1. 

**MASTRO – DATA ARCHIVAL**

**SYSTEM OPERATION DOCUMENT**

MAB/GROUP IT/SOD/MASTRO DATA ARCHIVAL/1.3

##### Prepared by :

##### SRAS Support Team

##### Application Management Services (AMS)

##### Group IT

**ALL INFORMATION CONTAINED HEREIN IS RESTRICTED AND SHALL BE KEPT FOR INTERNAL USE ONLY**. None of this information shall be divulged to persons other than Malaysia Airlines Berhad employees and contractors authorized by the nature of their duties to receive such information, or individuals or organisations authorised by Malaysia Airlines Berhad in accordance with existing policy regarding release of company information.

**INTENTIONALLY LEFT BLANK**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| Prepared By | : |  |  |
|  |  | RajashekarReddy Kasireddy |  |
|  |  | SRAS Support Team |  |
|  |  | Application Management Services |  |
|  |  |  |  |
| Reviewed By | :  : | |  | | --- | |  | | |  | | --- | | Wan Mohd Husni Wan Hussein | | Service Delivery Manager |   Application Management Services | |  |
|  |  | Noor Hafiza Bahruddin |  |
|  |  | IT - Service Delivery Management |  |
|  |  | Group IT |  |
|  | : |  |  |
|  |  | Fathul Azmi Ahmad |  |
|  |  | System Owner  OPS - Tech Ops MOC/MCC |  |
|  |  |  |  |
| Approved By | : |  |  |
|  |  | Siti Hafsah Mohd Desa |  |
|  |  | Head IT Service Delivery Manager |  |
|  |  | Group IT |  |

**INTENTIONALLY LEFT BLANK**

**TABLE OF CONTENTS**

**Contents Page**

[PART 1 - MANUAL ADMINISTRATION 1-1](#_Toc503346522)

[1.1 RECORD OF REVISION 1-2](#_Toc503346523)

[1.2 LIST OF EFFECTIVE PAGES 1-3](#_Toc503346524)

[1.3 DISTRIBUTION LIST 1-4](#_Toc503346525)

[1.4 LIST OF ABBREVIATIONS 1-4](#_Toc503346526)

[1.5 CONDITION OF USE 1-5](#_Toc503346527)

[1.6 CONTROL OF MANUAL 1-5](#_Toc503346528)

[PART 2 - MANUAL BACKGROUND 2-1](#_Toc503346529)

[2.1 INTRODUCTION 2-2](#_Toc503346530)

[2.2 PURPOSE 2-2](#_Toc503346531)

[2.3 SCOPE AND APPLICATION 2-2](#_Toc503346532)

[2.4 TERMINOLOGY 2-2](#_Toc503346533)

[2.5 REFERENCES 2-2](#_Toc503346534)

[PART 3 –OVERVIEW OF BUSINESS PROCESS 3-1](#_Toc503346535)

[3.1 OVERVIEW OF BUSINESS PROCESS 3-2](#_Toc503346536)

[PART 4 - MANUAL CONTENT TITLE 4-1](#_Toc503346537)

[4.1 Systems overview 4-2](#_Toc503346538)

[4.2 System Concept DEsign 4-2](#_Toc503346539)

[4.2.1 Back End Utilities -Technical design 4-3](#_Toc503346540)

[4.3 Interfaces 4-4](#_Toc503346541)

[4.3.1 User Interfaces 4-4](#_Toc503346542)

[4.3.2 System Interfaces 4-15](#_Toc503346543)

[4.3.3 DATABASE TABLE DETAILS 4-15](#_Toc503346544)

[4.4 Warranty and Maintenance Period 4-15](#_Toc503346545)

[4.5 Roles and Responsibilities 4-15](#_Toc503346546)

[4.6 Technical specifications 4-16](#_Toc503346547)

[4.6.1 Hardware specifications 4-16](#_Toc503346548)

[4.6.2 Software specifications 4-17](#_Toc503346549)

[4.6.3 Communication / Network Specification 4-17](#_Toc503346550)

[4.6.4 User and Equipment Locations 4-19](#_Toc503346551)

[4.6.5 File Management 4-19](#_Toc503346552)

[4.6.5.1 Libraries and files 4-19](#_Toc503346553)

[4.6.5.2 DBMS setup 4-19](#_Toc503346554)

[4.7 Technical operations guide 4-20](#_Toc503346555)

[4.7.1 Installation Procedures 4-20](#_Toc503346556)

[4.7.2 monthly reboot server 4-20](#_Toc503346557)

[4.7.3 Backup and Recovery 4-20](#_Toc503346558)

[4.7.4 System Startup and Restart 4-20](#_Toc503346559)

[4.7.5 System Shutdown 4-20](#_Toc503346560)

[4.7.6 Monitoring Tools 4-20](#_Toc503346561)

[4.7.7 Source Code Version Control 4-21](#_Toc503346562)

[4.7.8 Preparation of Production Environment 4-21](#_Toc503346563)

[4.7.8.1 Program / Macro 4-21](#_Toc503346564)

[4.7.8.2 Network Definitions 4-21](#_Toc503346565)

[4.7.8.3 Desktop Configuration 4-21](#_Toc503346566)

[4.7.9 Batch Jobs 4-21](#_Toc503346567)

[4.7.10 Report Management 4-21](#_Toc503346568)

[4.7.11 Baseline Performance Information 4-21](#_Toc503346569)

[4.8 Maintenance and support 4-22](#_Toc503346570)

[4.8.1 Problem Logging 4-22](#_Toc503346571)

[4.8.2 Problem Categorization and Escalation 4-22](#_Toc503346572)

[4.8.3 Application / Technical Support 4-22](#_Toc503346573)

[4.8.4 incident management 4-23](#_Toc503346574)

[4.8.5 Escalation Matrix 4-23](#_Toc503346575)

[4.9 User guide 4-25](#_Toc503346576)

[4.9.1 Accessing the Application problem logging 4-25](#_Toc503346577)

[4.10 Contract management 4-26](#_Toc503346578)

[4.11 Handover items 4-27](#_Toc503346579)

[4.12 Information security 4-28](#_Toc503346580)

[4.12.1 AUDIT AND COMPLIANCE REQUIREMENTS 4-28](#_Toc503346581)

[4.12.2 PASSWORD POLICY COMPLIANCE 4-29](#_Toc503346582)

[4.12.3 USER ACCESS MATRIX 4-29](#_Toc503346583)

[4.13 Documentation and references 4-30](#_Toc503346584)

[AppendiX i](#_Toc503346585)

1. - MANUAL ADMINISTRATION

# RECORD OF REVISION

| **No.** | **Description Of Changes** | **Issue No.** | **Rev. No.** | **Author** | **Effective Date** |
| --- | --- | --- | --- | --- | --- |
| 1 | Initial draft | 1 | 0 | Mohammed Shafeeq | 14-May-16 |
| 2 | Updated SOD in new format | 1 | 1 | Mohammed Shafeeq | 17-May-16 |
| 3 | Updated DCT Changes | 1 | 2 | Nirmal | 17-Mar-17 |
| 4 | Updated AMS SDM and Support details | 1 | 3 | RajashekarReddy Kasireddy | 27-Sep-19 |
| 5 | Updated contract management details | 1 | 3 | Rajashekarreddy Kasireddy | 25-Jun-20 |

# 

# LIST OF EFFECTIVE PAGES

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Part** | **Page** | **Issue No.** | **Revision No.** | **Effective Date** |  | **Part** | **Page** | **Issue No.** | **Revision No.** | **Effective Date** |
| 1 | 1-1 | 1 | 1 | 17-05-16 |  |  | 4-17 | 1 | 1 | 17-05-16 |
|  | 1-2 | 1 | 1 | 17-05-16 |  |  | 4-18 | 1 | 2 | 17-03-17 |
|  | 1-2 | 1 | 3 | 27-09-19 |  |  | 4-19 | 1 | 1 | 17-05-16 |
|  | 1-3 | 1 | 1 | 17-05-16 |  |  | 4-20 | 1 | 1 | 17-05-16 |
|  | 1-4 | 1 | 2 | 17-05-16 |  |  | 4-21 | 1 | 1 | 17-05-16 |
|  | 1-4 | 1 | 3 | 27-09-19 |  |  | 4-22 | 1 | 3 | 27-09-19 |
|  | 1-5 | 1 | 1 | 17-05-16 |  |  | 4-23 | 1 | 1 | 17-05-16 |
|  | 1-6 | 1 | 1 | 17-05-16 |  |  | 4-24 | 1 | 1 | 17-05-16 |
| 2 | 2-1 | 1 | 1 | 17-05-16 |  |  | 4-25 | 1 | 1 | 17-05-16 |
|  | 2-2 | 1 | 1 | 17-05-16 |  |  | 4-26 | 1 | 1 | 17-05-16 |
|  | 2-3 | 1 | 1 | 17-05-16 |  |  | 4-27 | 1 | 1 | 17-05-16 |
| 3 | 3-1 | 1 | 1 | 17-05-16 |  |  | 4-28 | 1 | 1 | 17-05-16 |
|  | 3-2 | 1 | 1 | 17-05-16 |  |  | 4-29 | 1 | 1 | 17-05-16 |
| 4 | 4-1 | 1 | 1 | 17-05-16 |  |  | 4-29 | 1 | 3 | 27-09-19 |
|  | 4-2 | 1 | 1 | 17-05-16 |  |  | 4-30 | 1 | 1 | 17-05-16 |
|  |  |  |  |  |  |  |  |  |  |  |
|  | 4-3 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-4 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-5 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-6 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-7 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-8 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-9 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-10 | 1 | 3 | 25-06-20 |  |  |  |  |  |  |
|  | 4-11 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-12 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-13 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-14 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-15 | 1 | 1 | 17-05-16 |  |  |  |  |  |  |
|  | 4-16 | 1 | 2 | 17-03-17 |  |  |  |  |  |  |

