



Validation Session
Mobile Solutions for Facilities
Maintenance and Fleet Management
1/22/2009

LaGov



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www.doa.louisiana.gov/ERP/index.htm

The screenshot shows the LaGov website interface. At the top, it reads "DIVISION OF ADMINISTRATION" and "STATE OF LOUISIANA". Below this is the "LaGov" logo and the text "ENTERPRISE RESOURCE PLANNING". A navigation menu on the left includes "LAGOV ERP HOME", "ABOUT", "BLUEPRINT" (highlighted with a red box), and "REALIZATION". The main content area features a "Welcome" message and a list of budget preparation sessions. A callout box on the right provides a detailed list of these sessions, including titles and links to session presentations and meeting minutes.

Budget Preparation

- Blueprint Session: Budget Preparation, Integration & Overview (FI-FM-002/FI-BP-001)**
[FI-FM-002/FI-BP-001 Session Presentation](#)
[FI-FM-002/FI-BP-001 Meeting Minutes](#)
- Blueprint Session: Operating Budget Timeline (FI-BP-002)**
[FI-BP-002 Session Presentation](#)
[FI-BP-002 Meeting Minutes](#)
- Blueprint Session: Operating Budget - Details and Systems (FI-BP-003)**
[FI-BP-003 Session Presentation](#)
[FI-BP-003 Meeting Minutes](#)
- Blueprint Session: Operating Budget - Agencies Perspective (FI-BP-004)**
[FI-BP-004 Session Presentation](#)
[FI-BP-004 Meeting Minutes](#)
- Blueprint Session: Capital Budget - Central Perspective (FI-BP-005)**
[FI-BP-005 Session Presentation](#)
[FI-BP-005 Meeting Minutes](#)



Validation Session Agenda

- Purpose
- Work Session Recap
- 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
- SAP Backend Adapters
- Leveraging BAPI's
- Maintenance BAPI example



Validation Session Agenda

- Facilities with Mobile use
- Fleet Management with Mobile Use
- Road & Bridge with Mobile Use
- Inventory Materials Management with Mobile Use
- Mobile Order Processing
- Mobile Notification Processing
- Entering Measurement Readings on Mobile Devices
- Stock Processing with Mobile Device
- Equipment Management
- SAP Mobile Asset Management Configuration Settings
- Assignment of Work, Request, and Stock to Mobilized Field Personnel
- Assignment of Equipment as stock
- Organizational Impacts
- Questions



Purpose of Today's Validation Session

- Review & Validate Mobile Solution for DOTD Facilities and Fleet:
 - Mobile Devices
 - Middleware Infrastructure
 - Device Synchronization
 - Mobile Functionality
 - End User Settings
 - System Configuration



Workshop Session Recap

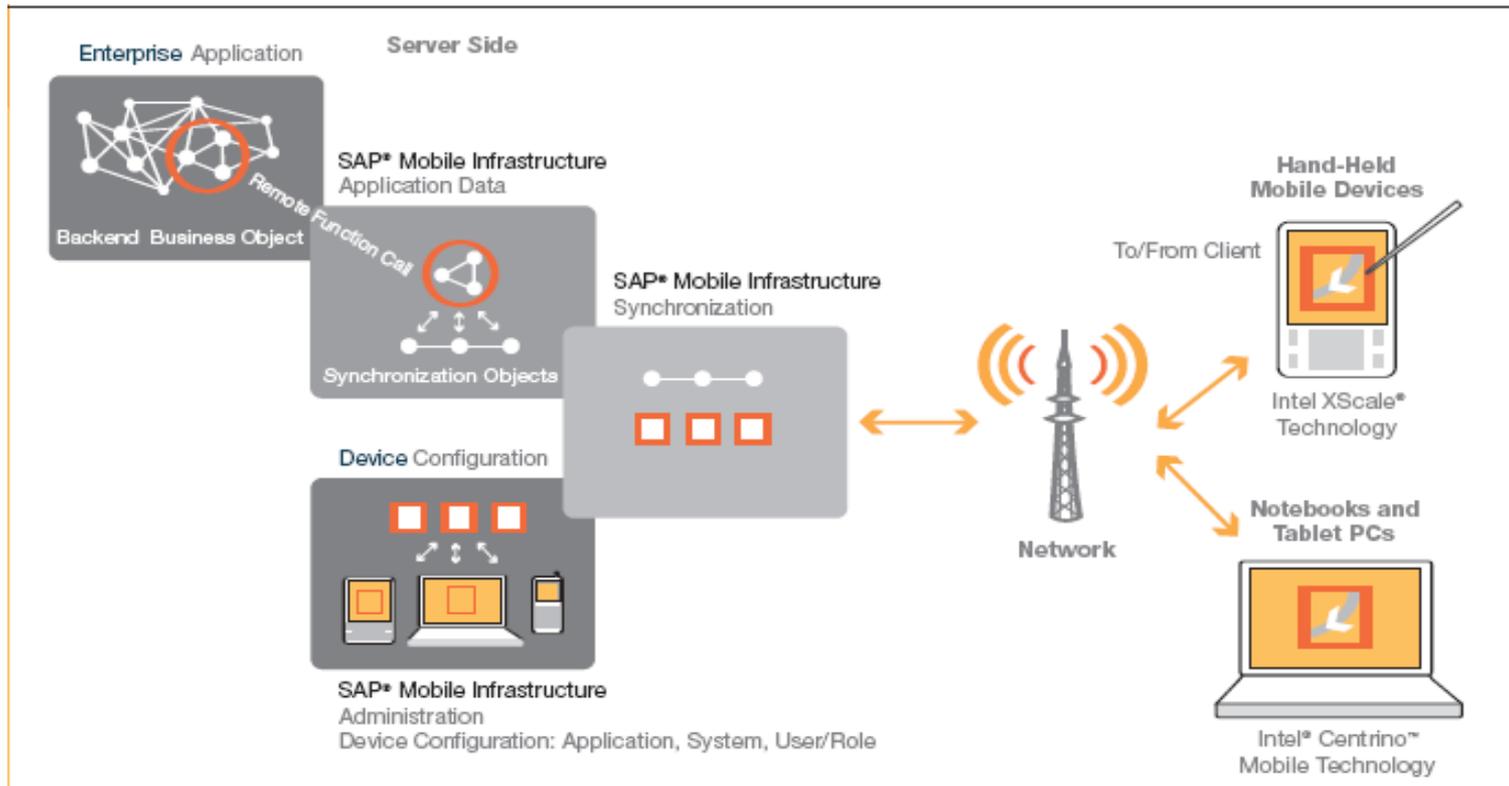
Business Process	Workshop Codes	Goals	Work Session Date
Mobile Solutions for Facilities & Fleet Maintenance	B.08-LOG-MO-PDD003	<ul style="list-style-type: none">▪ Mobilized Solutions and Architectural Tools for Logistical Operations	11/17/08 -11/20/08



