

LaGov Project

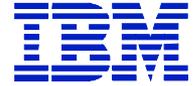
**Mobilized Solutions and Architectural Tools for
Logistical Operations**

November 17, 2008





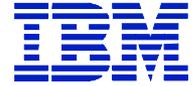
Workshop Agenda 1 of 3



- Logistics, Ground Rules & Introduction
- Blueprint / Workshop Objectives
- Project Overview / Scope / Timeline
- Agency Roles / Project Organization Teams
- SAP Mobile Introduction
- Mobile Devices
- Mobile ERP Transaction
- Mobile Frontend to SAP Backend Transparency
- General Mobile Infrastructure
- Uniqueness Amongst Infrastructure Areas
- Mobile Infrastructure
- End Users Device Infrastructure
- SAP Middleware Infrastructure
- Monitoring Device Assignments to users
- Tools in Middleware
- Orchestration Engine
- How Users will get Sync updates
- Communicating with Non-SAP Applications
- XI Exchange Architecture



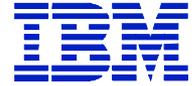
Workshop Agenda 2 of 3



- SAP Backend Adapters
- Leveraging BAPI's
- Maintenance BAPI example
- Interactive Forms for DOTD
- Property & Facilities with Mobile use
- Asset Tracking with Mobile Bar-Coding
- Fleet Management with Mobile Use
- Road & Bridge with Mobile Use
- Inventory Materials Management with Mobile Use
- As-Is Processes and To-Be Processes
- SAP Mobile Introduction – Field Operations Perspective
- Mobile Order Processing
- Mobile Notification Processing
- Entering Measurement Readings on Mobile Devices
- Stock Processing with Mobile Device
- Equipment Management
- SAP Mobile Asset Management Design Settings
- Assignment of Work, Request, and Stock to Mobilized Field Personnel
- Assignment of Equipment as stock



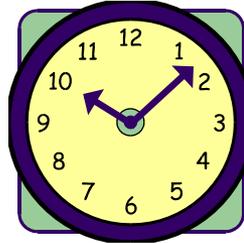
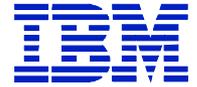
Workshop Agenda 3 of 3



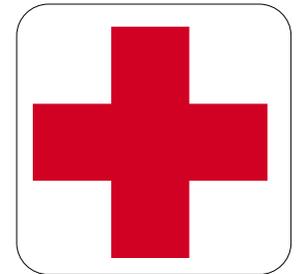
- Device Log-On access
- Process Improvement Opportunities
- Leading Practices
- Enterprise Readiness Challenges
- Next Steps for Mobile
- Contacts



Administrative

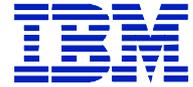


Before we get started ...





Ground Rules

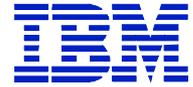


- Has everybody signed in?
- Everybody participates – blueprint is not a spectator sport
- Silence means agreement
- Focus is key – please turn cell phones to vibrate and mute sound on laptops
- Challenge existing processes and mindsets
- Offer suggestions and ideas
- Think Holistic for the Great State of Louisiana
- Please, Ask questions at any time
- One person at a time please
- Creativity, cooperation, and compromise





People Introduction



■ My Role and Your Role

- **Process Analyst and Functional Consultant (IBM)** – lead and facilitate the discussions and drive design decisions
- **Documenter (State Employee)** – take detailed notes to support the formal meeting minutes to be sent by the Process Analyst to all participants for review and feedback
- **Team Members (LaGov)** – provide additional support for process discussions, address key integration touch points
- **Subject Matter Experts** – advise team members on the detailed business process and participate in the decisions required to design the future state business process

Round the Room Introductions

Name

Position

Agency



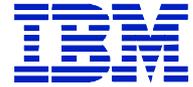
Mobile Logistics Blueprint Objectives



- Review and discuss the current or As-Is business processes
 - Which helps to drive out the Business requirements
 - As well as the integration points with other processes
- Define Master Data
 - Address key integration points
 - Support organizational requirements
 - Consistent and appropriate use of data fields
- Define Future or To-Be business processes based on:
 - Best Practices inherent in SAP
 - Leverage Intellectual capital from other SAP implementations
 - State business requirements
- Identify development requirements
 - Which could result in the need for a form, report, interface, conversion, enhancement, or workflow (FRICE-W)
- Understand and communicate any organizational impacts / Enterprise Readiness challenges
- Gather system security authorizations and district-wide training requirements



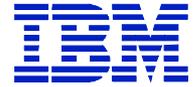
Mobile Logistics Workshop Objectives



- Review and discuss the Mobile Solution business processes for:
 - Mobile Business requirements for (Road & Bridge, Facilities, Fleet)
 - Integration points with other processes
 - Address key integration points
 - Consistent and appropriate use of data fields
 - Best Practices inherent in SAP
 - Intellectual capital from other SAP implementations
 - State business requirements
 - Identify development requirements which could result in the need for a form, report, interface, conversion, enhancement, or workflow (FRICE-W)
 - Understand and communicate any organizational impacts / Enterprise Readiness challenges
 - Gather system security authorizations
 - Training requirements



Project Overview



Enterprise Resource Planning (ERP)

Comprehensive suite of integrated products providing end-to-end support for statewide and agency-specific administrative business processes:

This is a Strategic Business Initiative for Louisiana State Government using technology as a tool

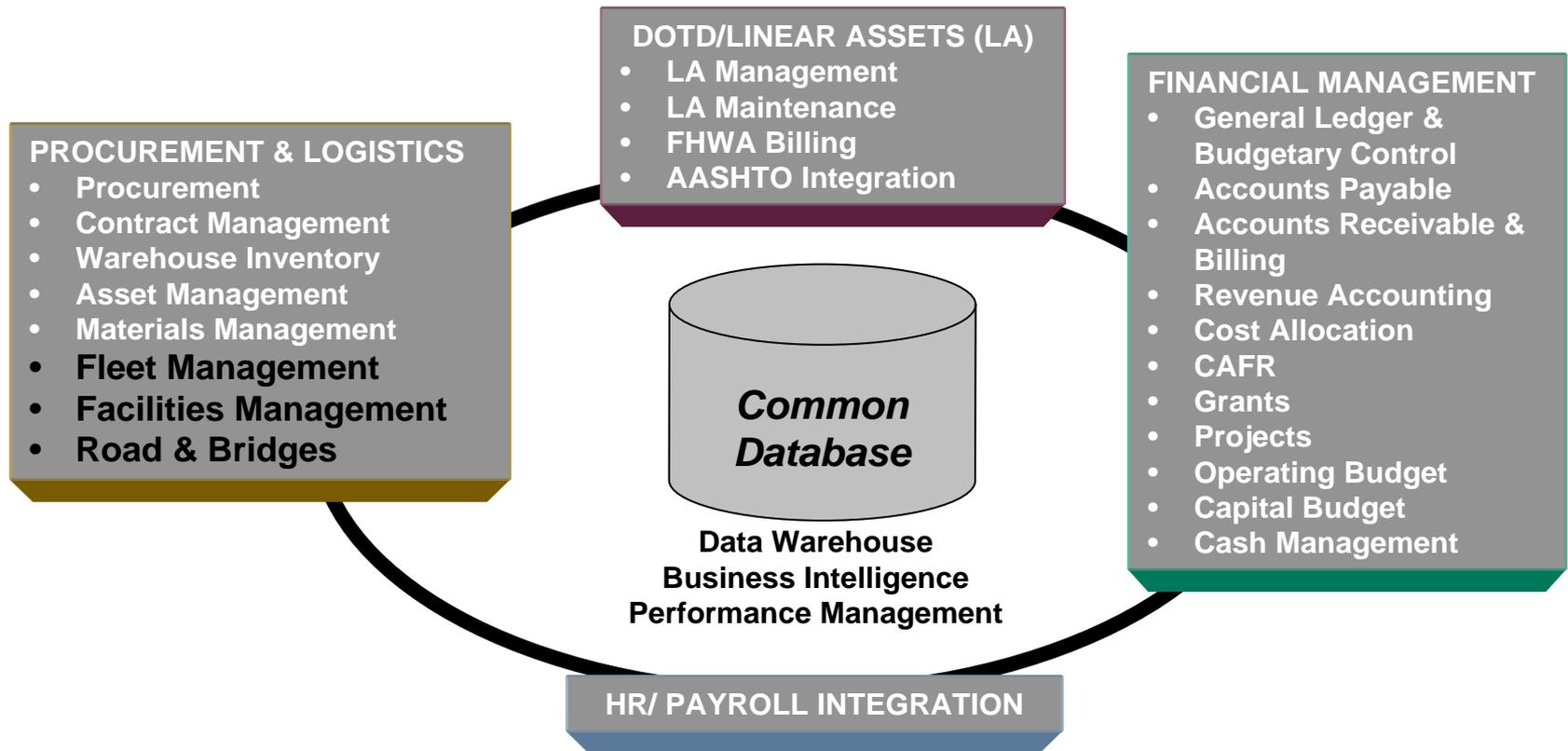
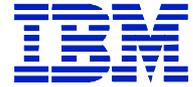
The existing SAP HR/Payroll System will be integrated with the SAP Financial System and AgileAssets:

Providing a fully integrated ERP Solution to the State of Louisiana!



