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Titolo	Foundations & Principles of Distributed Manufacturing : Elements of Manufacturing Networks, Cyber-Physical Production Systems and Smart Automation / / by Hermann Kühnle, Günter Bitsch
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Soggetti	Industrial engineering Production engineering Industrial organization Computer organization Industrial and Production Engineering Industrial Organization Computer Systems Organization and Communication Networks
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Description of the Working Field -- Theory Building Approach -- Process Models and Networks' Analysis -- Smart Manufacturing Units -- Networking Tools and Information Models -- Conclusions and Outlook.
Sommario/riassunto	The book presents a coherent description of distributed manufacturing, providing a solid base for further research on the subject as well as smart implementations in companies. It provides a guide for those researching and working in a range of fields, such as smart manufacturing, cloud computing, RFID tracking, distributed automation, cyber physical production and global design anywhere, manufacture anywhere solutions. Foundations & Principles of

Distributed Manufacturing anticipates future advances in the fields of embedded systems, the Internet of Things and cyber physical systems, outlining how adopting these innovations could rapidly bring about improvements in key performance indicators, which could in turn generate competition pressure by rendering successful business models obsolete. In laying the groundwork for powerful theoretical models, high standards for the homogeneity and soundness of the suggested setups are applied. The book especially elaborates on the upcoming competition in online manufacturing operations and respective control procedures. By outlining encapsulation and evolving decision-making principles, Foundations & Principles of Distributed Manufacturing fully conceptualizes the view of manufacturing networks as sets of loosely coupled interacting smart factory objects. Moreover, the book provides concrete approaches to a number of future fields, where distributed manufacturing might be applied. Both researchers and professionals will profit from the authors' broad experience in Distributed Manufacturing and Fractal Enterprise implementations, where they initiated and completed a number of successful research projects: within the global Intelligent Manufacturing Systems (IMS) scheme, within the European Research Area frameworks as well as national contexts, and both in industry and at leading research institutions. This background ensures well-founded theory on one hand and valuable practical results on the other in a fascinating area that is still under intensive research. Readers will acquire essential insights as well as useful guidance for categorizing and specifying extended distributed manufacturing solutions and their professional implementations.

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