Validation Session
Plant Maintenance
Master Data, Processes, Motor Pool
1/06/2009

LaGov

Version 1
Updated: 12/11/2008
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Validation Session Agenda

- Purpose
- Work Session Recap
- Master Data Design
  - Key Design Elements and Decisions
  - Changes and Challenges
  - Open Issues
  - Benefits/Improvements
  - FRICE-W objects
- To-Be Processes by Topic
  - Key Design Elements and Decisions
  - Changes and Challenges
  - Open Issues
  - Benefits/Improvements
  - FRICE-W objects
- Legacy Conversion Strategy
- Organizational Impacts
- Questions
Purpose of Today’s Validation Session

- Review and Validate the Master Data elements & FRICE-W objects

- Review & Validate Processes & FRICE-W objects for:
  - Notifications
  - Work Orders
  - Setup New Equipment
  - Preventive Maintenance
  - Outside Service Work / Service Contract
  - Pool Vehicles
  - Personal Assignment / Home Storage

- Discuss any “parking lot” and “action items” that need to be dealt with

- Review Legacy Conversion Strategy

- Questions
## Workshop Session Recap

<table>
<thead>
<tr>
<th>Business Process</th>
<th>Workshop Codes</th>
<th>Goals</th>
<th>Work Session Date</th>
</tr>
</thead>
</table>
| Functional Location       | LOG-PM-001     | ▪ Define Edit Mask  
 ▪ Define Functional Location Hierarchy                                  | 7/30/08           |
| Master Data               | LOG-MD-006     | ▪ Define Master Data and the field requirements for:  
 - Equipment  
 - Measuring Points (Counters)  
 - Measuring Documents  
 - Classification  
 - Characteristics  
 - Strategy / Package  
 - Task Lists  
 - Maintenance Plans / Items  
 - Work Centers  
 - Revision  
 - Permits  
 - Catalog Codes  
 - Bills of Material (BOMs) | 8/19/08           |
| Notification & Work Order Processing | LOG-PM-002, LOG-PM-003, LOG-PM-004, LOG-PM-005 | ▪ Determine Notification Process, Types & Field Requirements  
 ▪ Determine Work Order Process, Types & Field Requirements  
 ▪ Determine Work Order Planning & Scheduling Processes  
 ▪ Determine Preventive Maintenance Process  
 ▪ Determine Time Reporting Process | 09/30/08 - 10/02/08 & 10/07/08 |
## Workshop Session Recap

<table>
<thead>
<tr>
<th>Business Process</th>
<th>Workshop Codes</th>
<th>Goals</th>
<th>Work Session Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Pool Management</td>
<td>LOG-PM-006</td>
<td>- Pool Creation &amp; Editing</td>
<td>10/22/08</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Reservation Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Issuing Process</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Return &amp; Settlement Processes</td>
<td></td>
</tr>
<tr>
<td>Reporting</td>
<td>LOG-PM-007</td>
<td>- Gather reporting requirements</td>
<td>10/29/08</td>
</tr>
</tbody>
</table>
Master Data
Master Data Topics

- Functional Location
- Equipment
- Measuring Points (Counters)
- Measuring Documents
- Classification
- Characteristics
- Strategy / Package
- Task Lists
- Maintenance Plans / Items
- Bill of Material (BOM)
- Work Centers
- Revision
- Permits
- Catalog Codes
Functional Location
Functional Location – Design Considerations

- Edit Mask for functional location design

- Master data field requirements
  - System Required
    - Description
    - Maintenance Plant
    - Company Code
    - Business Area
    - Planning Plant
    - Structure Indicator
  - Business Required
    - Cost Center
    - Planner Group
    - Maintenance Work Center
    - Catalog Profile
    - Superior Functional Location

- Functional Location Category
  - M = Technical System - Standard
Functional Location – Design Considerations

- Planning Plant
  - Will be the same as the plant

- FI/CO will create:
  - Company Code
  - Business Area
  - Cost Center
Edit Mask

- One edit mask defined for the State of Louisiana
- For the State of Louisiana the edit mask/Structure Indicator is LA01 = State of Louisiana
Functional Location – Key Decisions

Edit Mask Level Definition

- Level 1 – Department
- Level 2 – Agency
- Level 3 – Section/ Parish/Region
  - S, P, R will define if it is a Section, Parish or Region
- Level 4 – City/Town/Site
  - For fleet, some agencies will stop here
- Level 5 – Building
- Level 6 – Floor/Outside Building & Fleet Indicator
- Level 7 – Outside & Fleet Areas
  - Used for areas associated with a building but not part of the structure
Create and Change a Functional Location, “To-Be” Business Process

[Flow Chart Diagram]

- Internal Client:
  - Have approved change request
  - Send approved request for add/change functional location
  - Provide additional information
  - Request additional information
  - Validate/update the changes requested (change if necessary)

- Master Data Specialist:
  - Additional information needed?
    - Yes
      - Is this an addition?
        - Yes
          - Create functional location
          - Notify requestor
        - No
          - Change functional location
          - Create PM Task List (if required)
      - No
        - Notify requestor

