



# Enhanced Building Information Models: Using IoT Services and Integration Patterns (SpringerBriefs in Computer Science)

By Umit Isikdag

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## Enhanced Building Information Models: Using IoT Services and Integration Patterns (SpringerBriefs in Computer Science) By Umit Isikdag

This book explains how to combine and exploit sensor networks and internet-of-things (IoT) technologies and Web-service design patterns to enrich and integrate Building Information Models (BIMs). It provides approaches and software architectures for facilitating the interaction with (and between) BIMs through Web services, and for enabling and facilitating the fusion of the information residing in such models or of information acquired from IoT technologies. The proposed software architectures are presented in the form of design patterns. This information fusion will facilitate many novel application fields ranging from emergency response, to urban monitoring and surveillance, and to smart buildings.

The book consists of 8 chapters. The first 2 chapters focus on the basics of BIMs, while chapter 3 presents fundamental service-oriented architecture patterns for complex information models. Subsequently, chapters 4 and 5 elaborate on the hardware and software side of IoT, with a special focus on their use for BIMs. Chapter 6 provides advanced SOA patterns for BIMs, while chapter 7 details patterns for IoT, and for BIM and IoT information fusion. Lastly, chapter 8 summarizes the work and provides an outlook on promising future developments.

Overall, the book will be beneficial for researchers and developers in the fields of building information models, IoT applications, and systems integration.

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#### **Review**

“This book enhances the BIM to incorporate Internet of Things (IoT) services, which can provide real-time information that is generated by IoT devices to BIM clients. ... The architecture introduced in this book will be useful to readers who are familiar with similar information models as well as BIM ... .” (Seon Yeong Han, Computing Reviews, [computingreviews.com](http://computingreviews.com), August, 2016)

#### **From the Back Cover**

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#### **About the Author**

Umit Isikdag is a senior lecturer at Mimar Sinan Fine Arts University (Turkey). In 2006, he had completed his PhD at University of Salford (UK) on the integration of building information models with geospatial information systems (GIS) . He is currently working in the areas of construction informatics, 3D GIS and enterprise systems integration, service- and resource-oriented architectures (SOA/ROA), and novel design patterns for BIM-based architectures. During his career, he has worked at several universities in the UK and Turkey, and as a research partner of universities in the Netherlands and Malaysia.

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