SAP MAM Mobile Overview

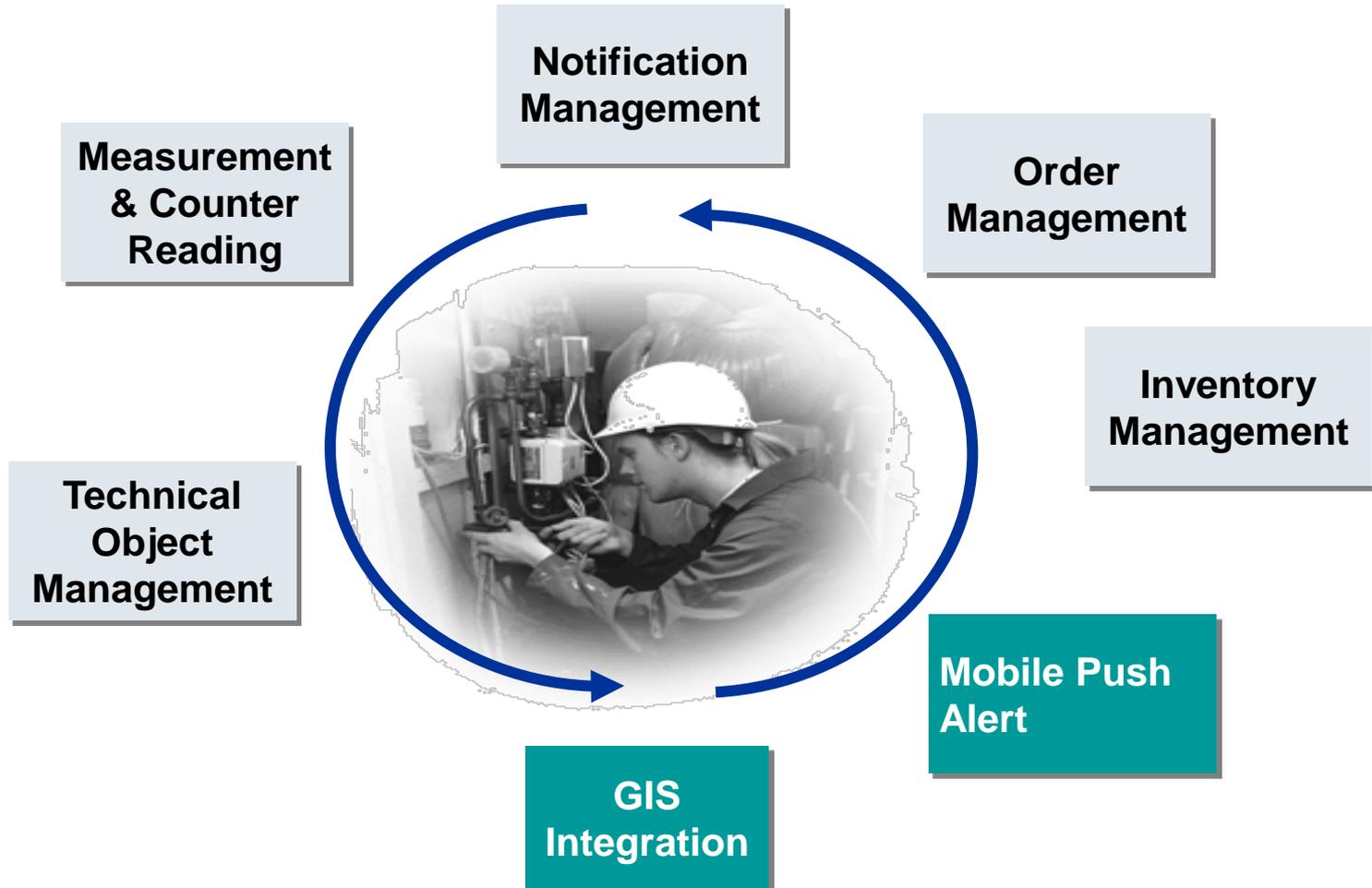
DOTD will enable Mobile Applications for an Occasional Connection Scenario (R3 & Mobile)

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





SAP MAM - Functional Overview





Mobile Devices Requirements

- SAP Mobile Infrastructure will provide platform independent runtime for mobile applications
 - SAP applications will run on Pocket PC 2003/2005, Win32, and Sharp Mobile Linux
 - Will be based on industry standards (HTTP, JAVA)
 - SAP MAM will provide a user interface and data access layers for the mobile device
 - Enabling database use for client applications (SAP Mobile Device will not have custom applications on device)
 - Assumptions: Agency Driven Mobile Device Purchases
 - DOTD is currently working with Motorola to determine the best fit (ruggedness)





SAP Mobile ERP Processes

- Mobilization will provide an unparalleled number of business capabilities into an easy-to-carry rugged device.
 - Field personnel will have all the features they need right at their fingertips in one device designed to endure all-day, everyday system use outside the SAP R3 Enterprise system — 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
 - Continued on next slide....





Order Management

- Display Order List
- Display Order Operations
- Partial / final confirmation
- Create single or multiple Time Confirmation
- Display Technical Object Data (Functional Location, Equipment)
- Create single or multiple Material Consumptions

The screenshot shows the SAP Order Management interface. At the top left is the SAP logo. To its right is a dropdown menu with 'Order Management' selected. Below this is a header bar with 'Orders' and a document icon. Underneath are two tabs: 'All Orders' and 'Local Orders'. The main area contains a table with columns 'Order', 'Type', and 'P'. The table lists several orders with their respective types and priorities. At the bottom of the table are navigation icons and a status bar indicating 'Total: 119 Page: 1/24'.

Order	Type	P
500197	SM01	1
martin, so i can REALLY have manequi		
500201	SM01	2
Jasper and contracts...		
500256	SM01	1
Test Sami		
500258	SM01	1
Long text test		
500259	SM01	1
PMATS order		



Order Management - Continued

- Add/Change Order user status
- Technical completion of an order
- Display Equipment historical data
- Add/Change Operation user status
- Create Order Operation Material Consumption with serial number
- Display time confirmations list
- Display material consumptions list

The screenshot displays two overlapping SAP Order Management windows. The top window, titled 'Order 500315', shows the 'Order' tab selected. The 'Order Detail' section includes the following information:

Order Type	SM01
Priority	Very urgent
Short Text	order with tech. obj and not
Start	12:00 AM
End	12:00 AM
Notification	200000529
Func. Loc.	K1
Equip.	10000957 Pump,Etanorm 200-1000 G

Below the details is a link for 'Enhancement'.

