the Potential of Consumer Connected Fitness Technologies: Towards

Framing Systems Engineering Involvement in User Experience Design

Woodrow W. Winchester, III (Robert Morris University, USA)

Valerie Washington (Kennesaw State University, USA)

Using Atlassian Tools for Efficient Requirements Management: An industrial case study

Luc Fillion (Nuum Solutions inc, Canada)

Nicolas Daviot (Nuum Solutions inc, Canada)

Jean-Philippe Le Bel (ISC Applied Systems, Canada)

Marc Gagnon (ISC Applied Systems, Canada)

Applying Standard Independent Verification and Validation (IV&V) Techniques within an Agile Framework: Is there a Compatibility Issue?

James B. Dabney (University of Houston, USA)

James D. Arthur (Virginia Polytechnic Institute and State University, USA)

11:30 - 13:00

Lunch

Room: Salon de Bal

13:00 – 14:30

3C1: Cyber Security Issues

Room: Salon Viger C

Session Chair: Logan Mailloux (United States Air Force, USA)

Conceptual Design Acceleration for Cyber-Physical Systems

Kevin Lynch (Raytheon Corporation, USA)

Randall Ramsey (Raytheon Corporation, USA)

George Ball (Raytheon Corporation, USA)

Matthew Schmit (Georgia Institute of Technology, USA)

Kyle Collins (Georgia Institute of Technology, USA)

Game Theoretic Analysis for Resource Allocation in Dynamic Multi-hop Networks with Arbitration

Laurent Njilla (Air Force Research Laboratory, USA)

Harold Ouete (University of Douala, Cameroon)

Niki Pissinou (Florida International University, USA)

Kia Makki (Technological University of America (TUA), USA)

System-Level Considerations for Modeling Space-Based Quantum Key Distribution Architectures

Logan O. Mailloux (Air Force Institute of Technology, USA)

Benjamin N. Sargeant (Air Force Institute of Technology, USA)

Douglas D. Hodson (Air Force Institute of Technology, USA)

Michael R Grimaila (Air Force Institute of Technology, USA)

13:00 – 14:30

3C2: Decision Making Systems III

Room: Salon Viger B

Session Chair: Saeid Nahavandi (Deakin University, Australia)

A New Decomposition-based Evolutionary Framework for Many-objective Optimization

Burhan Khan (Deakin University, Australia)

Samer Hanoun (Deakin University, Australia)

Michael Johnstone (Deakin University, Australia)

Chee Peng Lim (Deakin University, Australia)

Doug Creighton (Deakin University, Australia)

Saeid Nahavandi (Deakin University, Australia)

Systems Engineering Decision-making: Optimizing and/or Satisficing?

Alex Gorod (The University of Adelaide, Australia)

Tiep Nguyen (The University of Adelaide, Australia)

Leonie Hallo (The University of Adelaide, Australia)

13:00 – 14:30

3C3: Sensors Integration and Applications III

Room: Salon Terrasse

Session Chair: Gholamhossein Ekbatanifard (Lahijan Branch, Islamic Azad University, Iran)

An Energy Aware Dynamic Cluster Head Selection Mechanism for Wireless Sensor Networks

Maryam Kalantari (Islamic Azad University, Iran)

Gholamhossein Ekbatanifard (Islamic Azad University, Iran)

Efficient Harvester with Active Load Modulation and Wide Dynamic Input Power Range for Wireless Power Transfer Applications

A.M. Almohaimed (University of Ottawa, Canada)

M.C.E. Yagoub (University of Ottawa, Canada)

R.E. Amaya (Carleton University, Canada)

Requirements engineering of a micro-UAV defense system

Markus Diehl (Technical University Munich, Germany)

Mirko Hornung (Technical University of Munich, Germany)

13:00 – 14:30

3C5: Gaming, Entertainment and Sensor Systems

Room: Salle de Bal Foyer

Session Chair: Gaetan J. D. R. Hains (Huawei Technologies Co. Ltd., France)

Game Private Networks Performance: From Geolocation to Latency to User Experience

Gaétan Hains (Huawei Technologies Co. Ltd., France)

Youry Khmelevsky (Okanagan College, Canada)

