Main (Trunk)

- 1 Reader Core Proxy (Uses Licensed Fosstrak modules as Codebase)
- 2 ALE Server (Uses Licensed Fosstrak modules as Codebase)
- 3 Business Event Generator
- 4 EPCIS (Uses Licensed Fosstrak modules as Codebase)
- 5 Tooling (Eclipse)
- 6 Connector
- 7 ONS
- 8 TDT (Uses Fosstrak Library for EPC TDT)
- 9 Applications and Demos

Note that modules noted in "Red" are not implemented yet

Reader Core Proxy (Uses Licensed Fosstrak modules as Codebase)

- Implemented as an OSGi bundle that runs within Apache Felix
- Provides JMX management interface
- Provides EPC Reader Management (not currently enabled and used)
- Uses EPC Reader Protocol to communicate with ALE
- Provides Interfaces with readers (Implemented as an OSGi bundle):
  - For Intermec(BRI)
  - For FossTrack's Simulator reader
  - For Impinj (Mach1) (no OSGi implementation yet)
  - HAL Wrapper for new readers
  - FEIG ID ISC.LRU1000 (Ethernet, TPC/IP) (supported by Fosstrak not tested yet, no OSGi implementation yet)
  - FEIG ID ISC.MR101-A (RS232/485, COM) (supported by Fosstrak not tested yet, no OSGi implementation yet)

-
  - TagSys Medio L100 L200 Interface
  - Tikitag (ACR 122 USB (CCID compliant))
  - Bluetooth Interface
  - NFC Interface
- Standardization for Reader Management (RM) based on JMX
- Authentication/Access mechanisms

ALE Server (Uses Licensed Fosstrak modules as Codebase)

- EPC F&C 1.1 standard compliant (not all Standards Implemented).
  - Check if AspireRFID fully supports Tag Memory Specification API (Section 7 of ALE 1.1 specifications)
    - ALETM - Main API class (Section 7.1 of ALE1.1 specifications) and implement it if it doesn't.
- Runs on Apache tomcat 6.0
- Provides Standard EPC Control Interface Based on SOAP messages
- Uses CXF and spring to implement JaxWS for the control interface.
- Supports Maven.
- Supports RP and LLRP for the communication with the readers.
- Supports TCP/HTTP protocol to deliver EC reports

- Extension *Model* for Captured sensor data from semi-passive Tags, active-Tags, Sensor Networks, actuators… (Need to propose the supported model and implement it) sensors input planed to be supported:
  - Humidity

- ° Temperature
- ° Accelerometer
- ° GPS coordinates
- Interface for connecting/supporting Sensor Networks (e.g. Zigbee)
- Interface for connecting/supporting Active Tags
- Middleware anti-collision solution implementation for multi-vendor RFID readers
- Partial implementation of the EPC Writing API for supporting Label generation and printing (including 1D and 2D barcodes)
- Integration of TDT to support multiple types of Tags/Barcodes
- Implemented as an OSGi bundle that can be deployed in JOnAS Application Server (not implemented yet)
- Authentication/Access mechanisms

Business Event Generator

- Runs on Apache tomcat 6.0
- Uses CXF and Spring to implement JaxWS for the control interface.
- Provides TCP/HTTP interface to capture the ECReports
- Uses EPCIS Master Data Capture Client using AspireRFID MDC API Based on SOAP messages
- Uses EPCIS Capture Client using the standard EPC Control Interface Based on SOAP messages
- Uses EPCIS Query Client using the standard EPC Control Interface Based on SOAP messages
- Supports Quantity, Aggregation, Transaction and Object Events (needs to be tested)

- Interface for connecting/supporting (this feature can be implemented at the Connector also)
  - ° Actuators
  - ° To give feedback to various devises (e.g. Account machines, delivery Information at the gates/handheld devises …)
- Implemented as an OSGi bundle that can be deployed in JOnAS Application Server (not implemented yet)
- Authentication/Access mechanisms

EPCIS (Uses Licensed Fosstrak modules as Codebase)

- EPC 1.0.1 standard compliant
  - ° Provides Extension Mechanisms
    - · For every Event the following data are supported from the repository (check Section 6.3 and 9.1 of the EPCIS specifications):

Column Name	Type Name
event_id	BIGINT
fieldname	VARCHAR
prefix	VARCHAR
intValue	INT
floatValue	FLOAT
dateValue	TIMESTAMP
strValue	VARCHAR