The bottom window, titled 'Order NEW', shows the 'Operations' tab selected. The 'Order Detail' section includes the following information:

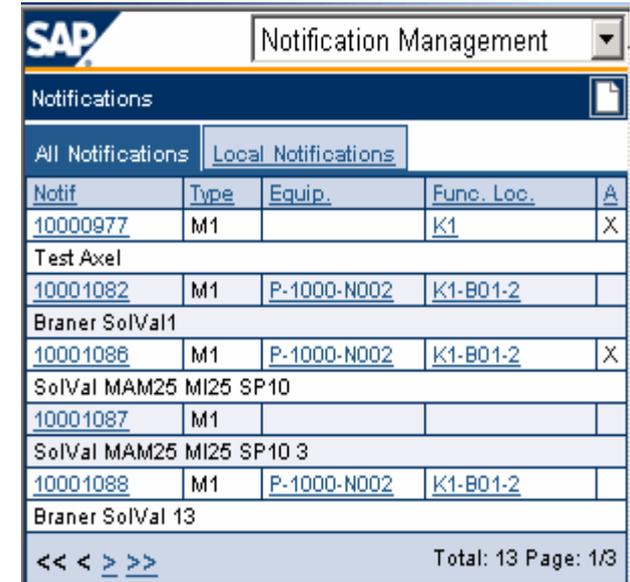
Order Type	PM01
Priority	Very high
Short Text	Leaky water pipe
Start	2003-06-18 02:42 PM
End	2003-06-18 02:43 PM
Func. Loc.	K1-B01
Equip.	M-1000-N051 Pump station Electric pump motor

Below the details is a link for 'Enhancement'.



Notification Management

- Create notification (related to order)
- Modify notification (related to order)
- Display Notification related to an order
- Add items, reasons, tasks, activity and long text to an existing notification
- Link to Equipment and functional location Master Record
- Display notification list (related to order)
- Catalog of Predefined Failure Codes
- View notification task list



The screenshot shows the SAP Notification Management interface. At the top, there is a header bar with the SAP logo on the left and a dropdown menu labeled 'Notification Management' on the right. Below the header, there is a section titled 'Notifications' with a document icon. Underneath, there are two tabs: 'All Notifications' and 'Local Notifications'. The main area displays a table of notifications with columns for 'Notif', 'Type', 'Equip.', 'Func. Loc.', and 'A'. The table contains several rows of data, including notification numbers like 10000977, 10001082, 10001086, 10001087, and 10001088, along with their respective types (M1), equipment numbers (P-1000-N002), and functional locations (K1-B01-2). At the bottom of the table, there are navigation arrows and a status bar indicating 'Total: 13 Page: 1/3'.

Notif	Type	Equip.	Func. Loc.	A
10000977	M1		K1	X
Test Axel				
10001082	M1	P-1000-N002	K1-B01-2	
Braner SolVal1				
10001086	M1	P-1000-N002	K1-B01-2	X
SolVal MAM25 MI25 SP10				
10001087	M1			
SolVal MAM25 MI25 SP10 3				
10001088	M1	P-1000-N002	K1-B01-2	
Braner SolVal 13				



Notification Management - Continued

- Add/Change notification user status
- Completion of notifications task
- Release task on notification
- Modify notification
- Create notification
- Inspection result recording

The screenshot shows the SAP Notification Management interface. At the top left is the SAP logo. To its right is a dropdown menu labeled 'Notification Management'. Below this is a header bar with the text 'Notification Details: 10000790' and three icons: a pencil, an information icon, and an upward arrow. Below the header bar are six tabs: 'Notif', 'Partners', 'Objects', 'Items', 'Actvts', and 'Tasks'. The 'Notif' tab is selected. Below the tabs is a table with the following data:

Notification Details	
Notif Type	I1
Priority	1
Responsible Work Center	SAMIWORK
Short Text	Order with notif 
Malf. Start	2003-06-05 12:28 AM
Malf. End	2003-12-31 12:00 AM
Order Number	810844
Func. Loc.	K1
	Clarification plant

[Enhancement](#)



Inventory Management

- Local Availability Check on storage location or consignment stock
- Update stock when order transaction is saved
- Inventory list of storage location status or count (Material, Quantity, UOM)

SAP Inventory Management

Inventory List

Material Equipment

Material	Serial No	Stg. Loc.	Qty
100-500		0001	1015.000
Bearing case			
100-510		0001	364.000
Ball bearing			
100-600		0001	1766.000
Support base			
100-700		0001	1496.240
Sheet metal ST37			
100-804		0001	1000.000
Colour Yellow with gloss			
100-851		0001	1000.000
Colour powder Red			

Total: 320 Page: 4/54

SAP Inventory Management

Inventory Detail

Material	
Material Number	100-700
Serial Number	
Quantity	1496.240
Unit	M2
Plant	1000
Storage Location	0001
Description	Sheet metal ST37

[Enhancement](#)



Technical Object Management

- Display equipment
- Display warranty information for Equipment
- Equipment / functional location list to work center
- Install/Uninstall of equipment at functional location
- Barcode identification of a technical object
- Modify Equipment user status

The screenshot shows the SAP interface for "Tech. Object Management". It displays a "Functional Location List" with two tabs: "Equipments" and "Func Locations". The "Func Locations" tab is active, showing a table with the following data:

Func Location	Category
JGO VAN	M
Joergs Van-Funcloc	
K1	M
Clarification plant	
K1-B01	M
Pump station	
K1-KGV-1	M
Sewage gas processing-elect. generation	
MAMFUNCLOC	M
MAM2 func loc	

At the bottom right of the table, it says "Total: 5 Page: 1/1".



Technical Object Management - continued

- Display functional location characteristic list
- Display equipment characteristic list

User Statuses Equipment 10000957

Used Statuses Available Statuses

User Status	Description	Add Status
0002	Equipment avail. at warehouse	<input type="checkbox"/>
0003	Equipment damaged in warehouse	<input type="checkbox"/>
0004	Equipment being repaired	<input type="checkbox"/>
0005	Equipment at contractor loc.	<input type="checkbox"/>

Total: 4 Page: 1/1

SAP Tech. Object Management

Functional Location MAMFUNCLOC

Details Partners Contracts Inst Equip History

Functional Location	
Category	M
Short Text	MAM2 func loc

[Warranties](#)

[Measurement Points](#)

[Enhancement](#)

SAP Tech. Object Management

Functional Location MAMFUNCLOC

Details Warranties

Type	Category
1	0
2	1

Total: 2 Page: 1/1



Measurement & Counter Readings

- Measuring points & counters linked to the equipment and functional locations
- Creation of a measurement document
- Display measurement reading entry list
- Measurement history / number of documents