Rob Bartlett (WTFast Inc., BC Canada)

Alex Needham (WTFast Inc., BC Canada)

Tyler Sutherland (WTFast, Canada)

Wednesday, April 26

Gaming Network Delays Investigation and Collection of Very Large-Scale Data Sets

Ben Ward (Okanagan College, Canada)

Youry Khmelevsky (Okanagan College, Canada)

Gaétan Hains (Huawei France R&D Centre, Paris)

Rob Bartlett (WTFast Inc., France)

Alex Needham (WTFast Inc., Canada)

Tyler Sutherland (WTFast Inc., Canada)

13:00 – 14:30

3C6: INCOSE

Room: Salon Viger A

Session Chair: James J. Mulcahy (Florida Atlantic University & MEDNAX, USA)

Reengineering Autonomic Components in Legacy Software Systems: A Case Study

James J. Mulcahy (Florida Atlantic University & MEDNAX, USA)

Shihong Huang (Florida Atlantic University, USA)

Bridging the Gap Across Program Management, Systems Engineering, And Plant Modeling

Raymond K. Jonkers (Colorado State University, USA)

14:30 – 15:00

Break

15:00 – 16:30

3D1: Autonomous Systems II

Room: Salon Viger C

Session Chair: Saeid Nahavandi (Deakin University, Australia)

Towards Trusted Autonomous Vehicles from Vulnerable Road Users Perspective

Khaled Saleh (Deakin University, Australia)

Mohammed Hossny (Deakin University, Australia)

Saeid Nahavandi (Deakin University, Australia)

Analyzing Hazards in System-of-Systems: Described in a Quarry Site Automation Context

Stephan Baumgart (Volvo Construction Equipment, Mälardalen University, Sweden)

Joakim Fröberg (SICS & Swedish Institute of Computer Science, Sweden)

Sasikumar Punnekkat (Mälardalen University, Sweden)

An Energy-Based Flight Planning System for Unmanned Traffic Management

Zhilong Liu (University of California, Berkeley, USA)

Raja Sengupta (University of California, Berkeley, USA)

15:00 – 16:30

3D2: Systems Verification and Validation

Room: Salon Viger B

Session Chair: Sofiene Tahar (Concordia University, Canada)

Formalization of Birth-Death and IID Processes in Higher-order Logic

Liya Liu (Concordia University, Canada)

Osman Hasan (Concordia University, Canada)

Sofiene Tahar (Concordia University, Canada)

Wednesday, April 26

Systems Integration and Verification in an Advanced Smart Factory

George Ball (Raytheon Co., USA)
Christopher Runge (Raytheon Co., USA)
Randy Ramsey (Raytheon Co., USA)
Nicholas Barrett (Raytheon Co., USA)

Improving Adaptive Network Fuzzy Inference System with Levenberg-Marquardt Algorithm

Ana Farhat (Oakland University, USA)
Ka C Cheok (Oakland University, USA)

15:00 – 16:30

3D3: Modeling and Simulation II

Room: Salon Terrasse

Session Chair: John Salmon (Brigham Young University, USA)

An Agent-Based Decision Tool to Explore Urban Climate & Smart City Possibilities

Nasrin Khansari (University of Pennsylvania, USA)
Barry G. Silverman (University of Pennsylvania, USA)
Qing Du (University of Pennsylvania, USA)
John B. Waldt (University of Pennsylvania, USA)
William W. Braham (University of Pennsylvania, USA)
Jae Min Lee (University of Pennsylvania, USA)

Optimization of a Modular Drone Delivery System

Jaihyun Lee (University of Michigan, USA)

15:00 – 16:30

3D4: Energy Management and Sustainability II

Room: Salon Neufchatel

Session Chair: Leila Ismail (UAE University, United Arab Emirates)

Towards an Energy-Aware Task Scheduling (EATS) Framework for Divisible-Load Applications in Cloud Computing Infrastructure

Leila Ismail (United Arab Emirates University, United Arab Emirates (UAE))
Abbas A. Fardoun (United Arab Emirates University, United Arab Emirates (UAE))

Energy Management System for Automated Driving: Optimal and Adaptive Control Strategy for Normal and Failure Case Operation