# DISTRIBUTION LIST

|  |  |  |
| --- | --- | --- |
| **NAME** | **DEPT / AREA** | **DESIGNATION** |
| Fathul Azmi Ahmad | OPS - Tech Ops MOC/MCC | System owner |
| Siti Hafsah Mohd Desa | Information Technology | HEAD IT SDM |
| Wan Mohd Husni Wan Hussein | AMS | AMS SDM |
| Noor Hafiza Bahruddin | Group IT | IT - Service Delivery Management |

# LIST OF ABBREVIATIONS

The following are the abbreviations used for the purpose of simplification.

|  |  |
| --- | --- |
| **Abbreviation** | **Denote** |
| AMS | Application Maintenance & Support |
| CFO | Chief Financial Officer |
| NRM | Network and Revenue Management |
| SOD | System Operating Document |
| AD | Active Directory |
| MAB | Malaysia Airlines Berhad |

# CONDITION OF USE

* + 1. This manual is the property of Malaysia Airlines Berhad.
    2. All copies assigned to individual position(s), section(s) or station(s) is on loan basis. If, for any reason, the position(s), section(s) or station(s) is abolished from the company organization, the respective copy(ies) of the manual must be returned to Head IT Service Delivery Manager.
    3. In the event where the title of the position or section is changed, the department concerned shall inform Head IT Service Delivery Manager promptly.
    4. The content of this manual shall not be copied, or communicated in part or as a whole, to any person not employed by the Company without the express written consent of the Head IT Service Delivery Manager.
    5. It is the responsibility of the holder to ensure that his copy is updated to the latest amendments and is in good state of condition.

# CONTROL OF MANUAL

* + 1. The contents of this manual shall not be deleted, added, or altered in any way without the approval of the Head IT Service Delivery Manager.
    2. Any page which carries an amendment must bear the new revision date. Any line which is amended shall be highlighted by a revision bar (i.e. dark vertical line) drawn close to the amended text on the outside border of the document.
    3. A transmittal letter must accompany the amended pages to advise the holders how to effect the amendment to their copies.
    4. Holders shall notify this department in writing for loss of manual and to obtain a replacement copy. Head IT Service Delivery Manager shall ensure that this manual reviewed at least once a year and effect necessary amendments as and when necessary. Should any person(s) envisage improvements needed for the contents of this manual, the person should direct the request to the Head IT Service Delivery Manager.

**INTENTIONALLY LEFT BLANK**

1. - MANUAL BACKGROUND

# INTRODUCTION

This is the “MASTRO-Data Archival” SOD, hereinafter referred to as “the Policy” provides comprehensive operating procedures within the scope and application herein defined in Part 2 Section 3.0 for Malaysia Airlines Berhad (MAB).

# PURPOSE

The objective of this document is to provide relevant information required to operate and support “MASTRO – Data Archival”.

# SCOPE AND APPLICATION

This SOD covers all information required to operate and support the solution in production.

This SOD does not include the following:

Application maintenance for the sub-systems interfaced by the core system.

# TERMINOLOGY

|  |  |  |
| --- | --- | --- |
| **SNo.** | Term | **Description** |
| 1. | App | Application |
| 2. | DB | Database |
| 3. | DSL | Domain Specific Language |
| 4. | AD | Active Directory |
| 5. | OS | Operating System |

Table 1

# REFERENCES

|  | **Document** | **Description** |
| --- | --- | --- |
| 1 | SOW\_NCR000004184\_MASTRO\_18MonthsData+DataArchivalToJavaSystem | Statement of Work as supplied as agreed upon between ATOS and MAB |
| 2 | TDD-MFDecom\_JAVA\_PROJ\_04-MASTRO DATA ARCHIVAL- V1.1 | Document highlighting the Technical Design & architecture of the collaboration platform. This is supplied by ATOS |
| 3 | DSR - MFDecom\_JAVA\_PROJ\_04-Mastro Data Archival V1.2 | Detail Solution Review Document |
| 4 | Test Plan - MFDecom\_JAVA\_PROJ\_04-MASTRO DATA ARCHIVAL -v1.1 | Document highlighting the Test plan for the collaboration platform. This is supplied by ATOS |

Table 2

1. –OVERVIEW OF BUSINESS PROCESS

# OVERVIEW OF BUSINESS PROCESSAND NETWORK OVERVIEW DIAGRAM

MASTRO



**SRAS DB**



Initial Historical Data Loading

User access MASTRO Data Archival UI with input parameters and get the required fields displayed

Figure 1:High level Business flow

1. - MANUAL CONTENT TITLE

# 4.1 Systems overview

MASTRO is a defect and delay management system to keep track of defects details and actions taken to correct the same and flight delay information over a period of time.

MASTRO mainframe system has decommissioned on 10th March 2016. So from 10th March 2016, all MASTRO updating transactions will be stopped and MASTRO functionality has been replaced with OPTIMIS and identified dynamic data have been migrated to OPTIMIS.

Other identified static data of MASTRO are need to be extracted and archived to an identified storage and feature need to be provided to view the critical data in UI.

The new java application developed to archive and view critical static MASTRO data is named as **MASTRO – Data Archival**.

**Features of MASTRO - Data Archival**

**MASTRO – Data Archival** includes the following features.

* Back end utilities to archive below MASTRO data from MASTRO database to SRAS -MASTRO Database.

1. MR1-MR2 Data
2. Delay Data

* Application UI with the following screens to view MASTRO static data.

1. View MR1 Info
2. View MR2 Info
3. View Delay Info

# 4.2 System Concept DEsign

System Architecture of MASTRO – Data Archival include the following designs.

* Architecture diagram.
* Back end job -Technical design
* Application UI screens.
* Database Table Details.

**Architecture diagram** of new application MASTRO – Data Archival is follows*.*

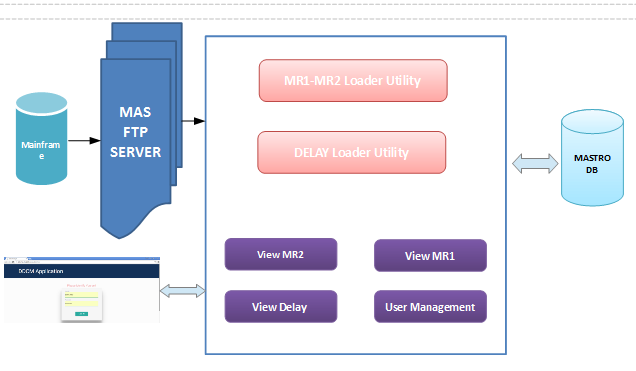


Figure 2. Architecture diagram

## 4.2.1 Back End Utilities -Technical design

Utilities for MR1-MR2 and DELAY will follow the below logic to load data from input file to DB table.

1. Read the file and process record line by line
2. Remove “ at the start and end of each line
3. For each record, split the record using delimited agreed, say “,”
4. Fields obtained after splitting the record need to be mapped in corresponding Java object and add to list. Repeat step 2 and 3 and 4 for all records in the input file.
5. Then each java object in list will be inserted into Database table (Batch Size = 500).
6. In case if any record is corrupted then the corrupted record will be put into .bad file which will be referred for further investigation
7. Steps 1-6 will be repeated for all files extracted from MASTRO database.

The following utilities will be developed to archive data from MASTRO to new MASTRO-Data Archival Application.

**MR1-MR2 Loader utility**

It reads MR info text files and load data into corresponding tables. This file holds information about flight defect details and its corresponding action taken by.

**DELAY Loader utility**

It reads DELAY info text file and loads data into corresponding tables. This file holds information about flight delay.

# 4.3 Interfaces

## 4.3.1 User Interfaces

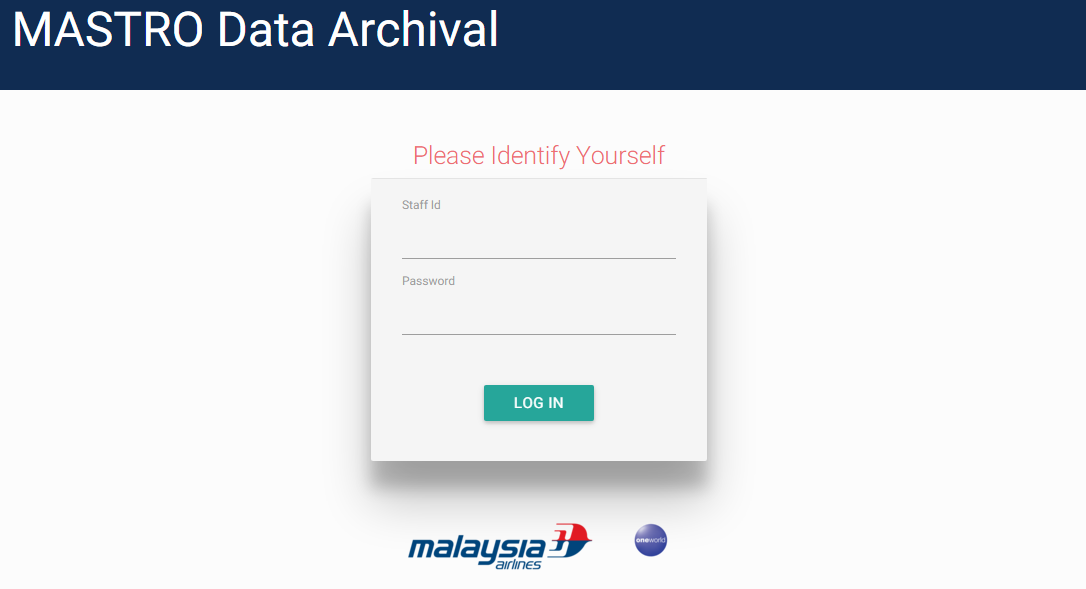
The following features are available in MASTRO– Data Archival application.