- Requestor notified → End
Equipment
Equipment – Design Considerations

- Equipment is installed into a Functional Location

- Equipment Categories
  - F = Fleet
  - M = Machine

- Equipment Master field requirements (F & M)
  - System Required
    • Description
    • Maintenance Plant
    • Planning Plant
    • Functional Location
  - Business Required
    • Object Type
    • Cost Center
    • Catalog Profile
Equipment – Design Considerations

- Additional Equipment Master field requirements for fleet (F)
  - System Required
    - Vehicle Type
  - Business Required
    - Fleet Object Number
    - VIN
    - Primary Fuel
      Define fluid types

- Partner Function
  - Populated with the responsible party (Personal Assignment / Home Storage)

- Optional fields that provide defaults in Notifications & Work Orders
  - Planner Group
  - Maintenance Work Center
Create and Change an Equipment Master Record, “To-Be” Business Process

- **Internal Client**
  - Have approved change request
  - Send approved request for add/change equipment master record
  - Provide additional information
  - Request additional information
    - Yes: Validate/update the changes requested (change if necessary)
    - No: Additional information needed?
      - Yes: Requestor notified → End
      - No: Is this an addition?
        - Yes: Create equipment master
        - No: Change equipment master
          - Notify requestor
  - Create PM Task List (if required)

- **Master Data Specialist**
  - Notify requestor
Measuring Points
Measuring Points – Design Considerations

- Define what needs to be measured
  - Odometer
  - Hours
  - Fuel Usage

- Measuring Point field requirements
  - System Required
    - Measuring Point Object
    - Equipment / Functional Location
    - Measurement Category
    - Description
    - Decimal Places
  - Business Required
    - CntrOverReadg
    - Annual Estimate
Measuring Documents
Measuring Documents – Design Considerations

- Measuring Documents field requirements
  - System Required
    - Measuring Point
    - Measurement Date
    - Measurement Time
    - Read By
  
  - Business Required
    - Counter Reading
      - Odometer Hours
      - Fuel Usage
Classification
Classification – Design Considerations

- Classes are created for a specific class type, i.e. the “car” class could be created for the “vehicles” class type.

- Classification field requirements
  - System Required
    - Class
    - Valid From
    - Description
    - Status
  - Business Required
    - Key Word (for search functionality)
Classification – Key Decisions

- The class hierarchy will be no more than 2 levels.
Characteristics
In classification, characteristics describe the properties of objects. (i.e. Characteristic Fuel has the values 'gas', 'diesel', and 'propane')

Characteristics field requirements
- System Required
  - Characteristic
  - Valid From Date
  - Description
  - Status
  - Data Type
  - Number of Characters
  - Decimal Places
  - Unit of Measure
  - Template
  - Language
  - Description

- Business Required
  - Values
Strategy / Package
A maintenance strategy defines the rules for the sequence of planned maintenance work. (i.e. Monthly)

Strategy field requirements
- System Required
  - Name
  - Description
  - Scheduling Indicator
  - Strategy Indicator

- Business Required
  - None
A maintenance package contains cycles which define when individual work should be performed (i.e. every 3 months)

Package field requirements
- System Required
  - Package Number
  - Cycle Length
  - Unit
  - Cycle Short Text
  - Hierarchy
  - Hierarchy Short Text
- Business Required
  - Maintenance Cycle Text
Task Lists
Task Lists – Design Considerations

- Maintenance task lists describe a sequence of individual maintenance activities which must be repeatedly performed.

- Task Lists are plant specific.

- Task List Types
  - T = Functional Location
    - Specific to a unique functional location
  - E = Equipment
    - Specific to a unique piece of equipment
  - A = General
    - Can be used for multiple equipment or functional locations.
Task Lists – Design Considerations

- Task Lists field requirements
  - System Required
    - Functional Location Code
    - Key Date
    - Operation Activity Number
    - Work Center
    - Plant
    - Calculation Key
    - Work Percentage
    - Execution Factor
Task Lists – Design Considerations

- Task Lists field requirements
  - Business Required
    - Work Center
    - Usage
    - Status
    - System Condition
    - Control Key
    - Operation Description
    - Operation Long Text
    - Work
    - Work Unit
    - Number
    - Duration
    - Duration Unit
    - Activity Type
    - Operation
    - Package
Create and Change a Task List, “To-Be” Business Process

<table>
<thead>
<tr>
<th>Internal Client</th>
<th>Master Data Specialist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have approved change request</td>
<td>Validate/change the changes requested (change if necessary)</td>
</tr>
<tr>
<td>Send approved request for add/change a task list</td>
<td>Request additional information</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Provide additional information</td>
<td>Is this an addition?</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Create task list</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Notify requestor</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Change task list</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Requestor notified</td>
</tr>
<tr>
<td></td>
<td>End</td>
</tr>
</tbody>
</table>
For general task lists, SAP will generate the sequence number.
Maintenance Plans / Items
The maintenance plans describe the dates and scope of the tasks