Kirill Gorelik (Robert Bosch GmbH, Germany)
Ahmet Kilic (Robert Bosch GmbH, Germany)
Roman Obermaisser (University of Siegen, Germany)

An Agent-based Model for the Evidence-Based Long Term Planning of Power and Water Critical Infrastructures

James R. Thompson (The MITRE Corporation, USA)
Damon Frezza (The MITRE Corporation, USA)
Burhan Necioglu (MITRE Corporation, USA)
Michael Cohen (The MITRE Corporation, USA)
Kenneth Hoffman (The MITRE Corporation, USA)
Kristine Rosfjord (The MITRE Corporation, USA)

15:00 – 16:30

3D5: Model-Based Systems Engineering III

Room: Salle de Bal Foyer

Session Chair: Robert Hilbrich (German Aerospace Center (DLR), Germany)

Free and Open Source Fault Tree Analysis Tools Survey

Anis Baklouti (Supméca & ENISo, France)

Nga Nguyen (EISTI, France)

Jean-Yves Choley (SUPMECA, France)

Faïda Mhenni (SUPMECA, France)

Abdelfattah Mlika (ENISo, Tunisia)

Experiences Gained From Modeling and Solving Large Mapping Problems During System Design

Robert Hilbrich (German Aerospace Center, Germany)

Michael Behrlich (German Aerospace Center, Germany)

Experimentable Digital Twins for Model-Based Systems Engineering and Simulation-Based Development

Michael Schluse (Technical University of Aachen, Germany)

Linus Atorf (Institute for Man-Machine Interaction, RWTH Aachen University, Germany)

Juergen Rossmann (Technical University of Aachen, Germany)

15:00 – 16:30

3D6: THEFOSE

Room: Salon Viger A

Session Chairs: William Edmonson (North Carolina A&T State University, USA); Claus Nielsen (Cranfield University, United Kingdom)

Fuzzy Classification Context for the Responsive and Formal Design Process

Solomon Gebreyohannes (NC A&T State University, USA)

William Edmonson (NC A&T State University, USA)

Albert Esterline (NC A&T State University, USA)

Abdollah Homaifar (NC A&T State University, USA)

Nadew Kibret (NC A&T State University, USA)

Applying the VDM Formalism Across Systems Engineering Lifecycles

Claus Ballegaard Nielsen (Cranfield University, United Kingdom)

Systems Theory and a Drive Towards Model-based Safety Analysis

Cody H. Fleming (University of Virginia, USA)

08:00 - 12:00

Registration

Room: Level A Lobby

08:00 - 09:30

4A1: Autonomous Systems II

Room: Salon Viger C

Session Chair: Peter Travis Jardine (Royal Military College of Canada, Canada)

Design of Model Predictive Control via Learning Automata for a Single UAV Load Transportation

Kleber Cabral (Instituto Tecnológico de Aeronáutica, Brazil)

Sergio R. Barros dos Santos (Instituto Tecnológico de Aeronáutica, Brazil)

Sidney N. Givigi (Royal Military College of Canada, Canada)

Cairo L. Nascimento, Jr. (Instituto Tecnológico de Aeronáutica, Brazil)

Experimental Results for Autonomous Model-Predictive Trajectory Planning Tuned with Machine Learning

Peter T. Jardine (Royal Military College of Canada, Canada)

Sidney N. Givigi (Royal Military College of Canada, Canada)

Shahram Yousefi (Queen's University, Canada)

08:00 - 09:30

4A2: Complex Systems Issues I

Room: Salon Viger B

Session Chair: Jawad Ahmad (Glasgow Caledonian University, United Kingdom)

A Systematic Approach to Model and Simulate Controlling Industrial Processes with Uncertainties

Ashraf A. Zaher (American University of Kuwait, Kuwait)

Mounib Khanafer (American University of Kuwait, Kuwait)

Energy Demand Prediction Through Novel Random Neural Network Predictor for Large Non-Domestic Buildings

Jawad Ahmad (Glasgow Caledonian University, United Kingdom)

Hadi Larjani (Glasgow Caledonian University, United Kingdom)

