

I-ESA
2016



29 March - 1 April 2016

INTEROPERABILITY FOR ENTERPRISES SYSTEMS
AND APPLICATIONS

(18TH INTERNATIONAL CONFERENCE)



Guimarães
Portugal

InterOP - VLab

I-ESA'16

CALL FOR PAPERS



Universidade do Minho
Escola de Engenharia

INTEROPERABILITY FOR ENTERPRISE SYSTEMS AND APPLICATIONS
“Enterprise Interoperability in the digitized and networked Factory of the Future”

Pre-conference March 29th - 30th 2016 with workshops

Conference March 31st - April 1st 2016

GUIMARÃES (PORTUGAL)
Universidade do Minho / INTEROP VLab



Organized by **Escola de Engenharia da Universidade do Minho** on behalf of **INTEROP Portuguese Pole (PtRP)** and **INTEROP-VLab** (International Virtual Laboratory for Enterprise Interoperability).

The city of Guimarães is historically associated with the foundation and identity of the Portuguese nationality. It is also one of the key poles of Minho industrial region, prosper in national and foreign industry, public and private interface organizations. Exploring the benefits of a long-term approach, the strategic support and cooperation to local SMEs and large companies are the utmost priorities to Escola de Engenharia of UMinho, as the main source of specialized knowledge to a sustainable and competitive technological and scientific network.

CONFERENCE

The I-ESA conferences bring together the world's leading researchers and practitioners in the area of enterprise interoperability and related domains, including interoperability aspects of enterprise systems and applications such as ERP, PLM etc., applications of the future internet, and all aspects of collaborative manufacturing and the delivery of product-service through global production networks. I-ESA'16 will be an outstanding forum for the exchange of visions, ideas, research results and industrial experiences, dealing with a wealth of interoperability research subjects for business, enterprise applications and software.

Industry especially will find in I-ESA'16 an outstanding opportunity to exchange experience and problems on business interoperability in their daily operations, with a conference stream focusing on real industrial case study applications. The I-ESA series of conferences has become a forum where industry and research worlds meet and share experience, ideas and problems on all aspects of enterprise systems interoperability, the problems of its realisation, and the potential benefits to collaborative enterprises and others.

I-ESA's unique balance of focused workshops on current research and industry issues, and leading edge research developments, makes it a major event for all in industry who have an interest in, or wonder if they may benefit from, an understanding of the potential opportunities offered by enhanced interoperability in their enterprise systems and applications.

SCOPE

Enterprises and organizations (of any kind), in today's economic environment recognise the competitive advantage of working in close collaboration with complex networks of suppliers and customers to present product-service combinations to their markets. It has long been recognised that to take part in take part into emerging, potentially opportunistically, collaborative networks, these organisations must ensure that their systems and applications must be capable of interoperating across heterogeneous collaborative networks of independent enterprises. The concept of “**interoperability**” has been defined by INTEROP-VLab as “The ability of an enterprise system or application to interact with others at a low cost in a flexible approach”. Consequently, interoperability of organizations appears as a major issue in successfully building on-the-fly emerging enterprise networks.

TOPICS OF INTEREST

This edition of I-ESA has the subtitle “***Enterprise Interoperability in the digitized and networked Factory of the Future***“. Establishing efficient and relevant collaborations requires management of interoperability in a dynamic, evolving production network: a relevant and efficient collaboration of organizations requires continual adaptation to remain in line with potentially changing objectives, potentially evolving resources, unexpected events, etc. This specific aspect of interoperability will be the keystone of I-ESA 2016.

Furthermore, the topics of I-ESA 2016 are aligned with the vision presented in the framework program **Horizon 2020** regarding interoperability: *Enterprise interoperability and Innovation, Interoperability strategies for Digital and Sensing Enterprise, System Interoperability in Internet of everything; Collaborative manufacturing and logistics*.

I-ESA 2016 welcomes papers addressing the topics listed below, but this list is not exclusive: all papers relevant to enterprise interoperability and related topics will be considered in the review process.

- **Manufacturing Enterprise Interoperability**
 - Collaborative manufacturing
 - Resilient production networks
 - Knowledge management in networked enterprises
 - Cloud manufacturing
 - Autonomous manufacturing & cyber-physical systems