SAP Tech. Object Management

Equip. Details

Equip.	
Category	M
Short Text	Pump,Etasom 200-1000 0-0-m
Functional Location	K1-ZPW-1
Serial Number	N001
Material	P-1001
Name	Arbala GmbH
Street	Am neuen Schulhaus
Zip Code	66190
City	Waldorf
Country	DE
Telephone	06227.6070

[Address \(0\)](#)
[Contacts \(0\)](#)
[Warranties \(0\)](#)
[Measurement Points \(0\)](#)
[Characteristics \(0\)](#)
[Orders \(1\) New](#)
[Notifications \(1\) New](#)
[Enhancement](#)

SAP Notification Management

Insp Notification Details: New

Insp Notification Details	
Reported By	ZIMMERMANNJO
Plant	1000
Notif. Type	MIC
Equipment	10000057
Description	Pump,Etasom 200-1000 0-0-m
Order	<input checked="" type="checkbox"/>
Short Text	

Item Create

Obj Part Code Grp	Monitor
Obj Part	Automatic Controller
Damage Code Grp	Monitor
Damage	Colors are Unnatural



Mobile Push Alert

- Create:
 - Create (push) a message for an order
 - Create (push) a message for a notification
 - Message to technicians for orders / notifications
- Display
 - Message flag for unread messages
 - Push alert message detail
- Read/Accept/Reject:
 - Read, Accept, Reject message for a single technician
 - Reject message - Multiple technicians for orders
 - Reject message - Multiple technicians for notifications
- Delete a message

The screenshot shows the SAP Mobile Asset Management interface. At the top left is the SAP logo, and at the top right is a link labeled "ME Home". Below the header is a list of menu items: "Mobile Asset Management", "Bus. Partner Management", "Inventory Management", "Meas. and Counter Reading", "Notification Management", "Order Management", "Tech. Object Management", "Push Alert" (with a red push notification icon), and "User View Manager". Below this list is a section titled "Synchronization" containing a table with the following data:

Synchronization	
Last Sync. Result	N/A
Last Sync. Date	N/A
Error Log	0



Master data create/change

- Mobile Users will not create SAP Master Data.
- Create a new equipment (via template or last created locally)
- Modifying an equipment (local or global)
- Modifying a functional location (global only)
- Deleted a locally created equipment
- Modify characteristic
- Add partner



Mobile Customizing Management

- User View Management
 - User can change mobile display screens to adjust for Mobile Device screens widths.

SAP User View Management

User View Mgt.

- List Name
- Contact List
- Contract List
- Equipment Contract List
- Equipment List
- Equipment Measurement Point List

Page: 1/10 Total: 46

SAP User View Management

User View Mgt.

Reset Default

How many per page	4
Line 1, column 1	Name
Line 1, column 2	First Name
Line 1, column 3	Telephone

SAP Order Management

Order 814301

Order | Part. | Objects | Operations

Order Detail

Order Type	PM01
Short Text	Cleaning in plant
Start	16.01.2005
End	17.01.2005
Notification	
Func. Loc.	80HTC10 Flue Gas Blower

Confirmations Processing

Action Create Single TConf

[View Order Report\(0\)](#)

Welcome

Order Management

Order List | Order Detail

Order Details

Order 814282

Order Type	PM02	Plant	1000
Start Date	06.01.2005	Plan Plant	1000
End Date	10.01.2005	Plan Group	100
Text	Maintenance tasks for installed pumps	Work Center	MECHANIK
Functional Location	K1-B01-1 Pump set 1	PM Activity Type	102

Confirmation Processing

Order Reports

Partners

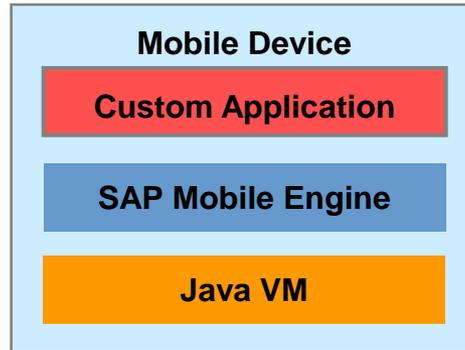
My Operations

Operation ID	Start Date	Start Time	Planned Work	Planned Work Unit
0010	07.01.2005	08:00	30,0	MIN
Work Center: MECHANIK				
Abschalten und Sicherheitsprüfung durch				
0020	07.01.2005	08:37	30,0	MIN
Work Center: MECHANIK				



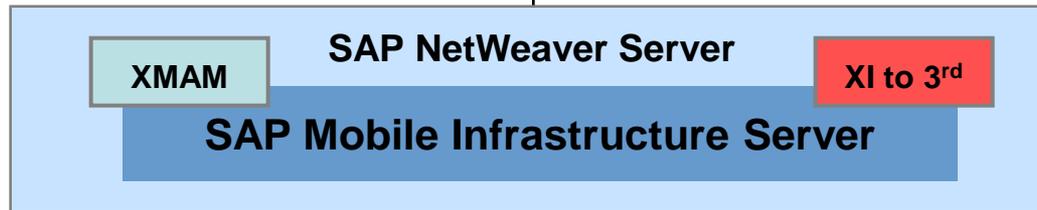
Mobile Infrastructure Overview

LaGov Mobilized



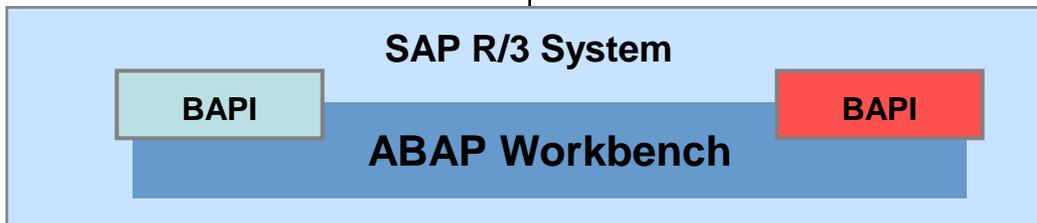
- *Develop User Interface*
- *Develop Business Logic*
- *Add/Update data*
- *Configure Sync properties*