Maintenance Plan field requirements
  – System Required
    • Maintenance Plan Category
    • Maintenance Plan Strategy
    • Plan Description
    • Maintenance Item Functional Location
    • Maintenance Item Planning Plant
    • Maintenance Item Order Type
    • Maintenance Item Maintenance Work Center
    • Maintenance Item Maintenance Activity Type
    • Maintenance Item Business Area
    • Maintenance Item Task List Type
    • Maintenance Item Task List Group
    • Maintenance Item Task List Group Counter
    • Maintenance Plan Factory Calendar
    • Maintenance Plan Scheduling Indicator
    • Maintenance Plan key Date
Maintenance Plans / Items – Design Considerations

- Maintenance Plan field requirements
  - Business Required
    - Maintenance Item Description
    - Maintenance Item Planner Group
    - Maintenance Plan Call Horizon
    - Maintenance Plan Authorization Group
    - Maintenance Plan Start of Cycle
Create and Change a Maintenance Plan/Item, “To-Be” Business Process

- Have approved change request
  - Send approved request for add/change Maint Plan/Item
  - Provide additional information
    - Request additional information
      - Yes
      - No
        - Additional information needed?
          - Yes
          - No
            - Is this an addition?
              - Yes
              - No
                - Notify requestor
      - Validate/update the changes requested (change if necessary)
        - No
        - Yes
          - Change Maint Plan/Item
            - Notify requestor
  - IP02 Change Maint Plan/Item
  - IA05 or IA11 Create PM Task List (if required)
  - Create Maint Plan/Item
    - Requestor notified
      - End

- IP42, IP43
There will be only one maintenance item assigned to a maintenance plan.
Bill of Material (BOM)
BOM – Design Considerations

- Equipment will need to exist or be created
- MM integration - Material records will need to exist or be created
- BOM field requirements
  - System Required
    • Equipment Number
    • Plant
    • BOM Usage
    • Valid From
    • Item Number
    • Item Category
    • Quantity
    • Component Unit of Measure
    • Base Quantity
    • BOM Status
  - Business Required
    • Authorization Group
BOM – Flow Chart

Create and Change BOM, “To-Be” Business Process

<table>
<thead>
<tr>
<th>Internal Client</th>
<th>Master Data Specialist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have approved request for add/change bill of material</td>
<td>Send approved request for add/change bill of material</td>
</tr>
<tr>
<td>Provide additional information</td>
<td>Request additional information</td>
</tr>
<tr>
<td>Validate/update the changes requested (change if necessary)</td>
<td>Additional information needed?</td>
</tr>
<tr>
<td>New item(s) needed to be setup?</td>
<td>Is this an addition?</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>MM - Create Material Master</td>
<td>Create BOM</td>
</tr>
<tr>
<td>Change BOM</td>
<td>Update stock levels if necessary</td>
</tr>
<tr>
<td>Is part being removed from BOM?</td>
<td>Is part Required for other applications?</td>
</tr>
<tr>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Update part status to blocked</td>
<td>Dispose/use remaining stock</td>
</tr>
<tr>
<td>Update stock level (if needed)</td>
<td>Completed Request</td>
</tr>
</tbody>
</table>

Completed Request

Notify purchasing, maintenance and other affected areas and requester

Completed Request

Validate/update the changes requested (change if necessary)

Additional information needed?

New item(s) needed to be setup?

Is this an addition?

Yes

Create BOM

No

No

No
Work Centers
Work Centers – Design Considerations

- People will be assigned to work center via HR positions
- Work centers for Mobile Solutions device users (i.e. foreman) will have only one position assigned to it
- Equipment used for maintenance operations will be set up as work centers
- Cost Center will be the maintenance home cost center
- Activity Types with rate structure (average rate) will be created by FI/CO
  - Straight time
  - Over time
- Work Centers field requirements
  - System Required
    - Plant
    - Work Center Code/ External assignment
    - Work Center Description
    - Work Center Category
    - Control Key
    - Capacity Category
Work Centers – Design Considerations

- Work Centers field requirements
  - Business Required
    - Usage
    - Standard Value Key
    - Other Formula
    - Capacity Planner Group
    - Factory Calendar ID
    - Base Unit of Measure
    - Capacity Utilization
    - No. of Individual Cap.
    - Capacity Unit
    - Finite Scheduling
    - Be used by several operations
    - Long Term Planning
    - Capacity Category
    - Other Formula
    - Work Dimension
    - Work Unit
    - Start Date
    - End Date
    - Controlling Area
    - Cost Center
    - ActType Int Procs
Create and Change a Work Center, “To-Be” Business Process

**Internal Client**

- Have approved change request
- Send approved request for add/change a work center
- Provide additional information
- Request additional information
- Validate/update the changes requested (change if necessary)
- Is this an addition?
- Does this replace existing work center?
- Create new work center
- Change work center
- Update work center
- Update equipment master (if required)
- Update Task List library (if required)
- Notify requestor

**Master Data Specialist**

- Requestor notified
- End
Revision
Revision – Design Considerations

- Revision can be used to group work orders for:
  - Planning purposes
  - Projects (e.g. named storms)

- Revision field requirements
  - System Required
    - Plant
    - Revision
    - Description
  
  - Business Required
    - Revision Complete
    - Revision Start Date
    - Revision End Date
Permits
Permits – Design Considerations

- Permit Types
  - Cutting/ Welding Permit
  - Confined Space
  - Environmental

- Permit field requirements
  - System Required
    - Permit
    - Text
    - Category
    - Permit Class
  - Business Required
    - Print
Catalog Codes
Catalog Codes – Design Considerations

