

# EPPICS: Event Prediction and Decision Support based on Huge Data from Physical-Social Systems

Lars Schmidt-Thieme<sup>1</sup> and Achim Rettinger<sup>2</sup>

<sup>1</sup> University of Hildesheim, Germany  
schmidt-thieme@ism11.de

<sup>2</sup> Karlsruhe Institute of Technology, Germany  
rettinger@kit.edu

## 1 Administrative Facts

Call:	FP7-ICT-2013-11
Funding scheme:	Large-scale integration project (IP)
Grant agreement no:	619532
Duration:	Feb 2014 to Jan 2017 (36 months)
Partners:	University of Hildesheim, The University of Sheffield, University of Koblenz-Landau, Karlsruhe Institute of Technology, The FLOW Limited, MediaSift Limited, Software Mind S.A., TEMIS S.A., Bristol City Council, Knowledge-Now Limited, Alto Adriatico Water Authority, Quinary SPA
Coordinator:	Lars Schmidt-Thieme
Website:	<a href="http://eppics-project.eu/">http://eppics-project.eu/</a>

## 2 Introduction

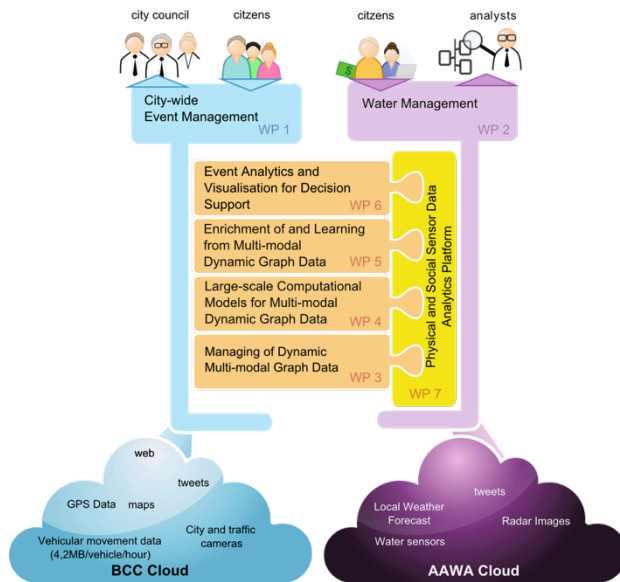
Miniaturization, progress with energy issues and cost reductions have resulted in rapid growth in deployment of networked devices and sensors, very strongly connecting the internet with the physical world. With wide adoption of smartphones and social media, also people have become key sources of information about the physical world, corresponding events and the intents and plans of many individuals. With more than a billion of people organizing their lives electronically and sharing information via social platforms on the Internet and with the number of devices connected to the Internet already exceeding the number of people on earth and still growing to an estimated 50 billion devices by 2020, handling these massive amounts of data becomes a

huge challenge. Surmounting this challenge, however, may give us previously unattainable understanding of events and changes in our surrounding environments.

EPPICS will develop large-scale adaptive methods to enable pervasive modeling, monitoring and predicting of events in the real world by extracting and combining data and information from physical and social sensors. Such methods will be integrated into a platform that will support citizens, authorities and organizations in taking informed and timely decisions when tackling real world events.

Application domains will cover the intelligent management in urban settings with a particular focus on city-wide events management as well as water management, specifically monitoring and reacting to widespread floods. EPPICS will provide the technological and methodological framework for the capturing, integrating, modeling and forecasting of the large-scale hybrid information deriving from hundreds of sensors, thousands of cars and large-scale social media. The technology will enable the authorities a huge leap in terms of the ability to manage large events where hundreds of

thousands of people are involved at the same time.



### 3 Contributions to ESWC2014

We intend to present the general research ideas and use cases plus show early demonstrators of dynamic graph data management and computational models for dynamic graph data.

### 4 Networking at ESWC2014

We are interested in any projects related to processing and analyzing large-scale dynamic, multi-modal graph data, like the DEMONS and TrendMiner project. In addition we are interested in projects related to our use cases in city-wide event management (advance project, PRONTO project, EUNOIA project) and water management.