HTTPS



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

RFC

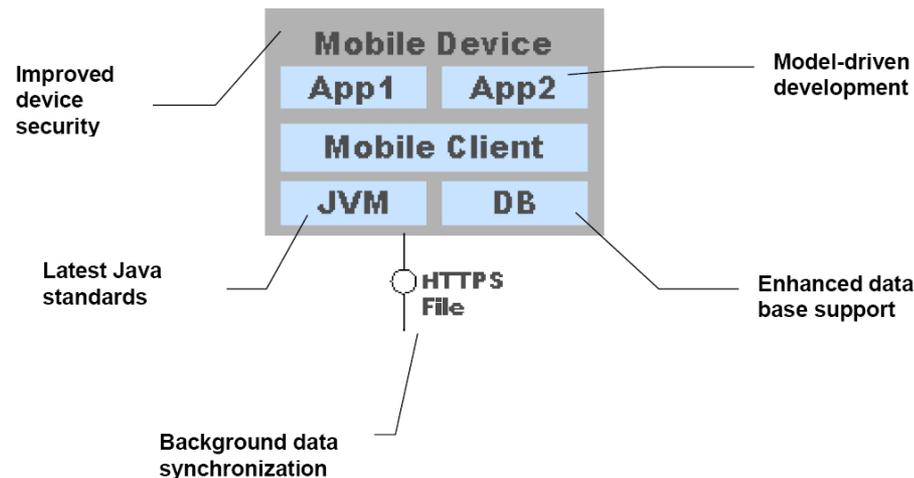


- *Extend BAPI*
- *BAPI Wrappers*
- *RFC Wizard*



End Users Device Infrastructure

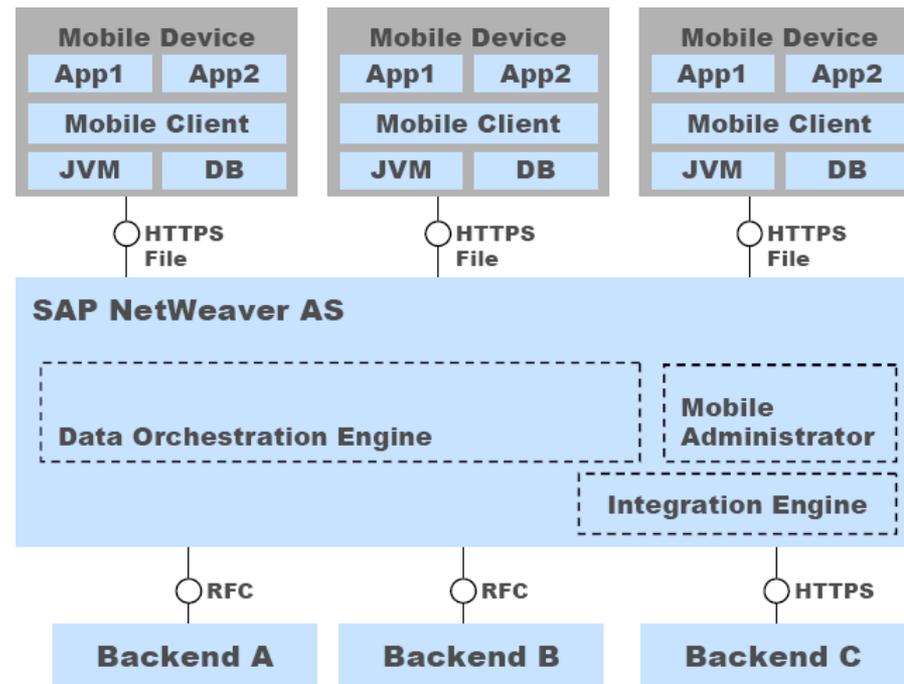
- The Mobile Client will have several tasks, as personnel work in an offline mode , it will be the runtime environment so the end user can work without requiring full online access.
 - The Mobile Client will manage the component registry. Mobile Client will always know what transactions were installed,
 - The Mobile device will know what assigned users have logged on. It will provide Advanced Programming Interfacing, commonly known as API's, in order to retrieve data to and from the local database and track transactional changes,
 - and finally it will exchange data with the Data Orchestration Engine upon synchronization.





SAP Mobile Infrastructure

- The Runtime Tools for SAP Netweaver Mobile Infrastructure will include the following:
 - Data Orchestration Engine will take care of the data that is used by SAP mobile devices
 - SAP Mobile Administrator will manages the DOTD Facilities, and Fleet mobile devices
 - The Integration Engine has the task of receiving, processing, and forwarding XML messages.

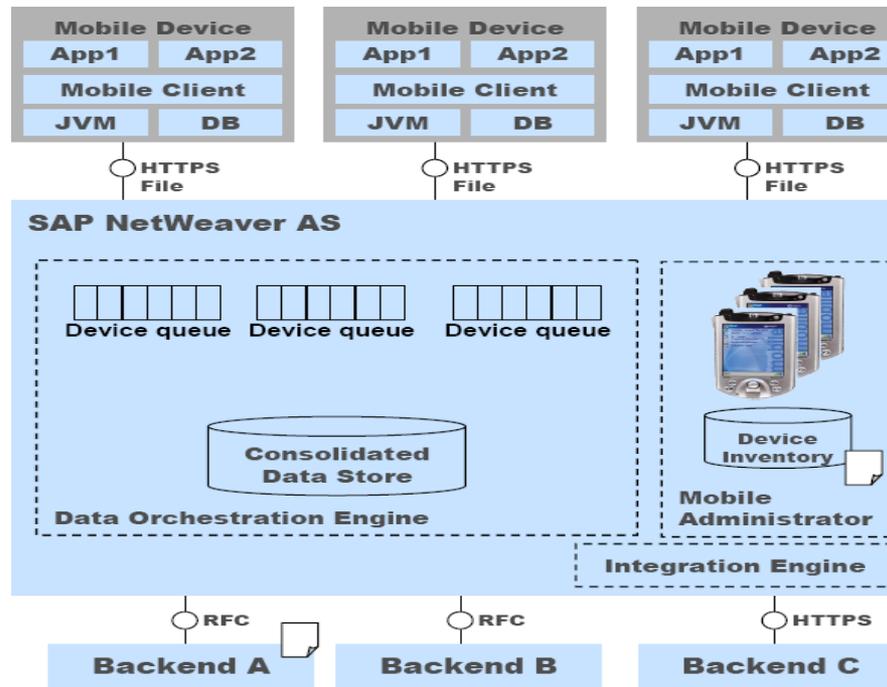




Tools in Middleware Infrastructure

- 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.



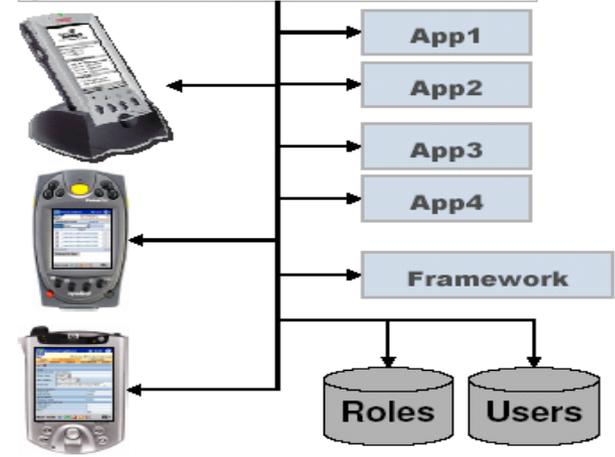


Mobile Monitoring Dashboard

The SAP Mobile Infrastructure will provide the following?

