

Conference Schedule Overview

Tuesday, July 5, 2016

14:00 – 17:00: ISCCBE BOD Meeting (Invitation Only)
17:00 – 19:30: Registration
17:30 – 19:30: Reception (All Attendees)
18:30 – 21:00: ISCCBE BOD Dinner (Invitation Only)

Wednesday, July 6, 2016

08:00 – : Registration
09:00 – 09:30: Opening Ceremony
09:30 – 10:10: Keynote 1
10:10 – 10:30: Intermission
10:30 – 12:30: Parallel Session 1
12:30 – 13:30: Lunch
(12:45 – 13:15: Diamond Sponsor Keynote1)
13:30 – 15:10: Parallel Session 2
15:10 – 15:30: Intermission
15:30 – 17:30: Parallel Session 3
17:30 – 19:00: ASCE TCCIT Education Committee Annual Meeting

Thursday, July 7, 2016

09:00 – 09:40: Keynote 2
09:40 – 10:00: Intermission
10:00 – 11:20: Parallel Session 4
11:20 – 11:40: Intermission
11:40 – 13:00: Parallel Session 5
13:00 – 14:00: Lunch
(13:15 – 13:45: Diamond Sponsor Keynote 2)
14:00 – 19:00: Excursion in Osaka City (All Attendees)
19:00 – 21:00: Banquet (All Attendees)

Friday, July 8, 2016

09:00 – 09:40: Keynote 3
09:40 – 10:00: Intermission
10:00 – 12:00: Parallel Session 6
12:00 – 13:00: Lunch
(12:15 – 12:45: Diamond Sponsor Keynote 3)
13:00 – 15:00: Parallel Session 7
15:00 – 15:20: Intermission
15:20 – 16:00: Closing Ceremony

Saturday, July 9, 2016

Optional Tour to Nara and Kyoto (JPY10,000)

Osaka International Convention Center (OICC, Grand Cube Osaka)

Address: 5-3-51 Nakanoshima, Kita-Ku, Osaka, 530-0005, Japan

Phone: 06-4803-5555

URL: <http://www.gco.co.jp/en/>

Room	Floor	Room Number of OICC
Large Hall	10F	1001 - 1003
Room I	12F	1202
Room II	11F	1101 – 1102
Room III	10F	1006
Room IV	10F	1007
Room V	10F	1009 *
Room VI	10F	1008 *
Room VII	8F	801 – 802
Room VIII	7F	701 – 702 **
Exhibition	10F	1004 - 1005
Reception	3F	EH-A ***

***: N.B.**

**** : For special purposes**

*****: July 5, 2016 only**

Conference Topics

- A. Analysis, Simulation and Sensing
 - A1. Structural Health Monitoring and Sensing
 - A2. Computer-aided Structural Control and Analysis
 - A3. Computational Mechanics
 - A4. Structural or Earthquake Simulations
 - A5. Analysis and Sensing in Geotechnical Engineering
 - A6. Multi-Agent Simulation (MAS)
- B. Building Information Modeling (BIM)
 - B1. BIM for Planning
 - B2. BIM for Design
 - B3. BIM for Construction
 - B4. BIM for Operation and Maintenance
 - B5. BIM for Whole Lifecycle
 - B6. Theory and Modeling for BIM
- C. Civil (Construction) Information Modeling (CIM)
 - C1. CIM for Planning and Design
 - C2. CIM for Construction
 - C3. CIM for Operation and Maintenance
 - C4. CIM for Whole Lifecycle
- D. Urban Planning and Architecture
 - D1. Urban Planning
 - D2. Smart Cities and Smart Buildings
- E. Surveying
- F. Visualization
- G. Virtual Reality and Augmented Reality (VR/AR)
- H. Automation and Robotics for Construction
- I. Asset Management and Maintenance Management
- J. Facility Management and BEMS/HEMS
- K. Big Data, Data Mining and Machine Learning
- L. Education
- M. Others

DAY 1: Wednesday, July 6, 2016

Time	Room I	Room II	Room III
08:00 – 17:30	Registrarion (10F)		
09:00 – 09:30	Opening Ceremony (Large Hall)		
09:30 – 10:10	Keynote Lecture 1: Tatsuo Arai (Large Hall)		
10:10 – 10:30	Intermission		
10:30 – 12:30 (Parallel Session 1)	Session 1- I : A1-1 (Ian F.C. Smith) 004, 005, 024, 110, 204, 215	Session 1- II : B1-1, B6-1 (Hiroshige Dan) 011, 034, 058, 068, 241; 376	Session 1-III: B3-1 (Ming Lu) 352, 045, 069, 133, 186
12:30 – 13:30	Lunch (Large Hall)		
(12:45 – 13:15)	(Lunch Keynote Speech by Diamond Sponsor 1: Autodesk, Inc.)		
13:30 – 15:10 (Parallel Session 2)	Session 2- I : A1-2, A2-1 (Chimay J. Anumba) 248, 340; 019, 050	Session 2- II : B1-2, B2-1 (Ghang Lee) 259 , 334, 339; 044, 066	Session 2-III: B3-2 (Amin Hammad) 188, 190, 194, 195, 199
15:10 – 15:30	Intermission		
15:30 – 17:30 (Parallel Session 3)	Session 3- I : A2-2, A3-1, B4-1 (Markku Heinisuo) 052, 222, 370; 028, 063; 201	Session 3- II : B2-2 (Bimal Kumar) 095, 098, 100, 103, 104, 138	Session 3-III: B3-3 (Vachara Peansupap) 202, 203, 206, 210, 335, 346

DAY 2: Thursday, July 7, 2016

09:00 – 09:40	Keynote Lecture 2: Amin Hammad (Large Hall)		
09:40 – 10:00	Intermission		
10:00 – 11:20 (Parallel Session 4)	Session 4- I : A3-2 (Jun Shang Kuang) 088, 171, 216, 324	Session 4- II : B2-3 (André Borrman) 154, 167, 192, 196	Session 4-III: B3-4, H-1 (Nora El-Gohary) 014, 389; 070, 249
11:20 – 11:40	Intermission		
11:40 – 13:00 (Parallel Session 5)	Session 5- I : A4-1 (Takashi Aruga) 012, 059, 128, 152	Session 5- II : B2-4 (Walid Tizani) 217, 268, 270, 343	Session 5-III: H-2 (Karl E. Beucke) 302, 306, 336
13:00 – 14:00	Lunch (Large Hall)		
(13:15 – 13:45)	(Lunch Keynote Speech by Diamond Sponsor 2: Forum 8 Co., Ltd.)		
14:00 – 19:00	Excursion in Osaka City for All Attendees		
19:00 – 21:00	Banquet at Taiko-En		

DAY 3: Friday, July 8, 2016

09:00 – 09:40	Keynote Lecture 3: André Borrman (Large Hall)		
09:40 – 10:00	Intermission		
10:00 – 12:00 (Parallel Session 6)	Session 6- I : A4-2, A5-1 (Narito Kurata) 155, 320, 356, 360; 129, 172	Session 6- II : K (Hsing-Chih Tsai) 076, 229, 234, 261, 362, 379	Session 6-III: B4-2 (Shang-Hsien Hsieh) 071, 074, 102, 108, 132, 156
12:00 – 13:00	Lunch (Large Hall)		
(12:15 – 12:45)	(Lunch Keynote Speech by Diamond Sponsor 3: KUMONOS Corporation)		
13:00 – 15:00 (Parallel Session 7)	Session 7- I : A5-2, A6-2 (Chien-Cheng Chou) 299, 307, 385, 386; 157, 233	Session 7- II : M-2, A1-3 (Ken-Yu Lin) 086, 111, 166, 220, 387; 317	Session 7-III: B4-3 (Takashi Michikawa) 228 , 262, 265, 286, 318, 329
15:00 – 15:20	Intermission		
15:20 – 16:00	Closing Ceremony (Large Hall)		

Names in parentheses are chairpersons for sessions.

