Foreword

ENTERPRISE INTEROPERABILITY: SCIENCE OR TECHNOLOGY?

Collaboration is necessary for enterprises to prosper in the current extreme dynamic and heterogeneous business environment. Enterprise integration, interoperability, and networking are the major disciplines that have studied how companies can collaborate and communicate in the most effective way. These disciplines are well-established and are supported by international conferences, initiatives, groups, task forces, and governmental projects all over the world where different domains of knowledge have been considered from different points of view and with a variety of objectives (e.g., technological or managerial). Enterprise Interoperability involves breaking down organizational barriers to improve synergy within the enterprise so that business goals are achieved in a more productive and efficient way.

The past decade of Enterprise Interoperability research and industrial implementation has seen the emergence of important new areas that involve breaking down organizational barriers to improve synergy within the enterprise and among enterprises. The ambition to achieve dynamic, efficient, and effective cooperation of enterprises within networks of companies, or in an entire industry sector, requires the improvement of existing, or the development of new, theories and technologies. Enterprise Modelling, Architecture, and semantic techniques are the pillars supporting the achievement of Enterprise Interoperability. Internet of Things and Cloud Computing now present new opportunities to realize inter-enterprise and intra-enterprise integration.

Since technology has evolved quite fast and become more and more accepted in the academic and industry environments, it is no longer the issue when enterprises want to work together. The Enterprise Interoperability Science Base aims at defining a practical body of knowledge in the interoperability domain. The main objective is to take advantage of the prominent technologies for structuring the knowledge in this domain. With such an approach, enterprises from the software industry can decouple research from technology and develop fundamental knowledge on complex environment integration.

This book clearly underscores the importance of developing a Science Base for studying the interoperability domain. It is a great collection of experiences, insights, and theoretical essays from both researchers and practicing people in their ambition to enhance the main issues of facilitating the collaboration between enterprises. This book describes well the strategic, conceptual, and architectural principles to adhere to, to interoperate, and to make it work.

It is my pleasure to contribute this Foreword and strongly recommend this book to all those who are open minded to achieving “interoperability” not only from a technical point of view but also following the best practices in Science, the non-sufficient but necessary condition for formally accepting and generalising the results coming from the hard work of many researchers around the world.

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Hervé Panetto is Professor of Enterprise Information Systems at University of Lorraine and Head of External Relationships at TELECOM Nancy, School of Engineering in Information Technology. He teaches Information Systems modelling and development, and conducts research at CRAN (Research Centre for Automatic Control), Joint Research Unit with CNRS. He is expert at AFNOR (French National standardisation body), CEN TC310, and ISO TC184/SC4 and SC5. He is the author or co-author of more than 100 papers in the field of automation engineering, enterprise modelling, and enterprise systems integration and interoperability. He is currently Chair of the IFAC Technical Committee 5.3 “Enterprise Integration and Networking.”