- Will allow key SAP functions accessible to a mobile user
- Will assume DOTD Facilities and Fleet are disconnected users
- Will utilize a Central role-based application deployment
- Leverage Central device management and monitoring for Mobile Facilities and Fleet users

Device ID	Device Name	Device Type	Device Status	Device Location	Device Role	Device User	Device Date
10-10000000000000000000	10-10000000000000000000	Android	Active	10-10000000000000000000	10-10000000000000000000	10-10000000000000000000	2010-10-10 10:10:10
11-11111111111111111111	11-11111111111111111111	Android	Active	11-11111111111111111111	11-11111111111111111111	11-11111111111111111111	2010-10-10 10:10:10
12-12121212121212121212	12-12121212121212121212	Android	Active	12-12121212121212121212	12-12121212121212121212	12-12121212121212121212	2010-10-10 10:10:10
13-13131313131313131313	13-13131313131313131313	Android	Active	13-13131313131313131313	13-13131313131313131313	13-13131313131313131313	2010-10-10 10:10:10
14-14141414141414141414	14-14141414141414141414	Android	Active	14-14141414141414141414	14-14141414141414141414	14-14141414141414141414	2010-10-10 10:10:10
15-15151515151515151515	15-15151515151515151515	Android	Active	15-15151515151515151515	15-15151515151515151515	15-15151515151515151515	2010-10-10 10:10:10
16-16161616161616161616	16-16161616161616161616	Android	Active	16-16161616161616161616	16-16161616161616161616	16-16161616161616161616	2010-10-10 10:10:10
17-17171717171717171717	17-17171717171717171717	Android	Active	17-17171717171717171717	17-17171717171717171717	17-17171717171717171717	2010-10-10 10:10:10
18-18181818181818181818	18-18181818181818181818	Android	Active	18-18181818181818181818	18-18181818181818181818	18-18181818181818181818	2010-10-10 10:10:10
19-19191919191919191919	19-19191919191919191919	Android	Active	19-19191919191919191919	19-19191919191919191919	19-19191919191919191919	2010-10-10 10:10:10
20-20202020202020202020	20-20202020202020202020	Android	Active	20-20202020202020202020	20-20202020202020202020	20-20202020202020202020	2010-10-10 10:10:10





Monitoring of 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="I">
  <ORDERITEM C6="CORRECT DOOR BELL" C1="0018FE796BF01DEC83DC82401D329A06"
  C0="0018FE796BF01DEC84D46504EB1E1A06" ty="U" tv="0018FE796BF21DDC9382D116ACC1DB0B" />
</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	



Example of Orchestration Engine

- Data Staging for the Data Orchestration Engine

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

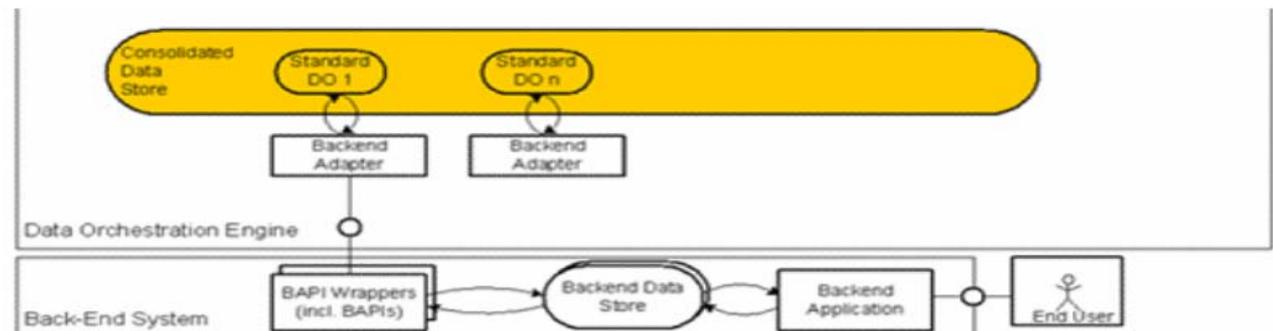
The screenshot displays the SAP Data Object Designer interface. The main window title is 'Data Object :Display ORDER (Active)'. The left pane shows a tree view of data objects under the 'TR_DATA_MODEL_*' software component. The 'ORDER' object is selected, and its 'ORDERHEADER' node is expanded. The right pane shows the 'Node Attributes' view for the 'ORDER' data object, displaying a table of attributes.

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



SAP Backend Adapters

- How the SAP Facilities / Fleet mobile data will be 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

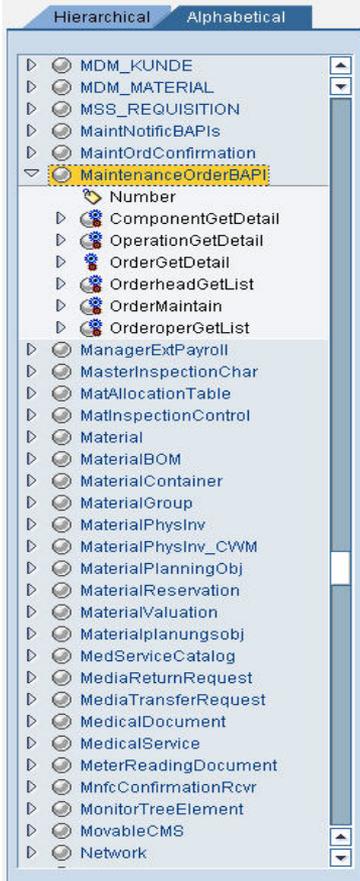




Leveraging Existing SAP Programming Interfaces



- 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 SAP Mobile Asset Management devices.
 - BAPI's
 - The flexibility and convenience of writing and the retrieval of data in ready-to-use configurations for business processes will make 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 Maintenance 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.

