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TRACK A: FOUNDATIONS OF DIGITAL ECOSYSTEMS AND COMPLEX ENVIRONMENT ENGINEERING

Track co-Chairs

- **Pierpaolo Andriani,** *Euromed Management School, France*
- **Pierfranco Ferronato,** *Soluta.net, Italy*
- **Gabriele Gianini,** *Università degli Studi di Milano, Italy*

Track A addresses the foundations of Digital Ecosystems in the context of Complex Environments Engineering. A digital ecosystem is defined as an open, loosely coupled, demand-driven, domain clustered, agent-based self-organized environment where species/agents form short and long-term coalitions for specific purposes or goals, and everyone is proactive and responsive for its own benefit or profit. Interactions among peers in Digital Ecosystems may involve, besides unbridled competition, new modalities of pre-competitive and collaborative partnerships.

Digital ecosystems are characterized by complexity – demanding radically new solutions. This track focuses on the theoretical foundations, that can be drawn upon form various disciplines.

Track Papers

TRACK B: TECHNOLOGY INFRASTRUCTURE FOR DIGITAL ECOSYSTEMS

Track co-Chairs

- **Lionel Brunie,** *INSA-Lyon, France*
- **Harald Kosch,** *University of Passau, Germany*

The ICT infrastructure underlying digital ecosystem must ensure the basis for digital ecosystems' economic operation. Track B will include contributions on how the ICT infrastructure can enable Digital Ecosystems by providing the required connectivity, mobility, availability, and security solutions. Typically, members of an ecosystem employ technological agents to procure products and access services on their behalf in order to achieve collective and individual goals.

The ICT infrastructure needs to provide solution ensuring that the ecosystem's resources are available as and when they are legitimately needed, protecting confidential information from loss and avoiding corruption of information.

Track Papers

TRACK C: CYBER-PHYSICAL ENERGY SYSTEMS

Track co-Chairs

- **Neil Brown,** *Institute of Energy and Sustainable Development (IESD), De Montfort University, UK*
- **Rupert Gammon,** *Institute of Energy and Sustainable Development (IESD) , De Montfort University, UK*
- **Peter Palensky,** *Austrian Institute of Technology, Vienna, Austria*
- **Martin Anda,** *Environmental Engineering & Life, Murdoch University, Australia*

Cyber-Physical Energy Systems address the merging of IT and energy infrastructures, with the aim of achieving more energy-efficient and sustainable lifestyles. The coordination of the various stakeholders involved in the future energy market raises many challenges, for example the data-intensive and complex event processing required.

An example is provided by research driven by the need to reduce greenhouse gas emissions, increase the use of new and renewable energy technologies, and provide a high-quality, comfortable, safe and efficient built environment. Such applied research aims to exploit the potential of information technology to boost energy efficiency and minimize our environmental footprint, while preserving or improving the quality of life for every individual in every nation.

Track Papers

TRACK D: HEALTHCARE AND SUSTAINABLE LIVING

Track co-Chairs
- **Rémi Bastide,** *ISIS-University Centre for Health Informatics, Carmaux, France*
- **Matthew Smith***, Leibniz University Hannover, Germany*

eHealth, Telemedicine, and Bio-System Research Systems all describe approaches to improving the capacity of healthcare systems through fundamental and applied research, technology, and services. Researchers and companies are, for example, exploring the use of sensor devices, human-system interfaces, and medical record systems in order to provide radically new solutions for helping patients.

These advances require structural changes as well as technological development. Societies are facing an increase in chronic degenerative diseases that require monitoring and long-term patient management, the growing desire of patients to be treated in a family environment in order to protect their social ties, and, finally, a need to reduce costs. These factors necessitate a new strategic orientation in services offered by healthcare systems, in particular the transfer of a large portion of care activities from the hospital to the patient's residence.

Track Papers

TRACK E: DIGITAL HUMANITIES

Track co-Chairs

- **Tobias Blanke,** *Kings College, UK*
- **Stuart Dunn,** *King's College London, UK*

The digital humanities form a bridge between the traditional practices of scholarship and the opportunities afforded by advances in technology, enabling researchers to reconsider old problems in new ways, and providing the methods, tools and frameworks to support them in developing new modes of enquiry. On the one hand, the humanities are faced with ever greater volumes of complex data and digital resources, for example from the increasing mass digitisation of historical records.