* Login
* View MR1 Info
* View MR2 Info
* View DELAY Info
* Manage Users

#### 4.3.1.1 Login

The login screen is shown below, Figure 1.1

**Figure 1.1 : Login**



#### 4.3.1.2 View MR1 Info

* View MR1 info Search screen is provided with three search option

1. **MR1 SERIAL NUMBER**

**2. AC REGN**

**3. AC TYPE**

* **MR1 SERIAL NUMBER:** User can search by a particular MR1 SERIAL NUMBER and its corresponding records will be displayed as results.
* **AC REGN:** User can search by **AC REGN** (With AC REGN as mandatory field and ATA, SUBATA, PARTNUMBER, STATION, START DATE and END DATE as optional) and its corresponding records will be displayed as results.
* **AC TYPE:** User should be able to search by **AC TYPE** (With AC TYPE as mandatory field and ATA, SUBATA, PARTNUMBER, STATION, START DATE and END DATE as optional) and its corresponding records should be displayed as results.
* View MR1 info Search screen is shown below.

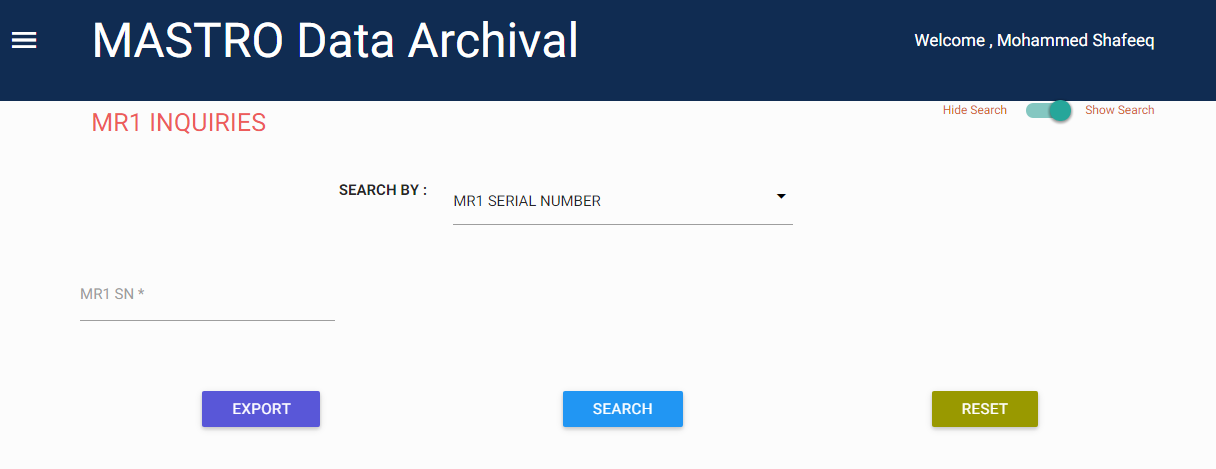


Figure 2.11: MR1 Search – Serial No

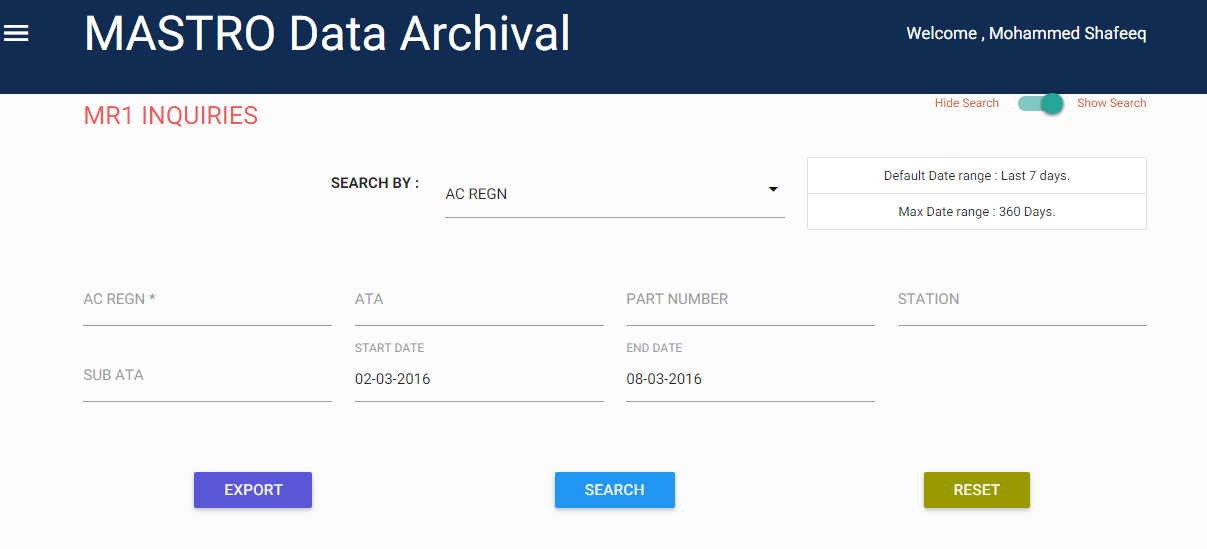


Figure 2.12: MR1 Search – AC REGN

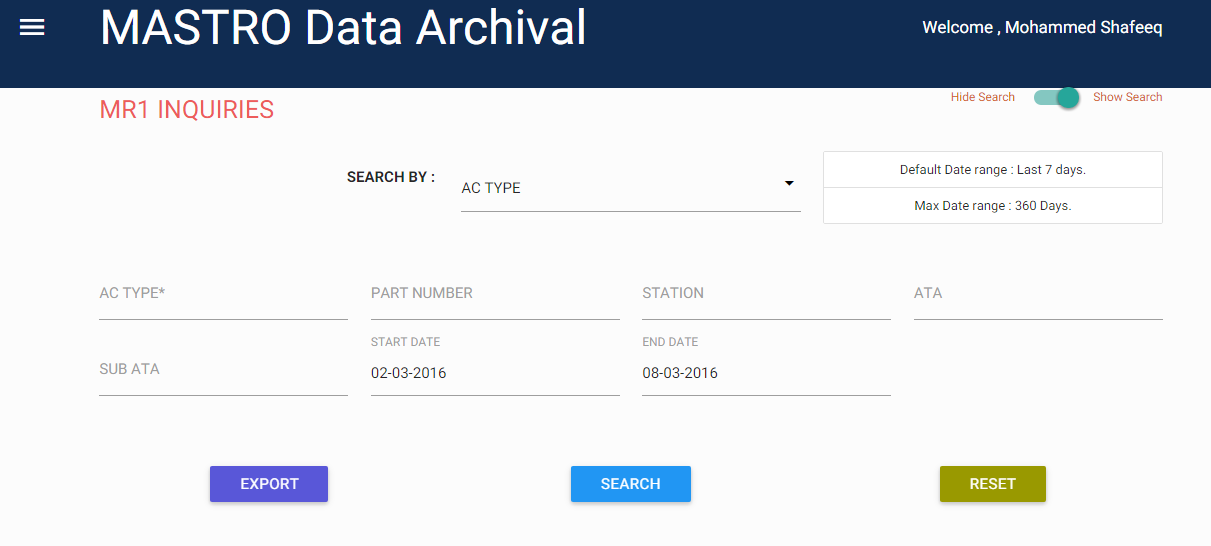


Figure 2.13: MR1 Search – AC TYPE

* Click **Details** button to view the full details for a defect record.