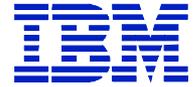
Project Scope

SAP Integrated Business Components

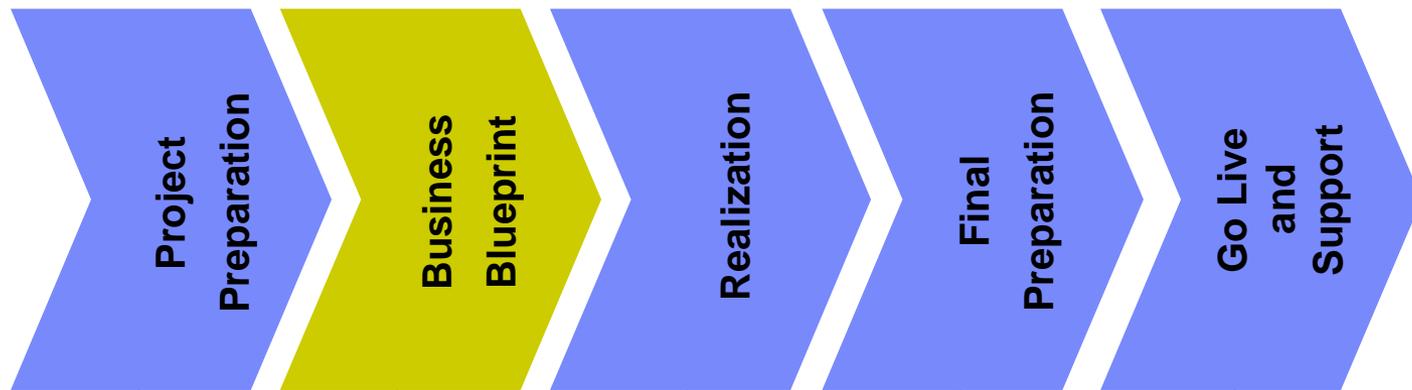




Project Phases



■ Five Key Phases



- Strategy & Approach Defined
- Project Team Training

- Development & Unit Testing
- Integration Testing
- End-User Training Materials

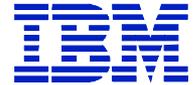
- Go-Live Support
- Performance Tuning

- Business Process Definition
- Development Requirements

- User Acceptance
- Technical Testing
- End-User Training
- Conversion

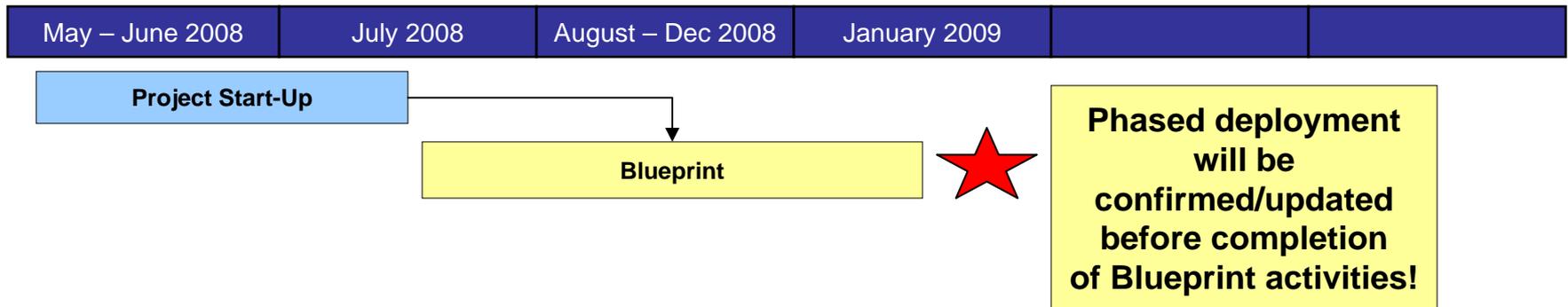


Tentative Project Timeline



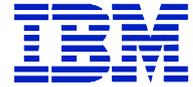
- Tentative implementation dates are planned as follows:

Functionality	Tentative Implementation Date
Budget Prep	October 2009
DOTD	February 2010
Core Modules All Agencies	July 2010
Additional Modules	January 2011





Agency Roles



Agency Project Involvement

Usage/Requirements/Design

Organize Agency Implementation Effort

Be Trained on Agency Implementation Tasks

Plan Agency Implementation Effort

Conduct Agency Implementation Effort

- Usage Mapping/Issue Resolution
- Security Role Definition
- Conversion
- Interfaces
- Documentation/Policy/Procedures**
- Training Needs Assessment
- Cutover

Training

Testing

Support From Central Team

Agency Support Group

Central Team SMEs/Blueprint Participants

Central Team Technical Staff

Information on New System Design

Information on COA, Budget, Purchasing, Payables and other centrally determined functions/classifications

Agency Implementation Guide

Agency Implementation Team Training

Forms and Templates to Assist Agency Implementation Effort

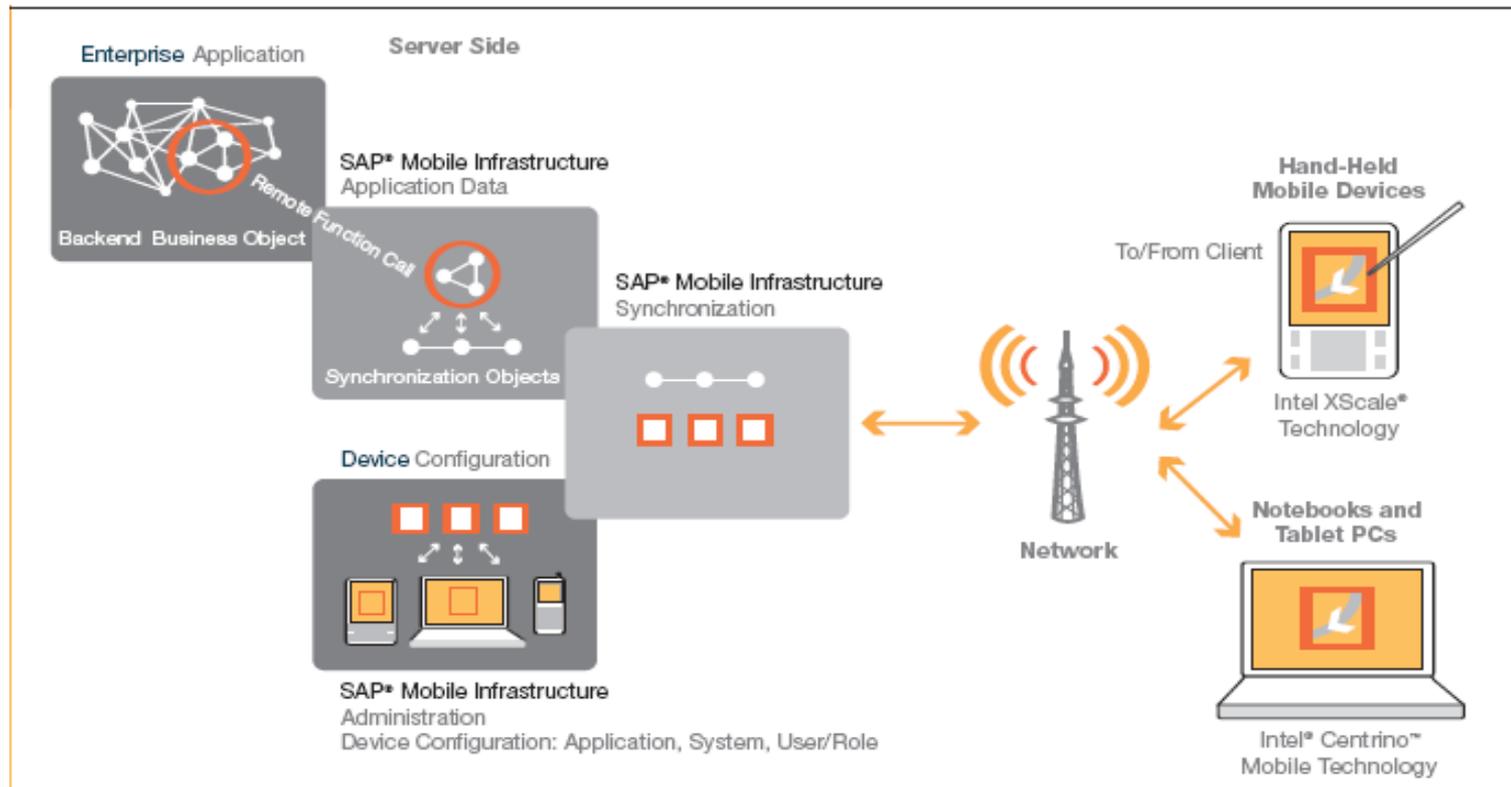


SAP Mobile Introduction



Enabling Mobile Applications for Occasional Connection (R3 & Mobile)

- End users with mobile devices that are occasionally connected can carry out their tasks without being connected to the SAP back-end system. The required business logic and user interface reside on the mobile device (MAM & Agile Assets), and when the mobile device connects to the back-end system, it exchanges all modified data using SAP Business Objects & XML processing.





Mobile Devices

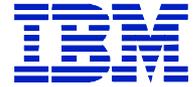


- SAP Mobile Infrastructure provides platform independent runtime for mobile applications
 - Runs on Pocket PC 2003/2005, Win32, and Sharp Mobile Linux
 - Based on industry standards (HTTP, JAVA)
 - Implements user interface and data access layers for the mobile device
 - Enables database use for client applications
 - Assumptions: Agency Driven Mobile Device Purchases





Mobile ERP Transactions

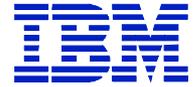


- Mobilization shall provide an unparalleled number of business capabilities into an easy-to-carry rugged device.
 - Field personnel will enjoy having all the features they need right at their fingertips in one device designed to endure all-day, everyday use outside the SAP R3 Enterprise — including push-to-talk, integrated GPS with tracking capabilities, 1D and 2D bar code scanning, a high resolution 2 megapixel autofocus color camera, 802.11a/b/g wireless LAN (WLAN), Bluetooth and IrDA connectivity (commonly known as Infra-red).
 - Assumptions: Agency Driven Mobile Device Purchases





Frontend to Backend Transparency



- Data Staging for the Mobile Device

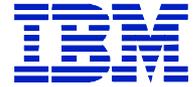
Here you see where the information staged in DOE was synchronized up to the Mobile device. Field personnel log onto the Mobile Application and review the work assigned to them.

The screenshot displays the SAP Mobile Infrastructure interface. The top navigation bar includes 'Welcome CHPEIA' and a menu with 'xMAM Home', 'Order Management', 'Notification Management', 'Technical Object Management', 'Measurement and Counter Reading', and 'Other'. The main content area is titled 'Orders' and features a 'Create' button. Below this is a table of 'All Orders' with columns for Order, Order Type, Priority, Notification, Equipment, and Functional Location. The table lists several orders, including one for a Diesel Engine Repair. A 'Quick Links' section on the left provides a link to 'Create Order'.

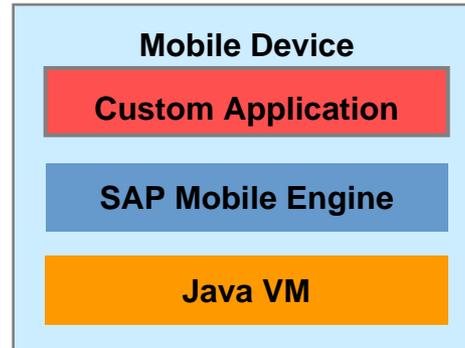
Order	Order Type	Priority	Notification	Equipment	Functional Location
4000064	PM01		10000035	10000000	PLATFORM POWER
#1 Diesel Engine Repair					
4000065	PM01		10000036	10000000	PLATFORM POWER
check diesel engine					
4000066	PM01		10000037		PLATFORM POWER
Check and Inspect Diesel Engines					
4000067	PM01		10000041	10000014	
Casing is cracked and requires Maint					
4000068	PM01		10000043	10000000	PLATFORM POWER
Preventive Maintenance Plan					



