

Hagenberg Business Process Modelling Method

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Preface

The whole is greater than the sum of its parts

—Aristotle

The Hagenberg Business Process Modelling (H-BPM) method constitutes a proposal for the design of Business Process Management (BPM) systems, which in addition to process modelling comprises several other important aspects like actor modelling, user interaction modelling, and an enhanced communication concept. On top of these aspects, we propose the enhanced Process Platform (eP^2) architecture to integrate the different models in a single tool.

The presented book gives insight into major results of a fundamental research project on business process modelling, called Vertical Model Integration (VMI), and its successor project, VMI 4.0, performed at the Software Competence Center Hagenberg (SCCH), Austria. It builds on a previous book, *A Rigorous Semantics for BPMN 2.0 Process Diagrams*¹, and like the latter, draws from our experience in large-scale business software development projects where we have experienced the need to go beyond BPM languages like BPMN.

This book mainly addresses researchers in the area of business process modelling, although we hope that it may also provide useful input to developers of modelling tools.

The introduced method is named after Hagenberg, a village in the district of Freistadt in the state of Upper Austria, situated on one of the green hills on the southern edge of the Bohemian Massif. Hagenberg is well known for the *Softwarepark Hagenberg*, a technology centre comprising 12 research institutes, 23 academic study programmes, and about 70 companies in the IT domain.

¹Kossak, F., Illibauer, C., Geist, V., Kubovy, J., Natschläger, C., Ziebermayr, T., Kopetzky, T., Freudenthaler, B., Schewe, K.D.: *A Rigorous Semantics for BPMN 2.0 Process Diagrams*. Springer (2015)

The SCCH, where the H-BPM method has been developed, is one of the largest research institutions in the Softwarepark Hagenberg.

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Acronyms

ADL	Architectural Description Language
ARIS	Architecture of Integrated Information Systems
ASM	Abstract State Machine
AST	Abstract Syntax Tree
AUVA	Austrian Social Insurance Company for Occupational Risks
BPEL	Business Process Execution Language
BPM	Business Process Management
BPML	Business Process Modelling Language
BPMN	Business Process Model and Notation
CCS	Calculus of Communicating Systems
CPN	Coloured Petri-Net
CPS	Cyber Physical Systems
CPPS	Cyber Physical Production Systems
CSP	Communicating Sequential Process
DL	Description Logic
DSL	Domain-Specific Language
EAI	Enterprise Application Integration
eP^2	Enhanced Process Platform
EPC	Event-Driven Process Chain
ER	Entity-Relationship
H-BPM	Hagenberg Business Process Modelling
HCI	Human-Computer Interaction
HDM	Hypertext Design Model
ISO	International Organization for Standardization
IT	Information Technology
JSF	JavaServer Faces
MB-UIDE	Model-Based User Interface Development Environment
MDA	Model-Driven Architecture
OCL	Object Constraint Language
OMG	Object Management Group
OOHDM	Object-Oriented Hypertext Design Model

R2ML	REVERSE Rule Markup Language
RMM	Relationship Management Methodology
S-BPM	Subject-Oriented Business Process Management
SBVR	Semantics of Business Vocabulary and Rules
SME	Small- and Medium-sized Enterprise
SQL	Structured Query Language
SysML	Systems Modelling Language
UIML	User Interface Markup Language
UML	Unified Modeling Language
WebML	Web Modeling Language
WS-BPEL	Web Services Business Process Execution Language
XML	Extensible Markup Language
YAWL	Yet Another Workflow Language