**System Design Specification**

**for**

**Changes to Monthly Billing Process**

**Project Code: EST080**

**Version: 1.2**

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# Document Management

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## Version Control

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Version** | **Author** | **Section** | **Amendment** |
| 19/02/16 | 1.0 | JA | **All** | **Initial draft** |
| 14/03/16 | 1.1 | JA | **All** | **Added PAT Testing Billing sections****Minor updates to Overview, MBP and Archival sectionsAdded 6.2 – requirement to consult Mass re: deployment** |
| 17/03/16 | 1.2 | JA | **All** | **Updated document to accommodate change of requirement:*“All work orders should be set to CLOSED regardless of zone rollout status”.*****Added section 6.3 to describe planned zone rollout.** |
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# OVERVIEW

Estates admin staff run a Monthly Billing Process (MBP) in the middle of the month, billing for work done in the month previous.

There are two steps:

1. PAT testing billing
2. Work order billing

There is a requirement to introduce an additional step:

1. Work order archival

## Application

The Archibus Desktop Client application is used to carry out the MBP.

The file which handles the PAT Testing billing form is **mnthedpt.abs**.

The file which handles the monthly billing form is **eumnthen.abs**.

## Need for change

### Work order status semantics

EST080 is making changes to Work Order workflow. One impact of this is that Work Order **status** will have different semantics.

The status of a completed job which is eligible for MBP is changing from ‘***Job Done***’ to ‘***Completed***’.

### Archival of work orders and related objects

Currently no archival of Work Orders takes place. Archival of completed work orders and related objects should be implemented to maintain the performance of the application.

The table below shows the old and new work order status significance:

|  |  |  |
| --- | --- | --- |
|  | Current Process | New Process |
| Work eligible for MBP | Job Done | Completed |
| After MBP | Completed | Closed |
| Candidate for archival | N/A | Closed |
| After archival | N/A | N/A |

# PAT Test Billing Process

## Description of current process

### Process outcome

* All ‘Job Done’ PAT TESTER work orders with date\_completed prior to month end are set to ‘Complete’.
* All work orders from this set which qualify for recharging are stamped with recharging information.

### Launching the process

The current process is run from Archibus Desktop Client.

User enters the month end data and clicks ‘OK’.

### Step one – update and complete rechargeable PAT TEST work requests

Work requests qualify for full processing if the following conditions are met:

|  |  |  |
| --- | --- | --- |
| Condition | Field name | Field matches |
| Status is ‘Job Done’ | status | DON |
| Was completed before month end | date\_completed | <= date entered  |
| Has PAT tests recorded against it | pat\_tests | > 0 |
| Flagged as recharge | *OR* | recharge | 1 |
| Is for rechargeable building | bl.bl\_zone5\_id | not null |
| Is for school within SCE or MVM | dv.bu\_id | SCE or MVM |
| Was requested by employee in school within SCE or MVM | em.dv.bu\_id | SCE or MVM |

Matching work requests are updated as follows:

|  |  |
| --- | --- |
| WR property | Set it to |
| monthly\_bill | Number of pat tests X triple rate for trade PAT TESTER |
| status | COM |
| date\_stat\_chg | Date entered by the user |
| recharge | 1 |
| tr\_id | PAT TESTER |
| dv\_id (if null) | requestor’s dv\_id |
| dp\_id (if null) | requestor’s dp\_id |

### Step two – complete all other PAT TEST work requests

A further update is performed on work requests which match the following conditions:

|  |  |  |
| --- | --- | --- |
| Condition | Field name | Field matches |
| Status is ‘Job Done’ | status | DON |
| Was completed before month end | date\_completed | <= date entered  |
| Trade is PAT TESTER | tr\_id | PAT TESTER |

Matching work requests are updated as follows:

|  |  |
| --- | --- |
| WR property | Set it to |
| status | COM |

## Proposed Process

A phased approach to the new helpdesk system rollout is planned, based on zones. This means that the update to the PAT Test Billing Process must also be delivered in corresponding phases.

The zones are:

* ACCOM
* CENTRAL
* MED+VET
* KB

### Process outcome

* All ‘Job Done’ PAT TESTER work orders **from non-rolled-out zones** with date\_completed prior to month end are set to ‘**Closed**’.
* All ‘**Completed**’ PAT TESTER work orders **from rolled-out zones** with date\_completed prior to month end are set to ‘C**losed**’.
* All work orders from this set which qualify for recharging are stamped with recharging information.

### Step one - update and close rechargeable PAT TEST work requests

The update must be split into 2 zone-sensitive versions.

