

# eg-ice 2015

**22<sup>nd</sup> EG-ICE International Workshop of the**

**European Group of Intelligent Computing in  
Engineering**

**Eindhoven University of Technology, The Netherlands  
July, 13-15th 2015**

## Program and abstracts

## Workshop participants

Professor Robert Amor	Auckland	New Zealand
Professor Mehul Bhatt	Bremen	Germany
Eng. Alberto Beltrami	Gandino(BG)	Italy
Leon van Berlo	TNO	Netherlands
Sjonnie Boonstra	Eindhoven	Netherlands
Prof. Andre Borrmann	Munich	Germany
Dr Ioannis Brilakis	Cambridge	United Kingdom
Simon Daum	Munich	Germany
Matthias Flurl	München	Germany
Steffen Franz	Darmstadt	Germany
Kristina Georgieva	Bochum	Germany
Philipp Geyer	Leuven	Belgium
Prof. Ewa Grabska	Krakow	Poland
Veronika Hartmann	Weimar	Germany
Minkoo Kim	Daegu	Korea, Republic Of
Dr Christian Koch	Nottingham	United Kingdom
Christopher Kropp	Bochum	Germany
Rodrigo Leal	Lisboa	Portugal
Fernanda Leite	Austin	United States
Professor J.P. Mohsen	Louisville, KY	United States
Wojciech Palacz	Kraków	Poland
Pieter Pauwels	Sint-Niklaas	Belgium
Stefania Christina Radopoulou	CAMBRIDGE	United Kingdom
Dr Yaqub Rafiq	Plymouth	United Kingdom
Prof Francisco Regateiro	Lisboa	Portugal
Prof. Dr.-Ing. Uwe Rüppel	Darmstadt	Germany
Prof. Zita Sampaio	Lisbon	Portugal
Kateryna Sigalov	Essen	Germany
Grazyna Slusarczyk	Krakow	Poland
Prof. Dr. Kay Smarsly	Weimar	Germany
Ian Smith	Lausanne	Switzerland
Barbara Strug	Krakow	Poland
Georg Suter	Vienna	Austria
Ann Sychterz	Lausanne	Switzerland
Walter Terkaj	Milano	Italy
Herman Winkels	Utrecht	Netherlands

### Local organizing committee:

- Jakob Beetz [Eindhoven University]
- Leon van Berlo [TNO]
- Timo Hartmann [Twente University]
- Karin van Nisselroij [Eindhoven University]
- Thomas Krijnen [Eindhoven University]
- Chi Zhang [Eindhoven University]

### Emergency numbers:

- ++ 31 40 247 2280 (Karin Nisselroij)
- ++ 49 176 20 10 42 70 (Jakob mobile)

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## Program

### Sunday, July 12<sup>th</sup>

19:00-22:00	Van Moll	EG-ICE-Breaker welcome reception in the Van Moll micro brewery in the city center of Eindhoven, close to hotels and workshop venue See <a href="#">the interactive workshop map</a> and <a href="#">local information</a>
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### Monday, July 13<sup>th</sup>

Time	ID	Presentation	Authors
9:30		Welcome and registration Zwarte Doos	
10:00		Opening and welcome Welcome to all workshop participants, introduction to the program, location etc.	Jakob Beetz
10:15		Keynote lecture <b>Engineering: Open BIM standards in the Netherlands</b>	Herman Winkels, Ministry of Infrastructure, Chairman <a href="#">BIM Loket</a>
11:00	22	<b>Winner of the Best Paper Award 2014:</b> Automated Detection of Road Defects for Enhanced Pavement Condition Assessment	<b>Stefania-Christina Radopoulou</b> , Ioannis Brilakis ( <i>University of Cambridge</i> )
11:30		Break	
12:00		Session 1: <b>BIM applications and analysis</b>	<i>Chair: Leon van Berlo</i>
	55	Optimization for 3D Printing of concrete structures	Rob Wolfs, Theo Salet ( <i>TU Eindhoven</i> )
	32	Conflict analysis using BIM tools	Alcinia Z Sampaio, Edgar P Bardeja ( <i>University of Lisbon</i> ,