General Mobile Infrastructure

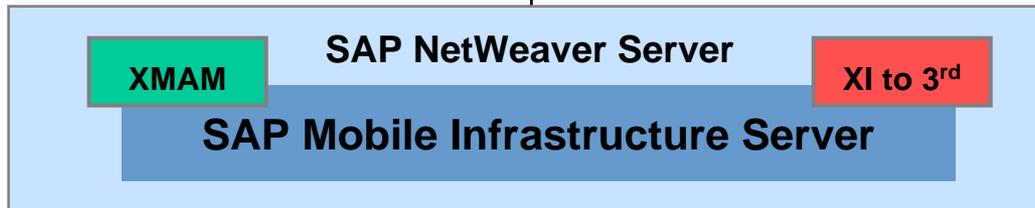


LaGov Mobilized



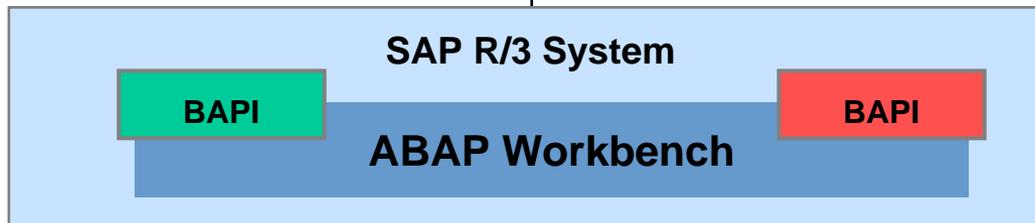
- *Develop User Interface*
- *Develop Business Logic*
- *Add/Update data*
- *Configure Sync properties*

HTTPS



- *Create SyncBO*
- *Enable Sync BO*
- *Upload Client App*
- *Assign Users*

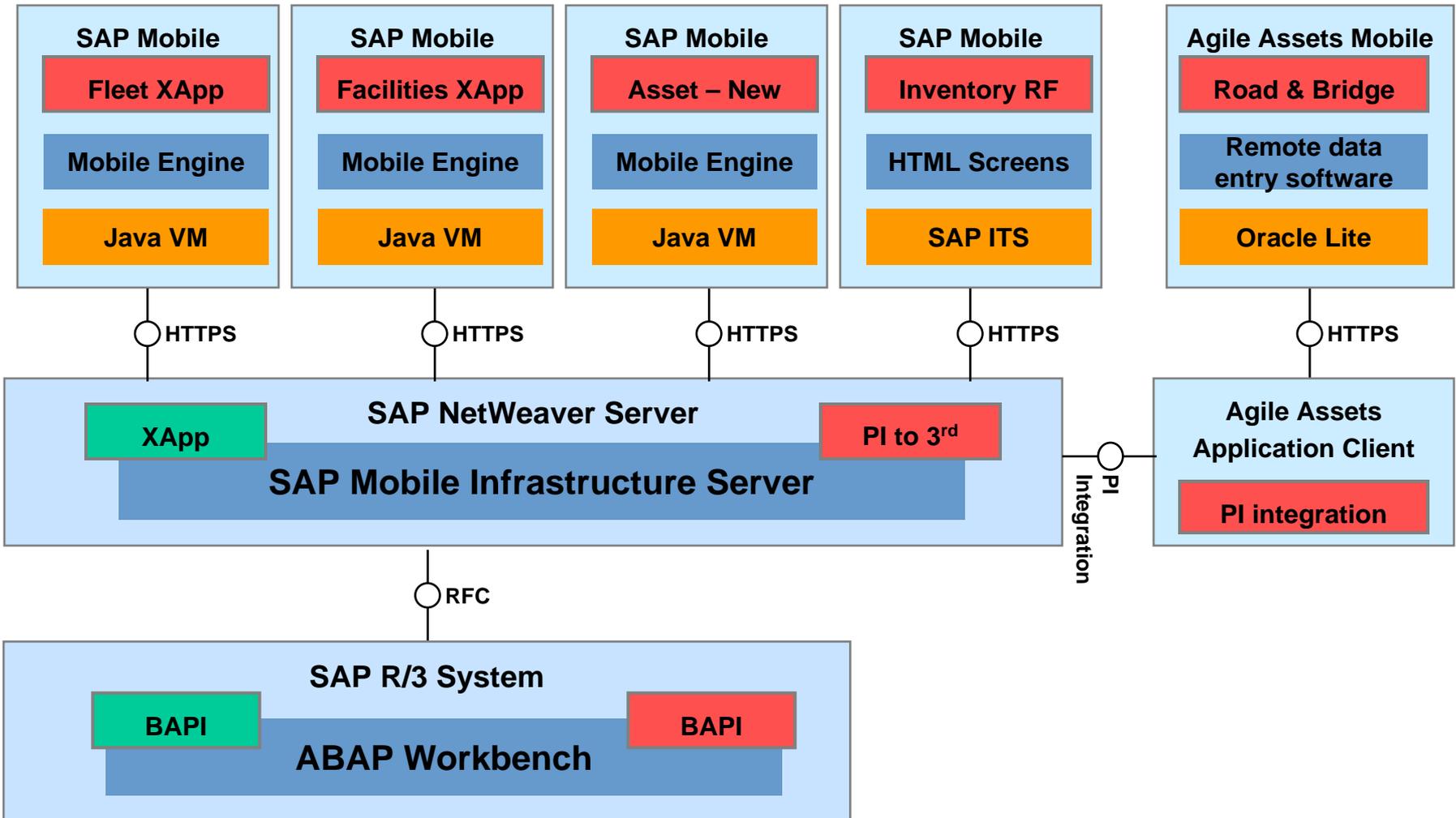
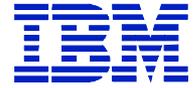
RFC



- *Extend BAPI*
- *BAPI Wrappers*
- *RFC Wizard*

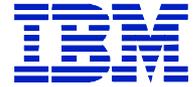


Uniqueness Amongst Infrastructure Areas

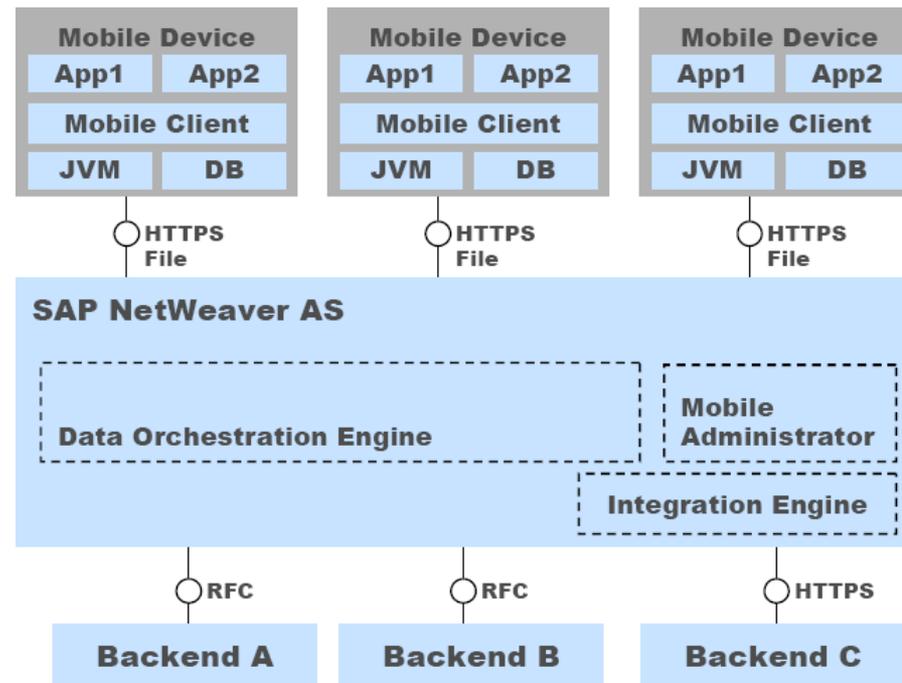




Mobile Infrastructure



- Runtime Tools for SAP Netweaver Mobile Infrastructure
 - Data Orchestration Engine takes care of the data that is used by devices
 - Mobile Administrator Manages the devices
 - Integration Engine has the task of receiving, processing, and forwarding XML messages.

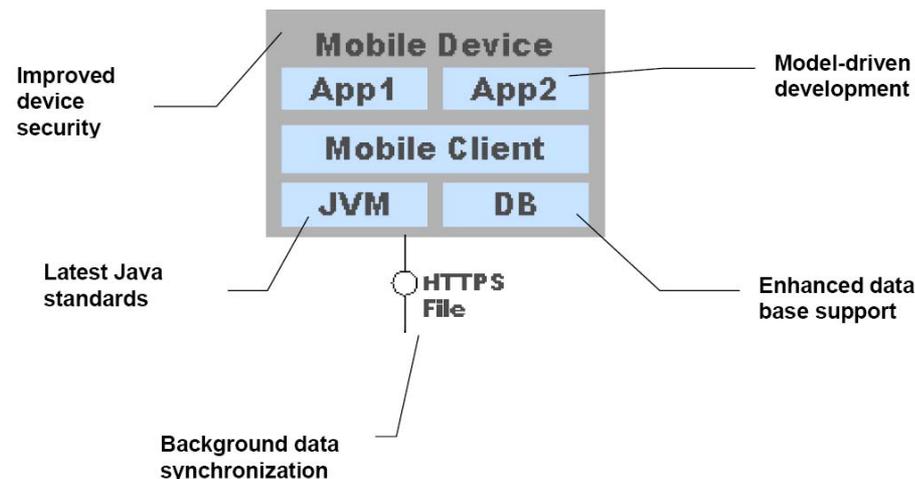




End Users Device Infrastructure

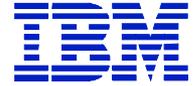


- The Mobile Client has several tasks, as personnel work in an offline mode , it is the runtime environment so the end user can work without requiring full online access.
 - The Mobile Client Manages the component registry. Mobile Client always knows what transactions are installed,
 - What version and assigned users have logged on. It provides Advanced Programming Interfacing, commonly known as API's, in order to retrieve data to and from the local database and track changes,
 - and finally it exchanges data with the Data Orchestration Engine upon synchronization.



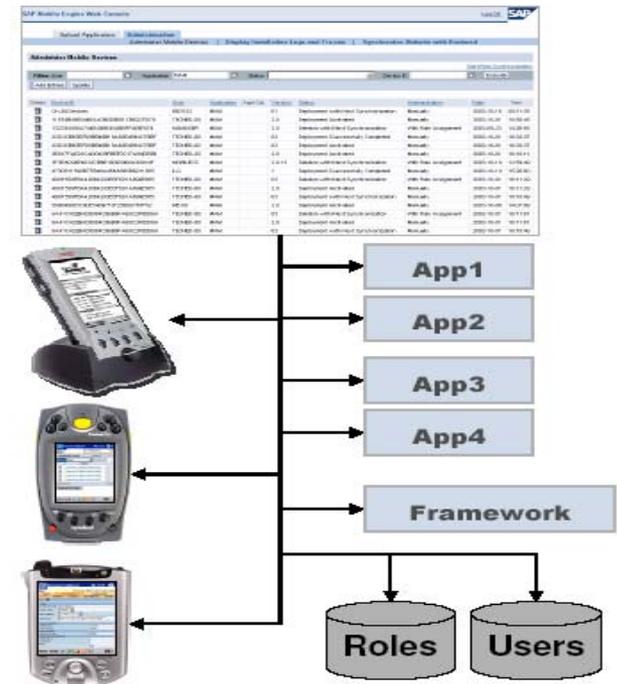


Middleware Infrastructure



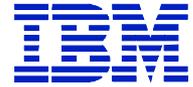
What is an SAP Mobile Infrastructure?

