

# Preface

INTEROP-VLab defined in 2007 Enterprise Interoperability (EI) as “the ability of an enterprise system or application to interact with others at a low cost in a flexible approach.” This definition was the result of several analyses with the existing EI interface. Often the development of these interfaces was very costly and about all was not able to evolve when the IT applications of the both enterprises were changing.

The research on EI started in 2001 based on an action initiated by European Commission on the demand of the European Industry to reduce the cost of EI development.

Since this time, several research programs were launched including a Network of Excellence “Interoperability Research for Networked Enterprises Applications and Software” INTEROP-NoE (IST-508011, <http://www.interop-noe.org>) at the end of 2003 which gave, among other results, the creation of INTEROP-VLab, the Virtual European Laboratory for the development of Enterprise Interoperability ([www.interop-vlab.eu](http://www.interop-vlab.eu)).

One of the main results promoted by INTEROP-VLab is that the EI solutions must have a multidisciplinary vision by merging three research areas supporting the development of Enterprise Interoperability:

- ICT: the basic technology to develop EI solutions including Future Internet.
- Enterprise Modeling: defining requirements and supporting implementation solutions for the organization.
- Ontology: ensuring the semantically consistency of organizations and solutions.

The motto for I-ESA 2014 was “*interoperability for agility, resilience and plasticity of collaborations.*” Actually, *agility* is a crucial concept in collaborative situations. Consequently, interoperability in an agile framework is definitely one of the next main steps in the management of interoperability. We suggest considering the concept of agility according to four main aspects:

- Being agile requires, first, being able to supervise the relevant environment to *detect* any elements requiring agility.
- Being agile requires, second, being able to control its own structure and its own behaviour to *adapt* to the faced situation.

- Being agile requires, third, being able to proceed detection and adaptation in a *reactive* manner (that is dynamically relevant with the evolution of context).
- Being agile requires, four, being able to proceed detection and adaptation in an *efficient* manner (that is functionally relevant with the evolution of context).

Consequently, agility in interoperability may be defined as: “*the ability of an interoperable system to detect its potential unsuitability to the current environment and to perform a relevant adaptation according to its composing systems, in a reactive and efficient manner.*” This definition may be simply and roughly formulated as:

$$\mathbf{Agility} = (\mathbf{Detection} + \mathbf{Adaptation}) \times (\mathbf{Reactiveness} + \mathbf{Efficiency}).$$

In an ecosystem more and more fluid, enterprises and organizations have to take part into collaborations and to perform interoperability. However, this interoperability should also be agile in order to ensure *resilience* and *plasticity* of collaborative systems.

Interoperability for Enterprise Systems and Applications (I-ESA 2014) is the seventh Conference after the six previous successful experiences: Genève (2005), Bordeaux (2006), Madeira (2007), Berlin (2008), Coventry (2010), and Valencia (2012), and a special edition in Beijing (2009). This time the motto is “Interoperability for Agility, Resilience and Plasticity of Collaborations.” The I-ESA’14 Conference was organized by Ecole des Mines Albi-Carmaux, on behalf PGSO (“Grand Sud-Ouest” French Pole of INTEROP-VLab), and the European Virtual Laboratory for Enterprise Interoperability (INTEROP-VLab) and sponsored by the International Federation for Information Processing (IFIP).

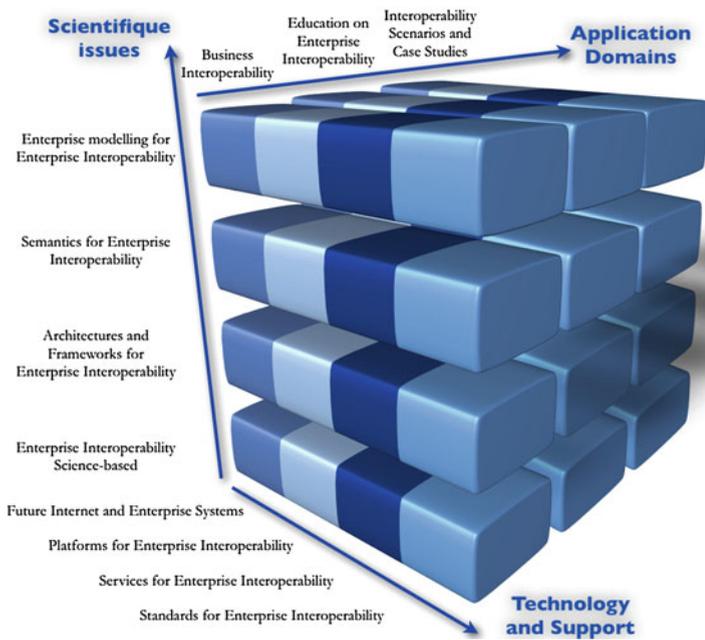
The program proposed several keynotes presented by high-level renowned experts from industry, government, and academia:

- Mr. Gerald Santucci, European Commission, EU
- Pr. Wil Van der Aalst, University of Technology of Eindhoven, NL
- Pr. Luis Camarinha-Matos, New University of Lisbon, PR
- Dr. Bartel Van de Walle, Tilburg School of Economics and Management, NL
- Mr. Sergio Gusmeroli, TXT e-Solutions SpA, IT.

World’s leading researches and practitioners in the area of Enterprise Integration from government, industry, and academia contributed to this book. As a result, Enterprise Interoperability VI is a unique anthology presenting visions, ideas, research results, industrial experiences, and problems on business interoperability.

This book is organized into 11 parts addressing the major research in the scope of Interoperability for Enterprise Systems and Applications:

- I. Introduction
- II. Business Interoperability
- III. Enterprise Modeling for Enterprise Interoperability
- IV. Semantics for Enterprise Interoperability
- V. Architectures and Frameworks for Interoperability
- VI. Future Internet and Enterprise Systems
- VII. Platforms for Enterprise Interoperability
- VIII. Services for Enterprise Interoperability
- IX. Enterprise Interoperability Science-Based
- X. Standards for Interoperability
- XI. Interoperability Scenarios and Case Studies



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