

RFID

Trends of RFID Middleware Technology and Its Applications

<p>& RFID/USN</p> <p>.....</p> <p>. RFID</p> <p>. RFID</p> <p>.</p>	<table border="1"> <tr><td>(J.G. Hwang)</td><td>RFID/USN</td></tr> <tr><td>(T.S. Cheong)</td><td>RFID/USN</td></tr> <tr><td>(Y.I. Kim)</td><td>RFID/USN</td></tr> <tr><td>(Y.J. Lee)</td><td>RFID/USN</td></tr> </table>	(J.G. Hwang)	RFID/USN	(T.S. Cheong)	RFID/USN	(Y.I. Kim)	RFID/USN	(Y.J. Lee)	RFID/USN
(J.G. Hwang)	RFID/USN								
(T.S. Cheong)	RFID/USN								
(Y.I. Kim)	RFID/USN								
(Y.J. Lee)	RFID/USN								

RFID

가

RFID

RFID

EPCglobal

RFID

RFID



I.

21

RFID

. RFID

[1].

RFID

가

RFID ,

가

RFID ,

가

RFID

.

RFID

RFID

RFID

RFID

,

가

1. RFID

RFID

RFID

RFID

RFID

RFID

RFID ,

가

RFID

가. RFID

RFID

RFID

RFID

RFID

EPCglobal

, RFID

, RFID

RFID

가

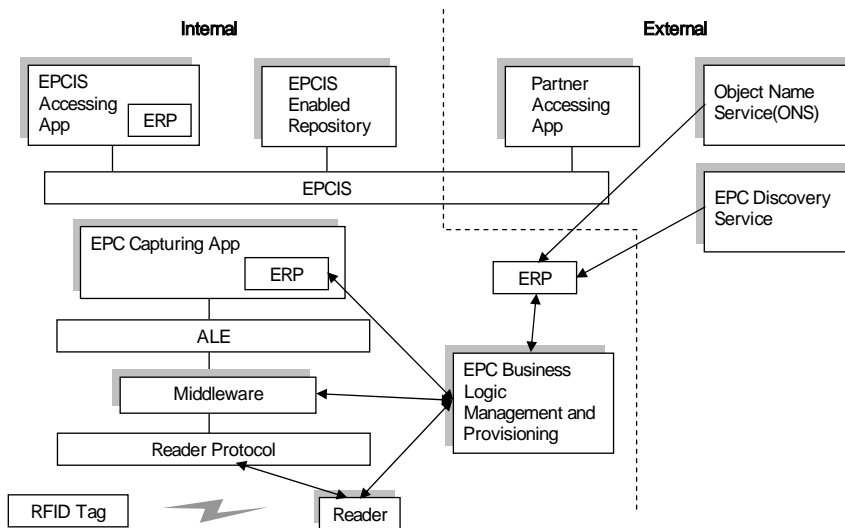
RFID

가

, RFID

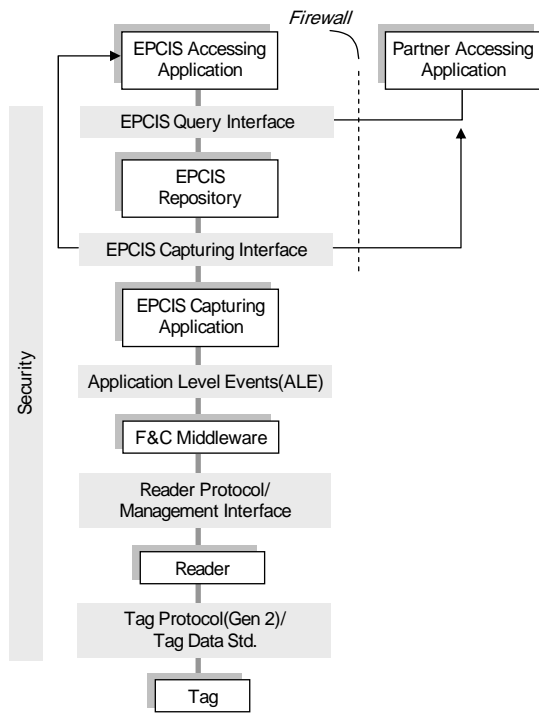


SAG 7 EPC discovery service EPC
 WG EPC Network EPC
 (1)[3] EPCglobal EPC Net-
 work Reader
 reader protocol
 reader middleware 가
 . Middleware
 , ALE /
 application middleware EPC capturing
 application middleware . EPC capturing
 repository / EPCIS
 . EPCIS accessing application EPCIS-enabled
 partner application EPCIS EPC
 EPCIS EPC
 [5]. ALE
 event cycle RFID
 cycle , event cycle
 . ALE EPC event