Before the zone is rolled out, the status must match “Job Done”.

After the zone is rolled out, the update must match status “Complete”.

A variable should be created to control which zones use the new workflow rules. For example:

Dim activatedZones As String
activatedZones = “’ACCOM’,’CENTRAL’”

The structure of the existing code in this step is as follows:

SELECT qualifying work requests
 FOR EACH row
 UPDATE work request SET primary properties
 SELECT dv\_id, dp\_id FROM requestor
 UPDATE work request SET dv\_id, dp\_id = requestor details

This section must be duplicated so that we have:

* one version for active zones, which selects on status ‘COM’ and sets status to ‘CLO’
* one version for inactive zones, which selects on status ‘DON’ and sets status to ‘CLO’.

This will give the following structure:

SELECT qualifying work requests for active zones
 FOR EACH row
 UPDATE work request SET primary properties inc status=CLO
 SELECT dv\_id, dp\_id FROM requestor
 UPDATE work request SET dv\_id, dp\_id = requestor details
SELECT qualifying work requests for inactive zones
 FOR EACH row
 UPDATE work request SET primary properties inc status=CLO
 SELECT dv\_id, dp\_id FROM requestor
 UPDATE work request SET dv\_id, dp\_id = requestor details

The select should be joined to building table to detect the zone. For example, for active zones:

SELECT wr\_id

 ,pat\_tests

 ,dv\_id

 ,dp\_id

 ,requestor

 ,date\_completed

FROM wr

WHERE **UPPER(status) = 'COM'**

AND date\_completed <= <date entered>

AND **wr.bl\_id IN ( select bl\_id from bl where bl\_zone2\_id IN <activatedZones>))**

AND NVL(pat\_tests,0) > 0

AND (

 (

 bl\_id IS NOT NULL AND

 bl\_id IN ( SELECT bl\_id

 FROM bl

 WHERE bl\_zone5\_id IS NOT NULL)

 ) OR (

 dv\_id IS NOT NULL AND

 dv\_id IN ( SELECT dv\_id

 FROM dv

 WHERE bu\_id IN ('SCE','MVM'))

 ) OR (

 em\_id IS NOT NULL AND

 em\_id IN ( SELECT em\_id

 FROM em

 WHERE dv\_id IN (SELECT dv\_id

 FROM dv

 WHERE bu\_id IN ('SCE','MVM')))

 ) OR (

 recharge = '1'

 )

)

As each zone is rolled out, the variable should be amended to include the new zone.

## Step two – complete all other PAT TEST work requests

The final update query must also be duplicated into two zone-sensitive versions. For example, for active zones:

UPDATE wr

SET status = 'Clo'

WHERE UPPER(status) = 'COM'

AND date\_completed <= <date entered>

AND tr\_id = 'PAT TESTER'
AND **wr.bl\_id IN ( select bl\_id from bl where bl\_zone2\_id IN <activatedZones>))**

# Monthly Billing Process

## Description of current process

### Process outcome

* All ‘Job Done’ work orders with date\_completed prior to month end are set to ‘Complete’.
* All work orders from this set which qualify for recharging are stamped with recharging information.

### Launching the process

The current process is run from Archibus Desktop Client.

User enters the month end date which the Billing should be run for and inputs EIT numbers for each of the rechargeable buildings.

All EIT fields must be filled in.

The user clicks ‘OK’

### Step one – update rechargeable work requests

For each of the 14 rechargeable buildings: determine work orders eligible for recharging and stamp them with the IT NO entered by the user.

Work requests will match for the specified building if the following is true:

|  |  |  |
| --- | --- | --- |
| Condition | Field name | Field matches |
| Status is ‘Job Done’ | status | DON |
| Was completed before month end | date\_completed | <= date entered  |
| Health and safety is not set | health\_safety | not 1 |

In addition, the following must be true and will match the WR with a rechargeable building:

|  |  |  |  |
| --- | --- | --- | --- |
|  | priority | trade | bl\_zone5\_id |
| EUSA | not C | not LANDSCAPE | RECEUSA |
| Accom Services | Any | not GLAZING or LANDSCAPE | RECACCOM |
| Mylnes Court | Any | not LANDSCAPE | RECCATER |
| Pollock Halls | Any | not LANDSCAPE | RECPOLL |
| Abden House G/F | not C | not LANDSCAPE | RECABDEN |
| BBSRC | not C | not LANDSCAPE | RECBBSRC |
| Let Property | Any | not LANDSCAPE | RECLET |
| WGH 6Q | Any | not LANDSCAPE | RECWGH28 |
| Accom short lease | Any | not LANDSCAPE | RECSL |
| WGH2327 | Any | not LANDSCAPE | RECWGH27 |
| WGH2302 | Any | not LANDSCAPE | RECWGH02 |
| SRUC | Any | not LANDSCAPE | RECSAC |
| Roslin | Any | not LANDSCAPE | RECROS |
| Roslin Biocentre | Any | not LANDSCAPE | RECROSBC |