Room IV	Room V	Room VI	Room VII
Session 1-IV: B5-1 (Cheng Zhang) 009, 027, 089, 096, 109, 140	Session 1-V: E-1 (Raja R. A. Issa) 015, 078, 085, 187, 258, 287	Session 1-VI: D1-1 (Kenichi Sugihara) 006, 017, 037, 119, 131, 144	Session 1-VII: I (Satoshi Kubota) 092, 143, 173, 212, 239, 359
Session 2-IV: B5-2 (Nashwan Dawood) 284, 288, 297, 304, 322	Session 2-V: E-2, C1-1 (Renate Fruchter) 141, 209, 383, 384; 043	Session 2-VI: D1-2 (Andrey A. Volkov) 198, 213, 225, 238, 254	Session 2-VII: F-1 (Jack C. P. Cheng) 080, 099, 146, 158, 164
Session 3-IV: B5-3, B6-2 (Peter Demian) 257 325, 382 ; 007, 038, 072, 121	Session 3-V: C1-2, C2-1 (William J. O'Brien) 075, 130, 174, 176, 361; 026	Session 3-VI: D1-3, D2-1 (Jin Yeu Tsou) 263, 264, 337; 021, 030, 065	Session 3-VII: J-1 (Somayeh Asadi) 013, 113, 126, 250, 252, 056
17:30 – 19:00	ASCE TCCIT EdCom Mtg		

Session 4-IV: B6-3 (Xiangyu Wang) 147, 177, 183, 193	Session 4-V: C2-2 (Ian Flood) 031, 060, 061, 081	Session 4-VI: D2-2 (Yaqub Rafiq) 039, 032, 117, 153	Session 4-VII: J-2, G-1 (Ali Motamedi) 001, 046, 281 ; 051 266
Session 5-IV: B6-4 (Eduardo T. Santos) 231, 243, 256, 374	Session 5-V: C2-3, C3-1 (Uwe Rüppel) 175, 331, 375; 159	Session 5-VI: D2-3 (Sebastian R. Skatulla) 224, 275, 278 , 295	Session 5-VII: M-1 (Adel Francis) 041, 042, 048, 083

Session 6-IV: G-2 (Koji Makanae) 064, 073, 149, 191, 205, 211	Session 6-V: C3-2, C4-1 (Fumiki Tanaka) 161, 296, 301, 333; 054, 342	Session 6-VI: A3-3, B1-3, D2-4, H-3 (Adam Fingrut) 118, 357; 181; 321, 327; 120	Session 6-VII: A6-1 (Akinori Tani) 093, 105, 107, 125, 127, 139
Session 7-IV: L (Ivan Mutis) 008, 101, 197, 240, 257 , 266	Session 7-V: C4-2 (Ian Flood) 365, 150, 364, 366, 267, 255	Session 7-VI: F-2 (Kay Smarsly) 290, 303, 276, 003, 135, 179	

Conference Program

DAY 0: Tuesday, July 5, 2016

14:00 – 17:00	ISCCBE BOD Meeting (Invitation Only)	12F
17:00 – 19:00	Registration	3F
17:30 – 19:30	Reception	3F
18:30 – 21:00	ISCCBE BOD Dinner (Invitation Only)	

DAY 1: Wednesday, July 6, 2016

08:00 –	Registration	10F
09:00 – 09:30	Plenary Session: Opening Ceremony	Large Hall
09:30 – 10:10	Plenary Session: Keynote Lecture 1	Large Hall
	Robotics and Automation in Construction <i>Tatsuo Arai</i>	
10:10 – 10:30	Intermission	
10:30 – 12:30	Parallel Session 1	
10:30 – 12:30	1- I (A1-1) Structural Health Monitoring and Sensing (1)	Room I

Chairperson: Ian F.C. Smith

- 004 Monitoring Information Modeling for Semantic Mapping of Structural Health Monitoring Systems
Kay Smarsly and Eike Tauscher
- 005 A New Method for Monitoring Chronological Changes of Cracks Using a Crack Detection System with a Total Station
Kazuhide Nakaniwa, Nobuyoshi Yabuki, Daisuke Nishi, and Proshchanka Dzianis
- 024 Sensor Fusion for Structural Tilt Measurement using 3-Axis Accelerometer and Gyroscope
Cheng Liu, Jongwoong Park, B.F. Spencer, Jr., and Jiansheng Fan
- 110 Measurement-System Design Based on the Expected Utility of Monitoring Actions
Romain Pasquier and Ian F.C. Smith

204 Parking Camera Calibration for Assisting Automated Road Defect Detection
Stefania C. Radopoulou and Ioannis Brilakis

215 Challenges of Bridge Maintenance Inspection
Philipp Hüthwohl, Ruodan Lu, and Ioannis Brilakis

10:30 – 12:30 **1-II** **(B1-1) BIM for Planning (1) and (B6-1) Theory and Modeling for BIM**
(1) **Room II**

Chairperson: Hiroshige Dan

(B1-1) BIM for Planning (1)

011 Application of Structure and Architecture Synergy Framework (SAS) Using BIM
Nawari O. Nawari and T. Chichugova

034 BIM-Driven Library for Islamic Architecture
Ayad Almainani and Nawari O. Nawari

058 Wheelchair Motion Planning with 3D Barrier Information
Hiroshige Dan and Yoshihiro Yasumuro

068 A Topological and Hierarchical Information Integration Approach for Standard-unit-based Residential Planning
Tianfeng He, Jianping Zhang, Jiarui Lin, Weidong Jia, and Zhenzhong Hu

241 Integrating BIM and LCA. Comparison of Different Approaches for the Integration of Lifecycle Information in a Digital Planning Process
Joaquín Díaz, Laura Alvarez-Anton, and Georg Reitschmidt

(B6-1) Theory and Modeling for BIM (1)

376 Managing and Versioning IFC Models Under Semantic Consistency Requirements
Denis Ilyin, Sergey Morozov, Vitaly Semenov, and Vladislav Zolotov

