

ECPPM 2021

CONFERENCE PROGRAMME

EUROPEAN CONFERENCE ON PRODUCT AND PROCESS MODELING 2020-2021

15 - 16 SEPTEMBER 2021

Moscow, Russian Federation



Conference Organisers:



PROGRAMME OVERVIEW

Virtual ROOMS

Room A: opening, plenary sessions, thematic sections in the left column of the program tables, closing

Room B: thematic sections in right column of the program tables

Room C: EAPPM assembly meeting

All times are indicated in CEST (UTC+2)

Wednesday, 15th and Thursday, 16th of September

Time/Day	Wednesday, 15 th of September		Thursday, 16 th of September	
9:00-9:15	Registration			
9:15-10:45	Opening Prof. Vitaly Semenov, ISP RAS, Moscow Prof. Raimar Scherer, TU Dresden Plenary session Philipp Nikandrov, GORPROJECT, Russia		Plenary session Prof. Franz Baader, TU Dresden Dr. Thomas Liebich, AEC3, buildingSmart, Germany	
10:45-11:00	Coffee break		Coffee break	
11:00-13:00	ICT impacts on BIM standardization and regulation	Models, methods, tools for design, engineering and construction (I)	Digital twins and cyber-physical systems (I)	Applications of artificial intelligence (I)
13:00-13:45	Lunch break		Lunch break	
13:45-15:45	Key aspects of data integration and management (I)	Models, methods, tools for design, engineering and construction (II)	Digital twins and cyber-physical systems (II)	Applications of artificial intelligence (II)
		City and building information modelling	Photogrammetry, laser scanning and point clouds	Organizational, perceptual and technological issues of BIM adoption (I)
15:45-16:00	Coffee break		Coffee break	
16:00-18:00	Key aspects of data integration and management (II)	BIM education and adoption	Environmental, social and economic dimensions of sustainability	Organizational, perceptual and technological issues of BIM adoption (II)
18:00-19:00	EAPPM Assembly Meeting		Closing Session	