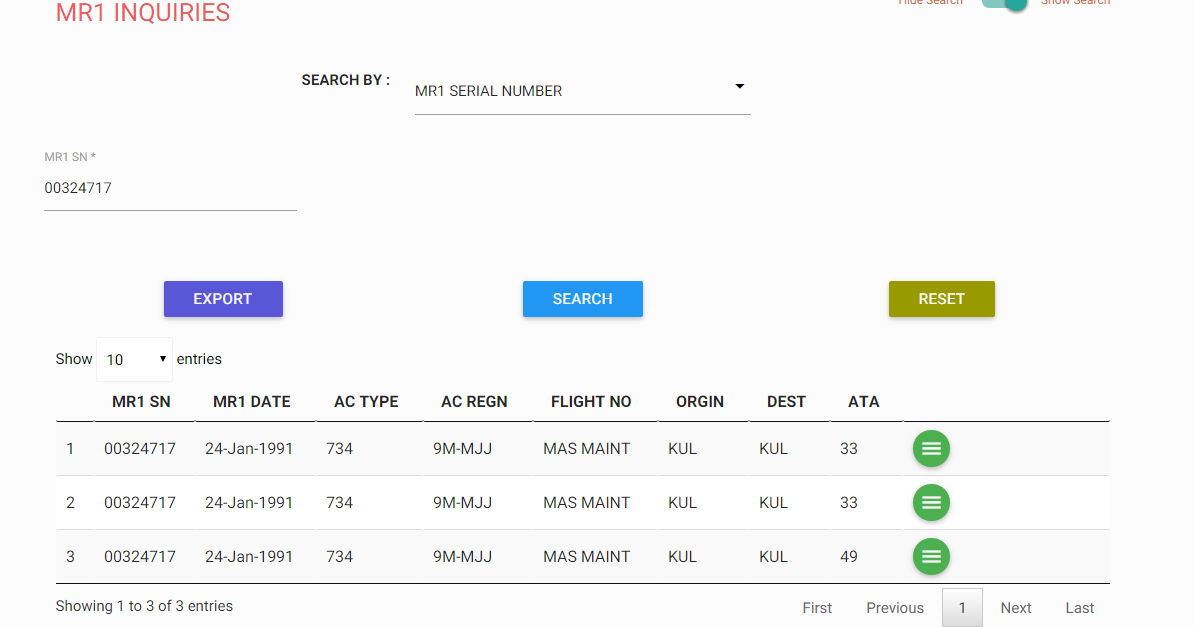


Figure 2.21: MR1 Details View

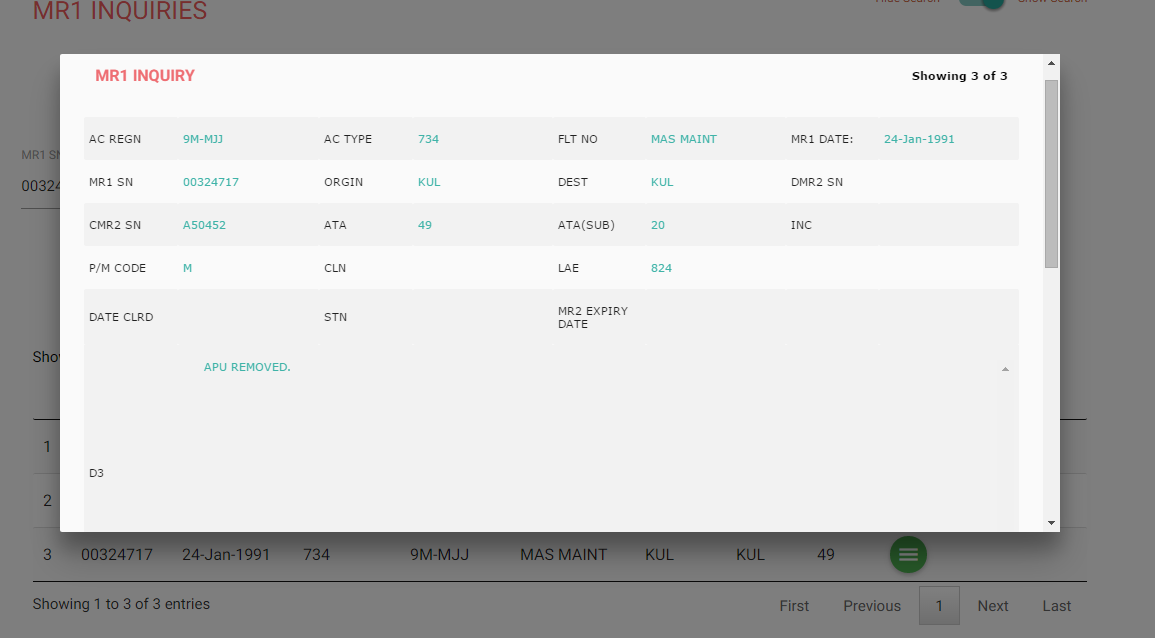


Figure 2.22: MR1 Details View

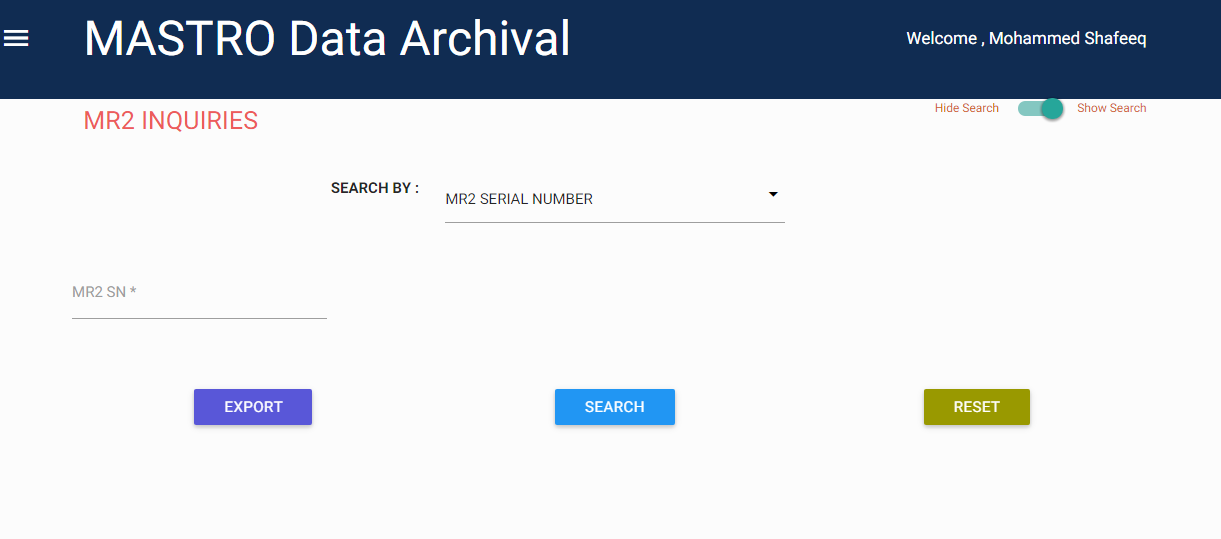
#### 4.3.1.3 View MR2 Info

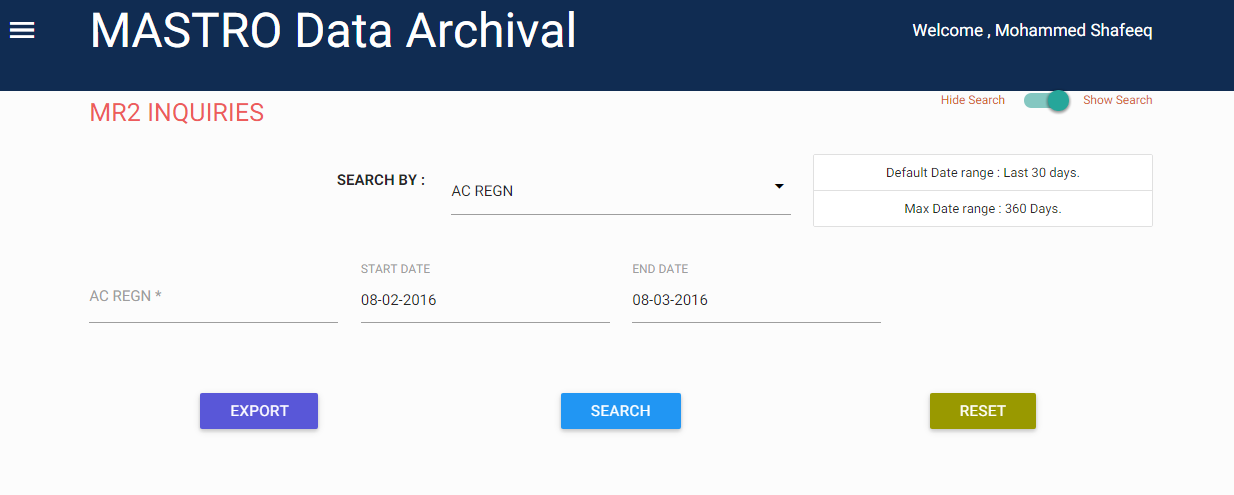
* View MR2 info Search screen is provided with three search option

1. **MR2 SERIAL NUMBER**

**2. AC REGN**

* **MR2 SERIAL NUMBER:** User can search by a particular MR2 SERIAL NUMBER and its corresponding records will be displayed as results.
* **AC REGN:** User can search by **AC REGN** (With START DATE and END DATE as optional) and its corresponding records will be displayed as results.
* View MR2 info Search screen is shown below.





**Figure 3.11 Serial Number Search**

**Figure 3.12 AC Regn Search**

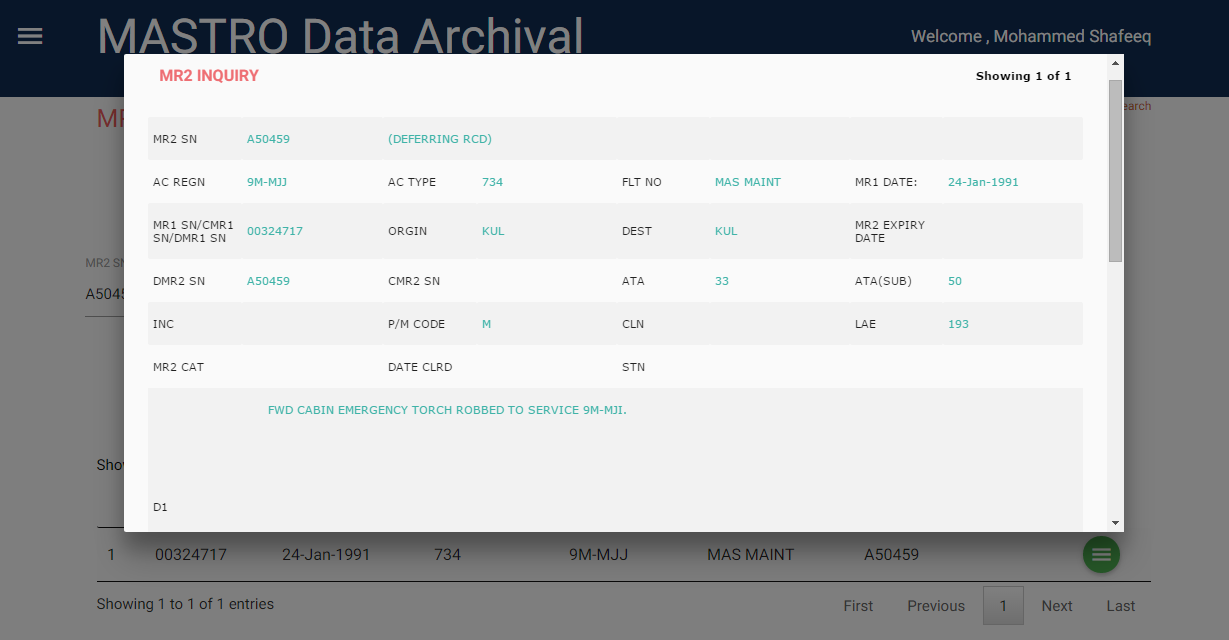
* + ClickDetails button to view the MR2 details of a particular record. Mr2 Info screen is shown below. Figure 3.2