- Catalog Codes field requirements
  - System Required
    - Code Group
    - Short Text
    - Status of Code Group
    - Codes
    - Short Text for Code
    - Long Text for Code

- Considering possible purchase of catalog codes for fleet usage
Create and Change Code Group/ Group Code, “To-Be” Business Process

- Internal Client
  - Have approved change request
  - Send approved request for add/change equipment master record
  - Provide additional information
    - Request additional information
      - Yes
        - Is this an addition?
          - Yes
            - Create Code Group
            - Notify requestor
          - No
            - Change Catalog Code Group/Group Code
            - Notify requestor
        - No
          - Additional information needed?
            - Yes
              - Provide additional information
            - No
              - Requestor notified
              - End

- Master Data Specialist
  - Validate/update the changes requested (change if necessary)
Master Data – Changes & Challenges

- Master Data Person to manage the master data elements.
- Determine the types of master data and at which level(s) they will be maintained (i.e. functional location data vs. equipment data)
Master Data – Open Issues

- Need forms, permits, codes, & task lists used for work order processing from Agencies

- Need reports out of legacy systems regarding Master Data from Agencies (facilities)
Master Data – Benefits & Improvements

- Detailed reporting
- Increased visibility of where work is done.
- Hierarchy structure to break down locations/areas.
Technical Objects

Master Data - FRICE-W Objects
Master Data - FRICE-W Objects

- **Forms:**
  - Create/Change for all master data sets

- **Reports:**
  - **Functional Location**
    - Show Functional location hierarchy (IH01)
    - List Functional Location by Cost Center (IL05)
  - **Equipment**
    - Equipment by Cost Center (IE37)
    - Equipments by Class (IE37)
    - Equipments by User Status (IE37)
    - MPG Exception Report (IE37)
    - Vehicles Less than 15000 mi (IE37)
    - Vehicle Assignment (PAM03)
    - Vehicle Maintenance Detail (IK17)
    - Vehicle Mileage Report (IE37)
    - Vehicle Type (IE37)
    - Fleet Data (IE37)
Master Data - FRICE-W Objects

- Reports cont. :
  - Measuring Point
    - Equipment Measuring Point List (IK08)
  - Measurement Document
    - Equipment Measurement Document List (IK18)
  - Classification
    - Equipment by Class (CL31)
    - Material by Class (CL31)
  - Characteristic
    - Characteristic by Class Type (CL02 & CL6A)
    - Characteristic by Equipment (CL30N & CL31)
  - Strategy / Package
    - Strategy where used (IP14)
    - Package Sequence (IP13)
Master Data - FRICE-W Objects

- Reports cont.:
  - Task Lists
    - Task List by Functional Location (IA08)
    - Task List by Equipment (IA08)
    - Task List by Description (General) (IA08)
  - Maintenance Plans / Item
    - Maintenance Plans by Strategy (IP17)
    - Maintenance Plans by Measuring Point (IP17)
    - Maintenance Plans by Status (IP17)
    - Maintenance Plan Costing (IP17)
    - Maintenance Items by Order Type (IP17)
    - Maintenance Items by Strategy (IP17)
    - Maintenance Items by Planner Group (IP17)
    - Maintenance Items by Business Area (IP17)
    - Maintenance Item by Functional Location (IP17)
    - Maintenance Items by Equipment (IP17)
    - Maintenance Items by Work Center (IP17)
    - Maintenance Items by Cost Center (IP17)
    - Maintenance Items by Task List (IP17)
Master Data - FRICE-W Objects

- Reports cont.:
  - Bill of Material
    - Functional Location BOM Structural Display (IH12)
    - Equipment BOM Structural Display (IH04)
    - Material BOM Structural Display (IH05)
  - Work Center
    - Work orders by work center (IW38)
  - Revision
    - Work Order by Revision (IW38)
  - Permits
    - Work Order by Permit (IPM2)
  - Catalog Codes
    - Notification by Codes (MCI5)
FRICE-W Objects (cont.)

- **Interfaces:**
  - None

- **Conversions:**
  - Functional Location, Measuring Points, Work Centers, Classification, Characteristics, BOM
    - Will use spreadsheet to create master data and use conversion program in SAP (LSMW)
  - Equipment, Task Lists
    - Will extract relevant data from applicable legacy systems and use a spreadsheet to prepare master data and use conversion program in SAP (LSMW)

- **Enhancements:**
  - None

- **Workflow:**
  - None
Notification Processing
Notification Processing – Design Considerations

- Required Fields
  - Description
  - Functional Location
  - Reported By
  - Subject Code
    - ENVM - Environmental
    - NRML - Normal Maintenance
    - SAFY - Safety
  - Priority
    - 1 - Very High (Same Day)
    - 2 - High (Next Day)
    - 3 - Medium (3-10 Days)
    - 4 - Low (11 Days & >)
    - 5 - Preventive Maintenance (For M6 Notification Type)
Notification Processing – Design Considerations