- Provides a central administration and deployment tool for mobile applications.
- It's a combination of software tools and applications that enable deployment of SAP functionality to a variety of disconnected handheld devices
- Allows key SAP functions accessible to a mobile user
- Assumes disconnected user
- Server-side code (synchronization and administration)
- Central role-based application deployment
- Automatic upgrades
- Central device management and monitoring
- Full integration into SAP Web AS





Monitoring device assignments to users



- Mobile Administrator

We can search for all the devices and view what relevant information has been assigned to it. Think of it as a device inventory / administrator. We can also view the synchronization of information that is taking place per device by selecting the messages.

```
<?xml version="1.0" encoding="utf-8" ?>
- <Msg type="T">
  <ORDERITEM C6="CORRECT DOOR BELL" C1="0018FE796BF01DEC83DC82401D329A06"
  C0="0018FE796BF01DEC84D46504EB1E1A06" ty="U" tv="0018FE796BF21DDC9382D116ACC1DB08" />
</Msg>
```

Device Management

Device Details

Refresh

Device name: SDN_DEMO_01 Device Id: 0018FE796BF21DDC92E7EB50F90FFB0B

Status: Registered Reinitialise Device Enabled: Disable

Queue Name: MMV_Q_000000000000000143

Device attributes | Mobile Components | Device Profiles | Users | Distribution Model Software Component Version

Attribute Name	Attribute Value
CLIENT_FRAMEWORK_TYPE	JSC
CLIENT_FRAMEWORK_VERSION	7.1
DEVICE_NAME	
DEVICE_TYPE	LAPTOP
EQUIPMENT_NUMBER	
LANGUAGE	EN
OSVERSION	
OSVERSIONVENDOR	
QUEUE_NAME	MMV_Q_000000000000000143
TEST_DEVICE	

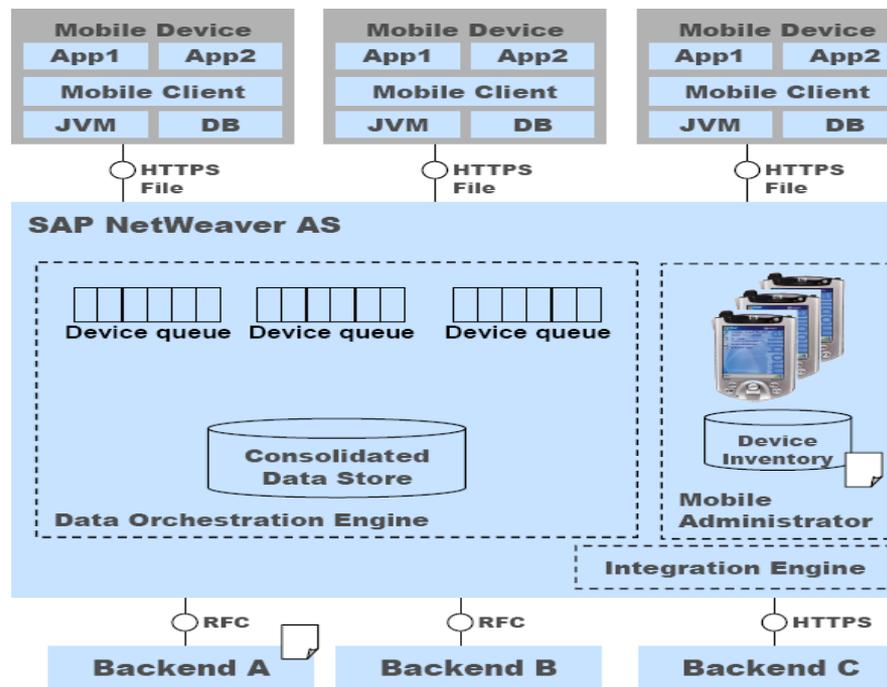


Tools in Middleware Infrastructure



- Consolidated Data Store

Data will be staged in CDS, basically it is where we have all the data relevant for Mobile processes (Maintenance, Purchasing, Inventory, Asset Tracking) but only field entries relevant to mobile. The reason we have this data redundancy in the data store is to reduce the load on the backup R3 system, no more constant reloading of data from the backend systems.





Example of Orchestration Engine



- Data Staging for the Data Orchestration Engine

In the DOE we have the data grouping of objects sorted by category, Here you can see a customer And Order data nodes. In the Order header data we have a listing of attributes known as fields relevant to the order header.

The screenshot shows the SAP Data Object editor interface. The main window displays the 'Data Object : Display ORDER (Active)'. The left pane shows a tree view of the object structure, including 'CUSTOMER' and 'ORDER' nodes. The right pane shows the 'Node Attributes' table for the selected 'ORDER' node.

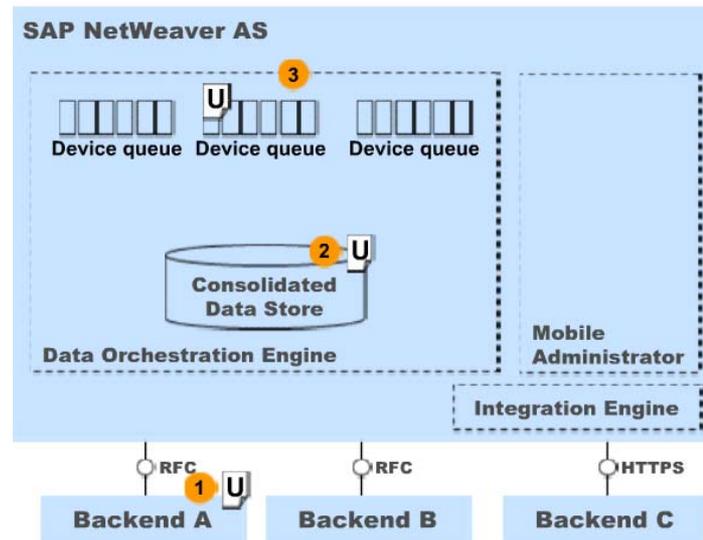
Posit	Field Name	Data element	Data Type	Length	Decimal	Description
1	SYNCKEY_MMW	CHAR32	CHAR	32	0	Character field, length 32
2	ORDERID	-	CHAR	8	0	
3	CUSTID		CHAR	4	0	
4	LONGTEXT		CHAR	32	0	
5	SERVICEUNIT		CHAR	32	0	
6	CUS_SYNCKEY_MMW	CHAR32	CHAR	32	0	Character field, length 32



How field personnel will get updates

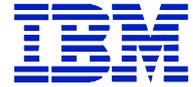


- Outbound/Inbound Data Processing Steps
 1. The user updates a record in the SAP Backend system
 2. The Consolidated Data Store updates the generated table
 3. Every mobile device has a queue which acts as a mailbox
 4. When device is synchronized the data is downloaded into the mobile client.





Communication with Non-SAP Applications



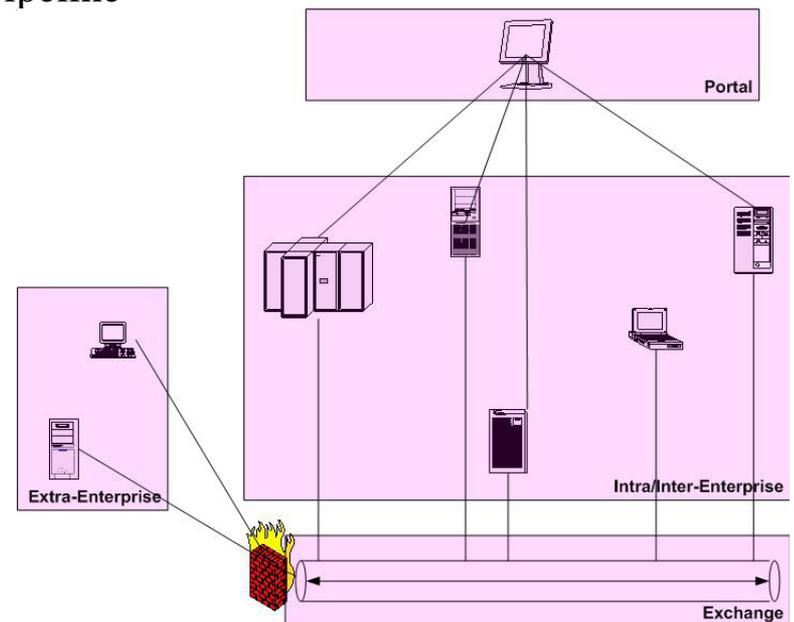
- Leveraging PI for 3rd Party Best of Breed Applications
 - SAP Exchange Infrastructure (SAP PI) enables us to implement cross-system processes. It enables us to connect systems from different vendors (non-SAP and SAP) in different versions and implemented in different programming languages (Java, ABAP, and so on) to each other.
 - SAP PI an integration broker that will mediate between 3rd party entities with varying requirements in terms of connectivity, format, and protocols. SAP PI can be used to reduce integration costs by providing a common repository for interfaces.
 - Assumption, as workshops progress additional 3rd party applications could be defined.
 - At the center of SAP NetWeaver PI is an XML-based communication that uses HTTP. Irrespective of the scenario used, the application-specific contents are transferred in messages in user-defined XML from the sender to the receiver either via the Integration Server, or directly between the systems involved.



An XI Exchange Architecture



- Leveraging PI for 3rd Party Best of Breed Applications
 - Consolidates the connectivity requirements of multiple systems to a single location.
 - Hides the complexity of heterogeneous platforms it connects with, while simplifying connectivity through a suite of pre-configured connectors.
 - Systems now become “publishers” and “consumers” of messages, unaware of the source system or format.
 - Interfaces become more plug and play, allowing rapid redeployment from one system to another with significant re-use.
 - Monitoring is centralized within the exchange pipeline





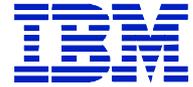
An XI Exchange Architecture



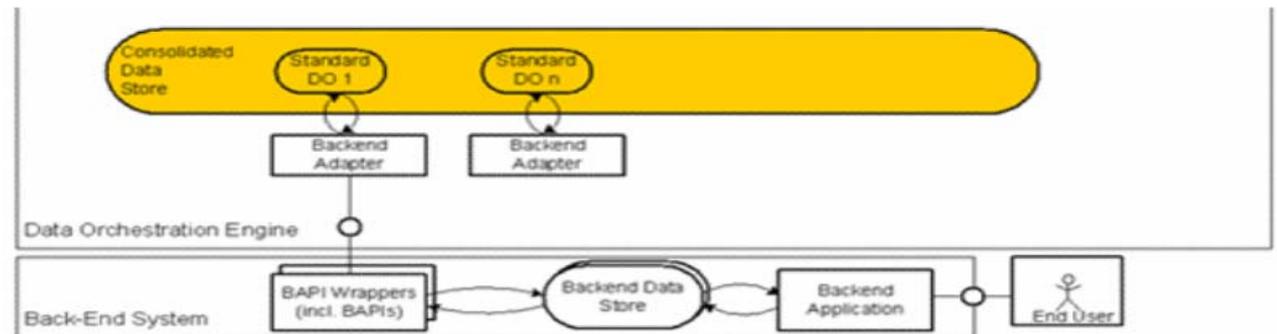
- Utilizing PI within the SAP, Netweaver, Agile Application Landscape
 - The basic PI schema is very simple: A sender application system (SAP) talks to a central PI Integration Server (Netweaver), which then sends the messages to a receiver application system (Agile).
 - Adapters will connect the Integration Engine to SAP legacy systems, as well as to external. In the process, XML and HTTP-based documents are converted to IDOCs and RFC's.
 - Active Message transmission, The sender (Agile Assets) continues to re-send a message until it gets a positive notice that the message has in fact been persisted on the receiver. In other words, as long as network errors and such prevent the message from arriving at its destination, the message will continuously be sent by the PI sender.
 - XI is recommended for:
 - Interfaces where a standard IDOC/BAPI can be used to load data into SAP
 - Real time interfaces, where the legacy system cannot directly communicate with SAP