10:30 – 12:30 **1-III** **(B3-1) BIM for Construction (1)** **Room III**

Chairperson: Ming Lu

352 BIM-based Construction Site Layout Planning and Scheduling
Kevin Schwabe, Stephan Liedtke, Markus König, and Jochen Teizer

045 Time-based Construction Waste Management Planning Using Building Information Modeling (BIM)
Jongsung Won and Jack C.P. Cheng

069 Towards Hazards Detection on Building Sites Using Safety Interaction Matrices (SIM)
Michael Kreger and Uwe Rüppel

133 Optimizing Job Sequence and Resource Use in Structural Steel Fabrication Scheduling
Ming-Fung Francis Siu, Ming Lu, and Simaan AbouRizk

186 Developing the Standard Operating Procedures of BIM Collaboration Management for General Contractor
Hui-Hsuan Yang and Yu-Cheng Lin

10:30 – 12:30 **1-IV** **(B5-1) BIM for Whole Lifecycle (1)** **Room IV**

Chairperson: Cheng Zhang

- 009 The Development Process of a Cloud-based BIM Governance Platform
Eissa Alreshidi, Monjur Mourshed, and Yacine Rezgui
- 027 State-of-the-Art and Future Directions of Cloud-based BIM Governance Solutions
Eissa Alreshidi, Monjur Mourshed, and Yacine Rezgui
- 089 An Automatic Hypothesis of Electrical Lines from Range Scans and Photographs
Ulrich Krispel, Henrik Leander Evers, Martin Tamke, and Torsten Ullrich
- 096 Experiencing Interoperability of BIM in a Stadium Project in China
Cheng Zhang, Bo Liu, and Guobin Gong
- 109 Towards Developing a Framework for Managing Knowledge Using BIM Methodology in a Supply Chain
Touria Bouazza, Chika Udeaja, and David Greenwood
- 140 An Overview of Global Research Trends in BIM from Analysis of BIM Publications
Amarnath Chegu Badrinath, Yun-Tsui Chang & Shang-Hsien Hsieh

10:30 – 12:30 1-V (E-1) Surveying (1)

Room V

Chairperson: Raja R. A. Issa

- 015 Evaluating Modeling Indoor Building Environments Using an Unmanned Aerial Vehicle
Wael M. Elhassan, Ghassan Al Laft, Zhenhua Zhu, and Jianli Hao
- 078 A Proactive Scan Planning Framework for Courtyard-Centric Buildings
Meida Chen, Lucio Soibelman, and Burcin Becerik-Gerber
- 085 Quality Enhancement Technique for Similarity-based Polygonization from a Point Cloud
Nao Hidaka, Takashi Michikawa, Nobuyoshi Yabuki, Tomohiro Fukuda, and Ali Motamedi
- 187 Laser Measurements on Experiments on Plate Girders with a very Slender Web under Pure Bending
Roland Abspoel
- 258 Parametric Model for Planning Laser Scanning Jobs in the AECO Industry
Nathan Blinn and Raja R. A. Issa
- 287 Laser-scanned as-built 3D modeling of air-conditioning ducts based on Manhattan world assumption
Masaya Narumi, Satoshi Kanai, Hiroaki Date, Eisuke Wakisaka, and Shintaro Sakamoto

10:30 – 12:30 1-VI (D1-1) Urban Planning (1)

Room VI

Chairperson: Kenichi Sugihara

- 006 Automatic Generation of 3D Town Model for Efficient Solar Photovoltaic Generation
Kenichi Sugihara and Zhenjiang Shen
- 017 Environmental, Social and Economic Challenges for Urban Development: Stakeholder's Perception in a Developing Economy
Raed Fawzi Mohammed Ameen and Monjur Mourshed
- 037 Methodology of Clinical Waste Management System using the GIS-technologies
Svetlana G. Sheina, Jennifer McQuaid-Cook, Liya L. Babenko, and Anastasia V. Khatuntseva

(A2-1) Computer-aided Structural Control and Analysis (1)

- 019 Large-Deformation Folding Analysis of Steel Ring Embedded in Self-Erecting Tent
Thomas Jin-Chee Liu, Li-Wei Chen, Siang-Jyun Meng, and Wei-Ting Chen
- 050 Design Programming of Catenary Shell Using Grasshopper Script
Joo Hong Lee and Thomas Kang

13:30 – 15:10 2-II (B1-2) BIM for Planning (2) and (B2-1) BIM for Design (1) Room II

Chairperson: *Ghang Lee*

(B1-2) BIM for Planning (2)

- 259 Development of Stormwater Controls on Construction Sites Using Computer Analysis Tools
Jintaek Ock, Raja R.A. Issa, and Ian Flood
- 334 Introduction to the Global BIM Dashboard
Ghang Lee, Kyungha Lee, Wooyoung Jung, Kyungran Hwang, Sangil Han, Namchul Jung, Hwayeon Lee, and Minyoung Kim
- 339 Evaluating the Design of Low Carbon Buildings of Different Configurations Using Building Information Modeling (BIM)
Jongsung Won and Jack C.P. Cheng

(B2-1) BIM for Design (1)

- 044 Performance Evaluation of the Design Process Management Practices: The VDC Scorecard and Some Brazilian Case Studies
Saulo Britto, Sergio Scheer, and Calvin Kam
- 066 Building Information Modelling in Change Management: A Case Study
Seong mok Paik, Pekka Leviakangas, Daniel Morrison, Levi Naas, and Xiangyu Wang

13:30 – 15:10 2-III (B3-2) BIM for Construction (2) Room III

Chairperson: *Amin Hammad*

- 188 Applications of Configuration Management in BIM Models Management during the Construction Phase
Hsin-Tzu Hu, Cheng-Ping Lin, and Yu-Cheng Lin
- 190 Development of BIM-based Safety Monitoring System Integrated with WSN Technology
Weng-Fong Cheung and Yu-Cheng Lin
- 194 Applications of BIM Technology for Temporary Safety Planning: A Case Study
Jun-Xiong Chang and Yu-Cheng Lin
- 195 Application of BIM for Interface Management in the Structural Steel Work at the Construction Site
Nan-Hai Lo and Yu-Cheng Lin
- 199 Development of BIM Models Management for General Contractor in Practice
Chia-Chun Chen and Yu-Cheng Lin

13:30 – 15:10 2-IV (B5-2) BIM for Whole Lifecycle (2) Room IV

Chairperson: *Nashwan Dawood*

- 284 Building Information Modeling-based Full Life Cycle Design for Luxury Yacht
Fuyong Liu, Chaohe Chen, and Wei Wu

- 288 Whole lifecycle information flow underpinned by BIM in Qatari construction industry: The ‘Project DNA’ Concept
Nashwan Dawood
- 297 Research on BIM Deliverables for Government Approval of Construction Engineering Projects Based on GIS+BIM Platform
Jianyong Shi, Pai Liu, and Yongxin Chen
- 304 Germany’s governmental BIM initiative – Assessing the performance of the BIM pilot projects
André Borrmann, Markus Hochmuth, Markus König, Thomas Liebich, and Dominic Singer
- 322 A Comparative Analysis of the Building Information Modeling Guides of Korea and Other Countries
Kyungran Hwang and Ghang Lee