- Notification Types
  - M1 - Maintenance Notification
  - M3 - Activity Report
  - M4 - Personal Assignment and Home Storage
  - M5 - Controlled Asset Tracking
  - M6 - Fleet Reporting (Non-accounting Agencies)
  - MF - Pool Asset Management

- User Status
  - REJT – Rejected
  - DUPL - Duplicate
  - UNDR - Under Review
  - ASCR - Asset Created (For M5 Notification Type)
  - ASTR - Asset Transfer – Send or Received (For M5 Notification Type)
  - ASRE - Asset Retired (For M5 Notification Type)
  - ASRJ - Asset Rejected (For M5 Notification Type)
Agencies have non-state employees with logins to various system (i.e. DPS has inmates using Faster & Facility Wizard Software for work order processing)
Notification Processing – Flow Chart(s)

**Notification, “To-Be” Business Process**

<table>
<thead>
<tr>
<th>Internal Client</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>Any request for work (identify)</td>
</tr>
<tr>
<td>Requester Notified</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Requestor</th>
</tr>
</thead>
<tbody>
<tr>
<td>IW21 or IW21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maintenance Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is it a breakdown?</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Set breakdown indicator on notification</td>
</tr>
<tr>
<td>Is it an emergency? (Priority 1)</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Create &amp; rout work order to proper planner group</td>
</tr>
<tr>
<td>IW22 or IW26</td>
</tr>
<tr>
<td>Notify Requester</td>
</tr>
<tr>
<td>Planning &amp; Scheduling Process</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>

If yes to emergency, create & route work order to proper planner group. If no, set to appropriate priority.
Process Change: Currently the State of Louisiana does not use notifications.
The introduction of notifications will allow the Departments / Agencies the ability to push the notification process out to specific users instead of at a central location.
Technical Objects

FRICE-W Objects
FRICE-W Objects

- **Forms:**
  - OSB – Work Evaluation
  - Activity Report - Activity Report Shop Paper
  - Breakdown Report - Breakdown Report Shop Paper
  - Notification Overview - Notification Overview Shop Paper

- **Reports:**
  - Blind audit report for Controlled Asset Tracking
  - Ad hoc reports via transaction IW28
    - Notification by Planner Group
    - Notifications By Priority
    - Notifications By Work Center
    - Notifications by Functional Location
    - Notification by failure Codes
    - Notifications by User Status
    - Etc.
FRICE-W Objects (cont.)

- Interfaces:
  - None

- Conversions:
  - None

- Enhancements:
  - None

- Workflow:
  - None
Work Orders
Work Orders – Design Considerations

- Required Fields
  - Description
  - Maintenance Work Center
    - Developed by agencies
  - Maintenance Activity Types
    - 001 - Inspection (PM01 & PM02)
    - 002 - Preventive Maintenance (PM02 Default)
    - 003 - Refurbishment (PM01)
    - 004 - Warranty Case (PM01)
    - 005 - Insurance Case (PM01)
    - 006 - Repair (PM01)
    - 007 - Safety (PM01)
    - 008 - Modification (PM01)
    - 009 - Environmental
    - 010 - Storm (PM01)
  - Functional Location
Work Orders – Design Considerations

- **Required Fields cont.**
  - Planner Group
    - Developed by agencies
  - Priority
    - 1 - Very High (Same Day)
    - 2 - High (Next Day)
    - 3 - Medium (3-10 Days)
    - 4 - Low (11 Days & >)

- **Control Keys**
  - PM01 - Plant Maintenance , Internal
  - PM02 - Plant Maintenance , External
  - PM03 - Plant Maintenance , External (Services)
Work Orders – Design Considerations

- **Work Order Types**
  - PM01 - Repair Maintenance
  - PM02 - Preventive Maintenance
  - PM03 - Capital Work Order
  - PMAG - Agile Work Order Interface (Under Evaluation - Used by Agile Only)

- **User Status**
  - CRTD - Created
  - HOLD - Hold for Parts
  - REDY - Ready to Schedule
  - REJT - Rejected
  - SCHD - Scheduled
  - WAIT - Waiting for Approval
  - WRTY - Warranty Repair
  - VEND - Vendor Repair

- **System Condition**
  - 0 – Not in operation
  - 1 – In operation
Work Orders – Flow Chart(s)

Work Order, "To-Be" Business Process

1. Create Work Order
2. Prepare Task-List as needed
3. Order & Reserve Stock/Non-stock / Contract resources as necessary
4. Is Requisition Required?
5. Check & Maintain Settlement Rule
6. Release Work Order
7. Financial Approval

Maintenance Services

- Other Technical Documentation
- Task Library & Previous WOs/ Machine Manuals
- Input PVM, Work Orders
- Materials Management

Internal Client

- 1W22, 1W28 or 1W31
- Work Execution Process
- 1-Day Schedule Prioritized / Planned Daily Task Report
- Prepare Daily Schedule for Each Area
- Weekly Schedule