Matching work requests are updated as follows:

|  |  |
| --- | --- |
| WR property | Set it to |
| it\_no | Value entered by user for the area |
| it\_ext\_no | I |
| date\_stat\_chg | Date entered by the user |
| recharge | 1 |

### Step two – Complete all work requests

Then set all ‘done’ work requests to ‘Complete’:

|  |  |  |
| --- | --- | --- |
| Condition | Field name | Field matches |
| Status is ‘Job Done’ | status | DON |
| Was completed before month end | date\_completed | <= date entered  |

Matching work requests are updated as follows:

|  |  |
| --- | --- |
| WR property | Set it to |
| status | Complete |
| date\_stat\_chg | Date entered by the user |

## Proposed Process

### Process outcome

* All ‘Job Done’ work orders **from non-rolled-out zones** with date\_completed prior to month end are set to ‘**Closed**’.
* All ‘**Completed**’ work orders **from rolled-out zones** with date\_completed prior to month end are set to ‘C**losed**’.
* All work orders from this set which qualify for recharging are stamped with recharging information.

### Implementation considerations

A phased approach to the new helpdesk system rollout is planned, based on zones. This means that the update to the MBP must also be delivered in corresponding phases.

The process updates work requests by rechargeable building, one after another. The implementation of the updated process should change these update blocks, according to the parent zone of the building.

There is no direct correlation between ‘rechargeable building zone’ (bl\_zone5\_id) and ‘zone’ (bl\_zone2\_id). For example, 6 buildings in RECEUSA are in ACCOM zone, and 1 is in CENTRAL.

The zones are:

* ACCOM
* CENTRAL
* MED+VET
* KB

### Step one - update rechargeable work requests

Each of the 14 update blocks must be split into 2 zone-sensitive versions.

Before the zone is rolled out, the status must match “Job Done”.

After the zone is rolled out, the update must match status “Complete”.

A variable should be created to control which zones use the new workflow rules. For example:

Dim activatedZones As String
activatedZones = “’ACCOM’,’CENTRAL’”

Then, each update block should filter on the appropriate status corresponding to active zones. For example, for rechargeable building zone RECEUSA:

-- This updates ‘Completed’ work orders for rolled-out zones

UPDATE wr

SET wr.it\_no = <it\_no>
 ,wr.it\_ext\_no = 'I'
 ,wr.date\_stat\_chg = <date>
 ,wr.recharge = 1

WHERE **wr.status = 'Com'**
AND wr.prio\_id <> 'C'
AND NVL(wr.health\_safety,0) <> 1
AND tr\_id <> 'LANDSCAPE'
AND wr.date\_completed <= <date>
AND wr.bl\_id in ( select bl\_id from bl where bl\_zone5\_id = 'RECEUSA')
AND **wr.bl\_id in ( select bl\_id from bl where bl\_zone2\_id in (<activatedZones>))**

-- This updates ‘Job Done’ work orders for non rolled-out zones

UPDATE wr
SET wr.it\_no = <it\_no>
 ,wr.it\_ext\_no = 'I'
 ,wr.date\_stat\_chg = <date>
 ,wr.recharge = 1

WHERE **wr.status = 'Don'**
AND wr.prio\_id <> 'C'
AND NVL(wr.health\_safety,0) <> 1
AND tr\_id <> 'LANDSCAPE'
AND wr.date\_completed <= <date>
AND wr.bl\_id in ( select bl\_id from bl where bl\_zone5\_id = 'RECEUSA')
AND **wr.bl\_id not in ( select bl\_id from bl where bl\_zone2\_id in (<activatedZones>))**

As each zone is rolled out, the variable should be amended to include the new zone.

### Step two – Set all of the month’s work requests to ‘Closed’

Again, there should be two zone-sensitive sql update blocks to close the month’s work requests. This should use a similar approach to the previous example:

-- This updates work requests in rolled-out zones
UPDATE wr

SET **status = 'Clo'**

 ,date\_stat\_chg = <date>

WHERE DATE\_COMPLETED <= <date>

AND status = 'Com'
AND bl\_id in (**select bl\_id from bl where bl\_zone2\_id in (<activatedZones>)**)

-- This updates work requests in non rolled-out zones
UPDATE wr

SET **status = 'Clo'**

 ,date\_stat\_chg = <date>

WHERE DATE\_COMPLETED <= <date>

AND status = 'Don'
AND **wr.bl\_id not in ( select bl\_id from bl where bl\_zone2\_id in (<activatedZones>))**

# Archival of work requests

There is an archival function which is currently unused.