13:30 – 15:10 2-V (E-2) Surveying (2) and (C1-1) CIM for Planning and Design (1) Room V

Chairperson: Renate Fruchter

(E-2) Surveying (2)

- 141 Drone Site Data for Better Decisions in AEC Global Teamwork
Renate Fruchter, Steve Herzog, Norman Hallermann, and Guido Morgenthal
- 209 Discover Failure Mechanism of a Landslide Dam using UAV
Kuo-Lung Wang and Zhi-Jie Huang
- 383 Online Image Analysis for Structural Experiments using Mobile Device and Internet of Things Techniques
Chung-Ming Yang and Yuan-Sen Yang
- 384 Development of a New Method for Measurement of Central Axis of Cylindrical Structures Using Total Station
Kazuhide Nakaniwa, Nobuyoshi Yabuki, Daisuke Nishi, and Proshchanka Dzianis

(C1-1) CIM for Planning and Design (1)

- 043 Construction Site Information Collection for Dynamic Site Layout Planning
Xiaoning Ren, Zhenhua Zhu, Chantale Germain, Roger Belair, Zhi Chen, and Fei Dai

13:30 – 15:10 2-VI (D1-2) Urban Planning (2) Room VI

Chairperson: Andrey A. Volkov

- 198 The Role of Rule-Based Procedural Modeling in Urban Planning
Yanwen Luo and Jiang He
- 213 Emergency Humanitarian and Resource Allocation under Disaster Convergence
Mu Huan Chung and Albert Y. Chen
- 225 A Parametric 3d City Model: Basis for Decision Support in Inner-City Development
Nils Seifert, Michael Mühlhaus, and Frank Petzold
- 238 A Transit Planning Model Considering Route Directness and Transfer Coordination
James C. Chu, Chen-Wei Li, and Hua-Yen Wu
- 254 The Effects of Orientation and Elongation on the Price of the Homes in Central Pennsylvania
Shahzad Fadaei, Sohrab Rahimi, Jiro Yoshida, and Lisa D. Iulo

13:30 – 15:10 2-VII (F-1) Visualization (1)

Room VII

Chairperson: Jack C. P. Cheng

- 080 3D Modeling of Workplaces for Time and Motion Study of Construction Labor
Xingzhou Guo, Alireza Golabchi, SangUk Han, and Jim Kanerva
- 099 Application of 4D BIM for Evaluating Different Options of Offshore Oil and Gas Platform Decommissioning
Jack C. P. Cheng, Yi Tan, Xin Liu, and Xiangyu Wang
- 146 Measurement-based Modeling for Simulation of Streetlights Illumination
Yoshihiro Yasumuro, Yusuke Uranaka, and Hiroshige Dan
- 158 Building Envelope Thermal Performance Analysis using BIM-Based 4D Thermal Information Visualization
Worawan Natephra, Ali Motamedi, Nobuyoshi Yabuki, Tomohiro Fukuda, and Takashi Michikawa
- 164 Research on the Alignment Model Automatic Creation Method in 3D Design of Urban Rail Transit (URT)
Cunxi Meng, Xuefu Zhang, Wei Feng, and Yaxin Meng

15:10 – 15:30 Intermission

15:30 – 17:30 Parallel Sessions 3

15:30 – 17:30 3- I (A2-2) Computer-aided Structural Control and Analysis (2) and (A3-1) Computational Mechanics (1) and (B4-1) BIM for Operation and Maintenance (1) Room I

Chairperson: Markku Heinisuo

(A2-2) Computer-aided Structural Control and Analysis (2)

- 052 Computation of Post-Tensioned Slab Deflection under Construction Loads
Ah Sir Cho, Thomas Kang, Keenam Jeong, Yeong Wook Jo, and Byong Kap Jeon
- 222 Validation of Experimental Investigations of Reinforced Concrete Details with Nonlinear Finite Element Simulations
Manuel Koob, Markus Blatt, Daniel Wolff, and Jens Minnert
- 370 Optimization of Viscoelastic Dampers for Vibration Control of Adjacent Building Structures
Ming-Yi Liu, An-Pei Wang, and Ming-Yi Chiu

(A3-1) Computational Mechanics (1)

- 028 Incremental Homogenization Strategy for Masonry Composites
Terry Y.P. Yuen, J.S. Kuang, and Match W.L. Ko
- 063 Cost Optimization of High Strength Steel Structures
Markku Heinisuo, Kristo Mela, Teemu Tiainen, and Timo Jokinen

(B4-1) BIM for Operation and Maintenance (1)

- 201 Development of Initial Plan for BIM Information Management for Facility Management
Wan-Ting Huang and Yu-Cheng Lin

15:30 – 17:30 3-II (B2-2) BIM for Design (2)

Room II

Chairperson: *Bimal Kumar*

- 095 Utilizing BIM Technologies in the Development of a Mixed Media Approach to Health and Safety
Graham Hayne, Bimal Kumar, and Billy Hare
- 098 Integrating Relational Algebra into a Visual Code Checking Language for Information Retrieval from Building Information Models
Cornelius Preidel and André Borrmann
- 100 Supporting the Building Design Process with Graph-based Methods using Centrally Coordinated Federated Databases
Johannes Roith, Christoph Langenhan, and Frank Petzold
- 103 A Multi-Agent-Based Platform for the Early Integration of Photovoltaic Systems in Building Façades
Steffen Franz, Uwe Rüppel, Tilmann E. Kuhn, and Jochen Teizer
- 104 BIM-based Collaboration Platform for the Holistic Integration of Energy Active Façade Components
Christian Leifgen, Tilmann E. Kuhn, Uwe Rüppel, and Jochen Teizer
- 138 A Preliminary Study on BIM Enabled Design Warning Analysis in T3A Terminal of Chongqing Jiangbei International Airport
Amarnath Chegu Badrinath, Yun-Tsui Chang, Emerson Lin, Shang-Hsien Hsieh & Bin Zhao

15:30 – 17:30 3-III (B3-3) BIM for Construction (3)

Room III

Chairperson: *Vachara Peansupap*

- 202 Applications of BIM Technology for Onsite Safety Planning and Communication in Construction
Yi-Syuan Lai and Yu-Cheng Lin
- 203 Applications of BIM Technology for Interior Decoration in Practice
You-Ying Jhang and Yu-Cheng Lin
- 206 Applications of BIM Technology for Reinforced Concrete Building in Practice
Yick-Hong Liao and Yu-Cheng Lin
- 210 The Study of the Adoption in the Field BIM Implementation for Architectural Practice in Taiwan
Yi-Sheng Jhuang and Yu-Cheng Lin
- 335 Preparation of BIM-Based Construction Schedules for Recognition of Process Patterns
Kateryna Sigalov and Markus König
- 346 Levels of Development in BIM for Supporting Cost Estimation of Building Construction Projects
Vachara Peansupap and Seksan Thuanthongdee