Ready To Be Scheduled backlog
Work Execution Part 1, “To-Be” Business Process

- **Completed Job Plans**
- **Print & Issue Work Order**
- **Collect Resources**
- **Obtain Safety Work Permit**
- **Commence Work**
- **Are additional resources required?**
  - **Yes**
  - **No**
- **Obtain Resources (Engineering / Assist Trades / Parts)**
- **Job Completed?**
  - **Yes**
  - **Return Equipment back to Service**
- **Is follow-up work required?**
  - **Yes**
  - **Return Permits**
- **Record actions & labor hours**
- **Return for scheduling in backlog**
- **Will tasks be undertaken in next shift / day?**
  - **Yes**
  - **No**
- **Obtain Safety Work Permit**
  - **Safety Permits Req'd?**
    - **Yes**
    - **No**
- **Collect Resources**
- **Goods Issue from MRO supplies stockroom**
- **Is Non-SAP Task Description IW32 for Print & Issue Work Order?**
- **Is Non-SAP Task Description IW21 for Create Work Request?**

1. Create Work Request
2. Return Permits
3. Record actions & labor hours
4. Return Permits
5. Is follow-up work required?
6. Return for scheduling in backlog
7. Goods Issue from MRO supplies stockroom
8. Obtain Safety Work Permit
9. Commence Work
10. Are additional resources required?
11. Obtain Resources (Engineering / Assist Trades / Parts)
12. Job Completed?
13. Return Equipment back to Service
14. Return Permits
Work Execution Part 2, “To-Be” Business Process

<table>
<thead>
<tr>
<th>Internal Client</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5</strong></td>
</tr>
<tr>
<td>Are there any unused parts from job?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Return unused parts to Maintenance Stores</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Is any replaced material going to be refurbished?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Return repairable part to shop</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Is equipment being installed or removed at this location?</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>Install/remove equipment in or from this location</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Work order review</td>
</tr>
<tr>
<td>Enter work order data into SAP</td>
</tr>
<tr>
<td>Technically Complete work order</td>
</tr>
<tr>
<td>Notify requestor of job completion</td>
</tr>
</tbody>
</table>

End
Work Orders – Changes & Challenges

- All Agencies will be using the same work order system

- Some Agencies currently do not use a work order system and will have to change their business processes
Work Orders – Benefits & Improvements

- Work orders are now tied to the financial system
- Work orders will show maintenance activities and reflect actual costs to the appropriate cost element
- The work order process will allow for more formalized planning resulting in increased manpower efficiency
FRICE-W Objects
FRICE-W Objects

- Forms:
  - Job Ticket - Facilities
  - Job Ticket - Fleet
  - Operation Control Ticket
  - Pick List
  - Material Issue Slip

- Reports:
  - Ad hoc reports via transaction IW38
    - Work Order by System & User Status
    - Work Order by Planner Group
    - Work Order By Priority
    - Work Order By Work Center
    - Work Order by Functional Location
    - Work Orders that are Open
    - Approved Work Orders by Planner Group
    - Approved Work Orders by Cost Center
    - Work Order by Equipment, Person Responsible and date
    - Work Order By Date
    - Etc.
FRICE-W Objects (cont.)

- Interfaces:
  - Agile Assets

- Conversions:
  - None

- Enhancements:
  - None

- Workflow:
  - DPS Fleet – When scheduled maintenance is due notify person responsible of work order
  - OSB Facility – Notify work order requester when work order has been completed
Setup New Equipment
Setup New Equipment – Design Considerations

- **Equipment**
  - Set up equipment master record
  - Install into functional location

- **Class**
  - Assign Class

- **Measuring Point**
  - Create measuring point (if required)

- **BOM**
  - Create BOM (if required)

- **Task Lists**
  - Create Task Lists (if required)

- **Maintenance Plan**
  - Create maintenance plan
  - Assign task list

- **Documents**
  - Scan in documents as required
Asset master record fields that can be synchronized on the Equipment master record need to be identified.
Setup New Equipment – Flow Chart(s)

Setup New Equipment, “To Be” Business Process

- Received new equipment
  - Obtain Asset #
    - Create equipment record in SAP
  - Install equipment in functional location
  - Create task list for equipment (if necessary)
  - Create maintenance plan for equipment
  - Release equipment to Requestor
    - Dismantle equipment & install at appropriate location
    - Receive equipment

- Requestor

- Assets
  - Provide Asset #

End
Setup New Equipment – Changes & Challenges

- Total change in current business process
Setup New Equipment – Benefits & Improvements

- Consistency across Agencies in equipment descriptions, naming conventions and settings
Technical Objects

FRICE-W Objects
FRICE-W Objects

- **Forms:**
  - Asset Number Request

- **Reports:**
  - Ad hoc reports using transaction IH08
    - Equipment by Functional Location
    - Equipment by Asset Number
    - Equipment by Business Area
    - Equipment by Class
    - Equipment by Object Type
    - Etc.

  - Ad hoc reports using transaction IE36
    - Fleet equipment by…
FRICE-W Objects (cont.)

