1. Record Nr. UNINA9910887874803321 Autore Iordache Octavian Titolo General Reference Architecture Frameworks / / by Octavian Iordache Cham:,: Springer Nature Switzerland:,: Imprint: Springer,, 2024 Pubbl/distr/stampa **ISBN** 3-031-70718-4 Edizione [1st ed. 2024.] Descrizione fisica 1 online resource (171 pages) Studies in Systems, Decision and Control, , 2198-4190; ; 73 Collana 343.078624 Disciplina Soggetti **Building laws** Sustainable architecture Buildings - Design and construction Building Law for Engineers and Architects Sustainable Architecture/Green Buildings **Building Construction and Design** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Nota di contenuto 1. Complexity -- 2. Methods -- 3. Operations and Equipments -- 4. Modeling -- 5. Design. Sommario/riassunto Studying high complexity projects implementation is the object of this book. Multiple interactions and emergences are the core of higher complexity and of associated models and projects. The starting point of our approach is the observed similarity or isomorphism of roadmaps toward higher complexity and of reference architectures for different domains of reality. The objective is to propose a General Polytopic Roadmaps (GPTR) and a General Reference Architecture Framework (GRAF) and use these for 8D Program implementation. The GPTR shows the stages: 0D, 1D, 2D, 4D, and 8D. The book is divided into 8 chapters. Chapter 1 introduces the GRAF as a 4D of 4D polytope. Chapter 2 emphasizes the role for the dialogue of processes in duality, of the logic of contradiction, of iteration and of included middle to face high complexity. Chapter 3 refers to operations and equipments of engineering interest as permutations, mixings and separations. Chapter 4 refers to modeling and simulation. Chapter 5 concerns creative design models. Dual process design, and processes integration are

presented. Industry 4.0, future developments to Industry 8.0 and

chemical engineering paradigms are evaluated in Chapter 6. Chapter 7 focuses on complex systems as production systems of systems architecture frameworks, decision models, operations processes, and cyber-physical social systems. Chapter 8 discusses implementation of high complexity projects for different levels of reality. The book is useful to engineers, researchers, entrepreneurs, and students in different branches of production, science, and engineering of high complexity.