15:30 – 17:30 3-IV (B5-3) BIM for Whole Lifecycle (3) and (B6-2) Theory and Modeling for BIM (2)

Room IV

Chairperson: *Peter Demian*

(B5-3) BIM for Whole Lifecycle (3)

- 325 Implementing BIM Uses for Managing Risk in Design-Build Projects
Veerarak Likhitrungsilp, Mervyn Jan S. Malvar, and Tantri N. Handayani

- 382 The Business of Building Information Modeling: Case Study of Thailand
Ponn Virulrak

(B6-2) Theory and Modeling for BIM (2)

- 007 Generic BIM Queries Based on the IFC Object Model using Graph Theory
Eike Tauscher, Hans-Joachim Bargstädt, and Kay Smarsly
- 038 Transforming the BIM Mindset
Renate Fruchter, Glenn Katz, and Flavia Grey
- 072 3DIR: Exploiting Topological Relationships in Three-Dimensional Information Retrieval from BIM Environments
Peter Demian, Kirti Ruikar, Tarun Sahu, and Anne Morris
- 121 Efficient Binary Serialization of IFC Models Using HDF5
Thomas Krijnen and Jakob Beetz

15:30 – 17:30 3-V (C1-2) CIM for Planning and Design (2) and (C2-1) CIM for Construction (1) Room V

Chairperson: *William J. O'Brien*

(C1-2) CIM for Planning and Design (2)

- 075 Data Integration Challenges for CIM in Large Infrastructure: A Case Study of Dallas Horseshoe Project
Bharathwaj Sankaran, Jojo France-Mensah and William J. O'Brien
- 130 BIM-supported Tunnel Light Environment Evaluation: a Case Study on Shanghai Chenxiang Road Tunnel Project
Jun Wang, Lei Hou, and Peng Wu
- 174 Preliminary Verification of the Effects of Introduction of CIM in the Detailed Design Phase of Bridge
Teruaki Kageyama
- 176 City Information Model-Based Damage Estimation in Inundation Condition
Sang-Ho Lee, Junwon Park, and Sang I. Park
- 361 Integrating Production Planning into Road Corridor Evaluation Using ETL
Jan Krantz and Tim Johansson

(C2-1) CIM for Construction (1)

- 026 Assessing Working Vulnerability of Construction Labor Through EEG Signal Processing
Jiayu Chen and Zhenghang Lin

15:30 – 17:30 3-VI (D1-3) Urban Planning (3) and (D2-1) Smart Cities and Smart Buildings (1) Room VI

Chairperson: *Jin Yeu Tsou*

(D1-3) Urban Planning (3)

- 263 Prediction of Building Energy Use and Emissions for Implementing Energy Efficiency and Renewable Energy Programs: toward Sustainable Cities
Dong-Soo Kim and Ravi S. Srinivasan

- 264 Review of Urban-scale Assessments of Environmental Impacts of Buildings
Dong-Soo Kim, Ravi S. Srinivasan, and Abdol R. Chini
- 337 Effect of Urban Planning Practice to the Formation and Dynamic of Urban Heat Island: A Case Study of Hong Kong
Tsou Jin Yeu, Li Xiang, and Chan Chun Hong Felix

(D2-1) Smart Cities and Smart Buildings (1)

- 021 Smart Energy Ranking Game to Improve Energy Efficient User Behavior Based on Smart Metering Data
Robert Irmeler, Christian Schwöbel, and Uwe Rüppel
- 030 Smart Water System Interoperability: Integrating Data and Analytics for Demand Optimized Management through Semantics
Shaun K. Howell, Yacine Rezgui, Tom Beach, Wanqing Zhao, Julia Terlet, and Haijiang Li
- 065 Towards the Development of a Visual Data Exploration Tool to Augment Decision-making in Urban Building Energy Efficiency Programs
Rimas Gulbinas and Rishee K. Jain

15:30 – 17:30 3-VII (J-1) Facility Management and BEMS/HEMS (1) Room VII

Chairperson: *Somayeh Asadi*

- 013 Integrated Management Systems for Corporate Real Estate Management
R. Schach, M. Schmuck, A. Harzdorf, and W. Reclam
- 113 Optimizing Energy-Efficient Building Design Using BIM
Peter Katranuschkov, Raimar Scherer, and René Hoch
- 126 The Study of Establishing a Maintenance Management System for Harbor Structures
Chen-You Jian, Lee-kuo Lin, and Chia-Feng Chang
- 250 Exploring Video Based Thermal Perception Identification
Sina Dabiri and Farrokh Jazizadeh
- 252 An Ontology-Based Approach for Detecting Energy Wasting Behavior of Building Occupants
Kadir Amasyali and Nora El-Gohary
- 056 Integration of End-User Satisfaction in Multi-Objective Optimization Model in Design of High-Performance Commercial Building
Ehsan Mostavi, Reza Foroughi, and Somayeh Asadi

17:30 – 19:00 ASCE TCCIT Education Committee Annual Meeting Room V

DAY 2: Thursday, July 7, 2016

09:00 – 09:40 Plenary Session: Keynote Lecture 2 Large Hall

Smart Construction Site: Recent Research and Future Directions
Amin Hammad

09:40 – 10:00 Intermission

10:00 – 11:20 Parallel Session 4

10:00 – 11:20 4- I (A3-2) Computational Mechanics (2) Room I

Chairperson: Jun Shang Kuang

088 Flexural Behavior of the New Type of Channel Steel-concrete Composite Girder
Ying-Jie Zhu, Jian-Guo Nie, Jian-Sheng Fan, and Mu-Xuan Tao

171 Coupled Continuous-discontinuous Simulation of Rockfall Protection Systems
Wei-Tze Chang and Shang-Hsien Hsieh

216 Numerical Calculation of Effective Stiffness of Composite Shear Walls under Combined Loading
Jia-ji wang, Jian-Sheng Fan, Jian-Guo Nie, and Mu-Xuan Tao

324 Multi-Level Tsunami Disaster Simulation by the Particle Method with a Matrix Array Shaped Virtual Wave Making Plate
Nur Ain Idris, Mitsuteru Asai, and Yoshiya Miyagawa

10:00 – 11:20 4- II (B2-3) BIM for Design (3) Room II

Chairperson: André Borrmann

154 Automatic Quantity Takeoff and Cost Estimation in BIM Design
Wei Zhou, Huanduan Li, Yuzang Huang, and Wei Yu

167 Development of the Criteria for Building Code Checking based on open BIM
Jungsik Choi, Minjae Lee, Jongyeon Bae, and Inhan Kim

192 Performance-Oriented Kinetic Façade Design Based on Interworking Between Physical and Digital Models
Do-Jin Jang and Sung-Ah Kim

196 Development of an openBIM-based Predefined Specification for Improving Interoperability of Building Code Checking System
Jongyeon Bae, Jungsik Choi, Jaemoon Jang, and Inhan Kim

10:00 – 11:20 4-III (B3-4) BIM for Construction (4) and (H-1) Automation and Robotics for Construction (1) Room III

Chairperson: Nora El-Gohary

(B3-4) BIM for Construction (4)