- **Interfaces:**
  - None

- **Conversions:**
  - None

- **Enhancements:**
  - None

- **Workflow:**
  - None
Preventive Maintenance
Preventive Maintenance – Design Considerations

- Any preventive maintenance plans created for fleet must meet the minimum requirements as described by LAC Title 34 Part XI
  - Equipment
  - Functional Location
  - Measuring Points
  - Bill of Material
  - Task Lists
    - General task lists used where possible
  - Maintenance Plans
Preventive Maintenance, “To Be” Business Process

SAP
- Time / Counter
- Auto generate work order

Planner
- Plan / Schedule PM work orders
- Print & Distribute PM work orders

Technician
- Receive PM work orders
- Work Execution process
Each agency will be responsible for maintenance plans and task lists creation/verification.
Preventive Maintenance – Benefits & Improvements

- All Agencies will have the tools needed to create preventive maintenance plans
- Better maintenance planning and scheduling will allow for more efficient manpower usage
FRICE-W Objects
FRICE-W Objects

- **Forms:**
  - Create/ Change Task List
  - Create/ Change Maintenance Plan/ Item

- **Reports:**
  - Equipment: MTTR - Mean Time To Repair (MCI5)
  - Equipment: MTBF - Mean Time Between Failures (MCI5)
  - Maintenance Items - Review Maintenance Items (List) (IP17)
  - Maintenance Plans - Review Maintenance Plans (List) (IP03)
  - Task Lists - Review Task List & Frequency (IA08)
  - Functional Location/ Equipment by Breakdown - List Functional Location/ Equipment by Breakdown (CI17)
FRICE-W Objects (cont.)

- Interfaces:
  - None

- Conversions:
  - None

- Enhancements:
  - None

- Workflow:
  - None
Outside Service Work / Service Contract
Required fields for requisition from order (PM02)
- Qty Unit of Measure (Change to “EA”)
- Material Group (Required)
- Purchasing Group
- Cost Element
- Price (If known)
Outside Service Work / Service Contract – Flow Chart

Outside Service Work / Service Contract, “To-Be” Business Process

1. **Maintenance**
   - **NW31**: Create W/O for service work by vendor/contractor
     - Does equipment record exist?
       - Yes → **NW31**: Create requisition from work order
         - Approve requisition?
           - Yes → Requisition approved
           - No → Requisition Denied; send back to originator
     - No → **NW31**: Create W/O generated from preventive maintenance automatically

2. **Contracting**
   - **W32**: Technically complete work order
     - End
   - **MRO**: Receive and process invoice & record costs
     - Buyer sends PO to vendor/contractor
     - Receive PO → Complete work → Submit Invoice

3. **Vendor**
   - Receive PO

4. **Master Data Specialist**
   - Add/Change Equipment Record
   - Add/Change Functional Location
Cost tracking/reporting to work order level.
FRICE-W Objects
FRICE-W Objects

- **Forms:**
  - Chain of Custody - To maintain a paper trail for the chain of custody of a piece of equipment that is being sent out for repair

- **Reports:**
  - Work Order by PM Control Key (IW37N)
FRICE-W Objects (cont.)

- Interfaces: None
- Conversions: None
- Enhancements: None
- Workflow: None
Integration Points – Maintenance Process Overview

Maintenance Process (Scheduled Preventive Maintenance, Repair, and Reactive)

Begin Repair Process

IW21 Create Notification (Problem Identified)

Notification Approved?

Yes

IW22 Change Notification (Release Work Order)

Begin Reactive Process

IW31 Create Work Order

Internal Resources to be used?

No

IW32 Change Order (Scheduled Work Order)

Yes

IW32 Change Order (Release Work Order)

Use P-Card?

Yes

Vendor performs work

No

IW32 Change Order (Shop orders printed and sent with vehicle to vendor)

PUSH to MAM

Mechanic Performs Work

CAT2 Enter Labor

Confirm truck hours?

Y

IW41 Enter Hours

N

MIGO Enter Goods Issue for any inventory components

Inventoryed Fuel

IK11 JFCU Counter Readings

IW22 Enter Tech Findings

IW32 Close Order CLSD

IW32 Change Order (TECO)

End All Maintenance Processes

IK11 JFCU Counter Readings

Order Settlement

CO Posting

CO

Create Reservation

GR

Purchase Order assigned to Work Order

Create Purchase Requisition from within Work Order

Yes

No

Enter Invoice

** FI Posting

AP (F1)

AP (F1)

Charge Card Payment to Work Order

HR Labor Actual Hrs/Rate Post to Work Order

Page-1 of 1
Pool Vehicles
Pools are created at a functional location and all vehicles installed at that location will be included in the pool

- Some locations will have multiple pools
- Some equipment will be pool assets (i.e. tractors, bull dozers, etc.)
SAP's Pool Asset Management (PAM) solution will be the official means of managing state pool assets which have the requirement and/or need to be tracked, managed and dispatched.
Pool Vehicles – Open Issues

- PAM Pool Security - Standard delivered PAM functionality does not provide for any user authorizations. In other words, if a user has access to PAM03, that user can manage any designated pool.

- Can users receive standard email from PAM instead of / in addition to SAP express mail?
Need to capture vehicle information rollups (fuel usage, mileage & repair cost) for non-accounting agencies.

