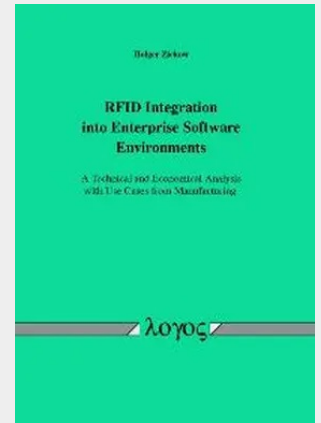


RFID Integration into Enterprise Software Environments - A Technical and Economical Analysis with Use Cases from Manufacturing

RFID technology promises to improve business applications by narrowing the gap between IT systems and the physical world. In this thesis we target the integration of RFID into enterprise software environments. We address (1) use cases for RFID in manufacturing and their economic effects, (2) technical aspects of using RFID in manufacturing processes, (3) architectures and technical solutions for integrating, processing, and disseminating RFID data, and (4) implications on privacy. The key contributions of this thesis are as follows: 1) We conducted case studies at manufacturers to investigate the use of RFID technology in this domain. Based on these studies we identified common use cases and incentives for applying RFID in manufacturing. Along these use cases, we developed guidelines to assess the costs and benefits of an RFID introduction. 2) We provide design guidelines for the technical integration of RFID into IT infrastructures of manufactures. These guidelines cover processing paradigms for RFID data, the relation of RFID middleware component and manufacturing IT solutions as well as heuristics for distributing data and logic in the IT system. We also provide guidance for domain specific challenges and trade-offs in RFID applications on the shop floor. 3) We developed a set of architectures and technologies for RFID integration. For the manufacturing domain we present architectural patterns that provide solutions for different design goals. We also developed a probabilistic cleaning method that improves data quality in a range of manufacturing applications. We furthermore developed architectures and optimization methods that improve resource utilization in processing and exchanging RFID data. For applications in sensor networks we developed solutions for in-network processing and message routing. For complex event processing over distributed RFID data sources we developed a query optimization method that exploits process knowledge. 4) We technically analyzed consumer fears that are related to RFID technology. In attack tree analysis we showed if and how perceived threat scenarios can be technically realized. Our analysis also reveals where strategies for risk mitigation can take effect.



39,00 €
36,45 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783832521134
Medium: Buch
ISBN: 978-3-8325-2113-4
Verlag: Logos
Erscheinungstermin: 15.01.2008
Sprache(n): Englisch
Auflage: Erscheinungsjahr 2008
Produktform: Kartoniert
Seiten: 272
Format (B x H): 145 x 210 mm