Rohinton Emmanuel (Glasgow Caledonian University, United Kingdom)

Mike Mannion (Glasgow Caledonian University, United Kingdom)

Abbas Javed (Glasgow Caledonian University, United Kingdom)

Mark Phillipson (Glasgow Caledonian University, United Kingdom)

08:00 - 09:30

4A3: Engineering Systems-of-Systems I

Room: Salle de Bal Foyer

A Requirement-Driven Description Methodology for Technology System of Systems

Hanlin You (National University of National Defense, China)

Mengjun Li (National University of Defense Technology, China)

Jiang Jiang (National University of Defense Technology, China)

Bingfeng Ge (National University of Defense Technology, China)

Kewei Yang (National University of Defense Technology, China)

Ming Qiao (National University of Defense Technology, China)

Modeling and Analysis of Health-Information System of Systems for Managing Transitional Complexity Using Engineering Systems Multiple-Domain Matrix

Suguru Okamil (Keio University, Japan)

Naohiko Kohtake (Keio University, Japan)

Systems of Systems Engineering for Particle Accelerator based Research Facilities: A case study on engineering Machine Protection

Thilo Friedrich (European Spallation Source ERIC & Royal Institute of Technology, Stockholm (KTH), Sweden)

Christian Hilbes (ZHAW School of Engineering, Switzerland)

Annika Nordt (European Spallation Source ERIC, Sweden)

08:00 - 09:30

4A4: THEFOSE

Room: Salon Viger A

Session Chairs: Rick Dove (Stevens Institute of Technology, USA); William Edmonson (North Carolina A&T State University, USA)

Case Study: Agile Hardware/Firmware/Software Product Line Engineering at Rockwell Collins

Rick Dove (Paradigm Shift International, USA)

William Schindel (ICTT System Sciences, USA)

Robert (Will) Hartney (Rockwell Collins, USA)

A Language Proposition for System Requirements

Benoit Lebeauvin (CentraleSupélec, France)

Antoine Rauzy (NTNU, Norway)

Jean-Marc Roussel (ENS, France)

09:30 – 10:00

Break

10:00 – 11:30

4B1: Large-Scale Systems Integration

Room: Salon Viger C

Session Chair: Eric Guetre (TRIUMF, Canada)

System engineering for the ARIEL-II project

Eric Guetre (TRIUMF, Canada)

Ontology Mediation to Rule them All: Managing the plurality in Product Service Systems

Uri Shani (IBM, Israel)

Marco Franke (BIBA - Bremer Institut für Produktion und Logistik GmbH, Germany)

Karl A. Hribernik (BIBA - Bremer Institut für Produktion und Logistik GmbH, Germany)

Klaus-Dieter Thoben (BIBA - Bremer Institut für Produktion und Logistik GmbH, Germany)

Nesting in the Evaluation of System Readiness for Complex Systems of Emerging Technologies

Michael Knaggs (US DoE, USA)

Dennis Harkreader (KeyLogic Systems, Inc., USA)

Alfred Unione (KeyLogic Systems, Inc., USA)

John Oelfke (KeyLogic Systems, Inc., USA)

John Ramsey (KeyLogic Systems, Inc., USA)

Dale Kearns (Deloitte, Inc., USA)

Brian Sauser (University of North Texas, USA)

Bradley Atwater (Lockheed Martin Rotary & Mission Systems, USA)

10:00 – 11:30

4B2: Complex Systems Issues II

Room: Salon Viger B

Session Chair: Huy T. Tran (University of Illinois at Urbana-Champaign, USA)

A Hierarchical Framework for Complex Networks Robustness Analysis to Errors

Michel Bessani (University of São Paulo, Brazil)

Júlio A. D. Massignan (University of São Paulo, Brazil)

João B. A. London Jr. (University of São Paulo, Brazil)

Carlos D. Maciel (USP, Brazil)

Rodrigo Zempulski Fanucchi (Copel Distribution S/A, Brazil)

Marcos H. M. Camillo (Copel Distribution S/A, Brazil)

Designing Resilient System-of-Systems Networks

Huy T. Tran (Georgia Institute of Technology)

Jean Charles Domercant (Georgia Institute of Technology, USA)