(1) EPC Network

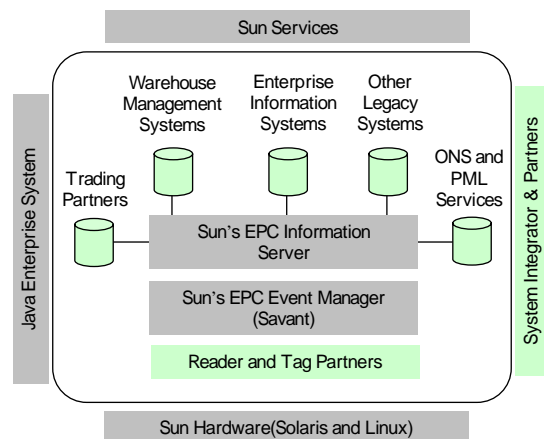
cycle API , API EPC
 event cycle / , EPC
 . ALE
 event cycle API
 , API /
 API
 EPC
 EPCIS /
 EPC EPC
 가
 [4]. (2) 2
 EPCIS 가 ,
 EPCIS capturing interface
 EPCIS query interface . EPC
 ,
) , EPC



(2) EPCglobal

/ RFID
 EPC
 API가
 EPC
 API
 3. RFID
 RFID RFID
 RFID
 , IBM, SAP, Sun Micro-
 systems, Oracle IT
 RFID
 가
 가
 Sun Microsystems 2004 6 RFID
 'Sun Java System RFID Software'
 [6]. (3)

EPC event manager
 EPC information server . EPC
 event manager
 RFID
 JINI Rio
 fault-
 tolerant . , EPC infor-