014 Integrating Lean and Safety: A Process-based Approach towards Construction Safety
Jürgen Melzner

- 389 BIM Use in the Production Process Among Medium Sized Contractors – A Survey of Swedish Medium Sized Contractors
Anders Isaksson, Henrik Linderoth, Petra Bosch, and Martin Lennartsson

(H-1) Automation and Robotics for Construction (1)

- 070 RFID Tracking using Robust Support Vector Regression and Kalman Filter in Safety Management of Industrial Plants
Jian Chai, Changzhi Wu, Hung-Lin Chi, and Xiangyu Wang
- 249 Automated Extraction of Environmental Requirements from Contract Specifications
Peng Zhou and Nora El-Gohary

10:00 – 11:20 4-IV (B6-3) Theory and Modeling for BIM (3) Room IV

Chairperson: Xiangyu Wang

- 147 A Relativity Evaluation Approach to Unstructured Document Integration and Retrieval for Building Information Modeling
Yunyi Zhang, Jianping Zhang, Qiang Liu, and Jiarui Lin
- 177 BIM Maturity Implementation for Electrical Manufacturers within the UK: Model Element LOD Creation Using the Information Delivery Manual standard
Ángel Gigante-Barrera and Darshan Ruikar
- 183 Modeling of repetitive IFC Building Elements using the Flyweight Design Pattern Approach
Andre Vonthron and Markus König
- 193 Global Stakeholders' Perception of Key BIM Maturity Indicators
Yunfeng Chen, Hazar Dib, Robert F. Cox, Mark Shaurette, Mihaela Vorvoreanu, Celine Manoosingh, and Marcel Maghiar

10:00 – 11:20 4-V (C2-2) CIM for Construction (2) Room V

Chairperson: Ian Flood

- 031 Development of a Sensor Network Protocol for Non-invasive Detection of Mobile Plant Operation in Construction Sites
Ruwini Edirisinghe and Frank Boukamp
- 060 Productivity Analysis of Construction Worker Activities Using Smartphone Sensors
Reza Akhavian and Amir H. Behzadan
- 061 Impact of Linear Correlation on Construction Project Performance using Stochastic Linear Scheduling
Ricardo Eiris Pereira and Ian Flood
- 081 Proposing a Material-Driven Recovery Schedule Optimization Framework: Spool Fabrication Case
Jing Liu and Ming Lu

10:00 – 11:20 4-VI (D2-2) Smart Cities and Smart Buildings (2) Room VI

Chairperson: Yaqub Rafiq

- 039 Refining Wi-Fi Based Indoor Localization with Li-Fi Assisted Model Calibration in Smart Buildings
Qian Huang, Yuanzhi Zhang, Zhenhao Ge, Chao Lu
- 032 An Informative Tool for Saving Household Energy Consumption
Yaqub Rafiq, Julian Tilbury, Julie Goodhew, Shen Wei, and Pieter De Wilde

- 117 An Interface for the Rule-based Home Automation System
Kamil Hawdziejuk and Ewa Grabska
- 153 Relationship between the Operation Mode of an Air Conditioner, Indoor Air Environment, and Electric Power Consumption using the OSHW
Kenta Urushihara, Akinori Tani, and Yuichiro Yamabe

10:00 – 11:20 4-VII (J-2) Facility Management and BEMS/HEMS (2) and (G-1) Virtual Reality and Augmented Reality (VR/AR) (1) Room VII

Chairperson: *Ali Motamedi*

(J-2) Facility Management and BEMS/HEMS (2)

- 001 Robotic Glass Wall Panels Mounting for Modular Operating Theatres
Alexey Bulgakov, Sergei Emelianov, Thomas Bock, and Daher Sayfeddine
- 046 A Quantitative Way for Measuring the Building User Design Feedback and Evaluation
Shideh S. Amiri, Mahsa Masoudi, Somayeh Asadi, and Ebrahim Karan
- 281 Air Ventilation Assessment – Study on Wind Pressure Ventilation System of Lingnan Vernacular Dwellings during Summer Time
Chen Ke

(G-1) Virtual Reality and Augmented Reality (VR/AR) (1)

- 051 Automatic Signage Visibility Checking System Using BIM-enabled VR Environments
Ali Motamedi, Nobuyoshi Yabuki, Zhe Wang, Tomohiro Fukuda, and Takashi Michikawa

11:20 – 11:40 Intermission

11:40 – 13:00 Parallel Session 5

11:40 – 13:00 5- I (A4-1) Structural or Earthquake Simulations (1) Room I

Chairperson: *Takashi Aruga*

- 012 High Performance Computing for Regional Building Seismic Damage Simulation
Xinzheng Lu, Zhen Xu, Chen Xiong, and Xiang Zeng
- 059 Detailed FEM Simulations for Shaking Table Test of Three-Story Full Scaled Steel Building Structure
Yasunori Mizushima, Yoichi Mukai, and Tomoharu Saruwatari
- 128 Fiber Beam-Column Model Considering Reinforcement Slip Effect for Simulation of an RC Bridge Column Shake-Table Test
Wen-Hao Pan, Mu-Xuan Tao, Jian-Guo Nie, and Di-Xiong Yang
- 152 Application of Automated Model Fitting to Simulation of a Steel Frame with Buckling-Restrained Braces
Ming-Chieh Chuang, Shang-Hsien Hsieh, An-Chien Wu, and Chao-Hsien Li

11:40 – 13:00 5- II (B2-4) BIM for Design (4) Room II

Chairperson: *Walid Tizani*

- 217 Design Change Management Based on Versioning the IFC Models
Aras Jaly-Zada and Walid Tizani

- 268 Extracting Information from Building Information Models to Support Automated Value Analysis
Lu Zhang and Nora El-Gohary
- 270 A Prototype System for Fully Automated Code Checking
Jiansong Zhang and Nora M. El-Gohary
- 343 BIM Implementation in SMEs: an Experience of Cooperation between an Architect Agency and a Carpentry Firm
Elodie Hochscheid, Marc Ribereau-Gayon, Gilles Halin, and Damien Hanser

11:40 – 13:00 5-III (H-2) Automation and Robotics for Construction (2) Room III

Chairperson: *Karl E. Beucke*

(H-2) Automation and Robotics for Construction (2)

- 302 Evaluation Test of an Unmanned Construction Machine Driving System Necessary for Building a Rehabilitation Construction 3DMC System
Shigeki Hiraoka, Richard Jackson, and Toshiyuki Suzuki
- 306 Application of 3D-MC for Road Construction Machine
Tatsuya Yamaguchi, Naoto Kuwada, and Keisuke Ito
- 336 Smartphone Construction Safety Awareness System: A Cyber-Physical System Approach
Wade Genders, Jun Wang, and Saiedeh Razavi