Wednesday, 15th of September

Time/Day	Wednesday, 15 th of September	
9:00-9:15	Zoom Registration	
9:15-10:45	<p>Opening Prof. Vitaly Semenov, ISP RAS, Moscow Prof. Raimar Scherer, TU Dresden</p> <p>Plenary session Philipp Nikandrov, GORPROJECT, Russia BIM-based design of megatall projects: Lakhta Center case</p> <p><i>Chair: Prof. Vera Galishnikova – Moscow State University of Civil Engineering, Russia</i></p>	
10:45-11:00	Coffee break	
11:00-13:00	<p>ICT impacts on BIM standardization and regulation <i>Chair: Prof. Robert Amor – University of Auckland, New Zealand</i></p>	<p>Models, methods, tools for design, engineering and construction (I) <i>Chair: Univ. Prof. Ardeshir Mahdavi – TU Wien, Austria</i></p>
11:00-11:20	<p>Digital description of the railway telecommunication system for a new data exchange format <i>Achraf Dsou, S. Karoui, J.D. Adounvo, P.E. Gautier, J.G. Philibert, C. Carpinteri, L. Lihai, L. Yifan & M. Boutros</i></p>	<p>Archi-guide. Architect-friendly visualization assistance tool to compare and evaluate BIM-based design variants in early design phases using template-based methodology <i>K. Jaskula, Ata Zahedi & F. Petzold</i></p>
11:20-11:40	<p>A critical analysis of linear placement in IFC models <i>Štefan Jaud, S. Esser, A. Borrmann, L. Wikstrom, S. Muhič & J. Mirtschin</i></p>	<p>Polyhedral space partitioning as an alternative to component assembly <i>Vera Galishnikova & W. Huhnt</i></p>
11:40-12:00	<p>IFC query language: leveraging power of EXPRESS and JSON <i>Sergey Morozov, S. Sazonov & V. Semenov</i></p>	<p>A hierarchical kit library to support content reuse for mass customization <i>Jianpeng Cao & D. M. Hall</i></p>
12:00-12:20	<p>DigiPLACE: Towards a reference architecture framework for digital platforms in the EU construction sector <i>Alexis David, A. Zarli, C. Mirarchi, N. Naville & L. Perissich</i></p>	<p>Navigating the vast landscape of spatially valid renovation scenarios <i>A. Kamari, B. Li & Carl Schultz</i></p>
12:20-12:40	<p>Using uncertainty to link compliance and creativity <i>Nicholas Nisbet</i></p>	<p>Towards semantic enrichment of early-design timber models for noise and vibration analysis <i>Camille Châteauvieux-Hellwig, J. Abualdenien & A. Borrmann</i></p>
12:40-13:00	<p>Building permit process modeling <i>Judith Fauth</i></p>	<p>Approaching the human dimension of building performance via agent-based modeling <i>Christiane Berger & A. Mahdavi</i></p>
13:00-13:45	Lunch break	
13:45-15:45	<p>Key aspects of data integration and management (I) <i>Chair: Prof. Jakob Beetz – RWTH University Aachen, Germany</i></p>	<p>Models, methods, tools for design, engineering and construction (II) City and building information modelling <i>Chair: Dr. Pieter Pauwels – Eindhoven University of Technology, the Netherlands</i></p>
13:45-14:05	<p>Towards conceptual interoperability of BIM applications: transaction management versus data exchange <i>Vitaly Semenov, S. Arishin & G. Semenov</i></p>	<p>Requirements analysis for a project-related quality management system in the construction execution <i>Sebastian Seiß & H.-J. Bargstädt</i></p>
14:05-14:25	<p>A system architecture ensuring consistency among distributed, heterogeneous information models for civil infrastructure projects <i>Sebastian Esser & A. Borrmann</i></p>	<p>BIM-based cost estimation in a road project – proof of concept and practice <i>David Fürstenberg, T. Gulichsen, O. Lædre & E. Hjelseth</i></p>
14:25-14:45	<p>A framework for leveraging semantic interoperability between BIM applications <i>Michael Belsky</i></p>	<p>A new approach for delay analysis process <i>Attila Dikbas & Can Durmus</i></p>
14:45-15:05	<p>Evaluating SPARQL-based model checking: potentials and limitations <i>André Hoffmann, M. Shi, A. Wagner, C.-D. Thiele, T.-J. Huyeng, U. Rüppel & W. Sprenger</i></p>	<p>A trend review on BIM applications for smart cities <i>Aritra Pal & S.H. Hsieh</i></p>
15:05-15:25	<p>A BIM to BEM approach for data exchange: advantages and weaknesses for industrial buildings energy assessment <i>Matteo Del Giudice, M. Dettori, S. Magnano & A. Osello</i></p>	<p>Matching geometry standards for geospatial and product data <i>Helga Tauscher</i></p>
15:25-15:45	<p>Microservice system architecture for data exchange in AEC industry <i>Goran Šibenik, I. Kovacic, T.-J. Huyeng, C.-D. Thiele & W. Sprenger</i></p>	<p>City and building information modelling using IFC standard <i>V. Shutkin, N. Morozkin, Vladislav Zolotov & V. Semenov</i></p>
15:45-16:00	Coffee break	

