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Abstract
Radio Frequency Identification (RFID) technology provides potential benefits to improve the efficiency of business processes. In recent years, RFID technology has been applied to almost every domain including transportation, supply chain management, medicine management or logistics management. Whether or not to adapt RFID technology has already become the issue that every enterprise has to confront.
In this thesis, an efficient web services-enabled (WS-enabled) architecture for RFID environment (WSARE) is proposed based on RFID and Web Services, which is the communicative medium between RFID readers and end-back application server. The WSARE consists of the following components: Data Acquisitor, Services Manager, Business Process Rule Base, Web Services and RFID Database. The Web Services of WSARE includes Filter, Reader Controller, Data Integrator, PML Parser, Exception Handler, Data Inquiry, Information Service and Object Name Service. Reducing modification and maintenance cost, crossing platform, flexibility and independence are the main characteristics of WSARE.
An automatic RFID management system based on WSARE for amusement park AP-WSARE is proposed and implemented. The AP-WSARE provides a more powerful means to manage an amusement park. Through the AP-WSARE, amusement park can collect the data of visitors automatically, automate some workflows, and improve visitors' security through the system. Such a system will be able to provide higher quality of service and improve the competitive force.
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