SAP Backend Adapters

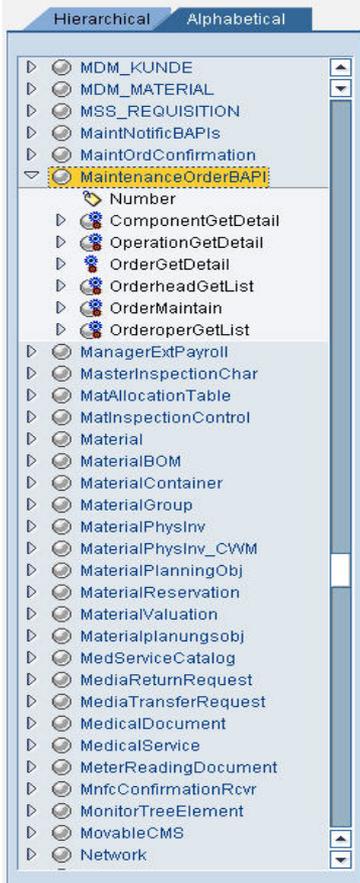
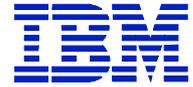


- How the data is pulled using Backend Adapters
 - The Adapters tasks is to pull and push the relevant data for offline purposes. The BAPI Wrappers responsibility is to match Data Node Attributes with Function Modules in the SAP Backend R3 System.
 - BAPI wrapper is called as such, because it typically wraps an existing standard BAPI. It merely means that you create a function module (RFC or not) in which you call the BAPI you are trying to 'wrap'.
 - XI will make use of the out of the box adapters to communicate with Legacy and SAP systems. The following adapter options exist for establishing communication with SAP Systems.
 - IDOC Adapter – Enables you to process IDocs (Intermediate Documents) using the XI Integration Engine
 - RFC Adapter - Handles native Remote Function Calls (RFCs) to and from the XI Integration Engine





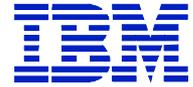
Leveraging Existing Programming Interfaces



- BAPI is an abbreviation used for Business Application Programming Interface. These are interfaces within the business framework to link SAP components to one another and SAP components with third-party components.
 - BAPI's
 - Will allow our SAP instance to get data to and from the Data Orchestration Engine to the mobile devices.
 - BAPI's
 - The flexibility and convenience of writing and the retrieval of data in ready-to-use configurations for business processes makes it an effective method.
 - BAPI's
 - Some BAPIs may be extended for new applications, the SAP Business Object Repository (BOR) contains dozens of BAPIs for creating and retrieving master records and transactional records of all types.



Example of a Maintenance Order BAPI



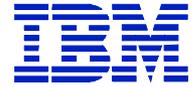
- The Business Application Programming Interface (BAPI)
 - BAPIs will allow our SAP instance to get data to and from the Mobile Infrastructure – and Mobile Devices.

The screenshot displays the SAP Business Explorer interface for the Business object BUS2007A, which is a Maintenance Order BAPI. The interface is organized into several sections:

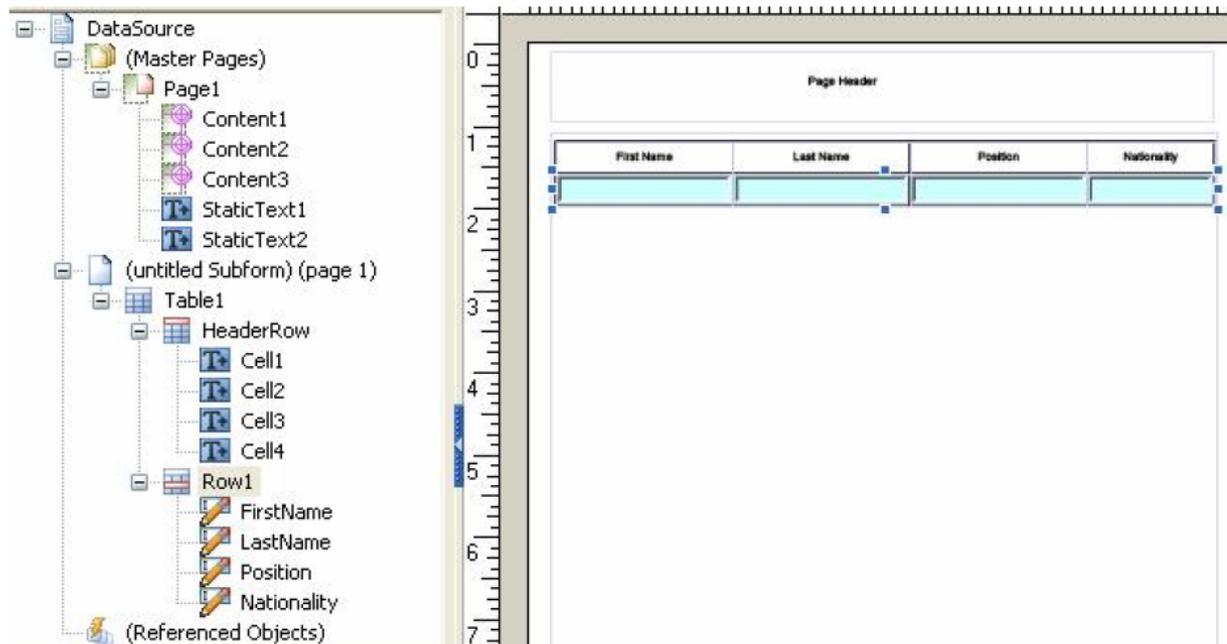
- Interfaces:** Lists several interfaces including IFSAP (SAP standard interface), IFARCH21 (SAP ArchiveLink interface), IFPRINT (Print object), IFSTATUS (Status management), and IFSENDSTAT (Receive send status info using events).
- Key fields:** Shows the MaintenanceOrderBAPI.Number field, which is the Order number.
- Attributes:** A comprehensive list of attributes for the MaintenanceOrderBAPI object, such as StatusProfile, Object type, PM planner group, Cost estimate, Company code, Business area, Notification No, Object type for status management, Object number for status management, Priority, Equipment number, Assembly, Maintenance planning plant, Object ID of PM work center, Order type, Order category, Created by, Short text, Plant, Work breakdown structure element (WBS element), Functional location, Maintenance plant, Estimated total costs of order, Basic finish date, Basic start date, Maintenance activity type, Basic finish (time), Basic start date, Number of superior order, Main work center, Service order indicator, and Maintenance planner group.



Interactive Forms for DOTD Road & Bridge Inspections

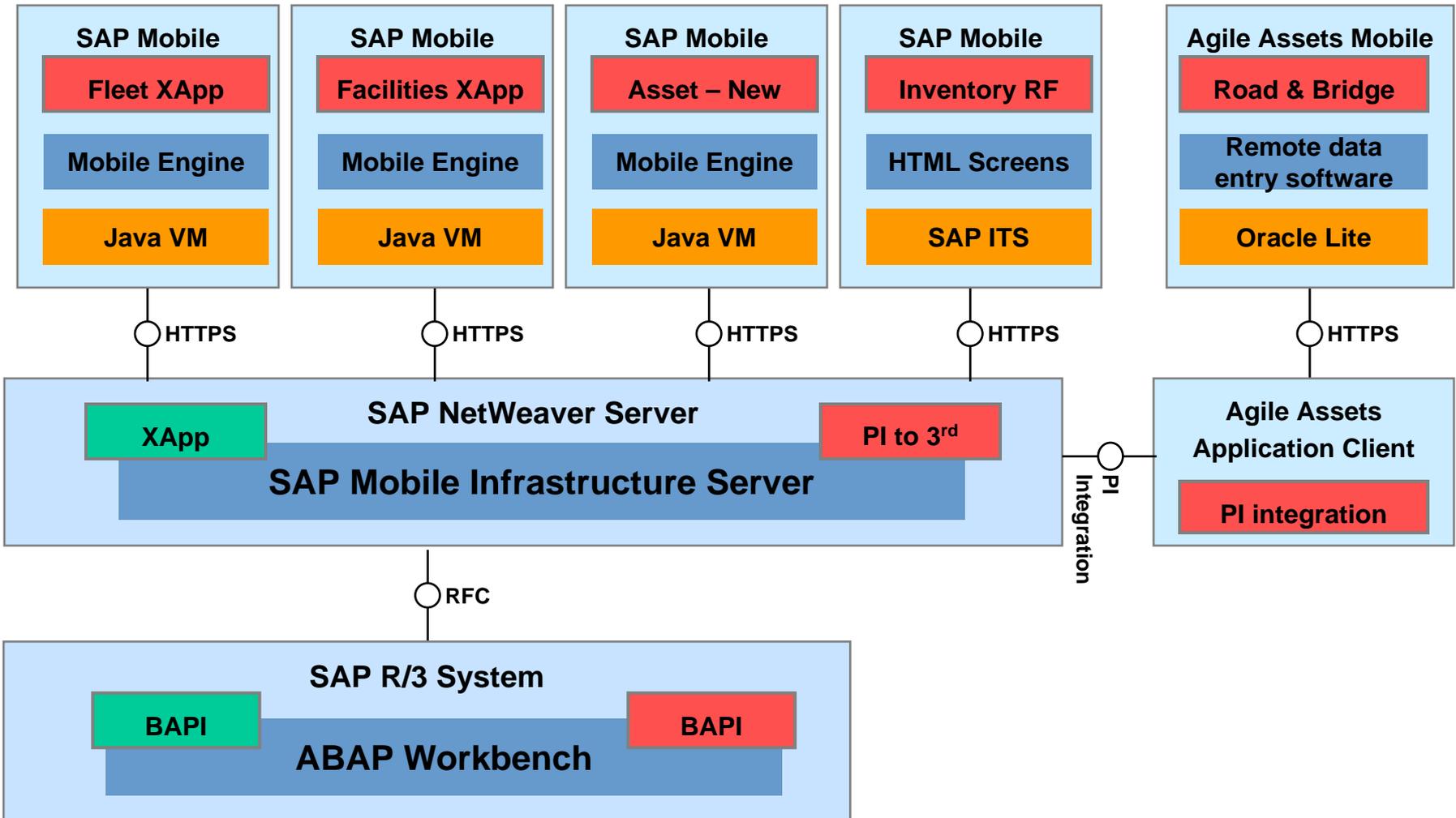


- With Adobe Interactive Forms users can easily engage in automated business processes by completing forms, such as adhoc inspection routines. DOTD performs incremental Inspections. DOTD will perform the following:
 - Create and deploy interactive forms that look exactly like their paper forms
 - Work with forms in offline scenarios
 - Capture data using forms and import that data directly into the SAP system