- Runs on Apache tomcat 6.0
- Provides standard EPC Query and Capture Interface Based on SOAP messages.
- Provides Query and Capture Interfaces
  - ° Uses CXF and Spring to implement JaxWS for the standard EPC Query and Capture interface.
  - ° Provides AspireRFID's Master Data Capture Interface Based on SOAP messages.
  - ° Uses CXF and Spring to implement JaxWS for the standard EPC Query and Capture interface.
  - ° Uses SQL for the Query interface and Hibernate for the Capture interface.
- Supports MySQL 5.0 (Can Support more Databases with some modifications)

- Probably a *New Field* extensions may be required for the existing Event Types extensions in the Data Definition Layer (Useful to store e.g. GPS coordinates, Security check …).
- Implement EPCIS Repo as an OSGi bundle that can be deployed in JOnAS Application Server
- Authentication/Access mechanisms

Tooling (Eclipse)

ASPIRE IDE has been designed as an Eclipse RCP (Rich Client Platform) application that will run over Equinox OSGI server. It uses the command API to define menus, pop-up menu items and toolbars so as to support easily plug-ins and provide more control. Every tool will be an eclipse plug-in/bundle that will be able to be installed or removed as needed.

- AspireRfidIDE Core (required for the other plug-ins to run)
- ALE Server Configurator Plug-in
- Business Event Generator Plug-in
- Physical Reader Configuration & Management Plug-in
- EC-Spec Editor Plug-in
- LR-Spec Editor Plug-in
- Master Data Editor Plug-in

- Business Process Management and Workflow Editor Plug-in
  - Possible candidates to use as codebase:
    - Eclipse JWT Workflow Editor
    - OW2 Bonita
    - OW2 Enhydra JaWE
- Connector Configurator Plug-in
- Business Location Designer. Will be used to "build" the company (Master Data: Business Location) using a design editor.
- ASPIRE Programmability Engine Plug-in. Will be used to translate the AspireRFID specification Language prodused from the BPMWE Plug-in to the AspireRFID middleware.
- End-to-End management for all the AspireRFID middleware's modules
  - Probably use Jasmine (eclipse plug-in) as codebase (note: should find appropriate open source JMX enabled plug-in as codebase)
- Concurrent innovation engineering framework
- Authentication/Access mechanisms for the AspireRFID IDE

Connector

- Runs on Apache tomcat 6.0
- Uses CXF and Spring to implement JaxWS for the control interface.
- Uses EPCIS Query Client using the standard EPC Control Interface Based on SOAP messages.

- ERP/WMS Support:
  - Singular Logic's Enterprise ERP
  - Microsoft's Dynamics NAV
  - MyWMS
  - UJF's Object tracking
  - UJF's Supply chain management
  - UJF's Sonding Balloon tracking
- Implemented as an OSGi bundle that can be deployed in JOnAS Application Server (not implemented yet)
- Authentication/Access mechanisms

ONS

- Under Construction

TDT (Uses Fosstrak Library for EPC TDT)

Tag Data Standards	Supported
Bar Code Tags (GS1 System)	Yes
EAN/UPC	Yes
ITF-14	Yes
GS1 DataMatrix	Yes
GS1 DAtaBar	Yes
GS1-128	Yes
EPC Global Tags	Yes (Using Fosstrak)
SSCC	Yes
GTIN	Yes
GTIN	Yes

GLN	Yes
GRAI	Yes
GIAI	Yes
GLN	Yes
ISO Tags	To be supported
14443	To be supported
15693	To be supported
15962	To be supported
uCode Tags	To be supported

Applications and Demos

- Simple F&C Test
- Warehouse Packet Delivery (3 Tier Use)
- AIT's Warehouse Packet Delivery (6 Tier Use)

- UJF's Object tracking (Connector Interface should be build to be supported)
- UJF's Supply chain management (Connector Interface should be build to be supported)
- UJF's Sonding Balloon tracking (Connector Interface should be build to be supported)
- Demo Packs for all available demos and Middleware modules.

Main (Trunk) (en)
Creator: xwiki:XWiki.nkef Date: 2009/05/04 08:44
Last Author: xwiki:XWiki.nkef Date: 2009/05/05 14:52
Copyright (c) 2008-2010, Aspire