## Current archival process

The process is implemented as a plsql procedure which is triggered from Archibus desktop client.

The process is provided with a start date and an end date, and behaves in the following way:

Criteria for work order archival:

|  |  |  |
| --- | --- | --- |
| Condition | Table/Field name | Field matches |
| Status is ‘Completed’, ‘Rejected’ or ‘Cancelled’ | status | Don, Com, Rej |
| Was completed within archival date range | date\_completed |  >=start date and<= end date  |
| Has no goods or contract orders | po\_goods\_detailpo\_contract\_detail | rows do not exist |
| (or) has goods and/or contract orders which only have statuses ‘C’ (Completed) or ‘X’ (Terminated) | po\_goods\_detail.statuspo\_contract)detail.status | rows do not exist except those with status C or X |

For each work request identified for archival:

Archive associated rows in the following tables:

|  |  |  |
| --- | --- | --- |
| Table | Archive table | Table purpose |
| WO | HWO | Work orders |
| WR | HWR | Work requests |
| WR\_OTHER | HWR\_OTHER | Work request other resources |
| WRCF | HWRCF | Crafts persons |
| WRPT | HWRPT | Parts |
| WRTL | HWRTL | Tools |
| WRTR | HWRTR | Trades |
| WRTT | HWRTT | Tool types |
| STORES\_ISSUE | HSTORES\_ISSUE | Stores issue and return material |
| PR\_DETAILS | HPR\_DETAILS | Parts by request |
| PO\_MAST | HPO\_MAST | Purchase order master |
| PO\_CONTRACT\_DETAIL | HPO\_CONTRACT | Contract purchase order lines |
| PO\_GOODS\_DETAIL | HPO\_GOODS\_DETAIL | Goods purchase order lines |
| INVOICE\_MAST | HINVOICE\_MAST | Invoice master |
| INVOICE\_CONTRACT | HINVOICE\_CONTACT | Contract invoice lines |
| INVOICE\_GOODS\_DETAIL | HINVOICE\_GOODS\_DETAIL | Goods invoice lines |
| DELIVERY\_MASTER | HDELIVERY\_MASTER | Delivery note master |
| DELIVERY\_DETAILS | HDELIVERY\_DETAILS | Delivery note lines |
| CRNOTE\_MAST | HCRNOTE\_MAST | Credit note master |
| CFNOTE\_DETAIL | HCRNOTE\_DETAIL | Credit note lines |

## Proposed archival process

The selection criteria should be updated to reflect the change of status code use:

‘Com’ should be removed from the eligible statuses.

‘Clo’ should be added to the eligible statuses.

## Implementation considerations

Consideration must be given over whether to begin using the updated archival process before all the zones are rolled out.

If archival is run before full zone rollout, it will have the following consequences:

* “Closed” work requests all zones will be archived
* “Rejected” or “Cancelled” work requests from all zones will be archived
* “Completed” work requests from all zones will not be archived

# Impact on reporting

The changes to status code usage and object removal by archival may have an impact on existing reporting.

Investigation into this impact is not currently within the scope of this document.

# IMPLEMENTATION

## Migrating existing data before running updated MBP

The following steps must be added to the implementation plan for zone rollout.

1. Work requests associated with the zone which have already been processed by MBP should have their status updated from ‘Completed’ to ‘Closed’. This will make them ineligible for MBP.
2. Subsequently, work requests associated with the zone which are pending for MBP should have their status updated from ‘Job Done’ to ‘Completed’. This will make them eligible for MBP.

These steps will be carried out manually by EBIS office.

These steps must be adhered to, to prevent double billing of work.

## Implementation procedure for ABS files

Implementing changes to Archibus ABS files has never been undertaken by UoE independently of Mass Ltd. Mass should be consulted to confirm what the deployment procedure should be.

## Planned zone rollout

The rollout is planned to take place in two stages:

|  |  |
| --- | --- |
| Stage 1 | HOLYROOD |
| Stage 2 | HOLYROODACCOMCENTRALKBMED+VETMULTI |

The variable defining rolled-out zones in **mnthedpt.abs** and **eumnthen.abs** must be changed at time of stage rollout.