Figure 3.2 Component Details

#### 4.3.1.4 View Delay Info

* View DELAY info Search screen is provided with three search option

1. **DATE RANGE**

**2. AC REGN**

**3. AC TYPE**

**4. AC TYPE AND STATION**

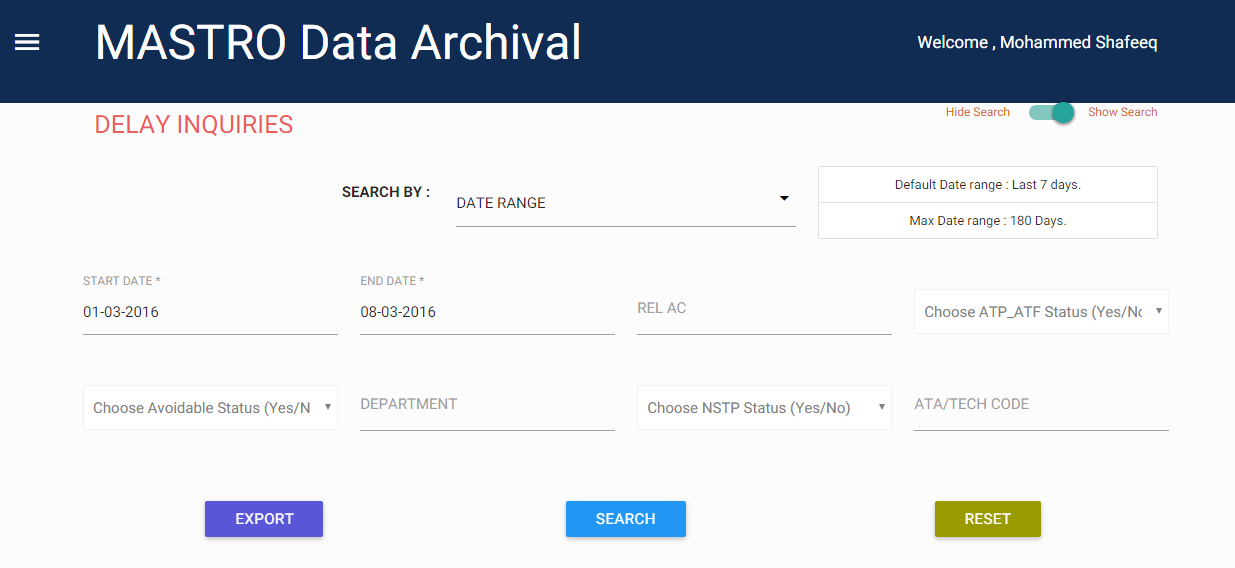
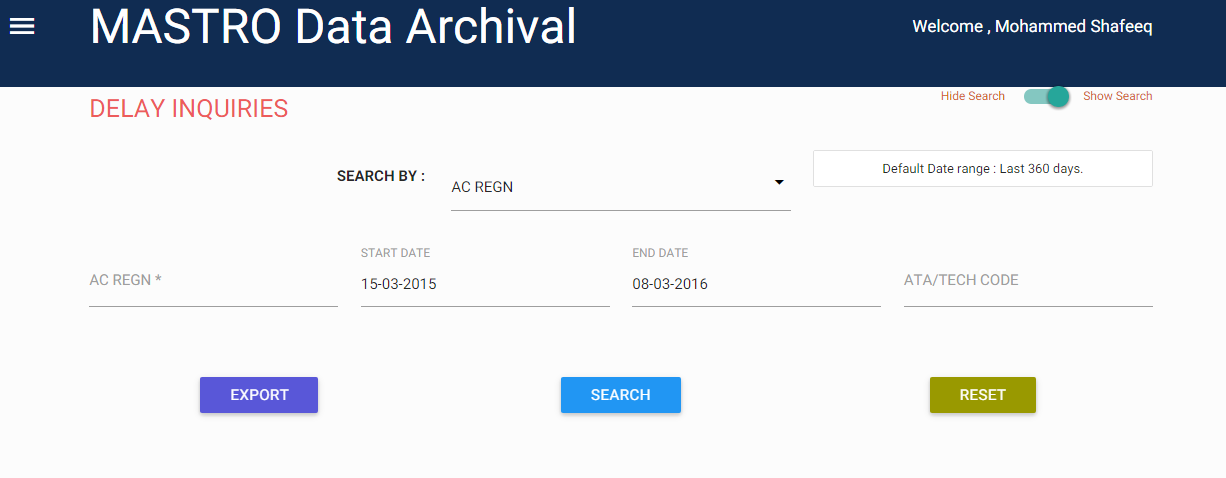
* **DATE RANGE:** User can search by a particular DATE RANGE (With START DATE and END DATE as mandatory field and REL AC, ATP\_ATF Status, Avoidable Status, DEPARTMENT, NSTP Status and ATA/TECH CODE as optional.) and its corresponding records will be displayed as results.
* **AC REGN:** User can search by **AC REGN** (With AC REGN as mandatory field and START DATE, END DATE and ATA/TECH CODE as optional.) and its corresponding records will be displayed as results.
* **AC TYPE:** User should be able to search by **AC TYPE** (With AC TYPE as mandatory field and START DATE, END DATE, MECH/TECH and ATA/TECH CODE as optional.) and its corresponding records should be displayed as results.
* **AC TYPE AND STATION:** User should be able to search by AC TYPE AND STATION(With AC TYPE and STATION as mandatory field and START DATE, END DATE and ATA/TECH CODE as optional.) and its corresponding records should be displayed as results.
* View Delay info Search screen is shown below.

Figure 4.11 Delay Info Search- Date Range



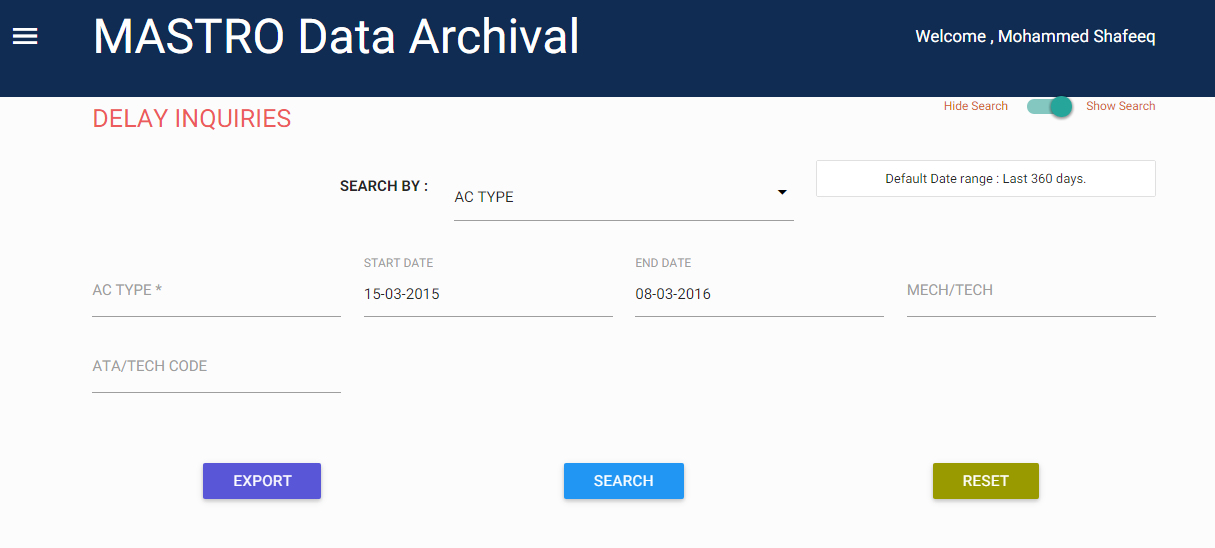
Figure 4.12 Delay Info Search- AC REGN

Figure 4.13 Delay Info Search- AC TYPE

* ClickDetailsbutton to view the Delay Info details of a particular delay record. Delay Info details screen is shown below. Figure 4.2

**Figure 4.2 Delay Details**

#### 4.3.1.5 User Management

User Management page is intended to add new users, add new role, delete existing users, update existing users and to view all current users with the assigned roles and features. User Management Screen is shown below. Figure 5.1

**Figure 5.1 User Management**

User Management module provides the below functionalities to the users.

* 1. Add User
* 2. Delete User Details
* 3. Filter User details
* 4. Update user details
* 5. Add Role

Please find the details of each functionalities below.