On the other hand, research in the humanities is moving away from the model of individual scholars to one in which international and inter-disciplinary teams of researchers collaborate actively within a diverse ecosystem of digital resources, tools, and services, not forgetting of course the users themselves – the rapid evolution of Web technologies continues to privilege the human as a key agent, both as provider and consumer of content, and this in turn is investing humanities scholarship with an increasing awareness of vast new audiences and potential participants.

Track Papers

Mark Hedges, Tobias Blanke, Michael Bryant, Stuart Dunn, Gabriel Bodard, Michael Jackson and David Scott	Linked Data for Humanities Research --- The SPQR experiment	Fï ì
Mark Hedges, Anna Jordanous, Stuart Dunn, Charlotte Roueche, Marc Kuster, Thomas Selig, Michael Bittorf and Waldemar Artes	New Models for Collaborative Textual Scholarship	Fì ı

TRACK F: COLLABORATIVE PLATFORMS FOR SUSTAINABLE LOGISTICS AND TRANSPORTATION

Track co-Chairs

- **Frederick Benaben,** *Ecole de Mines d'Albi-Carmaux, France*
- **Amadou Sienou,** *Abamix Research, Germany*
- **Hervé Pingaud,** *University JF Champollion, France*

Across application domains, organizations and enterprises (such as Small-Medium Enterprises) gain their strengths from flexible market orientation, agile value chains and cluster-based innovation capacity. The changing global (business) environment challenges all organizations to aim for agility and performance-driven management through process-focused thinking. These challenges reach far beyond the business world, affecting for example the formation and coordination of emergency teams in case of environmental disasters.

For the effective collaboration of all the partners in such scenarios, the agility aspect of the Digital Ecosystem paradigm demands explicit support for risk management and collaboration. Agility implies the continuous improvement and reengineering of the business processes involved. However, the outcome of such process management efforts is risky because of the lack of operational information about future processes, so risk management is a key component. Similarly, collaboration support is required to allow real-time information sharing and interaction of the parties involved, for example in case of deviation from the agreed-upon target process.

Track Papers

Guillaume Macé Ramète, Jacques Lamothe, Matthieu Lauras and Frédérick Bénaben	A road crisis management metamodel for an information decision support system	FJ€
Matthieu Lauras, Roland Stühmer, Yiannis Verginadis and Frédérick Bénaben	An event-driven platform to manage agility - Behavior adaptation in delivery context	FJÍ
Samir Amrioui, Nicolas Malhene and Jean-Christophe Deschamps	Traceability in Collaborative Logistics : how to use EPCglobal solution in transport reconfiguration	2€F
Andrej Eisfeld, David A. McMeekin and Achim P. Karduck.	Complex Environment Evolution - Challenges with Semantic Service Infrastructures	2€ì
Amadou Sienou and Achim P. Karduck	Logistics Challenges in Developing Countries - An analyis of Burkina Faso's national plan for disaster prevention and response	2FI
Nicolas Malhene, Anna Trentini, Guillaume Marques and Patrick Burlat	Freight Consolidation Centers for urban logistics solutions: the key role of interoperability	2Fì

TRACK G: PLATFORMS FOR SOCIAL AND COMMUNITY INVOLVEMENT/ENGAGEMENT

Track co-Chairs

- **Francois Grey,** *Tsinghua University, China*
- **Margaret Tan,** *Singapore Internet Research Center, Singapore*

The internet, together with other advances in ICT such as the increased take-up of smart mobile devices, is enabling a new era of community engagement. In science, the application of volunteer computing is providing examples of engagement in which members of the public can contribute to scientific advances of social importance. Examples include modelling climate change (ClimatePrediction.net), developing drugs for AIDS (FightAids@home), or simulating the spread of malaria (MalariaControl.net). The participatory ecosystem is becoming still wider with projects such as GalaxyZoo, in which volunteers contribute their "thinking" rather than their computers, and global initiatives to broaden take-up such as Africa@home and Asia@home.

