

I-ESA 2018: Interoperability of Enterprise Systems and Application - Smart Services and Business Impact of Enterprise

What make the difference of I-ESA Workshops, which are the benefits?

Compared to the traditional conferences with scientific papers reporting on completed research, the I-ESA workshops focus on ongoing research, on new applications of Enterprise Interoperability (EI) and on transfer towards industry. The highly innovative business- and engineering related topics are very close to those of the I-ESA conference, but are more oriented to ICT projects. Typical issues concern for instance enterprise digitalization, Virtual Factories, Manufacturing Decision Support, Smart Services, Big Data applications and platforms.

I-ESA workshops-focus on past or present International, European and national research projects and facilitate the exploitation of the project results. The workshops enable efficient exchange of knowledge between the workshop participants. They offer debates of research directions in small expert groups as well as exercises with EI use cases. The published final version the workshop papers is enriched with the most actual results of the discussions held at the workshop.

The workshops are co-located with the I-ESA conference. During the last five I-ESA conferences, a series of publications of the workshop proceedings has been built up. All workshop papers are peer reviewed for acceptance. The workshop proceedings will be published by ISTE-Wiley, a worldwide operating publisher in science and engineering.

With ISTE-Wiley, we presently donot have the opportunity to track each paper or author name directly, but we can search the workshop proceedings by title or ISBN number. The publisher offers a table of contents of the book with all paper titles and author names.

List of Workshops

Below, the workshop titles and the names of the organisers are provided.

- *Industrial Big Data platforms enabling Enterprise Interoperability for Smart Services*, M. van Sinderen, S. Gusmeroli
- *Virtual Factory Operating System*, R. Poler, S. Campbell, R. Goncalves
- *Business impact of applications of Enterprise Interoperability*, FW Jaekel
- *Method and Tools to support the development of Product Service System*, G. Doumeingts, S. Gusmeroli, A. Pirayesh, G. Pezzotta
- *Modelling & Simulation to design Advanced Manufacturing System*, G. Doumeingts, A. Pirayesh, C. Agostinho, G. Zacharewicz, Y. Ducq
- *From Embedded Intelligence to Directed Manufacturing Decision Support*, R. Young, A. West, G. Bhullar
- *Interoperability for Crisis Management: Increasing Resilience of Smart Cities*, A. De Nicola, F. sBenaben)
- *Predictive Maintenance in Industry 4.0: Methodologies, tools and interoperable applications*, G. Mentzas, K. Hribernik , D. Kiritsis, A. Mousavi, K.-D.Thoben
- *Industry 4.0 Qualification: Higher Education for the Era of Industry 4.0* , M. v. Stietenron, G. Montelisciani, G.Fantoni
- *Corporate Standardisation Management*, K. Jakobs, M. Zelm

The workshops cover topics starting from Open Operating System for Virtual Factories to Manufacturing Decision Support and to Big Data platforms for Enterprise Interoperability (EI). Further, particular EI applications are presented, as EI Business Impact, Crisis Management, applications in the upcoming integrated framework Industry 4.0 and new approaches in standardisation management. Many of the topics have a root of European research projects, the workshops contribute to the exploitation of the project results.

Description of the I-ESA 2018 Workshops

For a more detailed overview, for communication and for the promotion to submit a paper, the title, objective, organizers, coordinates and contact are presented below for each workshop.

Workshop title	Industrial big data platforms enabling enterprise interoperability for smart services (Full day workshop)	
Organisers	Name: Marten van Sinderen Organisation: University of Twente Email: m.j.vansinderen@utwente.nl	Name: Sergio Gusmeroli Organisation: Politecnico di Milano Email: sergio.gusmeroli@polimi.it
Objective	<p>Objective - Bring together researchers and practitioners working on big data platforms, smart enterprise services and enterprise interoperability, and to identify and discuss achievements, challenges and visions in this field.</p> <p>Goals - To answer or set out a roadmap for answering the following questions:</p> <ul style="list-style-type: none"> - What are the current enterprise interoperability challenges in a data economy based on big data and smart enterprise services? - Which are the promising approaches, architectures and platforms for addressing these challenges? - Where are these challenges currently addressed (projects, standards organizations, research institutes)? - How do current reference implementations of industrial data platforms address these challenges and/or how are they lacking support? 	

Workshop title	Virtual Factory Operating System	
Organisers	Name: Raul Poler Universitat Politècnica de València rpoler@cigip.upv.es	Name: Ricardo Gonçalves Organisation: UNINOVA rg@uninova.pt
	Name: Campbell First name: Stuart Organisation: Information Catalyst Ltd. Stuart.Campbell@informationcatalyst.com	
Objective	<p>The objective of this workshop is to show the research performed in the European project 'vf-OS' during its first year and to contrast with the research performed in other H2020 projects, academia and industry. The vf-OS project goal will offer a manufacturing orientated cloud platform, supporting a multi-sided market ecosystem that provides a range of services for the connected factory of the future, allowing manufacturing companies to develop and integrate better manufacturing and logistics processes including the building of vf-OS applications on top of its vf-OS platform.</p>	

Workshop title	Business impact of applications of Enterprise Interoperability		
Organiser	Name: Frank-Walter Jaekel Organisation: Fraunhofer IPK Frank-Walter.Jaekel@ipk.fraunhofer.de		
Objective	Based on Enterprise interoperability (EI) use cases, the workshop aims to identify the business impact by externalising artefacts of methods and procedures to achieve EI in current approaches and applications. A group discussion on methods, use cases, and KPIs for EI as well as on requirements for enterprise interoperability management is foreseen. addressing current innovations such as in I4.0, IoT, Smart Services which rely strongly on interoperability technologies		