Dimitri N. Mavris (Georgia Institute of Technology, USA)

Autonomous System Ranking by Topological Characteristics: A Comparative Study

Mehmet Engin Tozal (University of Louisiana, Lafayette, USA)

10:00 – 11:30

4B3: Engineering Systems-of Systems II

Room: Salle de Bal Foyer

Session Chair: Allison Doren (MITRE Corporation, USA)

On the Resilience of Systems of Systems

Matthew P. Summers (Cranfield University, UK)

Stephen G. Barker (Cranfield University, UK)

SysML Executable Systems of System Architecture Definition: A Working Example

Judith Dahmann (MITRE Corporation, USA)

Aleksandra Markina-Khusid (MITRE Corporation, USA)

Allison Doren (MITRE Corporation, USA)

Thomas Wheeler (MITRE Corporation, USA)

Matthew Cotter (MITRE Corporation, USA)

Mike Kelley (MITRE Corporation, USA)

On Defense Strategies for System of Systems Using Aggregated Correlations

Nageswara S. V. Rao (Oak Ridge National Laboratory, USA)

Neena Imam (Oak Ridge National Laboratory, USA)

Chris Y. T. Ma (Hang Seng Management College, Hong Kong)

Kjell Hausken (University of Stavanger, Norway)

Fei He (Texas A&M University-Kingsville, USA)

Jun Zhuang (State University of New York at Buffalo, USA)

10:00 – 11:30

4B4: INCOSE

Room: Salon Viger A

Session Chair: Thomas A. McDermott, Jr (Georgia Tech Research Institute, USA)

Application of Model-Based Systems Engineering Methods and Tools to Improve Emergency Care Delivery

Mohamed Elshal (Indiana University Purdue University Indianapolis, USA)

Hazim El-Mounayri (Indiana University Purdue University Indianapolis, USA)

Rapeepan Promyoo (Indiana University Purdue University Indianapolis, USA)

Ajay Thukral (Indiana University Purdue University Indianapolis, USA)

Vijay Thukral (Indiana University Purdue University Indianapolis, USA)

Alice Mitchell (Indiana University School of Medicine, USA)

ATRIUM - Architecting Under Uncertainty: for ISO 26262 compliance

Naveen Mohan (KTH Royal Institute of Technology, Sweden)

Per Roos (Scania CV AB, Sweden)

Johan Svahn (Scania CV AB, Sweden)

Martin Torngren (KTH Royal Institute of Technology, Sweden)

Sagar Behere (KTH Royal Institute of Technology, Sweden)

INCOSE Academic Research Forum - Future Systems Engineering Research Directions

Jon Wade (Stevens Institute of Technology, USA)

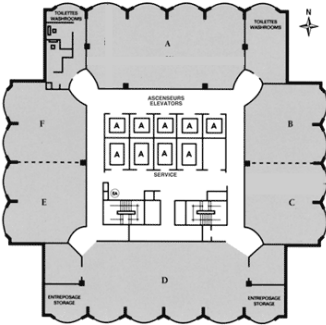
Rick Adcock (Cranfield University, UK)

Tom McDermott (Georgia Institute of Technology, USA)

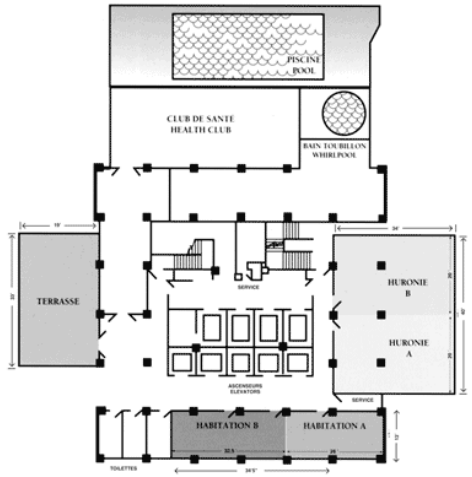
Larry Strawser (Johns Hopkins University, USA)

Floor Plans

Salles Maisonneuve / Maisonneuve Rooms
36^e étage / 36th floor



Niveau Plaza / Plaza Level



Hall inférieur / Lower Lobby