Data from fuel contract provider to be received via interface or by data extract and use tools to perform a mass upload?
Pool Vehicles – Flow Chart

Pool Vehicles Process Flow (MF notifications and PAM03)

- **Begin Process**
  - **Driver**
  - **Fleet Coordinator**

**Driver**
- Drag & Drop from bottom to top level
- **PAM03** Notif Stat: DISP
- **ASSIGN**
- Cancel Demand?
  - Yes: **PAM03** Notif Stat: STOR
  - No: **PAM03** Notif Stat: STOR
- Delete Scheduled Demand?
  - Yes: **PAM03** Notif Stat: STOR
  - No: **PAM03** Notif Stat: STOR

**Fleet Coordinator**
- **PAM03** Notif Stat: RESM
- **RESERVE**
- Cancel Reservation?
  - Yes: **PAM03** Notif Stat: STOR
  - No: **PAM03** Notif Stat: STOR
- Delete Reservation?
  - Yes: **PAM03** Notif Stat: STOR
  - No: **PAM03** Notif Stat: STOR

**PAM03** Notif Stat: GELD
- Drops off Planning Board

**PAM03** Notif Stat: AUFE
- Settle
- Double-Click then click Settle button

**PAM03** Notif Stat: STAN
- Cancel Demand?
  - Yes: **PAM03** Notif Stat: STOR
  - No: **PAM03** Notif Stat: STOR

**PAM03** Notif Stat: STOR
- Double-Click then click Delete Scheduled Demand button

**PAM03** Notif Stat: STOR
- Double-Click then click Delete Reservation button

**Express mail to Requisitioner**

- End Process

*Double-Click then click Issue button (Counter read)*

*Begin Process*

*Double-Click then click Reserve button*

*Double-Click then click Issue button (Counter read)*

*Double-Click then click Settle button*

*Double-Click then click Return button (Counter read)*

*Express mail to Requisitioner*
The Pool Asset Management functions will be new to many agencies that do not currently “track” pool vehicle usage.
Agencies will have the necessary tools to accurately report, schedule and forecast the usage of Pool assets.

Better scheduling will allow agencies to determine the number of fleet vehicles needed to perform work.
FRICE-W Objects
FRICE-W Objects

- Forms:
  - PAMS_MAIL - Reservation notice

- Reports:
  - None
FRICE-W Objects (cont.)

- Interfaces:
  - None

- Conversions:
  - None

- Enhancements:
  - None

- Workflow:
  - None
Personal Assignment / Home Storage
Personal Assignment / Home Storage – Design Considerations

- New assignments
- Renewals
- Assignment complete / ended early
- Notification Type (M4) used specifically for Personal Assignment / Home Storage
• Electronic Approval for Personal / Home Assignment
Personal Assignment / Home Storage – Open Issues

- Non-paid agencies creating M4 notifications for Home Storage/Personal Assignment requests
- Electronic Approval of Home Storage/Personal Assignment
Personal Assignment and Personal Assignment / Home Storage Process Flow (M4 Notifications)

BEGIN PROCESS

Submitter (e.g., Driver)
1) Enter License Plate
2) Enter Req’d Start/End Dates
3) Mark notif as PA, HS
4) Identify Reason
5) Enter pertinent qualifying text
6) Communication to 1st approver

1st Approver (e.g., Agency Fleet Coordinator)
1) Enter pertinent qualifying text
2) Communicate to 2nd approver

2nd Approver (e.g., Agency Head)
1) Enter pertinent qualifying text
2) Communicate to 3rd approver

3rd Approver (e.g., State Fleet Manager)
1) Enter pertinent qualifying text
2) Approve Notif (if new request)
3) Communicate to Submitter

New assignment? N
Create Notification Type M4 IW21
1) Change Req’d Start/End Dates
2) Mark notif as RENEWAL
3) Communication to 1st approver

Renewal? Y
Change Notification IW22

1st approver receives Communication
Approved? Y

2nd approver receives Communication
Approved? N

3rd approver receives Communication
Approved? N

Mark notif as REJECTED
Enter comments in long text

ASSIGNMENT COMPLETE OR ENDED EARLY
1) Add pertinent qualifying text
2) Close Notification w/ date

End Process

- State currently does not recognize electronic approvals.
Electronic Approvals will expedite current processes for Home Storage/Personal Assignments

HR integration will allow uniform reporting of commute mileage for taxable benefits
Technical Objects

FRICE-W Objects
FRICE-W Objects

- **Forms:**
  - None

- **Reports:**
  - Commute benefit reporting - Identify Home Storage vehicles in a report to reconcile with HR for commute trips.
FRICE-W Objects (cont.)

- Interfaces:
  - None

- Conversions:
  - None

- Enhancements:
  - None

- Workflow:
  - None
Legacy Conversion Strategy

- **Legacy Data Element: Functional Location**
  - Create structure in a excel spreadsheet provided by conversion team

- **Legacy Data Element: Equipment**
  - Export data from legacy into excel file
  - Clean data
  - Copy and finish build in an excel spreadsheet provided by conversion team

- **Legacy Data Element: Maintenance Plans/Task Lists**
  - Export data from relevant legacy systems
  - Clean data
  - Copy and finish build in an excel spreadsheet provided by conversion team
Legacy Conversion Strategy

- Legacy Data Element: Bill of Materials (BOM)
  - Export data from relevant legacy systems
  - Clean data
  - Copy and finish build in an excel spreadsheet provided by conversion team
Overall Organizational Impact

- Data cleansing will require agency resources
Questions?