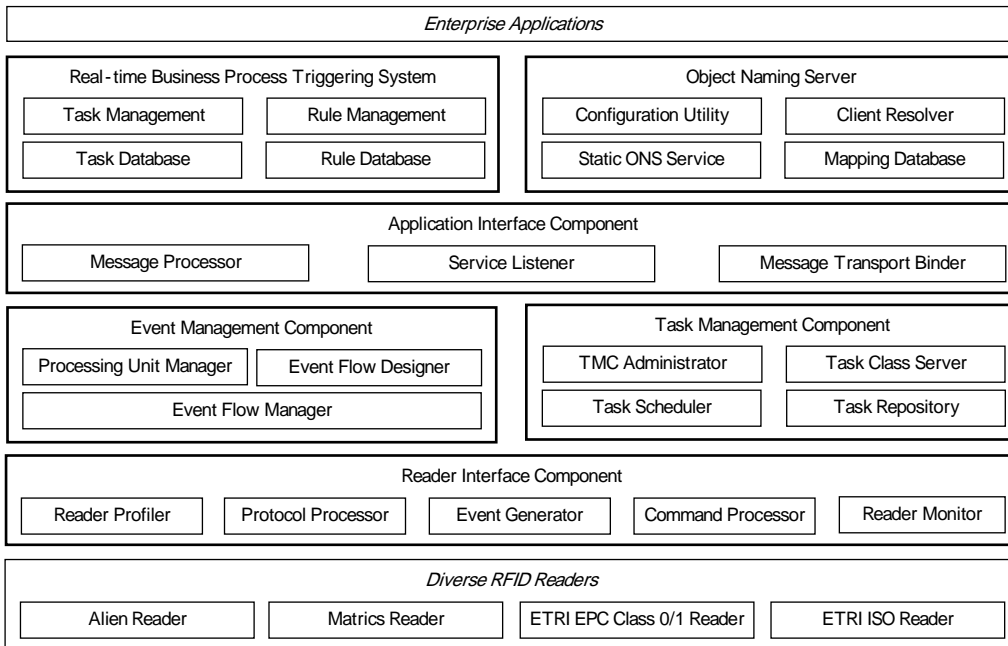


(3) Sun Java System RFID Software



20 3 2005 6

information server EPC event manager RIC, RFID
 EMC,
 Oracle 'Sensor-based Service' TMC, AIC
 RFID , REMS (ERP,
 Oracle SCM, CRM) RFID
 Application Server 10g Oracle Database 10g 가
 가 semantic event RBPTS,
 [7]. Oracle 가
 가 business solution
 suite RFID ONS
 REMS RFID
 Alien, Matrics RFID
 RFID , ETRI EPC Class 0 1 ,
 ETRI ETRI ISO , 가
 가 .
 (4) . Event management system
 가 . REMS
 RFID build-in ,



(4) ETRI

/ RFID

Java

accenture
dust

HTTP, SOAP

Ford

, GAP

RFID / / ,
SI Infosys Tech., Accenture, Oracle
RFID [8].

. RFID

180

ID

, RFID

EPCglobal EPC Network

128

uID

RFID

가

RFID

RFID

1. RFID

가

가.

1999 EAN/UCC MIT가 Auto-ID

uID

EPC

, JR

UHF

, JR

IC

RFID

RFID

가

[8].