Workshop title	Method and Tools to support the development of Product Service System			
Organisers	Guy Doumeingts INTEROP-VLab, Brussels guy.doumeingts@interop-vlab.eu	Segio Gusmeroli Politecnico de Milano sergio.gusmeroli@polimi.it	Amir Pirayesh INTEROP-VLab, Brussels amir.pirayesh@interop-vlab.eu	Giuditta Pezzotta Università degli Studi di Bergamo, giuditta.pezzotta@unibg.it
Objective	The objective is to understand how to support enterprise management in the evolution towards Servitization and Productization . Further, to discuss how the related challenges in a Product Service System (PSS) have been addressed in academic and industrial domains. Solutions supporting PSS design, development and implementation will be presented			

Workshop title	Modelling & Simulation to design Advanced Manufacturing System				
Organisers	Guy Doumeingts INTEROP-VLab, Brussels guy.doumeingts@interop-vlab.eu	Amir Pirayesh INTEROP-VLab, Brussels amir.pirayesh@interop-vlab.eu	Carlos Agostinho, UNINOVA ca@uninova.pt	Gregory Zacharewicz, IMS Bordeaux gregory.zacharewicz@ims-bordeaux.fr	Yves Ducq, IMS Bordeaux yves.ducq@unibordeaux.fr
Objective	The objective this workshop is to discuss potential Methods and Tools based on Modelling and Simulation (M&S) supporting Model transformation in order to design advanced manufacturing systems. M&S of the manufacturing system can be the basis to elaborate and validate the Business Requirements to as well as to determine Technological Requirements, not only in the IT domain but also in the domains of Organisation, Human aspects and Physical means				

Workshop title	From Embedded Intelligence to Directed Manufacturing Decision Support	
Organisers	Name: Bob Young and Andy West Organisation: Loughborough University and TG11 of INTEROP-VLab r.i.young@lboro.ac.uk	Name: Gash Bhullar Organisation: Control2K gbhullar@control2k.co.uk
Objective	<p>The workshop aims to clarify the manufacturing business requirements for ICT solutions to offer a directed trans-disciplinary information and knowledge sharing capability,</p> <p>As well as to Identify related issues potential solution paths.</p> <p>The following ICT topics of relevance will be covered:</p> <ul style="list-style-type: none"> - Embedded Intelligence: current capabilities and limitations -Software services for dynamic application development -Semantic interoperability frameworks for trans-disciplinary knowledge sharing -Blockchain technology as a route to information security -The role of augmented reality in empowering the workforce 	

Workshop title	Interoperability for Crisis Management: Increasing Resilience of Smart Cities (ICRIM 2018)	
Organisers	Name: De Nicola First name: Antonio Organisation: ENEA antonio.denicola@enea.it	Name: Benaben First name: Frederick Organisation: Mines Albi frederick.benaben@mines-albi.fr
Objective	<p>The workshop aims to provide an outlook of the research on how interoperability solutions for crisis management could increase resilience of smart cities. The workshop solicits interdisciplinary papers considering crisis management as a specific context where expectations about collaboration and interoperability are drastically exacerbated. Criticality of consequences on the one hand increases time constraints and obligation of acting, and on the other hand, implies to imagine specific collaborative approaches fitting with specific domain and specific actors.</p>	

Workshop title	Predictive Maintenance in Industry 4.0: Methodologies, tools and interoperable applications	
Organisers	Name: Gregoris Mentzas NTUA Athens gmentzas@mail.ntua.gr	Name: Dimitris Kiritsis EPFL Lausanne dimitris.kiritsis@epfl.ch
	Name: Karl Hribernik Organisation: BIBA, Bremen hri@biba.uni-bremen.de	Name: Ali Mousavi Organisation: Brunel University ali.mousavi@brunel.ac.uk
	Name: Klaus-Dieter Thoben Organisation: Universität Bremen and BIBA - Bremer Institut für Produktion und Logistik GmbH	
Objective	<p>The Workshop aims to promote and encourage research and industrial efforts with the aim to cover a number of topics related to methodologies, concepts, architectures, tools and interoperable applications for predictive maintenance in the frame of Industry 4.0. The main goal is to provide a forum for researchers and practitioners with diverse backgrounds to meet, exchange research and implementation ideas, and share experience and results regarding predictive maintenance within the Industry 4.0 paradigm.</p>	

Workshop title	Industry 4.0 Qualification - Higher Education for the Era of Industry 4.0	
Organisers	Name: Moritz von STIETENCRON Organisation: BIBA – Bremer Institut für Produktion und Logistik sti@biba.uni-bremen.de	Name: Gualtiero FANTONI Organisation: University of Pisa g.fantoni@ing.unipi.it
	Name: Gabriele MONTELISCIANI Organisation: TOI Srl g.montelisciani@zerynth.com	
Objective	The workshop aims to foster the academic and industrial discussion about the future of education in the Industry 4.0 era. It will promote and encourage related research and industrial efforts related to methodologies, concepts, architectures, tools and interoperable applications in this area. The main goal of this workshop is to provide a forum for researchers and practitioners with diverse backgrounds to meet, exchange research and implementation ideas, and share experience	

Workshop title	Corporate Standardisation Management	
organisers	Name: Kai Jakobs Organisation: RWTH Aachen University Email: kai.jakobs@cs.rwth-aachen.de	Name: Martin Zelm Interop V-Lab. Brussels Email: martin.zelm@t-online.de
Objective	The first objective is to contribute to the identification of best-practices in organisational standardisation development and take-up. e.g Smart Manufacturing ('Industry 4.0') for the former and the Internet of Things (IoT) and Cyber-Physical Systems (CPSs) for the latter. a second objective of the WS is to discuss if, and how, the standardisation environment of today will need to change to accommodate standards development for collaborative, smart systems.	