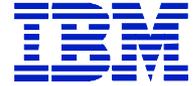


Commence Functional Uniqueness Amongst Areas Here





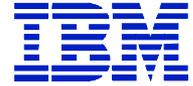
Property & Facilities with Mobile Use



- Mobilization for Property & Facilities Management for a number of business processes:
 - Perform Inspections of property and facilities
 - Enter service request
 - Enter work orders
 - Check work status
 - Plan, schedule, and track maintenance activities
 - Send task to employees
 - Perform physical inventory of content within a building (barcode scanning)
 - No GIS use
 - GIS functionality is restricted to Road & Bridge Linear Assets Module from Agile
 - Effected Agencies: DOTD, ORM, DPS, CRT, DHH, Corrections, WL&F, and OSB
 - Assumptions must be determined by Subject Matter Experts
 - Issue Management # 8000000310 Resolution:
- Decision 1: ONLY DOTD will be slated to Mobilize Road & Bridge with Linear Assets, Fleet with SAP MAM, and Facilities with MAM.
- Decision 2: Other Agency Point of Contacts attending the Mobile for Logistics Workshop can express an interest in Mobilizing work processes at a later date not to exceed the November 20th. 2008 end of workshop date.
- Decision 3: DOTD warehousing shall utilize a mobilized RF device for Field Personnel.
- Decision 4: Protégé shall be replaced by a Team IBM solution. (Solution To Be Determined).



Facilities with Mobile Asset Management



- Facilities Management Mobilization
 - Notification & work order resource planning, costing, refurbishment, and materials management integration shall be made available. Preventive and predictive maintenance activities, based on time, counter, condition, shall allow scheduling of maintenance tasks, resources, tools, and materials.

The screenshot displays the SAP 'Create Maintenance Order: Central Header' form. The interface includes a menu bar (Order, Edit, Goto, Extras, Environment, System, Help, Test) and a toolbar. The main form area is divided into several sections:

- Order Data:** Order PM01 %0000000001, Facilities Maintenance Work Order, Sys.Status.
- Navigation Tabs:** HeaderData, Operations, Components, Costs, Partner, Objects, Addit Data, Location, Planning, Control.
- Person responsible:** PlannerGrp / 1000, Mn.wk.ctr (checked), Person Resp, Notifctn, Costs (EUR), PMActType 103 Repair, SystCond, Address.
- Dates:** Bsc start 23.09.2008, Basic fin. 23.09.2008, Priority, Revision.
- Reference object:** Func. Loc., Equipment, Assembly.
- First operation:** Operation, Cckey Calculate duration, WkCtr/Plnt / 1000, Ctrl key PM01, Acty Type, Work durtn HR, Number, Oprtn dur. HR, Person. no.



Asset Tracking with Mobile Bar-coding



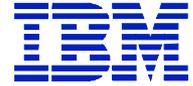
- Asset Tracking Mobilization will enable us to take accurate physical inventories quickly, get increased control over portable items and have access to reliable information for property managers.
 - Item tracking for Property Managers
 - Manage Identification Label
 - Resource Assignment
 - Certification checking
 - Location Validation

The screenshot displays the SAP Asset Explorer interface. The left pane shows the 'Display Asset: Master data' for asset 77669, with tabs for General, Time-dependent, Allocations, and Origin. The 'Time-dependent' tab is active, showing fields for Description (LOUDSPEAKER), Asset main no. text (LOUDSPEAKER), Acct determination (250), Serial number (393841), and Inventory number. The right pane shows the 'Asset Explorer' for asset 151812/0000, with a tree view of depreciation areas including '01 Book depreciation'. Below the tree, a table titled 'Planned values Book depreciation in local currency' is shown for the fiscal year 2006. The table has columns for Value, Fiscal year start, Change, Year-end, and Crcy. The data shows an acquisition value of 1,205.00 USD and a net book value of 1,205.00 USD. A message at the bottom states 'No postings for selected fiscal year'.

Value	Fiscal year start	Change	Year-end	Crcy
APC transactions	1,205.00		1,205.00	USD
Acquisition value	1,205.00		1,205.00	USD
Ordinary deprec.				USD
Unplanned dep.				USD
Write-up				USD
Value adjustment				USD
Net book value	1,205.00		1,205.00	USD
Down payments				USD
Scrap value				USD



Fleet Management with Mobile Use



- Mobilization for Fleet Management for a number of business processes:
 - Perform physical inventory scanning barcode tags
 - Perform vehicle inspections
 - Schedule, track and report preventive maintenance services, fuel usage, work orders, equipment histories, recall campaigns, and warranty recapture
 - NO GIS use
 - GIS functionality is restricted to Road & Bridge Linear Assets Module from Agile
 - Effected Agencies: DOTD, DPS, WL&F, and LPAA
 - Assumptions must be determined by Subject Matter Experts
 - Issue Management # 8000000310 Resolution:
- Decision 1: ONLY DOTD will be slated to Mobilize Road & Bridge with Linear Assets, Fleet with SAP MAM, and Facilities with MAM.
- Decision 2: Other Agency Point of Contacts attending the Mobile for Logistics Workshop can express an interest in Mobilizing work processes at a later date not to exceed the November 20th. 2008 end of workshop date.
- Decision 3: DOTD warehousing shall utilize a mobilized RF device for Field Personnel.
- Decision 4: Protégé shall be replaced by a Team IBM solution. (Solution To Be Determined).



Fleet with Mobile Asset Management



- Fleet Management Mobilization
 - Fleet objects will be captured as equipment master data, ensuring the whole array of functions in asset life-cycle management. The fleet master data record allows special input of relevant information for fleet operation (such as identification data, replacement data, engine information, fuel and lubricants data, dimensions and transport-relevant information).

A screenshot of a software application window titled "Measurement Documents". The window has a menu bar with "Edit", "Goto", "System", "Help", and "Test". Below the menu bar is a toolbar with various icons for file operations and navigation. The main content area is titled "Consumption-Relevant Measurement Document Recording". It contains two input fields: "Equipment" with a yellow dropdown menu and a search icon, and "GasStation" with a small white input box.

Measurement Documents Edit Goto System Help Test

Consumption-Relevant Measurement Document Recording

Equipment

GasStation



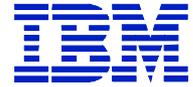
Road & Bridge with Mobile Use



- Mobilization for Road & Bridge for a number of business processes:
 - Perform physical inventory scanning barcode tags
 - Perform inspections on roads, bridges, towers, etc....
 - Create work orders
 - Send task to employees
 - Record accomplishments
 - Note changes to assets
 - Yes, GIS use
 - GIS functionality is restricted to Road & Bridge Linear Assets Module from Agile
 - Effected Agencies: DOTD
 - Assumptions must be determined by Subject Matter Experts
 - Issue Management # 8000000310 Resolution:
- Decision 1: ONLY DOTD will be slated to Mobilize Road & Bridge with Linear Assets, Fleet with SAP MAM, and Facilities with MAM.
- Decision 2: Other Agency Point of Contacts attending the Mobile for Logistics Workshop can express an interest in Mobilizing work processes at a later date not to exceed the November 20th. 2008 end of workshop date.
- Decision 3: DOTD warehousing shall utilize a mobilized RF device for Field Personnel.
- Decision 4: Protégé shall be replaced by a Team IBM solution. (Solution To Be Determined).



Agile Assets Mobile & Application Screen Shots



AgileAssets Management System V 5.0 (Build 3250)

[Roadway](#) | [Facilities](#) | [Traffic Op.](#) | [Fleet](#) | [Bridge](#) | [Network](#) | [Resources](#) | [System](#)
[Utilities](#) | [Setup/Inventory](#) | [Issue](#) | [Progress](#) | [Analysis and Budgets](#) | [Reports](#)

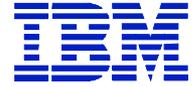
Make Day Cards from 11/12/200 to 11/12/200

Work Orders							Coding Block	
WO#	WR#	Project	Asset Type	Activity	Coding Error	Plan An	Valid Acct	Function
138		1 - Snow and Ice Control 1421 - Clinton	Road Sections	7S80 - SNOW AND ICE CONTROL (OTHER)(ANNUAL)	No			
257		1 - Snow and Ice Control 1421 - Clinton	Road Sections	7D81 - SNOW (OPEN CLOSED ROADS)	No			
303		10 - Rest Area Maintenance 1421 - Clinton	Road Sections	cp test of adding 1st branch	No			Estimated Cost: \$0.00
335		10 - Rest Area Maintenance 1421 - Clinton	Road Sections	cp test of adding 1st branch	No			Estimated Man-Hours: 5
363		10 - Rest Area Maintenance 1421 - Clinton	Road Sections	cp test of adding 1st branch	No			Suggested Duration: 5
365		10 - Rest Area Maintenance 1421 - Clinton	Road Sections	cp test of adding 1st branch	No			Description and Purpose: Snow removal activities not

Employees Short List			Assigned Employees		Employee Time Report				
Select	Employee Name	Labor Class Code	Employee	Approved	Employee	Work Date	Wage Type	Total Hrs	Total C
<input type="checkbox"/>	CASS, CHRISTOPHER	TRANSPORTATION TECHNICIAN I	CHAMBERLAIN, DAVID	<input type="checkbox"/>	CHAMBERL	3/20/2007	1200-Regular	8	
<input type="checkbox"/>	PRO, RICK	ROADWAY OPERATIONS MANAGER		<input type="checkbox"/>	CHAMBERL	3/21/2007	1200-Regular	8	
<input type="checkbox"/>	SUBE, WILLIAM	ROADWAY OPERATIONS COORDINA		<input type="checkbox"/>	CHAMBERL	3/22/2007	1200-Regular	8	
<input type="checkbox"/>	DAVIS, DENNIS	TRANSPORTATION TECHNICIAN II		<input type="checkbox"/>	CHAMBERL	3/23/2007	1200-Regular	8	
<input type="checkbox"/>	DRAWN, AUDREY	TRANSPORTATION TECHNICIAN II		<input type="checkbox"/>	CHAMBERL	3/26/2007	1200-Regular	8	
<input type="checkbox"/>	KELLY, BRUCE	TRANSPORTATION TECHNICIAN I		<input type="checkbox"/>	CHAMBERL	3/27/2007	1200-Regular	8	
<input type="checkbox"/>	CASTANEDA, ROBERTO	TRANSPORTATION TECHNICIAN II		<input type="checkbox"/>	CHAMBERL	3/28/2007	1200-Regular	8	



Inventory –Materials Management with Mobile Use



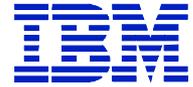
- Mobilization for Inventory and Materials management for a number of business processes:
 - Perform physical inventory
 - Moving items
 - Issuing items
 - Receiving items
 - Checking in and out
 - This unique process is to be done only by the following Agencies DOTD, DPS, WL&F
 - Scanning bar code tags

 - NO GIS use
 - GIS functionality is restricted to Road & Bridge Linear Assets Module from Agile

 - Effected Agencies: DOTD, DPS, WL&F, DHH, OSB, Dept. of Agriculture
 - Assumptions must be determined by Subject Matter Experts
 - Attachment D



Inventory Management with SAP Web Console



- Warehousing Mobilization functionality offers a number of "pre-configured" RF transactions that are accessible by SAP/Web/Console. These transactions include the most common transactions and simplify the set-up and configuration of mobile terminals.
 - RF Device Inventory Tracking
 - Goods Issue
 - ...

