1. Record Nr. UNINA9910554485803321 **Autore** Drath Rainer Titolo AutomationML: the industrial cookbook / / Rainer Drath Pubbl/distr/stampa Berlin; Boston, MA:,: De Gruyter Oldenbourg,, [2021] ©2021 **ISBN** 1-5231-5460-8 3-11-074597-6 Descrizione fisica 1 online resource (XXV, 641 p.) Disciplina 670.427 Soggetti Automation - Data processing Computer software - Development Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto Frontmatter -- Foreword by Prof. Dr. Alexander Fay -- Foreword by Andreas Graf Gatterburg -- Acknowledgement by Prof. Dr. Rainer Drath -- Table of Contents -- About the Editor -- 1 About this book -- Part

I: AutomationML Development Support -- 2 Overview of Part I -- 3 Software development with AutomationML -- 4 AutomationML Export and Import Data Interfaces -- 5 The AMLTestCenter Rule-based verification of AML documents for generic and AAS conformity --References for Part I -- Part II: The Industrial Cookbook -- 6 Overview of Part II -- 7 AML domain model for VDI 3697-1: Data exchange between CAE and PCS -- 8 AML domain model for VDI 3697-2: Data Exchange between CAE systems -- 9 MTP - Automation Engineering of Modular Process Plants -- 10 AML domain model for System Control Diagrams -- 11 Data exchange between ECAD and PLC tools - AR APC -- 12 Modelling of Drive Configurations - AR DRIVES MCAD -- 13 AML domain model for material handling -- 14 The AutomationML Component -- 15 AML domain model for Electric Interfaces -- 16 AutomationML Component Checker -- 17 AML domain model for communication systems -- 18 Modelling OPC UA with AutomationML -- 19 Serialization of the Asset Administration Shell by AutomationML -- 20 AutomationML Industrialization and Toolchain -- 21 AutomationML governance at Daimler AG -- 22 AutomationML and

eCI@ss Integration -- 23 Semantic and Pragmatic Interoperability Mappings -- 24 Extended RoleClass libraries -- 25 AML-based Enterprise Control System Integration by IEC 62264 -- References for Part II -- Part III: The Future – AutomationML Research -- 26 Overview of Part III -- 27 AutomationML based development of mechatronic systems -- 28 Concept to refine and computationally evaluate PPR information in AML -- 29 Integration of data and software into the Digital Twin via AML -- 30 Optimizing the engineering of technical energy management systems -- 31 Skill-Based Engineering of Automation Systems: Use Case and Evaluation -- 32 Engineering Data Logistics based on AML -- 33 Energy optimization during virtual commissioning -- Abbreviations -- Trademarks -- Index

Sommario/riassunto

This book provides a comprehensive in-depth look into the practical application of AutomationML Edition 2 from an industrial perspective. It is a cookbook for advanced users and describes re-usable pattern solutions for a variety of industrial applications and how to implement it in software. Just to name some: AutomationML modelling of AAS, MTP, SCD, OPC UA, Automation Components, Automation Projects, drive configurations, requirement models, communication systems, electrical interfaces and cables, or semantic integration aspects as eClass integration or handling of semantic heterogeneity. This book guides through the universe of Auto-mationML from industrial perspective. It is written by AutomationML experts that have industrially implemented AutomationML in pattern solutions for a large variety of applications. This book is structured into three major parts. • Part I: software implementation for developers • Part II: re-usable industrial pattern solutions and domain models • Part III: outlook into future AutomationML applications Additional material to the book and more information about AutomationML on the website: https://www. automationml.org/about-automationml/publications/amlbook/