<b>Time</b>	<b>ID</b>	<b>Presentation</b>	<b>Authors</b>
			<i>Dep. Civil Engineering and Architecture)</i>
	15	Simplifying the Analysis of Building Information Models Using tQL4BIM and vQL4BIM	Simon Daum, André Borrmann <i>(TU München CMS)</i>
13:00		Lunch: Restaurant Zwarte Doos	
14:30		Session 2: <b>BIM and scheduling</b>	<i>Chair: Timo Hartmann</i>
	26	Similarity estimation of BIM-based schedules	Kateryna Sigalov, Markus König <i>(Chair of Computing in Engineering, Ruhr-Universität Bochum)</i>
	27	Integrating visual state recognition with 4D BIM based indoor progress monitoring	Christopher Kropp, <i>(Ruhr-Universität Bochum)</i> , Christian Koch <i>(The University of Nottingham)</i> , Markus König <i>(Ruhr-Universität Bochum)</i>
	28	Assessment and optimization of the robustness of construction schedules	Veronika Hartmann, Kay Smarsly <i>(Bauhaus-Universität Weimar)</i>
15:30		break	
15:45		Session 3: <b>As-Built BIM</b>	<i>Chair: Simon Daum</i>
	1	BIM technology in the maintenance of building components	Alcinia Z Sampaio, Diogo Simoes <i>(University of Lisbon, Dep. Civil Engineering and Architecture)</i>
	40	Extending IFC with point cloud data	Thomas Krijnen, Jakob Beetz <i>(TU Eindhoven)</i> , Sebastian Ochman, Richard Vock, Raoul Wessel <i>(University of Bonn)</i>
16:30		Tour through facilities of TU/e	
17:30		EG-ICE board meeting Zwarte Doos	
from 18:15 onwards		Barbeque on the terrace of the workshop venue Zwarte Doos	

## Tuesday, July 14<sup>th</sup>

Time	ID	Presentation	Authors
10:00-10:30		Get together	
10:30		<b>Session 4: Energy and Building Physics</b>	<i>Chair: André Borrmann</i>
	41	Identifying Thermal Microgrids on the Basis of Fuzzy Logic	Philipp Geyer ( <i>KU Leuven</i> ), Fabian Ritter ( <i>TU München</i> )
	23	Automated assessment of precipitation forecasts based on visual pattern recognition and supervised machine learning	Kristina Georgieva, Gordon Horn ( <i>Ruhr-University Bochum</i> ), Christian Koch, ( <i>The University of Nottingham</i> ), Andreas Schumann, Markus Koenig ( <i>Ruhr-University Bochum</i> )
	38	Dynamic Blind Control: A Simulation Approach for Energy Efficiency	Rodrigo Leal, Francisco Regateiro, Maria Gomes ( <i>Instituto Superior Técnico</i> )
	39	Towards an optimal topology for hybrid energy networks	Wiet Mazairac ( <i>Eindhoven University of Technology</i> ), Robbe Salenbien ( <i>Flemish Institute for Technological Research</i> ), Bauke de Vries, ( <i>Eindhoven University of Technology</i> )
12:00		Lunch	
13:30		<b>Session 5: Sensor data and Infrastructure</b>	<i>Chair: Ioannis Brilakis</i>
	33	Laser scanning based automated dimensional inspection of atypical precast concrete slabs	Min-Koo Kim, JoonWoo Park ( <i>Korea Advanced Institute of Science and Technology</i> ), Qian Wang ( <i>Hong Kong University of Science and Technology</i> ), Hoon Sohn ( <i>Korea Advanced Institute of Science and Technology</i> )
	18	Supporting forensic fire cause analysis with next generation mobile devices by 3D-reconstruction based on multiple integrated sensor data	Steffen Franz, Uwe Rüppel ( <i>TU Darmstadt</i> )
	11	Towards a Collaborative Knowledge-based Engineering System for Infrastructure Design	Matthias Flurl, Dominic Singer, Ralf-Peter Mundani, Ernst Rank, André Borrmann ( <i>TU München</i> )
14:30		break	

<b>Time</b>	<b>ID</b>	<b>Presentation</b>	<b>Authors</b>
15:00		Session 6: <b>Computational applications in Building Technology</b>	<i>Chair: Phillip Geyer</i>
	34	Mid-span connection of a deployable tensegrity footbridge	Nicolas Veuve, Seif Dalil Safaei, Ian F.C. Smith, Ann Sychterz (presenter) ( <i>Swiss Federal Institute of Technology (EPFL), Lausanne</i> )
	37	Towards an integrated decision tool for evaluation of energy performance during building and plant design.	Alberto Beltrami ( <i>University of Bergamo, Dept. of Engineering and Applied Science</i> ), Rory Jones, Pieter de Wilde ( <i>Plymouth University, Building Performance Analysis Group</i> ), Marco Picco ( <i>University of Bergamo, Dept. of Engineering and Applied Science</i> ), Marco Marengo ( <i>University of Brighton, School of Computing, Engineering and Mathematics</i> )
	44	Generation of a hierarchic structure via 3D-topology optimisation using black and white filtering	Sjonnie Boonstra, Hèrm Hofmeyer, ( <i>Eindhoven University of Technology</i> )
16:00		EG-ICE General Assembly (open to all)	
17:00		Transfer to field trip / dinner location	
17:30		Guided tour through the Strijp-S redevelopment area from the former <a href="#">Philips Lightbulb factory</a> to the "creative and cultural center of Eindhoven"	
around 19:00		Workshop Dinner at <a href="#">Radio Royaal</a> , a restaurant situated in former machine hall in the Strijp-S area with a unique industrial flair	

