Editorial

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Biographical notes: Luis M. Camarinha-Matos is currently Head of the Robotics and Integrated Manufacturing Group at the New University of Lisbon. He is also the Leader of the Collaborative Networks and Distributed Industrial Systems (CoDIS) research group at the UNINOVA institute. He has participated in many national and international projects, both as a researcher and as a project coordinator. Currently he is the Scientific Director of the FP6 integrated project ECOLEAD, a major European initiative on collaborative networks. His main areas of current research include: virtual enterprises, organisations and professional communities, as well as coordination and workflow for distributed business processes, multi-agent systems, intelligent manufacturing systems, systems integration, machine learning in supervision. He has been involved in the organisation and program committees of many international conferences, edited various issues of journals and books, and published more than 270 papers in journals and conferences proceedings. He started the series of conferences *BASYS (on balanced automation systems)* and *PRO-VE (on Virtual Enterprises)* and is the Founder and President of the international Society of Collaborative Networks (SOCOLNET). He is also Founder and current Chairman of the IFIP WG 5.5 on virtual enterprises.

Xavier Boucher received his PhD Degree in Industrial Management in 1999 from the Aix-Marseille University, France, for research on concurrent engineering methodology. He is currently Professor in Production Management at the Ecole Nationale Supérieure des Mines de Saint Etienne. After a Master Degree in Industrial Management (1992), he acquired several years of industrial experience as project engineer before starting his PhD on the Deployment of Concurrent Engineering. He has published notably in *International Journal of Computer Integrated Manufacturing*, *Computers in Industry*, *International Journal of Design Sciences and Technology*, *Concurrent Engineering*: *Research and Application*, *European Journal of*

Automated Systems, *Journal of Decision Sciences*. With an overall research experience focusing on coordination and integration of socio-technical systems, his current topics of interest concern the agility of industrial systems: agility based on enterprise interconnectability or evolution management applied to information systems.

Hamideh Afsarmanesh is an Associate Professor at the Computer Science Department of the University of Amsterdam in the Netherlands, where she is also the Director of the COLNET (Collaborative Network) group. She has received her PhD in Computer Science from the University of Southern California (USC) in 1985. She has directed research in more than 20 National, European, and International projects. She has published more than 150 papers in journals, books, and *Conference Proceedings* in computer science research. She has co-edited more than ten books and various issues of *International Journals*. She is the Dutch representative at the IFIP TC5.

This Special Issue addresses 'Information Management for Collaborative Networks'. Its preparation has been managed by the three guest editors, Dr. Xavier Boucher (France), Professor Luis M. Camarinha-Matos (Portugal) and Dr. Hamideh Afsarmanesch (The Netherlands). This issue is a post-conference publication, based on extended versions of selected papers from the proceedings of two symposiums: *INCOM'06, the 12th IFAC Symposium on Information Control Problems in Manufacturing* and *PROVE'06, the 7th IFIP Working Conference on Virtual Enterprises*.

The selected papers emphasise some key elements of a state of the art on Collaborative Networks, especially Information Management issues. A Collaborative Network is an alliance constituted by a variety of entities (e.g., organisations and people) that are largely autonomous, geographically distributed, and heterogeneous in terms of their operating environment, culture, social capital and goals, but collaborate to better achieve common or compatible objectives, with interactions supported by computer networks. However, the performance of such cooperative endeavours must be properly managed, and the collaborative efficiency can be notably improved by coherent computer-based support systems for the sharing and exchange of information and knowledge. Recently, an emerging scientific community, gathering contributions from several complementary disciplines such as Information Sciences, Engineering, Industrial Management, Economy and Social Sciences, has generated a large amount of theoretical and applied works, on information management topics for networks. This Special Issue focuses on some of these innovative results.

The first paper by Hamideh Afsarmanesh and Luis M. Camarinha-Matos, provides an overview of Information Management requirements for collaborative networks. The paper synthesises the basic concepts related to collaborative networked organisations with particular focus on the notion of breeding environments for Virtual Organisations (VBE). Following this introduction, the authors define the requirements for VBE support management systems and emphasise the need for information management and knowledge sharing.

The next two papers can be considered as complementary to each other because of their different visions of collaborative networked organisations. The paper presented by Ricardo J. Rabelo, Sergio Gusmeroli, Thierry Nagellen and Cristina Arana specifies

a distributed and open ICT infrastructure dedicated to helping members of Collaborative Networks in doing business and collaboration more efficiently. This infrastructure is based on the service-oriented paradigm. With another perspective, Willy Picard emphasises in the third paper that service-oriented architectures do not answer to all needs of Virtual Organisations. He points out a lack in supporting human-to-human interactions and in considering social issues in information-based coordination. Therefore, Willy Picard proposes a model aimed at representing collaborative processes as social protocols. This model has the ability to capture social elements involved during the collaboration process and can be used to provide some adaptive approaches of supporting collaboration.

The last two papers provide two differing focuses on these issues. The fourth paper, by Nicolás Peñaranda Verdeza, Nathalíe Galeano, David Romero, Ricardo Mejía and Arturo Molina, deals with improving coordination and collaboration among engineering groups in the context of a virtual organisation. Both the methodological approach and its implementation are discussed. Finally, the last paper by Julio Garrido Campos and Luis Rodríguez Míguez focuses on traceability management for collaborative supply chains. The authors specify an information model and integration approach to manage manufacturing traceability. Also a prototype implementation and a validation case study are described.

We would like to thank all the authors and especially the reviewers whose work has been very helpful in improving the quality of the papers presented. We hope this Special Issue will really contribute to a better awareness of scientific advances in the domain of collaborative networked organisations: each of the included papers is original and provides some recent and strategic contributions leading to increase the efficiency of virtual organisations and their breeding environments.