On the social side, we are seeing substantial evidence of the role that digital technologies, especially the "Social Web" such as blogs, Twitter, Facebook, and video sharing sites, can play in community activism. The Social Web is in some quarters becoming the mainstream method for connecting people, sharing information, and influencing developments, particularly in areas where traditional modes of communication operate less effectively. This is reflected in a number of recent geopolitical events that have been referred to as "Twitter Revolutions", and these technologies have played an undeniable role in such events as the "Arab Spring" and humanitarian crises such as the 2010 Haiti earthquake. The use of these technologies has however led to debates concerning the extent to which such digital technologies genuinely promote more democratic community action, and the extent to which they can be exploited by the powerful to reinforce their positions.

Track Papers

TRACK H: CYBER-PHYSICAL ECOSYSTEMS IN ROBOTICS AND TELEMATICS

Track co-Chairs

- **Michaela Huhn,** *Clausthal University of Technology, Germany*
- **Jörg P. Müller,** *Clausthal University of Technology, Germany*
- **Bernardo Wagner,** *Leibniz University Hannover, Germany*

Cyber-Physical Systems are a synergetic composition of computational control and physical actors. They aim to achieve an enhanced functionality that relies on both, the interaction with and coordination in between the physical and the virtual components.

Cyber-Physical Ecosystems are built as agile networks of cooperating, independently developed subsystems. Cyber-Physical Ecosystems are emerging at the interface between robotics, sensor networks, systems of systems engineering, and multi-agent technologies. Research on theories, architectures, models, methods, and tools are required to form a uniform and integrated perspective to systems engineering for this class of complex systems. They need to be validated and verified in key applications such as micro grids, multi-robot systems, or autonomous traffic. The domain focus of this track will be accordingly on robotics and telematics, but is open to adjacent domains as well.

Track Papers

Sebastian Smolorz and Bernardo Wagner	Self-organized Distribution of Tasks inside an Autonomous Mobile Robotic System	2Î Í
Dennis Klar and Michaela Huhn	Interfaces and Models for the Diagnosis of Cyber-Physical Ecosystems	2Î 9
Jana Görmer and Jörg P. Müller	Multiagent system architecture and method for group-oriented traffic coordination	2Ï Í
Benjamin Henne, Christian Szongott and Matthew Smith	Coupled Multi-Agent Simulations for Mobile Security & Privacy Research	GÌ F
Benjamin Mensing, Ursula Goltz, Adina Aniculaesei, Sebastian Herold, Andreas Rausch, Stefan Gärtner and Kurt Schneider	Towards Integrated Rule-Driven Software Development for IT Ecosystems	GÌ Ï
Nguyen-Thinh Le, Lukas Märtin, Christopher Mumme and Niels Pinkwart	Communication-free Detection of Resource Conflicts in Multi-Agent-based Cyber-Physical Systems	GJH
Sebastian Smolorz and Bernardo Wagner	Self-organized Distribution of Tasks inside an Autonomous Mobile Robotic System	

BREAK-OUT SESSION: SECURING THE BANKING ECOSYSTEM

Track co-Chairs

- **Stelvio Cimato,** *Università degli Studi di Milano, Italy*
- **Ernesto Damiani,** *Università degli Studi di Milano, Italy*
- **Claudio Santacesaria,** *Rototype S.p.A., Italy*

In the Banking and Financial sector's ecosystem, IT Security has traditionally played the role of ensuring the availability, confidentiality, and accuracy of all types of customer and customer-related information.

Many solutions have been proposed regarding availability (e.g., immediate access to required personal data), confidentiality (making sure that only authorized persons could access confidential information) and accuracy (making sure that all information is timely and reliable).

However, the evolution of technology has opened a number of new issues. For instance, cloud and service-oriented computing have raised concerns over sharing of personal information, except in circumstances advised to the customer at the time the customer applies for a new product or service. Traditional assurance techniques need a radical rethinking before being applied to the new generation of banking services, as online monitoring and preventive maintenance are gaining importance. Also, online banking has widened the scope for social engineering attacks. A truly secure banking ecosystem is a partnership between the customer, the bank and a number of third parties.

The international break-out session on Securing the Financial and Banking Ecosystem at IEEE DEST-CEE 2012 is aimed at providing a forum to researchers, security practitioners and users for presenting new ideas and comparing their positions on the perspectives of security in the banking ecosystems.

Track Papers

Pietro Colombo and Elena Ferrari	Towards a Framework to Handle Privacy since the Early Phases of the Development: Strategies and Open Challenges
Stelvio Cimato, Ernesto Damiani and Gabriele Gianini	Risk Assessment of Credit Securities: The Notion and the Issues