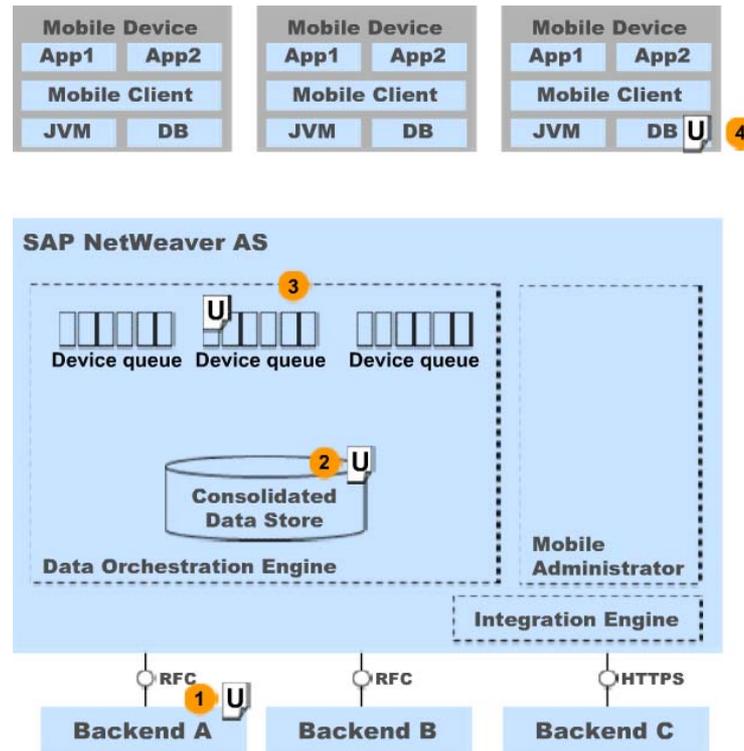
The screenshot displays the SAP Business Explorer interface for the Business object BUS2007A, specifically the Maintenance Order BAPI. The interface includes a menu bar (Object Type, Edit, Goto, Utilities(M), Environment, Settings, System, Help) and a toolbar with various icons. Below the menu, the title bar reads "Display Object Type BUS2007A". The main content area shows the object structure:

- Business object BUS2007A** ✓ Maintenance Order BAPI
- Interfaces**
 - IFSAP: SAP standard interface
 - IFARCH21: SAP ArchiveLink interface
 - IFPRINT: Print object
 - IFSTATUS: Status management
 - IFSENDSTAT: Receive send status info using events
- Key fields**
 - MaintenanceOrderBAPI.Number ✓: Order number
- Attributes**
 - MaintenanceOrderBAPI.StatusProfile: Status profile
 - MaintenanceOrderBAPI.ObjectType: Object type
 - MaintenanceOrderBAPI.Maintplanagergroup: PM planner group
 - MaintenanceOrderBAPI.Cost ✓: Cost estimate
 - MaintenanceOrderBAPI.CompanyCode: Company code
 - MaintenanceOrderBAPI.BusinessArea: Business area
 - MaintenanceOrderBAPI.Notification: Notification No
 - MaintenanceOrderBAPI.StatusObjType: Object type for status management
 - MaintenanceOrderBAPI.StatusObjNumber: Object number for status management
 - MaintenanceOrderBAPI.Priority: Priority
 - MaintenanceOrderBAPI.Equipment: Equipment number
 - MaintenanceOrderBAPI.Assembly: Assembly
 - MaintenanceOrderBAPI.PlanningPlant: Maintenance planning plant
 - MaintenanceOrderBAPI.PMWorkCenter: Object ID of PM work center
 - MaintenanceOrderBAPI.OrderType: Order type
 - MaintenanceOrderBAPI.OrderCategory: Order category
 - MaintenanceOrderBAPI.CreatedBy: Created by
 - MaintenanceOrderBAPI.ShortText: Short text
 - MaintenanceOrderBAPI.Plant: Plant
 - MaintenanceOrderBAPI.WBSElement: Work breakdown structure element (WBS element)
 - MaintenanceOrderBAPI.FunctLocation: Functional location
 - MaintenanceOrderBAPI.MaintenancePlant: Maintenance plant
 - MaintenanceOrderBAPI.EstimatedCosts: Estimated total costs of order
 - MaintenanceOrderBAPI.OrderFinishDate: Basic finish date
 - MaintenanceOrderBAPI.BasicStartDate: Basic start date
 - MaintenanceOrderBAPI.MaintActivityType: Maintenance activity type
 - MaintenanceOrderBAPI.BasicFinishTime: Basic finish (time)
 - MaintenanceOrderBAPI.BasicStartTime: Basic start date
 - MaintenanceOrderBAPI.SuperiorOrder: Number of superior order
 - MaintenanceOrderBAPI.Vap1z: Main work center
 - MaintenanceOrderBAPI.Service: Service order indicator
 - MaintenanceOrderBAPI.MaintPlanner: Maintenance planner group



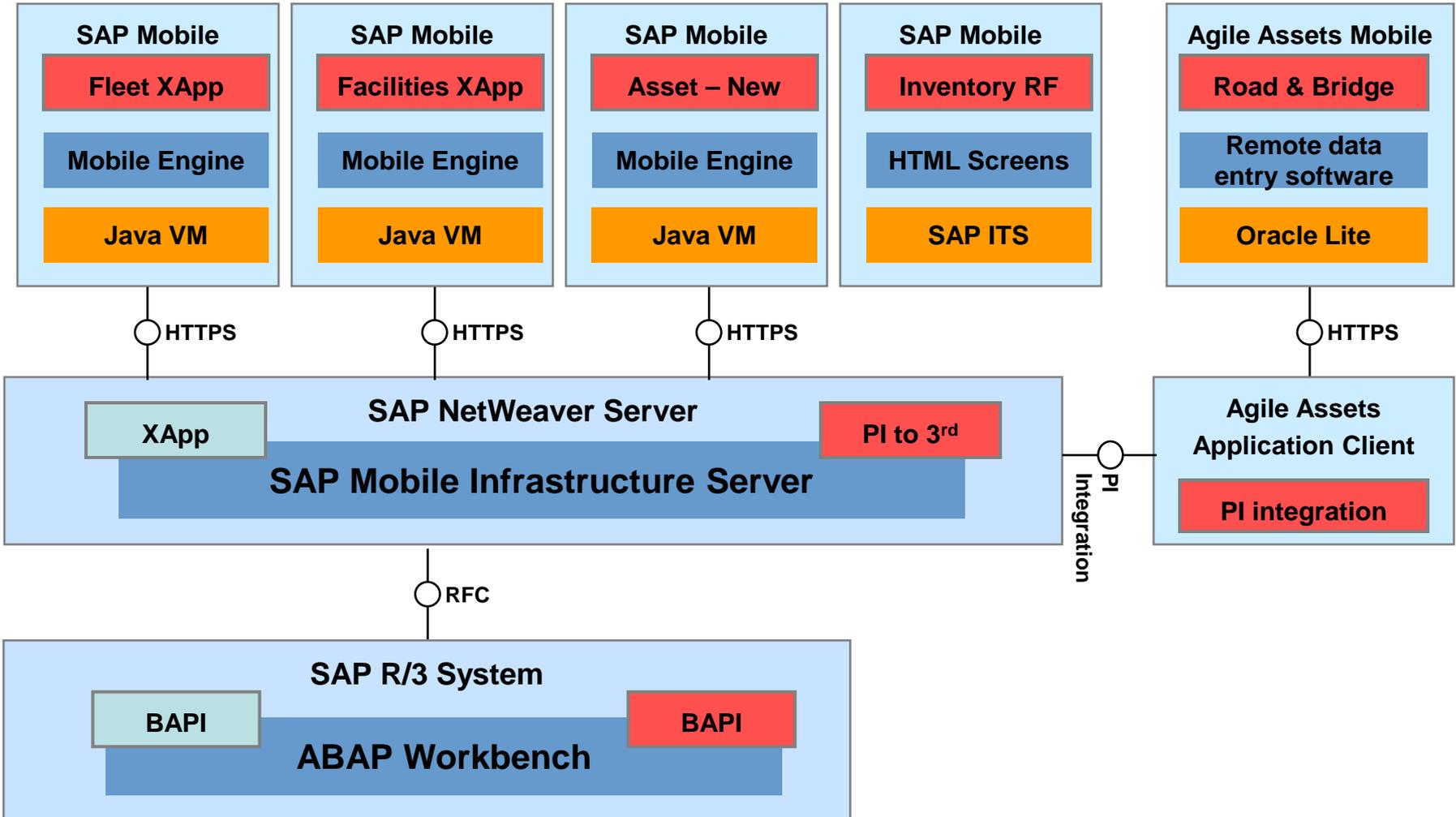
How field personnel will get SAP updates