EPCglobal EPC

Network RFID

(ISO)가

RFID

ISO-IC

, RFID

가

가

, Benetton

SI

SAP

RFID

RFID

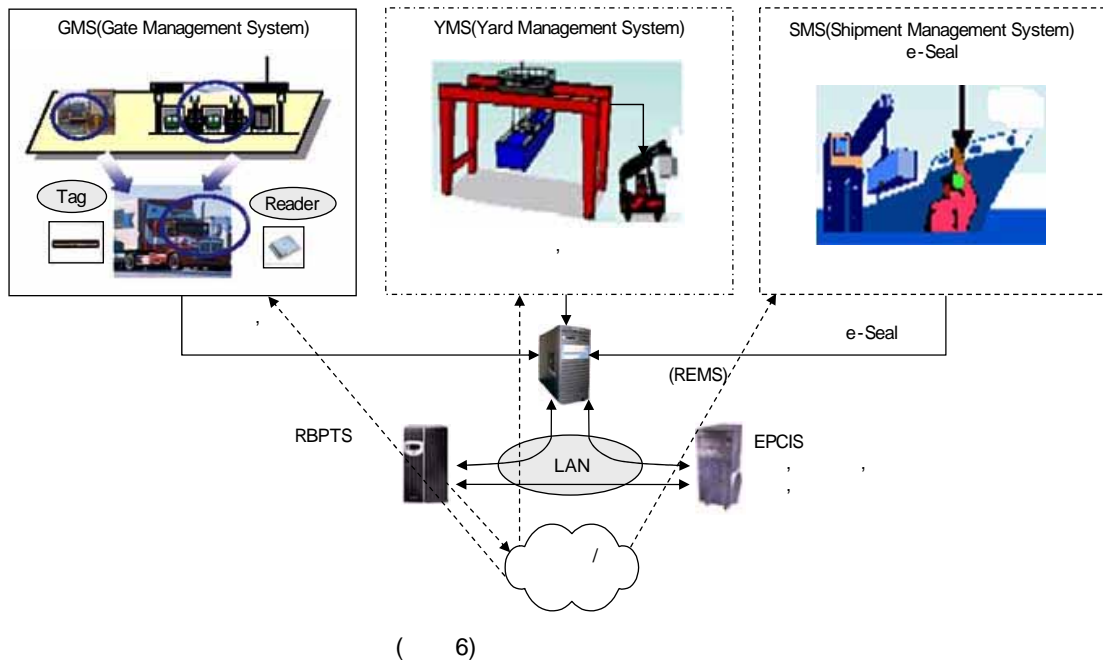
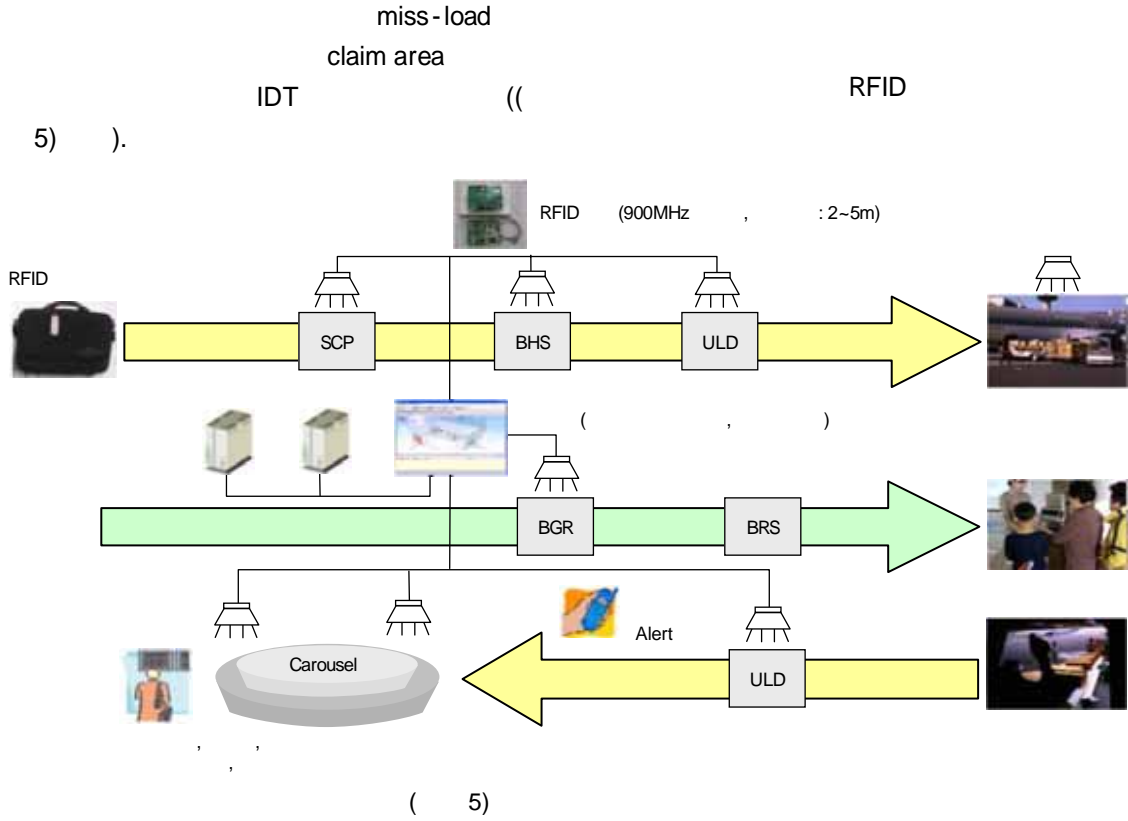
[8].



2. RFID

가.

2004
 , 2005 100
 , 2006 RFID
 RFID
 , RFID 2005 RFID
 30
 15
 가
 RFID
 2005
 RFID
 2006 RFID
 RFID
 RFID
 433MHz
 RFID
 [9].
 가
 3. RFID
 ETRI RFID
 ,
 가.
 , miss-load , cross
 pickup,
 RFID
 , RFID





20 3 2005 6

GMS , 가 RFID 가

((6)).