The screenshot displays the SAP RF Monitor interface. The main window is titled "RF Monitor" and shows a tree view of queues and transactions. The "Queues" section is expanded to show "009" with sub-queues "PICKING01" (0) and "PUTAWAY0" (5). The "PUTAWAY0" queue is further expanded to show "TOs" with a list of transactions: 31, 41, 51, 53, and 54, all with a "Last" value of 0.000. The "Proc. By" field is set to "LESSMO". The right-hand pane shows a table of transactions for "WhsNo 009 TRM warehouse".

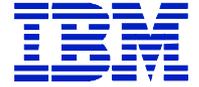
TO Number	Queue	TO p...	S	Created	Time	Plan...	T...
31	PUTAWAY01		E	17.09.20...	13:31...		
41	PUTAWAY01		E	18.09.20...	12:12...		
51	PUTAWAY01		E	10.10.20...	11:47...		
53	PUTAWAY01		E	10.10.20...	12:01...		
54	PUTAWAY01		E	10.10.20...	12:05...		

At the bottom of the interface, there is a table for user information:

User Name	Queue	Document	PersNo.
LESSMO			



As-Is Process Flow Review by Peers



- Stop.
- Introduce Bobby Hill & Lisa Smith

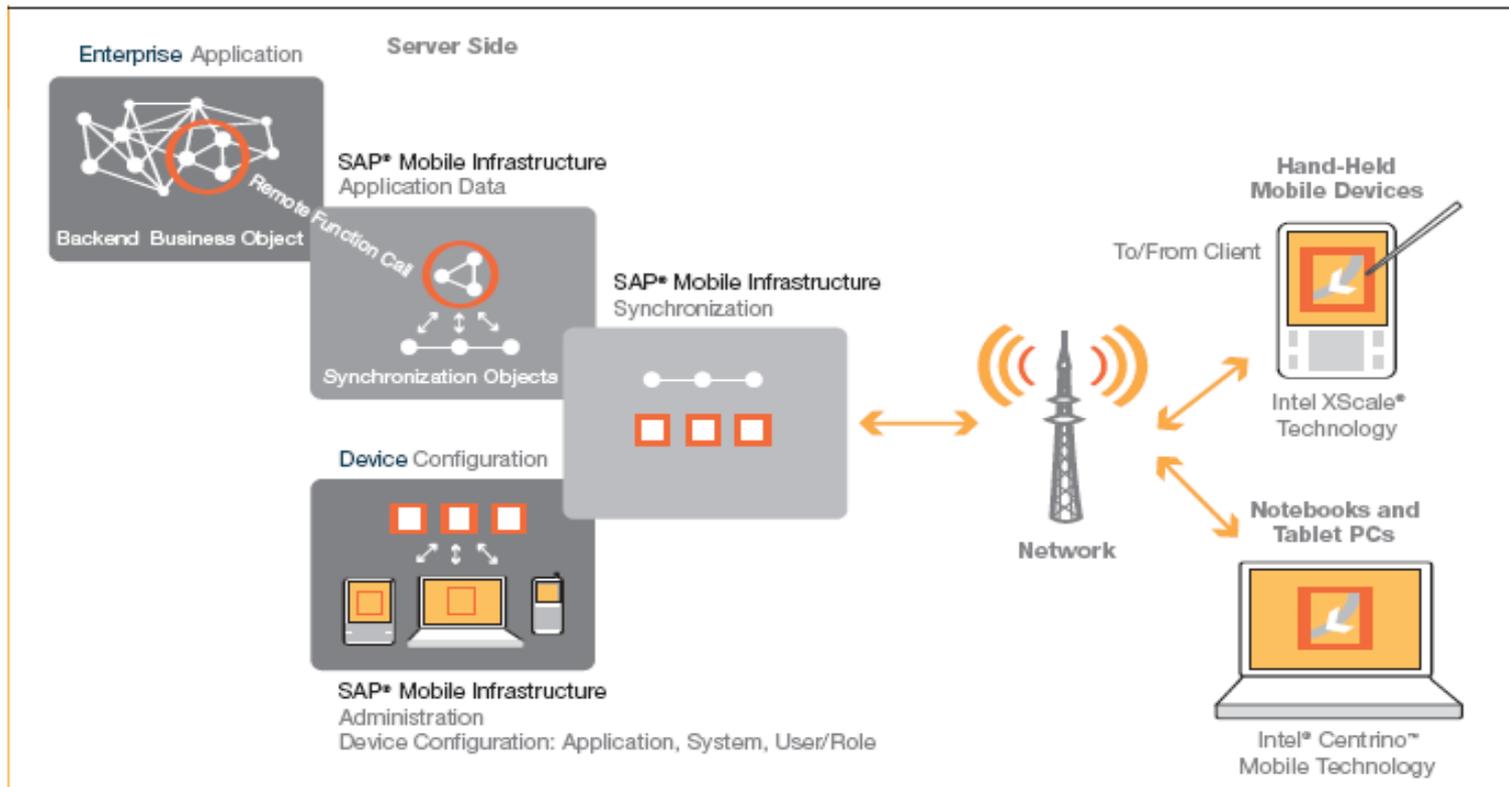


SAP Mobile Introduction - Users



Enabling Mobile Applications for Occasional Connection (R3 & Mobile)

- End users with mobile devices that are occasionally connected can carry out their tasks without being connected to the SAP back-end system. The required business logic and user interface reside on the mobile device (MAM & Agile Assets), and when the mobile device connects to the back-end system, it exchanges all modified data using SAP Business Objects & XML processing.





Screen Shot of MAM



Welcome CHPEIA

[xMAM Home](#)
[Order Management](#)
[Notification Management](#)
[Te](#)

Other ▾



[Order Management](#)
Process orders and material confirmation

Quick Links
[Create Order](#)

SAP Mobile Infrastructure

Welcome CHPEIA

[xMAM Home](#)
[Order Management](#)
[Notification Management](#)
[Technical Object Management](#)
[Measurement and Counter Reading](#)
[Other ▾](#)

Orders

Create

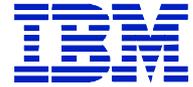
All Orders

Order	Order Type	Priority	Notification	Equipment	Functional Location
4000064	PM01		10000035	10000000	PLATFORM POWER
#1 Diesel Engine Repair					
4000065	PM01		10000036	10000000	PLATFORM POWER
check diesel engine					
4000066	PM01		10000037		PLATFORM POWER
Check and Inspect Diesel Engines					
4000067	PM01		10000041	10000014	
Casing is cracked and requires Maint					
4000068	PM01		10000043	10000000	PLATFORM POWER
Preventive Maintenance Plan					

Order



Order Processing with Mobile Device_I

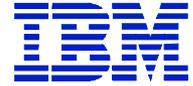


➤ **Mobile Devices will do the following:**

- The orders assigned to a person or to a work center are displayed in an order list.
- Change the layout of the list on the mobile device.
- Display the operations of a certain order.
- Display the data for the technical object (functional location, equipment) of the order.
- Display the object list, and thereby all the reference objects and notifications that are assigned to an order.
- Display the notification and its data (header data, items, cause, tasks, activities, and long text) assigned to a certain order.
- Display the partner of the order with the assigned contact persons.
- Confirm the time worked for each order and operation. You can enter the start time and end time, as well as a long text. You can also set the final confirmation indicator.
- Confirm which and how many materials you used during the operation. The material consumption can be planned or unplanned. You can set an automatic check to establish whether the material was withdrawn from the storage location.
- The confirmations remain on the mobile device until the order is technically completed in the backend.
- You can set or delete individual user statuses in the order as well as in the operation.



Order Processing with Mobile Device_II



➤ **Mobile Devices will do the following:**

- Set or delete individual user statuses in the order as well as in the operation.

Note that the links between user statuses and between user statuses and system statuses that are possible in mySAP ERP are not possible here.

- Create orders for the order types assigned to you. The following data can be created:

- Long texts for the order header
- Work center, reference object, and additional data in the order header
- Operations (a default operation is generated automatically)
- Partner assignments

- Change orders for the order types assigned to you. The following data can be changed:

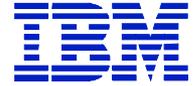
- Header data
- Operations

- Send push messages

- Technicians can be informed of urgent notifications and orders by a push message, that is an electronic short message or text message, to their mobile device.



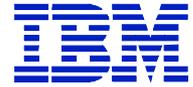
Order Processing with Mobile Device_III



- **We can use RFID integration (Radio Frequency Identification) in the following Business cases:**
 - for creating “Work Request” notifications
 - for processing “Maintenance” orders
 - for “Job” time confirmations
 - Process Features:
 - When the RFID tag for the technical object is read, the data stored is displayed. In addition, the corresponding orders are released and displayed.
 - When you create a notification or an order, you read the data from the RFID tag of the technical object. When you perform a confirmation, the data is written to the RFID tag.



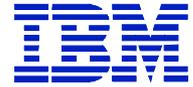
Notification Processing w/Mobile Devices



- **We can create malfunction reports for orders on the mobile device and process them later in the backend system.**
 - Notification list lists all the notifications stored on the mobile device.
 - Display the following data for a notification on the mobile device.
 - Notification long text
 - Header data
 - Items
 - Causes
 - Tasks
 - Activities
 - Change notifications on the mobile device:
 - Change header data, such as reference object.
 - Add and change items, causes, tasks, and activities.
 - Change user status at header level
 - Complete and release tasks
 - Add and change the partner data



Screen Shot of MAM



SAP Mobile Infrastructure

Welcome **CHPENIA** Alert Man...

[xMAM Home](#) | [Order Management](#) | **Notification Management** | [Technical Object Management](#) | [Measurement and Counter Reading](#) | [Other](#)

[Notifications](#) > Create Notification

Notification New

Reported by:	CHPENIA	Plant:	9999
Notification Type:	M1		
Priority:	1-Very high		
Short Text:	Fix equipment		
Long Text:	Take a look at equipment.		
Work Center:	MECH1		
Start Date:	04/04/2007	Start Time:	01:24 PM
End Date:	04/04/2007	End Time:	01:24 PM
Functional Location:			
Equipment:	10000000		

Welcome **CHPENIA**

[xMAM Home](#) | [Order Management](#) | [Notification Management](#) | [T...](#)

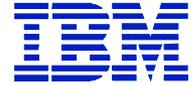
[Other](#)

 [Order Management](#)
Process orders and operations as well as time and material confirmations.