Wednesday, 15th of September

15:45-16:00	Coffee break	
16:00-18:00	Key aspects of data integration and management (II) <i>Chair: Dr. Alain Zarli – R2M Solution, France</i>	BIM education and adoption <i>Chair: Prof. Boyan Georgiev – University of Architecture, Civil Engineering and Geodesy, Bulgaria</i>
16:00-16:20	Occupant-centric ontology as a bridge between domain knowledge and computational applications <i>Ardeshir Mahdavi, V. Bochukova & C. Berger</i>	Experiences from large scale VDC-education in Norway <i>Eilif Hjelseth & M. Fischer</i>
16:20-16:40	Application of ontologically streamlined data for building performance analysis <i>Dawid Wolosiuk & A. Mahdavi</i>	Analysis of digital education in construction management degree programs in Germany and development of a training model for BIM teaching <i>Marianne Pieper, S. Seiß & A. Nast</i>
16:40-17:00	Interlinking geometric and semantic information for an automated structural analysis of buildings using semantic web <i>Tim-Jonathan Huyeng, C.-D. Thiele, A. Wagner, M. Shi, A. Hoffmann, U. Rüppel & W. Sprenger</i>	Analysis of the influencing factors for the practical application of BIM in combination with AI in Germany <i>Anna Nast & A. Doroschkin</i>
17:00-17:20	Analysis of design phase processes with BIM for blockchain implementation <i>Marijana Srečković, G. Šibenik, D. Breitfuß, T. Preindl & W. Kastner</i>	The practice of VDC framework as a performance measurement system for projects <i>Saad B.S. Ahmad & E. Hjelseth</i>
17:20-17:40	Digital traceability for planning processes <i>Dominik Breitfuss, G. Šibenik & M. Srečković</i>	Practical experiences from initiating development of machine learning in a consulting engineering company <i>Torkild Alstad & E. Hjelseth</i>
17:40-18:00		Applying activity theory to get increased understanding of collaboration within the VDC framework <i>E. Hjelseth & Sujesh Sujan</i>
18:00-19:00	EAPPM Assembly Meeting <i>Chair: Prof. Raimar Scherer</i>	

Thursday, 16th of September

Time/Day	Thursday, 16 th of September	
9:00-10:45	Plenary session Prof. Franz Baader, TU Dresden A Description Logic journey Dr. Thomas Liebich, AEC3, buildingSmart, Germany OpenBIM. Quarter century development and perspectives of IFC standard <i>Chair: Dr. Ana Roxin – University of Bourgogne Franche-Comté, France</i>	
10:45-11:00	Coffee break	
11:00-13:00	Digital twins and cyber-physical systems (I) <i>Chair: Dr. Helga Tauscher – Dresden University of Applied Sciences, Germany</i>	Applications of artificial intelligence (I) <i>Chair: Prof. Adam Borkowski. – Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland</i>
11:00-11:20	A cyber physical system for dynamic production adaptation <i>Michael Polter, P. Katranuschkov & R.J. Scherer</i>	Defeasible reasoning for automated building code compliance checking <i>Beidi Li, C. Schultz, J. Dimyadi & R. Amor</i>
11:20-11:40	A Digital Twin factory for construction <i>Calin Boje, S. Kubicki, A. Zarli & Y. Rezgui</i>	Metadata based multi-class text classification in engineering project platform <i>Meiling Shi, A. Hoffmann & U. Rüppel</i>
11:40-12:00	A framework for development and integration of digital twins in construction <i>Alessandra Corneli, B. Naticchia, A. Carbonari & M. Vaccarini</i>	Using Topic Modeling to restructure the archive system of the German Waterways and Shipping Administration <i>André Hoffmann, M. Shi & U. Rüppel</i>
12:00-12:20	Digital Twin as a framework for a machine learning based predictive maintenance system <i>Christian-Dominik Thiele, J. Brötzmann, T.-J. Huyeng, U. Rüppel, S. R. Lorenzen, H. Berthold & J. Schneider</i>	Applying weak supervision to classify scarce labeled technical documents <i>Meiling Shi, A. Hoffmann & U. Rüppel</i>
12:20-12:40	Lifecycle oriented digital twin approach for prefabricated concrete modules <i>M. Wolf, Oliver Vogt, J. Huxoll, D. Gerhard, Simon Kosse & M. König</i>	An overview of data mining application for structural damage detection in the last decade (2009 – 2019) <i>Fangzheng Lin, J. Liu & R.J. Scherer</i>
12:40-13:00		Assumption of undetected construction damages by utilizing description logic and fuzzy set theory in a semantic web environment <i>Al-Hakam Hamdan & R.J. Scherer</i>
13:00-13:45	Lunch break	
13:45-15:45	Digital twins and cyber-physical systems (II) Photogrammetry, laser scanning and point clouds <i>Chair: Dr. Dimitrios Rovas – University College London, UK</i>	Applications of artificial intelligence (II) Organizational, perceptual and technological issues of BIM adoption (I) <i>Chair: Prof. Žiga Turk – University of Ljubljana, Slovenia</i>
13:45-14:05	Semantic contextualization of BAS data points for scalable HVAC monitoring <i>Ville Kukkonen</i>	An AI-based approach for automated work progress estimation from construction activities using abductive reasoning <i>Karsten Johansen, R. O. Nielsen, J. Teizer & C. Schultz</i>
14:05-14:25	Integrating sensor- and building data flows: a case study of the IEQ of an office building in the Netherlands <i>S. van Gool, Dajuan Yang & P. Pauwels</i>	METIS-GAN: An approach to generate spatial configurations using deep learning and semantic building models <i>Hardik Arora, C. Langenhan, F. Petzold, V. Eisenstadt & K.-D. Althoff</i>
14:25-14:45	Combining point-cloud-to-model-comparison with image recognition to automate progress monitoring in road construction <i>Andreas Ellinger, C. Wörner, T. Walther & P. Vala</i>	“We need better software” – the users’ perception of BIM <i>Anders Rekve & E. Hjelseth</i>
14:45-15:05	The use of the BIM-model and scanning in quality assurance of bridge constructions <i>Christian Nordahl Rolfsen, H. Hosamo, A.K. Lassen, D. Han & C. Ying</i>	Development needs on the way to information-efficient BIM-based supply chain management of prefabricated engineer-to-order structures <i>P. Lahdenperä, Markku Kiviniemi, R. Lavikka & A. Peltokorpi</i>
15:05-15:25	Application of railway topology for the automated generation of geometric digital twins of railway masts <i>M.R. Mahendrini Fernando Ariyachandra & I. Brilakis</i>	A systematic review of project management information systems for heavy civil construction projects <i>Wenjun Chen, M. Leon & P. Benton</i>
15:25-15:45		BIM model uses through BIM methodology standardization <i>A. Barbero, M. Del Giudice, Francesca Maria Ugliotti & A. Osello</i>
15:45-16:00	Coffee break	