(4) real-time business

process triggering system

, REMS

RFID



RFID

. POC

POC

가 가

IT

IT

RFID

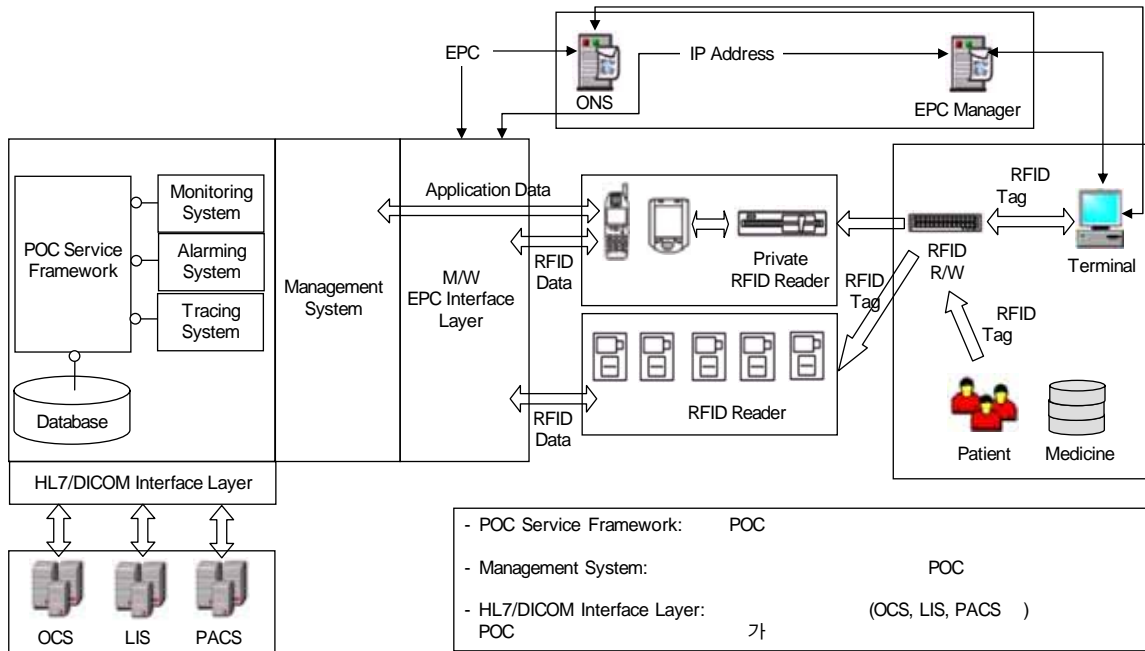
RFID

((7)).

RFID

, RFID

RFID



(7) POC

가 RFID
 RFID EPC
 Network , RFID
 RFID
 , RFID
 , ETRI RFID
 RFID
 RFID

OCS Order Communication System
 ONS Object Naming Service
 PACS Picture Archiving Communication System
 POC Point of Care
 RBPTS Real-time Business Process Triggering System
 REMS Reader Event Management System
 RFID Radio Frequency Identification
 RIC Reader Interface Component
 SAG Software Action Group
 SCM Supply Chain Management
 SCP Security Check Point
 SI System Integration
 SMS Shipment Management System
 SOAP Simple Object Access Protocol
 TMC Task Management Component
 UHF Ultrahigh Frequency
 ULD Unit Load Device
 YMS Yard Management System

AIC Application Interface Component
 ALE Application Level Events
 API Application Program Interface
 BAG Business Action Group
 BGR Boarding Gate Reader
 BHS Baggage Handling System
 BRS Baggage Reconciliation System
 CRM Customer Relationship Management
 EMC Event Management Component
 EPCIS EPC Information Services
 ERP Enterprise Resource Planning
 GMS Gate Management System
 HTTP Hypertext Transfer Protocol
 IC Integrated Circuit
 JR Japan Railway
 LIS Lab Information System

[1] Mark Weiser, "The Computer of the 21st Century," Scientific American, Sep. 1991, pp.94-100.
 [2] <http://www.epcglobalinc.org>
 [3] M. Mealling, EPCglobal Object Name Service(ONS) 1.0, EPCglobal Working Draft, April 15, 2004.
 [4] K. Traub and S. Rehling, etc., EPC Information Service Version 1.0 Specification, EPCglobal Working Draft, Oct. 12, 2004.
 [5] K. Traub and S. Bent, etc., The Application Level Events Specification, Version 1.0, EPCglobal Working Draft, Oct. 14, 2004.
 [6] <http://www.rfidjournal.com/article/articleprint/967/-1/1/>
 [7] <http://www.oracle.com/technologies/rfid/index.html>
 [8] , "RFID ," 16 6 , 2004, pp.8-9.
 [9] , RFID , 2004.