Quick Links
[Create Order](#)



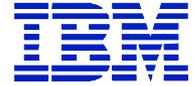
Entering Measurement Readings on Mobile Device



- **We can enter measurement readings for measuring points, for example, to collect data for condition-based maintenance.**
 - Display the assigned measuring point and the last measurement reading posted for the technical objects available on the mobile device.
 - Enter Measurement Readings
 - Inspection Data Entry
 - Inspection data entry is divided into two areas:
 - Defects recording to technical objects.
 - Enter and confirm measurement and counter readings for a technical object



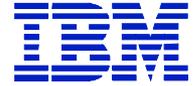
Stock Processing with Mobile Device



-
- **We can perform planned and unplanned material consumption used for work orders can be Stock Processed with Mobile Devices**
 - A storage location defined in mySAP ERP (for example, a heavy goods vehicle or consignment stores) can be loaded on the mobile device. The technician can then confirm used material to this storage location.
 - The storage location must be set up in the backend system and have stock.
 - When the technician confirms material used for orders, the system checks whether the material is available in this storage location.
 - A system message informs you if the material number at the storage location has no stock.
 - The material stocks are updated locally on the mobile device.



Equipment Management w/Mobile Device

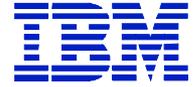


➤ **We can perform Management of Technical Objects**

- Install and remove equipment at functional locations. You can also display the details for the technical objects.
- Install and remove equipment from functional locations or other pieces of equipment.
- The user status of any piece of equipment can be changed.
- It is not possible to make structural changes to the functional locations.
- The order history and notification history, as well as the assigned warranties and contracts, can be displayed for every technical object. You can also display the orders and notifications assigned to the technical objects, as well as assigned measuring points and counters.
- In addition, you can display classification data and characteristics.



SAP Mobile Asset Management Future State

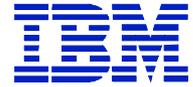


- Design considerations based on a Commercial Industry best practices for Mobile Field Operations. (Leveraging Intellectual capital from other SAP implementations)
 - Determine Order Processing
 - Determine Notification Processing
 - Assign Orders and Stocks to a Technician
 - Define Scenario
 - Configure User-Dependent Data
 - Perform General Settings
 - Define Trigger of Push Messages
 - Tech. Objects Active
 - Partner Mgmt. Active
 - Meas. Record. Active
 - RFID
 - GIS Integration
 - Free Sorting



SAP Mobile Asset Management

Future State

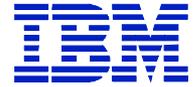


- Determine Order Processing
 - We shall create and use a profile to determine what combination of functions will be accessible by users. *It's not about security here !*
- Variant operation (Selection Variant for Order Operation Selection)
 - If orders and operations are assigned via work center or employee number Assign Orders, Notifications and Stock to a Technician) to a technician, this is done at the operation level; therefore, you need create and assign this variant in Order Processing. With this variant in place, all relevant operations are downloaded to the corresponding mobile devices together with the order header information.
 - With this variant, you can further reduce the number of orders and operations downloaded to the mobile device.
 - Transaction IW37 is used to determine the operations.
- Variant (Selection Variant for Order Header Selection)
 - If orders are assigned to a technician via planner group or partner function, this is done at the order header level.
 - With this variant, you can further reduce the number of orders downloaded to the mobile device.
 - Transaction IW38 is used to determine the orders.



SAP Mobile Asset Management

Future State



- Using Confirmation profiles, we can define all data related to time and material postings. A confirmation process supports the changing of both time and material usage.
 - Standard Confirmation Process: This process is the normal confirmation procedure (creation of a confirmation)
 - Simplified Confirmation Process: This process supports the auto generation of planned time and material confirmations (based on the planned time and material numbers) for operations (or split operations) and is saved as final.

- Time confirmation / Order closing
 - Specifies the following:
 - We can only technically complete the order manually in the back end
 - The order is completed automatically if you set the final confirmation indicator (for all operations) on the mobile device. The order is deleted upon the next synchronization.

- Operation Confirmation, the indicator has the following effect:
 - Mobile users can only confirm operations assigned to them.
 - Mobile users can also confirm operations assigned to other users.

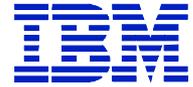
- Posting / Update, If confirmed data contains errors, there are two possibilities:
 - The data is updated in the back end in the error pool.
 - The data is sent to the mobile device without being updated.

- Operation Confirmation Unit, the possibilities here are:
 - You can change the unit when confirming an operation on the mobile device.
 - The unit is copied from the operation and cannot be changed in the confirmation.



SAP Mobile Asset Management

Future State

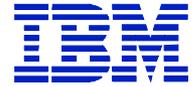


- Activity Type for Confirmation, we can specify whether the activity type for the confirmation can be changed on the mobile device using a selection list or is copied from the operation and cannot be changed
 - Final Confirmation, we can specify the behavior when the confirmation is finalized by the user:
 - Confirmation No Longer Possible: The user won't be able to create confirmations after finalizing one.
 - Confirmation Possible – Display Warning: A warning will be shown to the user when creating a confirmation after another confirmation was finalized.
 - Material confirmation is a Material consumption with or without serial number, Here, you can specify whether material consumption is recorded on the mobile device with or without serial numbers.
- Check Material Number, specifies whether the system should check the material number entered and on what basis this inspection takes place. You can select the following:
 - No check
 - Check technician stock, if the material is not part of the technician stock the material cannot be confirmed
 - Check technician stock, only warning message. Here the technician stock is checked. Only a warning is given if material is not known.
 - Special front end check. With this flag it is possible to check the material from external catalogues.
 - Stock Check, specifies whether the system performs a stock check and if so, what type of error message it displays if the stock check was not successful.



SAP Mobile Asset Management

Future State

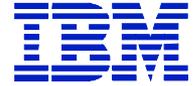


- Accounting Indicator, can define name and description of accounting indicator profile.
 - Order type profile, Here, we define the name and description of order type profile. Select the order type profile and double-click on order type detail on the left pane. Here, you can define what order types can be used on the mobile device for order creation.
 - Set Release immediately indicator, If checked, locally created orders on the mobile device of this order type are automatically released when transferred to the back-end system. The reason for the automatic release by the back-end system is to ensure that locally created orders, with their proper time and Material confirmations can be processed on the back-end system automatically in a single step. This configuration step helps users to perform their order processing without the necessity to synchronize multiple times to complete their daily tasks.
- Order type detail, for a specific order type that is associated with order type profile, the next parameters can be assigned;
 - Release, Add operation, Order Change, Reference Object Display
 - Number of Signatures: we can choose between one signature, two, three or any number of signatures. The choice will define how many electronic signatures can be captured for one order report.



SAP Mobile Asset Management

Future State



- Control key profile, will define name and description of control key profile. We shall define the control key's) permitted for creating orders on the mobile device.
- Work center profile, We will define the work centers that can be used when creating orders locally. If you do not enter any work centers here, then only the work center assigned to the user can be used.
 - On receiving a synchronization request from the front end, the request is passed via the Middleware to the back end. After receiving this Order download request in the back end, the system status of the order is set to MOBI on the back end to provide the administrator with critical information on the status of an order. This functionality enables the administrator to measure the impact of the change, to be carried on an order, on the end user.
- In combination with this system status, it is now possible to define how downloaded orders are handled in the back end. According to your business needs you can define the following possibilities:
 - A warning message displays. You are allowed to open and modify the order.
 - An information window displays. You can open and modify the order.
 - Error message displays. You are not allowed to open the downloaded order.



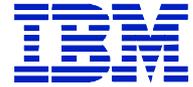
Assignment of Work, Request, and Stock to Mobilized Field Personnel



- We intend to Assign Orders, Notifications and Stock to a field technician. Create a profile to set how orders, notifications and stock are assigned to the technician with the following entries:
 - Order and/ or Notification Assignment: Specifies how orders are selected in ECC. Possible entries / User is assigned to:
 - Work Center (selection variant runs at operation level) or
 - Employee number (selection variant runs at operation level) or
 - Planner group (selection variant runs at order level) or
 - Partner (selection variant runs at order level / business partner level) or
 - ALL (Planner group + Work center + Employee number)
 - Stock Assignment: Specifies how the technician's stock is selected.
 - Possible entries are:
 - Storage location
 - Customer consignment stock
 - A zero stock checkbox is used to indicate if material with zero stock should be displayed or not. If this box is empty all material with no stock are not displayed on Mobile devices.



Assignment of Equipment as Stock for Mobilized Field Personnel



- Equipment Stock: For the dismantle/install functionality, this section will define where the relevant equipments are located. We can define a dummy-functional location where all the equipments for installing can be found.
- The installation / dismantle of equipment is supported with the help of a dummy functional location. Under this dummy functional location, you can find all the equipment that can be installed. These equipments are displayed on the front-end client device in the Inventory component under the folder Equipments. You can select the required equipments from this location. Uninstalled equipments are installed directly under this dummy functional location.
- This workaround is developed because it is not known what kind of movement type is used to take the equipment from and into a certain storage location. Implementing such integration with Materials Management could create further complexities for the mobile application.
- If a project does not want to use the dummy functional location workaround, then a BAdI can be used to program how the goods movements are handled on these projects.
- Orders and notifications related to a technical object in technical objects management:
- It is possible to see orders and notifications related to a technical object in technical objects management on the device. Since this feature takes a lot of performance, it should be possible to deactivate it on the backend. Although the setting is related to the technical objects which are maintained in general settings, the customizing can be scenario-specific. Therefore the setting is assigned to the assignment profile.



Device Log On access



- Role Authorizations are based on SAP role based profiles.

Change role: Authorizations

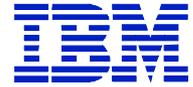
Maint.: 0 Unmaint. org. levels 0 open fields, Status: Unchanged

SAP_MI_ADMIN Mobile Infrastructure Admin Role

- Manually Cross-application Authorization Objects
 - Manually Mobile Engine: Synchronization of Offline Applications
 - Manually Alert Management
 - Manually General Administrator Authorization
 - Manually Authorization Group of Device Configuration
 - Manually Authorization Check for RFC Access
 - Manually Authorization Check for RFC Access
 - Activity Execute
 - Name of RFC to be protected BWF_MOMO, BNAF_MW, MEREPIINSTTK_MPC, ME_USER, RFC1, SDIFRUNTOME, SG00<...>
 - Type of RFC object to be prote Function group
 - Manually Transaction Code Check at Transaction Start
- Manually Basis: Administration
 - Manually Authorization for file access



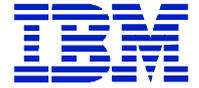
Process Improvement Opportunities And Concepts



- Information Mobility is a strategic subject that affects all areas of the State of Louisiana Agencies adapting to an SAP implementation environment. The gap between back office Enterprise Resource Planning support and the real world field personnel interaction is continuously closing and requires closely knit intra-relationships amongst a landscape of many relevant ERP or non-ERP business processes.



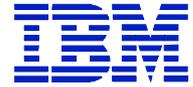
Enterprise Readiness Challenges



- TBD



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Questions?