11:40 – 13:00 5-IV (B6-4) Theory and Modeling for BIM (4) Room IV

Chairperson: *Eduardo T. Santos*

- 231 Object Boundaries and Room Detection in As-Is BIM Models from Point Cloud Data
Ioannis Anagnostopoulos, Michael Belsky, and Ioannis Brilakis
- 243 GIS & BIM in Construction – A Timeline Study and the Way Forward
Vaishali Hingmire and Nithin Thomas
- 256 Mining BIM Models: Data Representation and Clustering from Implicit Relationships
Joyce P. M. Delatorre, Fabiano R. Correa, and Eduardo T. Santos
- 374 Model Based Timber Construction
Sebastian Hollermann and Christian Buhr

11:40 – 13:00 5-V (C2-3) CIM for Construction (3) and (C3-1) CIM for Operation and Maintenance (1) Room V

Chairperson: *Uwe Rüppel*

(C2-3) CIM for Construction (3)

- 175 Towards BIM-based model integration and safety analysis for bridge construction
Zhang Xiaoyang, Lin Jiarui, Hu Zhenzhong, Zhang Jianping, Fang Ji, and Du Shenyun
- 331 CIM Initiatives for Tokyo Gaikan Expressway Tajiri Construction Project
Ryosuke Matsumura, Masataka Momma, Takahiro Mitani, Yuichi Matsui, Junichi Matsumoto, and Tsuyoshi Kitahara
- 375 A Review of Linear Transportation Construction Progress Monitoring Techniques
Steven M. Vick and Ioannis Brilakis

(C3-1) CIM for Operation and Maintenance (1)

- 159 A Framework for Data Coordination Method of Maintenance Data and 3D Conceptual Model on CIM Based Database
Katsunori Miyamoto

11:40 – 13:00 5-VI (D2-3) Smart Cities and Smart Buildings (3) Room VI

Chairperson: *Sebastian R. Skatulla*

- 224 Feasibility of Using Pedestrians' Physical Response to Detect Defects on Sidewalk
Hyunsoo Kim, Kanghyeok Yang, and Changbum R. Ahn
- 275 Decision Making Approach for Resiliency Based Rehabilitation Planning of Water Distribution Networks
Farrokh Jazizadeh and Arman Izadi
- 278 EnergyViz: Web-Based Eco-Visualization of Urban Energy Use from Building Benchmarking Data
Constantine E. Kontokosta and Christopher Tull
- 295 Occupancy Estimation in Smart Buildings using Audio-Processing Techniques
Qian Huang, Zhenhao Ge, and Chao Lu

11:40 – 13:00 5-VII (M-1) Others (1) Room VII

Chairperson: *Adel Francis*

- 041 Engagement Detection in Meetings
Maria Frank, Ghassem Tofighi, Haisong Gu, and Renate Fruchter
- 042 Global Teamwork: Components of Engaging and Productive Meetings ...
Maria Frank, Renate Fruchter, and Marianne Leinikka
- 048 Schedule Margins Computation Using the Chronographic Logic
Adel Francis and Edmond Miresco
- 083 SCO-enabled Process Reengineering of Construction Logistics and Supply Chain Management
Yuhan Niu, Weisheng Lu, Diandian Liu, and Ke Chen

13:00 – 14:00 Lunch Large Hall

(13:15 – 13:45 Lunch Keynote Speech by Diamond Sponsor 2: Forum 8 Co., Ltd.)

14:00 – 19:00 Excursion in Osaka City for All Attendees

19:00 – 21:00 Banquet at Taiko-En

URL: <http://www.taiko-en.com/e/>

DAY 3: Friday, July 8, 2016

09:00 – 09:40 Plenary Session: Keynote Lecture 3 Large Hall

BIM for Infrastructure – Current state and future challenges
André Borrmann

09:40 – 10:00 Intermission

10:00 – 12:00 Parallel Session 6

10:00 – 12:00 6- I (A4-2) Structural or Earthquake Simulations (2) and (A5-1) Analysis and Sensing in Geotechnical Engineering (1) Room I

Chairperson: Narito Kurata

(A4-2) Structural or Earthquake Simulations (2)

- 155 A System for Post-earthquake Investigation of Building Damage Based on Smart Phones
Zhen Xu, Xinzheng Lu, Li Deng, Aizhu Ren, and Mowen Xie
- 320 A Study of Bridge Wash-Out Simulation during Tsunami Using a Particle Method Considering Frictional Contact
Bodhinanda Chandra, Mitsuteru Asai and Tomoko Oya
- 356 Comparison of Shaking table Experiments of Tuned Liquid Column Damper with an Elliptical Flow Path Estimation Method
P. Chaiviriyawong, P. Panedpojaman, and S. Limkatanyu
- 360 Computational Simulation of Axial Compression Effect on Seismic Behaviour of Beam-column Joints
S.H. Luk and J.S. Kuang

(A5-1) Analysis and Sensing in Geotechnical Engineering (1)

- 129 Study on Application of MEMS Sensor Network to Monitoring Method of Slope Behavior
Yuya Hatano and Satoshi Nishiyama
- 172 A Low-Cost Slope Monitoring Device Using Off-The-Shelf Components
Yo-Ming Hsieh and Kuo-Lung Wang

10:00 – 12:00 6- II (K) Big Data, Data Mining and Machine Learning Room II

Chairperson: Hsing-Chih Tsai

- 076 A Near-Miss Fall Detection Technique for Ironworkers Using a Hybrid Machine Learning Approach
Kanghyeok Yang, Hyunsoo Kim, Changbum R. Ahn, and Terry L. Stentz
- 229 Data Mining Methods in Structural Reliability Estimation
I-Tung Yang, Willy Husada, and Tri Joko Wahyu Adi
- 234 A Machine Learning Based Approach to Bridge Design Prototyping
Achyuthan Jootoo and David Lattanzi
- 261 Semantic-Based Information Retrieval for Supporting Project Decision Making
Xuan Lv and Nora El-Gohary

362 Simultaneously Scaling and Shifting Design Codes of Ultimate Bearing Capacity of Shallow Foundations Using Weighted Genetic Programming
Hsing-Chih Tsai

379 Preliminary Study on the Long-Term Pavement Performance (LTPP) Program under the Big Data Concept
Jia-Ruey Chang, Ching-Tsung Hung, and Ping-Jung Tseng

10:00 – 12:00 6-III (B4-2) BIM for Operation and Maintenance (2) Room III

Chairperson: *Shang-Hsien Hsieh*

071 BIM Information Quality Analysis for Space Management
Puyan A. Zadeh, Hasan Burak Cavka, and Shery Staub-French

074 Non-intrusive Load Monitoring Using Imaging Time Series and Convolutional Neural Networks
Mohammad Mottahedi1 and Somayeh Asadi

102 A BIM-based Decision Support System Framework for Predictive Maintenance Management of Building Facilities
Jack C.P. Cheng, Weiwei Chen, Yi Tan, and Mingzhu Wang

108 Towards the Use of Cyber-Physical Systems in Facilities Management
Saratu N. Terreno and Chimay. J. Anumba

132 In-building Coverage of Automated External Defibrillators Considering Pedestrian Flow
Cheng-Ta Lee, Albert Y. Chen, and Cheng-Yi Chang