#### 4.3.1.5.1 Add User

This is to add a new user to MASTRO – Data Archival System. Please find below the steps to be followed to add a user to the System.

* Click on 'ADD USER' button
* Add user form will be opened as a pop-up window. Enter the staff ID. Staff Name and Email will be auto-populated if the staff ID is valid.
* Select the required role(s) for the user from the Roles check list. A user should belong to at least one role.
  + Once the role is selected, the default features corresponding to that role will be auto-selected from the features check list. Select additional features or remove features if required. A user must have at least one feature configured.
  + Click on 'Add User' button to add the user. Success message will be displayed if the user was added successfully. Add User pop up is shown below. Figure 5.2.

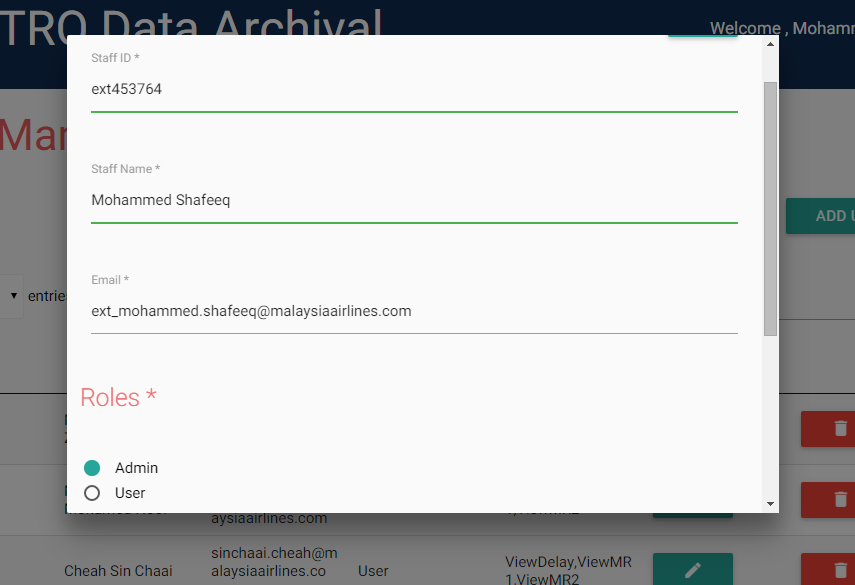


Figure 5.2 Add User

#### 4.3.1.5.2 Delete User details

This is used to delete a user from MASTRO- Data Archival System. The logged in cannot delete his own record from the system. Please find below the steps to delete a user from MASTRO- Data Archival System.

* Click the delete button corresponding to the user to be deleted.
* Confirm pop up will displays to delete. Click yes to delete.

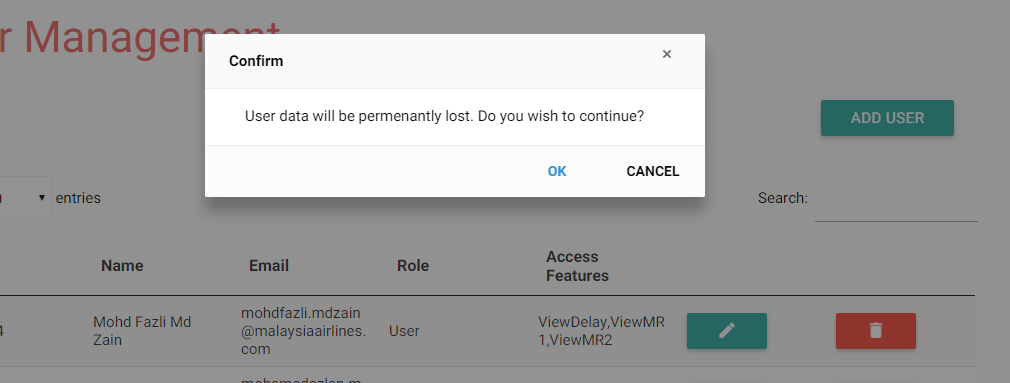


Figure 5.3 Add user

#### 4.3.1.5.3 Filter User details

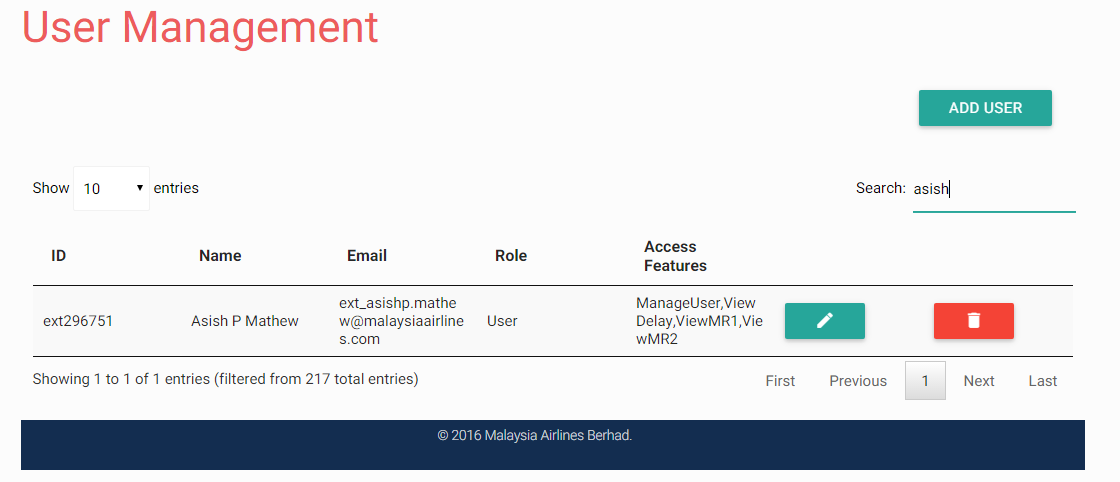
This is used to search a particular record which matches with the keyword provided in search box. Roles and features cannot be filtered. Search user screen is shown below. Figure 5.3

Figure 5.3 Search user

#### 4.3.1.5.4 Update user details

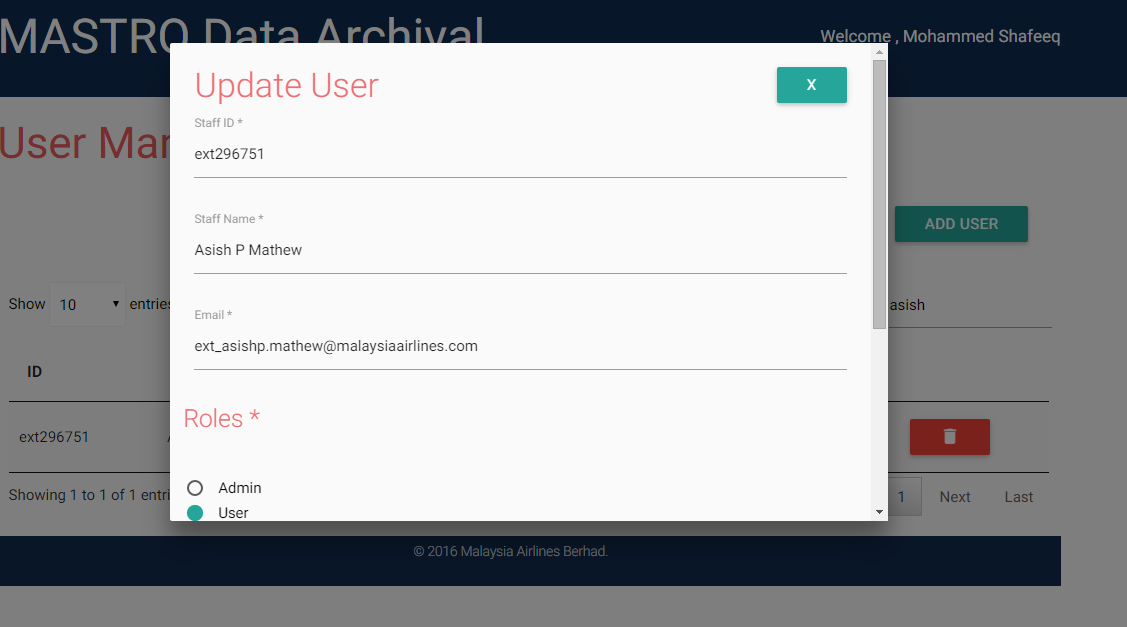
Particular user details can be updated using update button corresponds to it. Logged in user cannot update his/her own records. Roles and Features of a user can be updated. Update User screen is shown below. Figure 5.4.

