Real-time GIS for Smart Cities

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Guest Editors: Wenwen Li, Michael Batty, Michael F. Goodchild

The vision of the 'Smart City' is defined by the innovative use of Information and Communication Technologies (ICTs) to enhance city functioning and efficiency, improve competitiveness, support sustainable development, and encourage involvement of all its citizens in city governance and innovation processes (Batty et al. 2012). Recently, the rapid development of wireless (i.e. mobile phone) and sensor networks (i.e. the London oyster card data, PM2.5 particle sensors), the immediacy of social media (i.e. Twitter data) and VGI platforms (such as OpenStreetMap; Goodchild 2007), has fostered the proliferation of massive amounts of real-time streaming data capturing infrastructural conditions, human movements, market transactions and many other activities that flow and interact in the cities. These real-time GIS data are taking the pulse of smart cities and will offer new insights on how the cities are functioning in time, with attributes such as 'now' (Batty 2016). They have therefore become invaluable resources to support informed and intelligent city planning (Batty 2013), economic modeling (Li et al. 2013), real-time traffic predictions (Miller and Shaw 2015), and decision making (Geertman, and Stillwell, 2003). This special issue aims at capturing the latest advances in space-time analytics approaches, such as multi-scale modeling, data fusion and mining, which advance smart city research, operation and governance. We are interested in research that integrates both conventional data sources and emerging real-time GIS data in the modeling of the city economy, its environment, transportation, energy use, and social networks as well as their interactions. We particularly welcome research that bridges the gaps between ad-hoc real-time GIS approaches and more formal, theoretical data and computational models. Topics of interest include, but are not limited to:

- Visions of real-time GIS for smart cities
- Geographical representation and real-time data analytics of smart cities;
- The use of new data mining and data-driven approaches for the spatial-temporal analytics of real-time city data;
- New kind of multi-scale urban models that incorporate conventional data source at city, census, household level with new real-time or near real-time datasets at individual level;
- Novel cyberinfrastructure or spatial data infrastructure solutions to support synthesis, fusion and governance of multi-faceted big city data of high spatial and temporal granularity;
- New portals and visual analytics for real-time, open city data to implement the smart city vision;
- Real-time GIS in support of intelligent city planning, resilience and decision making;

- Applications of real-time analytics and urban computing in smart transit, smart energy, smart (and smarter) traffic management, healthy city, geodemography, and smart communities etc.

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Submission:

Abstracts should be sent to the guest editors as an email attachment by **January 31, 2018**. The guest editors will evaluate the abstracts to determine if the research fits the scope of the special issue and will invite authors with selected abstracts to submit full manuscripts. The invitation to submit a full manuscript does not guarantee final acceptance to the special issue.

Full manuscripts, including any supporting materials, should be submitted using the journal's online Manuscript Central facility (http://mc.manuscriptcentral.com/ijgis) by **July 1, 2018**. Guideline for submission of full manuscripts can be found at: http://www.tandfonline.com/action/authorSubmission?journalCode=tgis20&page=instructions/. All submissions will go through IJGIS standard double-blind peer reviews.

The *International Journal of Geographical Information Science* considers all manuscripts on the strict condition that they have been submitted only to the *International Journal of Geographical Information Science*, that they have not been published already, nor are they under consideration for publication or in press elsewhere. Authors who fail to adhere to this condition will be charged with all costs that the *International Journal of Geographical Information Science* incurs for their papers, and their papers will not be published.

Intended Timeline and **Important dates**:
- Jan 31, 2018, submit abstracts to guest editors
- Feb 15, 2018, invite full paper submissions (no guarantee for final acceptance)
- July 1, 2018, submit full manuscripts to IJGIS online
- May 1, 2019, notify final decisions
- November 2019, special issue published

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