156 Reasoning About Accessibility for Disabled Using Building Graph Models Based on BIM/IFC
Barbara Strug and Grażyna Ślusarczyk

10:00 – 12:00 6-IV (G-2) Virtual Reality and Augmented Reality (VR/AR) (2) Room IV

Chairperson: *Koji Makanae*

064 Design and Implementation of an IFC Data Model to Unity Data Model Transformation Mechanism
Zhong-Qi Wu and I-Chen Wu

073 Effective Balance of Characteristic Factors in Serious Games: A Case Study of Evacuation Simulation Game
Shunichi Kikuchi and Koji Makanae

149 Conceptual Framework of Training Simulator for Heavy Construction Equipment Integrating Sensory Data, Actual Spatial Model, and Multi Agent System
Amin Hammad, Faridaddin Vahdatikhaki, and Khaled El-Ammari

191 Markerless BIM Registration for Mobile Augmented Reality Based Inspection
Marianna Kopsida and Ioannis Brilakis

205 A Multi-player Virtual Reality-based Education Platform for Construction Safety
Xiaowei Luo, Chi-Kwong Wong, and Jiayu Chen

211 Outdoor Augmented Reality using Optical See-Through HMD System for Visualizing Building Information
Munetoshi Miyake, Tomohiro Fukuda, Nobuyohsi Yabuki, Ali Motamedi, and Takashi Michikawa

10:00 – 12:00 6-V (C3-2) CIM for Operation and Maintenance (2) and (C4-1) CIM for Whole Lifecycle (1) Room V

(H-3) Automation and Robotics for Construction (3)

- 120 Learning in Unordered and Static Daily Construction Site Photos for Roof Detection: A Step toward Automated Safety Performance Monitoring for Work on Rooftops
Madhuri Siddula, Fei Dai, Yanfang Ye, and Jianping Fan

10:00 – 12:00 6-VII (A6-1) Multi-Agent Simulation (MAS) (1)

Room VII

Chairperson: *Akinori Tani*

(A6-1) Multi-Agent Simulation (MAS) (1)

- 093 Analyzing a Multi-Agent-System Decision Architecture Aiming to Model the Behavior of Virtual Humans
Oliver Handell and André Borrmann
- 105 Applying Agent-based Modeling to Evaluation of Space Service Quality in an MRT Station
Yi-Chun Lin and I-Chen Wu
- 107 Agent-Based Modeling Approach for Understanding the Impact of Interactions between Construction Workers on Their Safety Related Behaviors
Peiyao Zhang, Dongping Fang, Nan Li, and Zhongming Jiang
- 125 A Study of the Improvement Method of the Cost Estimation System for Public Construction Based on the Comprehensive Bidding Evaluation Method
Satoru Yamaki and Nobuyoshi Yabuki
- 127 4D Simulation for Cooperative Worker Activity Planning
Hiroaki Ishioka
- 139 Study on the Variation in Evacuation Pace Depending on Route Shape:Effect of Route Elements on Evacuation Performance
Hajime Kanehara, Akinori Tani, and Yuichiro Yamabe

12:00 – 13:00 Lunch

Large Hall

(12:15 – 12:45 Lunch Keynote Speech by Diamond Sponsor 3: KUMONOS Corporation)

13:00 – 15:00 Parallel Session 7

13:00 – 15:00 7- I (A5-2) Analysis and Sensing in Geotechnical Engineering (2) and (A6-2) Multi-Agent Simulation (MAS) (2)

Room I

Chairperson: *Chien-Cheng Chou*

(A5-2) Analysis and Sensing in Geotechnical Engineering (2)

- 299 Monitoring the Shift of Bicycles from Sidewalk to Roadway - A New Development of Bicycle Traffic Policy in Japan -
Hiroataka Koike, Teppei Osada, Hideto Hayano, Mamoru Tomoda, Toru Kawarai, and Soki Kano
- 307 Spatial Interpolation of Bangkok Soil Unconfined Compressive Strength Using Inverse Distance Weighting
Thongchai Phothong, Boonsap Witchayangkoon, and Sayan Sirimontree
- 385 Vision Based Traffic Conflict Analytics of Mixed Traffic Flow
Yen-Lin Chiu, Albert Y. Chen, and Meng-Hsiu Hsieh

- 290 Hazard Avoidance System using Augmented Reality in Wearable Device
Kinam Kim, Hongjo Kim, and Hyoungkwan Kim
- 303 A Visualization Technology for shield Tunneling; An Example of the Application to a Monitoring System in Cutting Chamber
Hirokazu Sugiyama, Takehiko Nakaya, Atsushi Nakaya, and Toshiyuki Iwai
- 276 Eye Gaze Tracking Technology Application in Mobile Computing Platform Input Mechanism Study
Tan Qu, Michael Staley, and Wei Sun
- 003 Implementing Haralick Features on GPU for Pavement Distress Detection
Kristina Doycheva, Christian Koch, and Markus König
- 135 Robust Remote Localization from Multi-modal Mobile Sensing and Analytics for Civil and Building Engineering Applications
Hyunchul Yoon, Youngjib Ham, and Billie F. Spencer Jr
- 179 Model-based Pose Estimation for Visual Indoor Progress Monitoring Using Line Features
Christopher Kropp, Christian Koch, and Markus König

15:00 – 15:20 Intermission

15:20 – 16:00 Plenary Session: Closing Ceremony

Large Hall

Notice to Paper Presenters

Each speaker who will give presentation on the accepted paper has 15 minutes for presentation and 5 minutes for questions and answers, total of 20 minutes. The Chairperson will give a 5 minute warning and then a 1 minute warning. The speaker should finish the presentation immediately upon Finish sign.

Each speaker should bring his or her own laptop PC and presentation file and should check the connection of the PC to the beamer (projector) at the designated hall or room. We prepare laptop Windows PCs with MS PowerPoint for all rooms. However, we do not guarantee that your presentation file is compatible with our software and hardware. Especially, if you are going to show videos or special graphics files, you should bring your own PC. Please note that Windows and PowerPoint are Japanese version and no Apple Macs are provided. Furthermore, please bring your AC cable and adapter to outlets in Japan.

Notice to Chairpersons

All chairpersons should keep the time as planned. Please show the 5 minute warning after 10 minutes passed and the 1 minute warning after 14 minutes passed. When 15 minutes passed, please show Finish sign. If the speaker continues to speak, please tell him or her to finish.

After the presentation, please encourage the audience to ask questions or give comments. It is very important for speakers to be asked questions in order to improve the contents for publishing journal papers in the future. If no one asks questions, please ask the speaker by yourself. In the large halls, please use the chairperson's microphone. Our staff student will bring a microphone to the questioner. The total time for each speaker is 20 minutes. If many people raise hands for questions, please control and finish Q&A session as planned. If you encounter a rude questioner, who gives very harsh and rough comments to speakers, please give him or her a mild warning.

Please introduce each speaker before presentation. Each speaker is asked to fill out a short CV so that you can read it. After the presentation, please give a hand to each speaker.