

Change Alone Is Unchanging

Continuous Context-aware Adaptation of Service-based Systems for Smart Cities and Communities

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Abstract: Service-based systems have to deal with highly dynamic environments in which they must often operate. Consider for instance the case of smart cities and communities, i.e., communities of people who actively participate to the creation and use of ICT-based solutions to improve their quality of life within their own city or region. Within a smart city and community, the context in which applications must operate continuously changes, as well as the situation, the accessibility to (ICT-based) services, the people, their interactions, requirements, and preferences. Moreover, most often, the only way applications can react to such changing environment is at run-time, since we cannot predict a priori different situations, requirements, interactions, and availability of (ICT) services. Continuous context-aware and incremental adaptation becomes therefore the key enabling property for the delivery of ICT based value added services to cope with the dynamics of the continuously changing environment.

In my talk, I will present some of the compelling needs for context aware incremental adaptation in the case of service-based applications for smart cities and communities. I will discuss some alternative approaches, some lessons learned from applications we have been working with in this field, and the still many related open research challenges.

BRIEF BIOGRAPHY

Paolo Traverso is the Director of FBK ICT first, Centre for Information Technology at FBK (Fondazione Bruno Kessler) since 2007. The Centre counts about 200 people working on software and services, cloud computing, embedded systems, content and semantics, perception and interaction.

He was also CEO of Trento RISE (the Trento Research, Innovation, and Education System) from 2011 until June 2014, the association between FBK and the University of Trento, which is part of the European Institution of Innovation and Technology (EIT) in ICT, the EIT ICT Labs.

Paolo joined IRST after working in the advanced technology groups of companies for management information consulting in Chicago, London, and Milan, where he led projects for the development of safety critical systems, data and knowledge management, and service oriented applications. He contributed to research in automated planning and service oriented computing.

He was Program Chair of the International Conference on Automated Planning and Scheduling (ICAPS), General and Program Chair of the International Conference on Service-Oriented

Computing (ICSOC), and Program Chair of the Extended Semantic Web Conference (ESWC). His recent research interests are in the monitoring, adaptation, evolution of service oriented applications, and in the development of new-generation services delivery platforms for improving individual and societal quality of life.