Figure 5.4 Update User

## 4.3.2 System Interfaces

N/A

## 4.3.3 DATABASE TABLE DETAILS

Following are the tables used in MASTERS – Data Archival application.

|  |  |
| --- | --- |
| **S No.** | **Table Name** |
| 1 | [PARAM\_CONFIG](http://10.251.31.82/phpmyadmin/sql.php?db=MASTERS&token=98cfc7241e5bc58259099bfd9403bffb&goto=db_structure.php&table=PARAM_CONFIG&pos=0) |
| 2 | [M](http://10.251.31.82/phpmyadmin/sql.php?db=MASTERS&token=98cfc7241e5bc58259099bfd9403bffb&goto=db_structure.php&table=PART_NUMBER_INFO&pos=0)R1\_INFO |
| 3 | MR2\_INFO |
| 4 | DELAY\_INFO |
| 5 | [USER\_FEATURES](http://10.251.31.82/phpmyadmin/sql.php?db=MASTERS&token=98cfc7241e5bc58259099bfd9403bffb&goto=db_structure.php&table=USER_FEATURES&pos=0) |
| 6 | [USER\_FEATURE\_IDENTITY](http://10.251.31.82/phpmyadmin/sql.php?db=MASTERS&token=98cfc7241e5bc58259099bfd9403bffb&goto=db_structure.php&table=USER_FEATURE_IDENTITY&pos=0) |
| 7 | [USER\_PROFILE](http://10.251.31.82/phpmyadmin/sql.php?db=MASTERS&token=98cfc7241e5bc58259099bfd9403bffb&goto=db_structure.php&table=USER_PROFILE&pos=0) |
| 8 | [USER\_ROLES](http://10.251.31.82/phpmyadmin/sql.php?db=MASTERS&token=98cfc7241e5bc58259099bfd9403bffb&goto=db_structure.php&table=USER_ROLES&pos=0) |
| 9 | [USER\_ROLE\_IDENTITY](http://10.251.31.82/phpmyadmin/sql.php?db=MASTERS&token=98cfc7241e5bc58259099bfd9403bffb&goto=db_structure.php&table=USER_ROLE_IDENTITY&pos=0) |

Table 3

# 4.4 Warranty and Maintenance Period

|  |  |  |
| --- | --- | --- |
|  | **Start Date** | **End Date** |
| Technical cutover to production | 10 Mar 2016 | 10 Mar 2016 |
| AMS Support | 10 Mar 2016 | 30 Sep 2018 |

Table 4

# 4.5 Roles and Responsibilities

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Role** | **Responsibility** | **Name** | **Designation** | **Company / Department** | **Contact (Phone & Email)** |
| Application ID Administrator | Responsible for user access | Alvin Pinto | Executive Engineer | MAB/ OPS - Tech Ops Line Maintenance | 0196737826 |
| AMS Support | Responsible for entire application | Rajashekar Reddy Kasireddy | Module Lead | ATOS | +601123464348 |

Table 5

\*Note: Proper handover must be performed if there is any change to the above roles and the matrix will be updated accordingly.

# 4.6 Technical specifications

## 4.6.1 Hardware specifications

|  |  |
| --- | --- |
| Production Application Server | Hostname : MASG-1MFMIGAPP1 IP Address : 10.221.4.18  Public Cloud : Singapore Azure VM Size : Standard A2\_v2 (2 cores, 4 GB memory) OS Version : RHEL 7.2 CPU : 2 Memory (GB) : 4 SWAP (GB) : 8 |
| Production Database Server | Hostname : MASG-1MFMIGDB1 IP Address : 10.221.6.10  Public Cloud : Singapore Azure VM Size : Standard A2\_v2 (2 cores, 4 GB memory) OS Version : RHEL 7.2 CPU : 2 Memory (GB) : 4 SWAP (GB) : 8 |
| UAT Application Server | Hostname : MASG-3MFMIGAPP-LX IP Address : 10.221.12.20  Public Cloud : Singapore Azure VM Size : Standard A2\_v2 (2 cores, 4 GB memory) OS Version : RHEL 7.2 CPU : 2 Memory (GB) : 4 SWAP (GB) : 8 |
| UAT Database Server | Hostname : MASG-3MFMIGDB-LX IP Address : 10.221.14.14  Public Cloud : Singapore Azure VM Size : Standard A2\_v2 (2 cores, 4 GB memory) OS Version : RHEL 7.2 CPU : 2 Memory (GB) : 4 SWAP (GB) : 8 |

Table 6

## 4.6.2 Software specifications

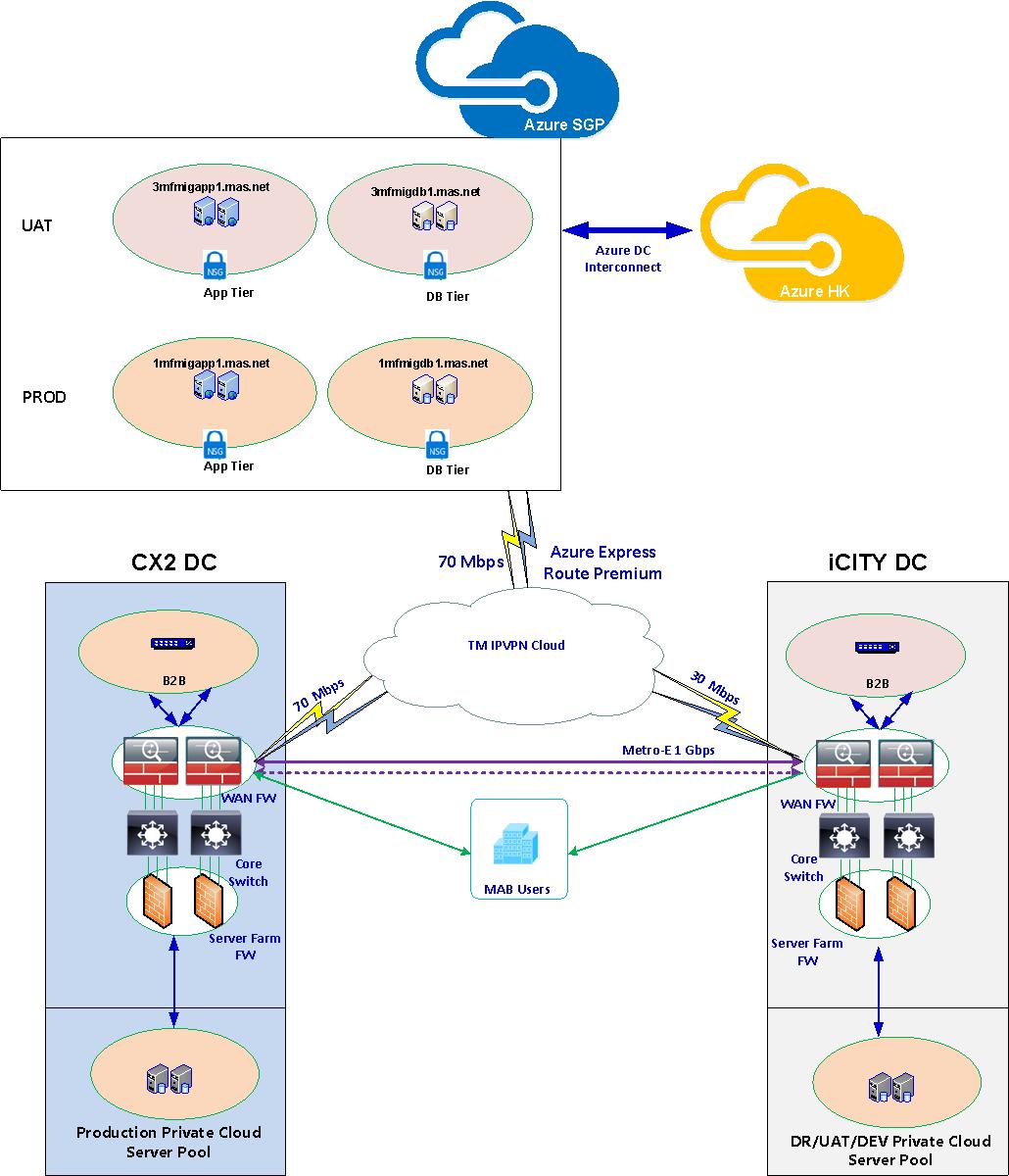
|  |  |  |
| --- | --- | --- |
| **S No.** | **Software** | **Specifications** |
| 1 | Application Server | Apache Tomcat 8.0.24 running under Linux platform |
| 2 | Monitoring application | IBM Tivoli ITM 6.2 |
| 3 | Programming Language - UI | Java, Web services & JSP, JavaScript, JQuery |
| 4 | Programming Language - DB | MySQL |
| 5 | Front-end **(Browser Support)** | Best viewed in Chrome 18+ |
| 6 | Database | MySQL |
| 7 | Server Operating System | RHEL 7.2 |

Table 7

## 4.6.3 Communication / Network Specification

|  |  |  |
| --- | --- | --- |
| **S No.** | **Category** | **Configuration** |
| 1 | Protocol | Server: TCP/IP  Client: TCP/IP |

Table 8



## 4.6.4 User and Equipment Locations

Users need an appropriate browser to access the application. Supported browsers are listed in Section 4.6.2 [Front-end **(Browser Support)**].

## 4.6.5 File Management

### 4.6.5.1 Libraries and files

|  |  |
| --- | --- |
| **Libraries and files** | **Location (mount point)** |
| Tomcat | /tomcat |
| Apache | /usr/local/apache |
|  | /appstorage  /archive  /TPF\_Repository |
| Mysql and Databases | /mysqlbackup  /mysqldata  /mysql |

Table 9

### 4.6.5.2 DBMS setup

N/A

# 4.7 Technical operations guide

Tomcat needs to be started when it goes down.

Database needs to be started when it goes down.