- **Enterprise modelling for enterprise interoperability**
 - Distributed modelling
 - Meta-modelling
 - Methods and tools
 - Enterprise interoperability measurement
 - Requirements engineering for interoperable enterprise
 - Service modelling for business
 - Synchronization of models
- **Semantics for enterprise interoperability**
 - Enterprise applications analysis and semantic elicitation
 - Reasoning, methods and tools for model transformation and data reconciliation
 - Semantic mediation and enrichment of enterprise models
 - Semantic Web-based approaches
- **Architectures and Frameworks for interoperability**
 - Agent-based approaches for interoperability
 - Enterprise application integration
 - Model Driven Architectures
 - Service Oriented (Enterprise) Architecture
 - Ubiquity, mobility, open architectures and large scale interoperability
- **Future internet and enterprise systems**
 - Future internet and enterprise interoperability
 - Future internet in enterprise collaboration and virtual organizations
 - Future internet and digital ecosystems
 - Next generation and vision for FInES
- **Reference Ontologies for Enterprise Interoperability**
 - Business Sector Reference Ontologies
 - Reference Ontologies and Standardisation
 - The application of reference ontologies to industrial problems
 - Methods for Reference Ontology Engineering
- **Services for enterprise interoperability**
 - Utility and value added services for enterprise interoperability
 - Methodology and technology of services interoperability
 - Service-oriented integrated development environment (IDE) for enterprise interoperability
 - Internet of service, big service in big data environment
 - Service science and service engineering
 - Cloud computing and cloud services in smart manufacturing
- **Enterprise interoperability science base**
 - Concepts, theories and principles for solving enterprise interoperability problems
 - Frameworks for the development of enterprise interoperability science-based
 - Contribution for enterprise interoperability science-base from neighbouring scientific domains
 - Proof of concept and assessment in enterprise interoperability science-based
- **Standards for interoperability**
 - Bridging the gap between research and standardisation
 - Open EI standards, open source and open innovation
 - Standardisation management and strategies
 - Development, implementation and diffusion of standards in industry
- **Industrial Implementation of Enterprise Interoperability**

- o Industrial Cases and Business Impact
- o Implementation Methodologies
- o Sustainability of Interoperability Approaches and Solutions
- o Success Stories and Lessons Learned
- o Business Models for Interoperability
- **Collaborative Supply Networks Interoperability**
 - o Collaborative Supply Networks Modelling
 - o Collaborative Production, Replenishment and Delivery in Supply Networks
 - o Tools for Collaborative Decision-Making in Supply Networks
 - o Interoperable Data Collection Frameworks for Supply Networks
- **Sustainability of Enterprise Interoperability**
 - o Decision and co-evolution strategies for dynamic enterprise networks
 - o Simulation for enterprise interoperability analysis
 - o Monitoring enterprise interoperability
 - o Solutions for interoperability in complex adaptive systems
 - o Dynamic and incrementable model management - mappings and transformations

IMPORTANT DATES

- **Conference:**
 - o Full paper submission deadline: ~~October 1st, 2015~~ **October 26th, 2015**
 - o Author notification due: November 15th, 2015
 - o Camera-ready copies due: December 15th, 2015
 - o Conference: March 31nd - April 1st 2016
- **Workshops:**
 - o Workshop proposals: November 4th, 2015
 - o Acceptance notification due: November 16th, 2015
 - o **Workshop deadline for papers: December 15th, 2015**
 - o Workshop content publication: January 12th, 2016
 - o Workshop: March 30th – 31st 2016
- **Doctoral Symposium:**
 - o Paper submission deadline: **November 30th, 2015**
 - o Author notification due: December 15th, 2015
 - o Camera-ready copies due: December 31st, 2015
 - o Doctoral Symposium: March 29th, 2016

INSTRUCTIONS FOR AUTHORS

A package with formatting instructions and an MSWord template for **full papers** (10 pages length articles for the conference), **Workshop papers** (6 pages length articles for workshops) and **Doctoral papers** (6 pages length articles for doctoral symposium) can be downloaded from the section “Paper submission” at <http://www.i-esa.org/>.

A template for **Workshop proposal** (2 pages description) can be downloaded from the section “Workshop submission” at <http://www.i-esa.org/>.

WORKSHOPS

I-ESA 2016 invites proposals for workshops to be held in conjunction with the main conference. The topics of the workshops are identical to those of the Conference but should be more oriented on project results. The particular goal is to facilitate a discussion between the speakers and the audience on these results in order to anticipate on the future. Workshops should provide

opportunities to promote the results of past or present European projects in order to facilitate the exploitation of these results.

The origin of these projects could be:

- Funded collaborative projects (national or European),
- Specific application domains for interoperability research (e-health, e-administration, transport, construction etc.),
- Studies regarding particular issues (emerging technologies, etc.)
- Research in Next Generation Enterprise Modelling: Formal enterprise models and ontology-driven systems
- BigData new applications on products and services for Enterprise Interoperability (EI)
- EI Standardisation innovation in development, implementation and rollout

Important dates for the workshops

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|---------------------------------|------------------------|
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| ○ Workshop: | March 30th – 31st 2016 |

Please send your proposal by e-mail to the Workshop Chair ws-chair@i-esa.org

DOCTORAL SYMPOSIUM

The doctoral symposium is an opportunity for students involved in the preparation of their PhD in any area of enterprise interoperability to interactively discuss their research issues with senior researchers.

More information on the Doctorial Symposium can be found at <http://www.i-esa.org/>.

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- Ricardo Goncalves, PT Enterprise Interoperability Science Base
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- Thomas Knothe, DE Industrial Implementation of Enterprise Interoperability
- Herve Panetto, FR Semantics for Enterprise Interoperability

- Raul Poler, ES Collaborative Supply Networks for Enterprise Interoperability
- Keith Popplewell, UK Manufacturing Enterprise Interoperability
- Xiaofei XU, CH Services Innovation for Enterprise Interoperability
- Bob Young, UK Reference Ontologies for Manufacture
- Martin Zelm, DE Standards for Enterprise Interoperability

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The Workshop Committee

Chair: Martin Zelm (INTEROP-VLab)
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Doctoral Symposium

Chair: Ricardo Goncalves,
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