Thursday, 16th of September

15:45-16:00	Coffee break	
16:00-18:00	Environmental, social and economic dimensions of sustainability <i>Chair: Prof. Attila Dikbaş – İstanbul Teknik Üniversitesi, Turkey</i>	Organizational, perceptual and technological issues of BIM adoption (II) <i>Chair: Prof. Eilif Hjelseth – Norwegian University of Science and Technology, Norway</i>
16:00-16:20	From linear to circular: Circular Economy in the Danish construction industry <i>T.S. Rasmussen, Ricardo Esclusa, E. Petrova & K.D. Bohnstedt</i>	Housing energy-efficient renovation adoption and diffusion: a conceptual model for household decision-making process <i>Hua Du, Q. Han & B. de Vries</i>
16:20-16:40	A BIM-based tool for the environmental and economic assessment of materials in a building within early design stages <i>Q. Han, Nuo Zhang & C.D. Van Oeveren</i>	Multi-stakeholder involvement in construction and challenges of BIM implementation <i>Zeynep Yazicioğlu</i>
16:40-17:00	Digital technologies as a catalyst to elevating IPD+BIM synergy in sustainable renovation of heritage buildings <i>Bani Feriel Brahmi, S. Sassi-Boudemagh, I. Kitouni & A. Kamari</i>	Impacts of BIM Implementation on construction management processes in Turkey <i>Yigit Beslioglu & İ. Akyaz</i>
17:00-17:20	Evaluating the concept and value of smart buildings for the development of a smarter procurement strategy <i>J. Olsen & Jan Karlshøj</i>	Building information modeling warnings towards a deadline <i>Lasse Damhus, P. N. Gade & R. Qian</i>
17:20-17:40	A conceptual method for data-driven analysis of project process and context to study collaboration A conceptual method to compare projects by combining assessment of controllable and non-controllable factors <i>Sujesh Sujan & E. Hjelseth</i>	The role of trust in the adoption of BIM-systems <i>Peter Nørkjær Gade, J. de Godoy & K. Otrell-Cass</i>
17:40-18:00	Exploring the degree of automated process metrics in construction management <i>Kamalan Rashasingham & E. Hjelseth</i>	
18:00-19:00	Closing Session <i>Chairs: Prof. Vitaly Semenov & Prof. Raimar Scherer</i>	