## 4.7.1 Installation Procedures

N/A

## 4.7.2 monthly reboot server

N/A

## 4.7.3 Backup and Recovery

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Server/Database** | **# of Versions** | **Frequency** | **Schedule (MYT)** | **Remarks** |
| MASG-1MFMIGAPP1 | 6 | Every Saturday | 5:50 PM MYT | Monthly first Saturday backup retention is 3 months |
| MASG-1MFMIGDB1 | 6 | Every Saturday | 5:50 PM MYT | Monthly first Saturday backup retention is 3 months |
| MASG-3MFMIGAPP-LX | 6 | Every Saturday | 5:50 PM MYT | Monthly first Saturday backup retention is 3 months |
| MASG-3MFMIGDB-LX | 6 | Every Saturday | 5:50 PM MYT | Monthly first Saturday backup retention is 3 months |

Table 10

## 4.7.4 System Startup and Restart

|  |  |  |  |
| --- | --- | --- | --- |
| **Hostname** | **IP Address** | **Server Function** | **Application Startup Procedure** |
| MASG-1MFMIGAPP1 | 10.221.4.18 | Production Application | Tomcat -> bin -> startup.sh |
| MASG-3MFMIGAPP-LX | 10.221.12.20 | UAT Application | Tomcat -> bin -> startup.sh |

Table 11

## 4.7.5 System Shutdown

|  |  |  |  |
| --- | --- | --- | --- |
| **Hostname** | **IP Address** | **Server Function** | **Application Shutdown Procedure** |
| MASG-1MFMIGAPP1 | 10.221.4.18 | Application | Tomcat -> bin ->shutdown.sh |
| MASG-3MFMIGAPP-LX | 10.221.12.20 | UAT Application | Tomcat -> bin ->shutdown.sh |

Table 12

## 4.7.6 Monitoring Tools

The MASTRO Data Archival production servers, Apache, MySQL and Tomcat processes will be monitored by IBM Tivoli Monitoring.

Refer to TEC Events Escalation Procedure.

## 4.7.7 Source Code Version Control

N/A

## 4.7.8 Preparation of Production Environment

### 4.7.8.1 Program / Macro

N/A

### 4.7.8.2 Network Definitions

N/A

### 4.7.8.3 Desktop Configuration

N/A

## 4.7.9 Batch Jobs

N/A

## 4.7.10 Report Management

N/A

## 4.7.11 Baseline Performance Information

|  |  |  |
| --- | --- | --- |
| **S No.** | **Activity** | **Expected Response Time** |
| 1. | Average time to generate response to requests | < 10 seconds |
| 2. | Average time taken to load each page | < 5 seconds |

Table 13

Acceptable down time during operation hours is based on BCD4 plan.

# 4.8 Maintenance and support

This section provides information to Help Desk personnel who are expected to receive problem or error reports from the users.

## 4.8.1 Problem Logging

The Help Desk personnel should ask the users:

For a screenshot of the error/issue that they are facing

For the steps that need to be performed to recreate the error/issue

To check the same steps to recreate the error/issue on another machine

To check if others are also facing the same error/issue

## 4.8.2 Problem Categorization and Escalation

|  |  |  |  |
| --- | --- | --- | --- |
| **Problem Category** | **Severity Level** | **Problem Description** | **Escalation** |
| System Completely Unusable | 1 | Page not loading | MASTRO Support Team |
| Functionality Completely Unusable | 2 | Part of the applications functionality | MASTRO Support Team |
| Minor Functionality Error | 3 | The application as a whole is working but some small functionality is not working | MASTRO Support Team |
| Cosmetic UI Error | 4 | The application and the concerned functionality is working but the UX is erroneous/misleading | MASTRO Support Team |
| Issue Related to MASTRO – data loading | 1 | Application is malfunctioning due to issue with data loading. | MASTRO Support Team |

Table 14

## 4.8.3 Application / Technical Support

|  |  |  |
| --- | --- | --- |
| **2nd Level Support** | **Name** | Contact No/Memo |
| Application Support | AMS – SRAS  RajashekarReddy Kasireddy | Group email : GD\_AMS\_SRAS@malaysiaairlines.com  Ext\_rajashekarreddy.kasireddy@malaysiaairlines.com |
| System Support | TCS\_Midrange | 1800817802 # 3 Option  [GD\_TCSMidrange@malaysiaairlines.com](mailto:GD_TCSMidrange@malaysiaairlines.com) |
| Database Support | TCS\_Database | 1800817802 # 4 Option  [GD\_TCSDatabase@malaysiaairlines.com](mailto:GD_TCSDatabase@malaysiaairlines.com) |
| Network Support | TCS\_Network | 60378637155  60378637581/82  GD\_TCSNetwork@malaysiaairlines.com |

Table 15

## 4.8.4 incident management

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Severity** | **Code** | **Definition of Severity Level** | **Response Time** | **Resolution Time** |
| Critical | S1 | Total Business Operations Disruption | 1 hour | 4 continuous hours |
| Urgent | S2 | Partial Business Operations Disruption | 2 hours | 8 continuous hours |
| Minor | S3 | No critical to business operations and workaround is available | 4 Business Hours | 2 business days |
| Monitor | S4 | Problems that cause inconvenience   * Single user with no impact to operations * Issue requiring no further action beyond monitoring for follow-up if needed | 8 Business Hours | 5 business days |

Table 16

## 4.8.5 Escalation Matrix

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Type of support** | **Contact Details** |
| 1. | Level 1:  IT Helpdesk | (006) 03 7863 2020  [Helpdesk@malaysiaairlines.com](mailto:Helpdesk@malaysiaairlines.com) |
| 2. | Level 2: Application  MASTRO Data Archival | [GD\_AMS\_MASTRO@malaysiaairlines.com](mailto:GD_AMS_MASTRO@malaysiaairlines.com) |
| 3. | Level 2: System & Network Infra Midrange & Database | Midrange: 1800817802 - Option 3  [GD\_TCSMidrange@malaysiaairlines.com](mailto:GD_TCSMidrange@malaysiaairlines.com)  Database: 1800817802 - Option 4  [GD\_TCSDatabase@malaysiaairlines.com](mailto:GD_TCSDatabase@malaysiaairlines.com) |

Table 17

# 4.9 User guide

Refer the appendix section.

## 4.9.1 Accessing the Application problem logging

Users can access the application by visiting **<http://mastro.mas.net/mastro>**in their browsers. The compatible browsers are given in section 4.6.2 [Front-end **(Browser Support)]**.

# 4.10 Contract management

|  |  |  |
| --- | --- | --- |
|  | **Contract** | **Parties** |
| 1. | Service contract for AMS support services | Signed between MAB and ATOS |

# 4.11 Handover items

The following documents / items will be handed over to Operations together with this System Operation Document during the Handover session.

1. User Guide

2. Detail Solution/Design Review Document

3. Test Plan

# 4.12 Information security

## 4.12.1 AUDIT AND COMPLIANCE REQUIREMENTS

|  |  |  |
| --- | --- | --- |
| **Activity** | **Frequency** | **Responsible Party** |
| Perform ID review every quarter and submit result to IRS  [Req: ISO 27001, PCI-DSS] | Quarterly | ID Admin |
| Update user access matrix and submit to IRS  [Req: ISO 27001, PCI-DSS] | Yearly | System Owner |
| Install Critical Security Patches for the application and submit report to IRS  [Req: ISO 27001, PCI-DSS] | Quarterly | System Owner |
| Performed Backup restoration  [Req: ISO 27001, PCI-DSS] | Yearly | System Owner |
| Review & update security documentation and submit to IRS:   * Super/privilege IDs and access * Security Controls Setting * Audit Logs setting * System bypass * List of connections and integration * List of used ports * Data encryption setting * Application/system schematic diagram   [Req: ISO 27001] | N/A | N/A |

Table 18

## 4.12.2 PASSWORD POLICY COMPLIANCE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Password Policy Requirements** | **Yes** | **No** | **Remarks** |
|  | Password length at least 8 characters (minimum) | Yes |  | Uses LDAP authentication for login |
|  | Alphanumeric | Yes |  |  |
|  | Change temporary password at first logon | Yes |  |  |
|  | Password expiry = 90 days (maximum) | Yes |  |  |
|  | Password reuse generation = 5 (minimum) | Yes |  |  |
|  | Account lock out after 5 failed login attempts | Yes |  |  |
|  | Application shall disconnect or suspend inactive sessions= 15 Minutes | Yes |  |  |
|  | Wrong password shall be recorded in an audit log | Yes |  |  |

Table 19

## 4.12.3 USER ACCESS MATRIX

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **USER ID/ Common ID** | **USER TYPE** | **ACCESS LEVEL** | | | |
| **Update** | **View** | **Edit** | **Delete** |
| admin | Administrator | N.A | N.A | N.A | N.A |
|  | Normal |  | X |  |  |

Table 20

# 4.13 Documentation and references

|  |  |  |
| --- | --- | --- |
|  | **Document** | **Location of source** |
| 1 | System Operation Document Template | https://mabitdept.sharepoint.com/sites/MyPulse/InformationTechnology/ServiceDeliveryManagement/ |

Table 21

# AppendiX



**PATCH MANAGEMENT REPORT**

Application : \_\_\_\_\_\_\_\_\_NIL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Owner **: \_\_\_\_\_\_\_\_\_**NIL**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **Date** | **Patch / Service Pack Applied** |
| NIL | NIL |
|  |  |
|  |  |
|  |  |

**Prepared By: Approved By:**

**.................................................... ....................................................**

**System Admin System Owner**

**BACKUP RESTORATION REPORT**

Application : \_\_\_\_\_\_NIL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Owner **: \_\_\_\_\_\_**NIL**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **Date** | **Status of Restoration** |
| NIL | NIL |
|  |  |
|  |  |
|  |  |

**Prepared By: Approved By:**

**.................................................... ....................................................**

**Backup Admin System Owner**

**NON COMPLIANCE REPORT**

Application : \_\_\_\_\_\_NIL\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Owner **: \_\_\_\_\_\_**NIL**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |  |
| --- | --- | --- |
| **Date** | **Reference Number** | **Description** |
| NIL | NIL | NIL |
|  |  |  |
|  |  |  |
|  |  |  |

**Prepared By: Approved By:**

**.................................................... ....................................................**

**System Admin System Owner**

**END OF DOCUMENT**