

MODELLING ELECTRIC VEHICLE DEMAND IN LONDON USING THE DIGITAL CITY EXCHANGE PLATFORM

Wednesday, 9th April 2014 12:30 p.m.

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Webinar Overview

Smart city applications often rely on the interoperability between various city infrastructure systems, including energy, transport and healthcare, to reach objectives such as increasing efficiency, reducing emissions or making decision making more transparent. Connecting these different systems requires linking (real-time) data collected from various sensors and devices with predictive simulation models so the combined effect can be analysed and visualised to support decision making. In the Digital City Exchange project a platform is currently under development with which one can build a workflow consisting of various data sets and simulation models, providing a way to analyse systems from a combination of (sub) system models. As an example application the case of the introduction of electric vehicles to the transport and energy systems is considered. Three different domain models are brought together to better understand the impact of the electrification of the transport sector: first an activity model generates trips across a network, then an EV model calculates the battery state of charge over space and time, and thirdly a powerflow models allows optimised charging. Other systems can be addressed in a similar fashion, building on top of existing models and re-using elements from other workflows where applicable.

Presenter

Dr Koen H. van Dam is a research fellow at Imperial College London working on the Digital City Exchange project. His main research interests are agent-based modelling of city infrastructures, ontology design and smart city standards. Previously, Koen worked as post-doc in the Energy & Industry group at the faculty of Technology, Policy and Management of the Delft University of Technology (TU Delft). He was visiting researcher in the Urban Energy Systems project at Imperial College in London as well as at the Department of Chemical and Biomolecular Engineering of the National University of Singapore. He holds an MSc degree in Artificial Intelligence with a specialisation in Knowledge Engineering from the Vrije University in Amsterdam. In 2009 he was awarded a doctorate from TU Delft for his PhD thesis "Capturing socio-technical systems with agent-based modelling".