- Outbound/Inbound Data Processing Steps
 1. The DOTD Facilities / Fleet 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 mobile device is synchronized the data is downloaded into the mobile client.





Process Uniqueness Amongst Infrastructure Areas





“Unique” DOTD Road & Bridge Process Integration

- LaGOV will leverage SAP PI for 3rd Party Best of Breed Applications
 - SAP Exchange Infrastructure (SAP PI) will enable us to implement cross-system processes. It enables us to connect systems from different vendors (Agile Assets) in different versions and implemented in different programming languages (Java, ABAP, and so on) to each other.
 - SAP PI is an integration broker that will mediate between Agile Assets 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.
 - The Agile systems now becomes a “publishers” and SAP backend becomes the “consumers” of messages, unaware of the source system or format.
 - Interfaces will become more plug and play, allowing rapid redeployment from one system to another with significant re-use.
 - Monitoring is centralized within the exchange pipeline



DOTD Facilities Maintenance with Mobile Use

- An SAP Mobile Asset Management device will be used for Facilities Maintenance for the following SAP business processes:
 - Perform Inspections of property and facilities
 - Enter service request (notifications)
 - Enter work orders
 - Check work status
 - Plan, schedule, and track maintenance activities
 - Send task to employees
 - Consume physical inventory for work orders
 - No GIS use
 - GIS functionality is restricted to Road & Bridge Linear Assets Module from Agile
 - Effected Agencies: DOTD
 - 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.



DOTD Fleet Management with Mobile Use

- An SAP Mobile Asset Management device will be used for DOTD Facilities Maintenance for the following SAP business processes:
 - Perform vehicle inspections
 - Schedule, track and report preventive maintenance services, fuel usage, work orders, equipment histories
 - NO GIS use
 - GIS functionality is restricted to Road & Bridge Linear Assets Module from Agile
 - Effected Agencies: DOTD
 - 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.



DOTD Road & Bridge with Mobile Use

- An Agile Assets Software device will be used for DOTD Road & Bridge for the following SAP 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
 - 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.



Inventory –Materials Management with Mobile Use

- An SAP Warehouse Management RF device will be used for inventory warehouse tracking for the following SAP 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
 - Not part of an SAP Mobile Asset Management Solution



Work Order Processing for users with Mobile Devices

- **SAP Work Order processing will include the following:**
 - The work orders assigned to a person or to a work center will be displayed in an order list.
 - Users can change the layout of the list on the mobile device.
 - Display the operations of a work 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.
 - 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 will remain on the mobile device until the order is technically completed in the backend SAP system.
 - Set or delete individual user statuses in the order as well as in the operation.



Work Order Processing for users with Mobile Devices

- **SAP Work Order processing will include the following:**
 - Users will create work orders for the order types assigned to their profile. The following data can be created in Mobile:
 - Long texts for the order header
 - Work center, reference object, and additional data in the order header
 - Operations (a default operation is generated automatically)
 - 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.



Entering Measurement Readings for users with Mobile Devices

- **Users will 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 (Equipment) available on the mobile device.
 - Enter Measurement Readings
 - Inspection Data Entry
 - Defects recording to technical objects.
 - Enter and confirm measurement and counter readings for a technical object



Stock Processing for users with Mobile Devices

- **Users will perform planned and unplanned material consumption used for work orders can be 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 for users with Mobile Devices

- **Users can perform Management of Technical Objects**
 - Install and remove equipment at functional locations. They 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.



Example Screen Shot of MAM

- Data Staging for the Mobile Device
 - Information staged in the Data Orchestration Engine will be synchronized up to the Mobile device. Field personnel will log onto the Mobile Application and review the work assigned to them.

The screenshot displays the SAP Mobile Infrastructure xMAM 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 those for Diesel Engine Repair and Preventive Maintenance Plan. A sidebar on the left provides a link to 'Order Management' and a 'Quick Links' section with a 'Create Order' link. The bottom of the screen shows a search bar and navigation controls.

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					



Example 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					

Navigation: << < > >>

Order: [Quick Search](#) [Advanced Search](#)



Example Screen Shot of MAM

SAP Mobile Infrastructure

Welcome CHPEIA [Alert Man...](#)

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

[Notifications](#) > Create Notification

[Save](#) [Cancel](#)

Notification New

Reported by:	CHPENA	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 CHPEIA

[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](#)



SAP Mobile Asset Management Design Configuration

- 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)
 - Orders and operations will be assigned via work center or employee number.
 - 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, we can further reduce the number of orders downloaded to the mobile device.
 - Transaction IW38 is used to determine the orders.



SAP Mobile Asset Management Design Configuration

- 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)
- 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.



SAP Mobile Asset Management Configuration

- 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, we can specify whether the system should check the material number entered and on what basis this inspection takes place. We 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 Configuration

- 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 we will 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 DOTD Mobilized Field Personnel

- We intend to Assign Orders, Notifications and Stock to a field technician and 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)
 - Planner group (selection variant runs at order level)
 - 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.



Process Improvement Opportunities And Concepts

- Information Mobility is a strategic initiative that affects all State of Louisiana Agencies adapting to an SAP system. The gap between standard SAP and remote field personnel interaction requires inter-operability amongst relevant ERP business processes.



Questions?

