Malaysian Communications and Multimedia Commission (MCMC)

Development of Case Management System (CMS 2.0) and Support Maintenance Services for MCMC

Business Requirement Specification (BRS)

ZEN Computer Systems Sdn Bhd
4808-1-28 CBD PERDANA 2,
PERSIARAN FLORA, CYBER 12,
63000 CYBERJAYA, SELANGOR

Prepared By	Za'im Hazwan Bin Zainal
Document Type	Business Requirement Specifications (BRS)
Date Created	1 February 2021
Client's Name	Malaysia Communication & Multimedia Commission (MCMC)
	Network Intelligence Department (NID)

Document Properties

Document Author	Za'im Hazwan Bin Zainal
Document Type	Business Requirement Specifications (BRS)
Document Reference	MCMC_CMS 2.0_BRS_25022021_v1.2
Version	1.2
Created Date	1 February 2021
Last Modified Date	11 March 2021

Document History

Version	Status	Description	Date
1.0	Final	Submission	25 February 2021
1.1	Final	1st Amendment	8 March 2021
1.2	Final	2nd Amendment	11 March 2021

Changes from Last Issue

1. 1st Amendment

Version	1.1	Date Received Review	4 March 2021	Date Updates	8 March 2021
Summary of Major Changes Made					
Table of Contents	Changes				
3 User and Access Management	3.1. Access Matrix for All Module and Users 1. Add Domain Management 3.2 Overall Sitemap Page Access Permission for Analyst Users 1. Update Administration • Update User Management • Add Domain Management 2. Update FDRS submenu 3.3 Sitemap by User 1. Update sitemap for Super User, Administrator, Analyst and Head of Department 3.4.1 Overview 1. Table 3.4.1: • Add HOD roles • Update rights for Tagging Management • Update rights for FDRS 2. Table 3.4.4: • Add Domain Management				

4 Authentication and Authorization	4.1.1 LEA Registration Flowchart 1. Table 4.1.1 • Update Email description 4.1.2 Analyst Registration Flowchart 1. Table 4.1.2 • Update Email description 4.2 Manage Role of User • Update figure 4.2.1 & 4.2.2
5 Login Page	5.1 Login Flowchart • Update flowchart 5.1.2 5.3 Requirement & Enhancement 1. Table 5.3.1 • Add domain whitelist 5.5.1 2FA Flowchart 1. Update flowchart 5.5.1 • Add domain whitelist
6 Law Enforcement Agency (LEA)	6.1 Sitemap 1. Table 6.1.1 • Update Permohonan Kes 6.3 Sosial Media 1. Permohonan Baru Sosial Media • Update table 6.1.5 – Update Tujuan Permohonan 6.6.1 Use Case Definition • Update description Permohonan
7 Case Management	7.3.3 Approve Case • Update flowchart 7.3.3 7.3.5 Update Status • Update description result Negative & Positive 7.4.3 Suspect and Witness • Add flowchart 7.4:13
8 Dashboard	8 Dashboard 1. Update dashboard wireframe • 8.1.1, 8.1.2, 8.2.1, 8.2.2 8.3 Dashboard Details Information 1. Table 8.3.1 • Update Star Rating formula.
9 Reporting	Case Report 1. Wireframe Figure 9.2.2 • Add Case Result 2. Table 9.2.1 • Add Case Result
11 Integration	11.6 FDRS • Update flowchart figure 11.6.2 (Face Comparison) 11.8 Prepaid Verification • Update flowchart Figure 11.8.2 and Description

2. 2nd Amendment

Version	1.2	Date Received Review	10 March 2021	Date Updates	11 March 2021

Summary of Major Changes Made

Table of Contents	Changes
3 User and Access Management	3.1 Access Matrix for All Module and Users 1. Add 'Others' User 3.4 User Management: Administrations 3.4.1 Overview 1. Update table 3.4.1 to sync with table 3.4.4 2. Update 'Note' under table 3.4.4 3.4.2 Wireframe 1. Update table 3.4.5 3.6 Domain Management 3.6.1 Overview 1 Update overview description 2 Change sample wireframe for Domain Management
4 Authentication and Authorization	4.1 Registration 4.1.2 Analyst Registration Flowchart 1. Add description on flowchart
5 Login Page	5.1 Login Flowchart 1. Update flowchart 5.1.2 5.2 Login Wireframe 1. Update table 5.3.1 no 6
6 Law Enforcement Agency	6.3 Permohonan Kes 1. To add new type of Permohonan Kes which is By Blocking Request on flowchart 6.3.2 Sosial Media 1. To update table header 6.3.3 Blocking Request 1. To create new definition of Blocking Request
11 Integration	11.1 JPN 1. To update and split flowchart

Distribution List

ZEN	Application Development Team Project Manager
MCMC	Network Intelligence Department (NID) Team

Abbreviations

BRS	Business Requirement Specification
LEA	Law Enforcement Agency
NID	Network Intelligence Department

Acceptance

This Acceptance Certificate confirms that the Business Requirement Specification (BRS) document has been prepared in accordance to be agreed:

For and on Behalf of ZEN:

Prepared by: Signature		**Date**	
Name	Za'im Hazwan Bin Zainal		
Designation	Business Analyst		
Reviewed by: Signature		**Date**	
Name	Ang Ruo Li		
Designation	Technical Lead		
Approved by: Signature		**Date**	
Name	Mohd Khairulnizam Bin Hasan		
Designation	Project Team Lead		

For and on Behalf of MCMC:

Reviewed by: Signature		**Date**	
Name			
Designation			
Reviewed by: Signature		**Date**	
Name			
Designation			

Contents

List of Figures

List of Tables

1 Executive Summary

1.1 Purpose of Business Requirement Specification (BRS) Document

This document represents the details of requirement generated from User Requirement Specification (URS) Workshop for Case Management System 2.0 project, for Malaysia Communication & Multimedia Commission (MCMC).

This document will be used as a reference to detail the requirements of the application, what to be expected in the final product, the structure, design, layout, functionality and interface overview.

The document is developed by using the following as references:

- Request for Quotation (RFQ) document
- Scope of Work (SOW) document
- Project Kick-Off slides
- Requirement gathering in URS Workshop (URS)
- Related documents provided by MCMC

1.2 Project Objective

- To develop Case Management System (CMS 2.0), and provide warranty and support maintenance services to Malaysia Communication & Multimedia Commission (MCMC).

1.3 Project Disclaimer

- Preparation of infrastructure (server, storage, switch, network and security (appliance/hardware) configuration) are not included in this scope.
- Vendor will only perform development and related component installation if required.
- Any additional requirements other than mentioned in scopes will be treated as change request.
- Any reverse proxy, Load Balancer and Firewall related matter are to be configured by MCMC personnel.
- Integrations are only with applications agreed in Business Requirement Specification (BRS).
- MCMC to provide necessary assistance on understanding the current Case Management System 1.0.

2 Project Overview

2.1 CMS 2.0 Overview

To enhance existing case Management System (CMS) and integrate with other systems via API to create a single dashboard not only for CMS but other system as well. The new system will further enhance the current capabilities already available in the existing system.

Version 2.0 offers tighter integration with external APIs and allows for display of dashboard of the matrices collected from the external systems. This, in turn, will help the users monitor and track the progress of each case with ease.

2.2 Application Architecture Diagram

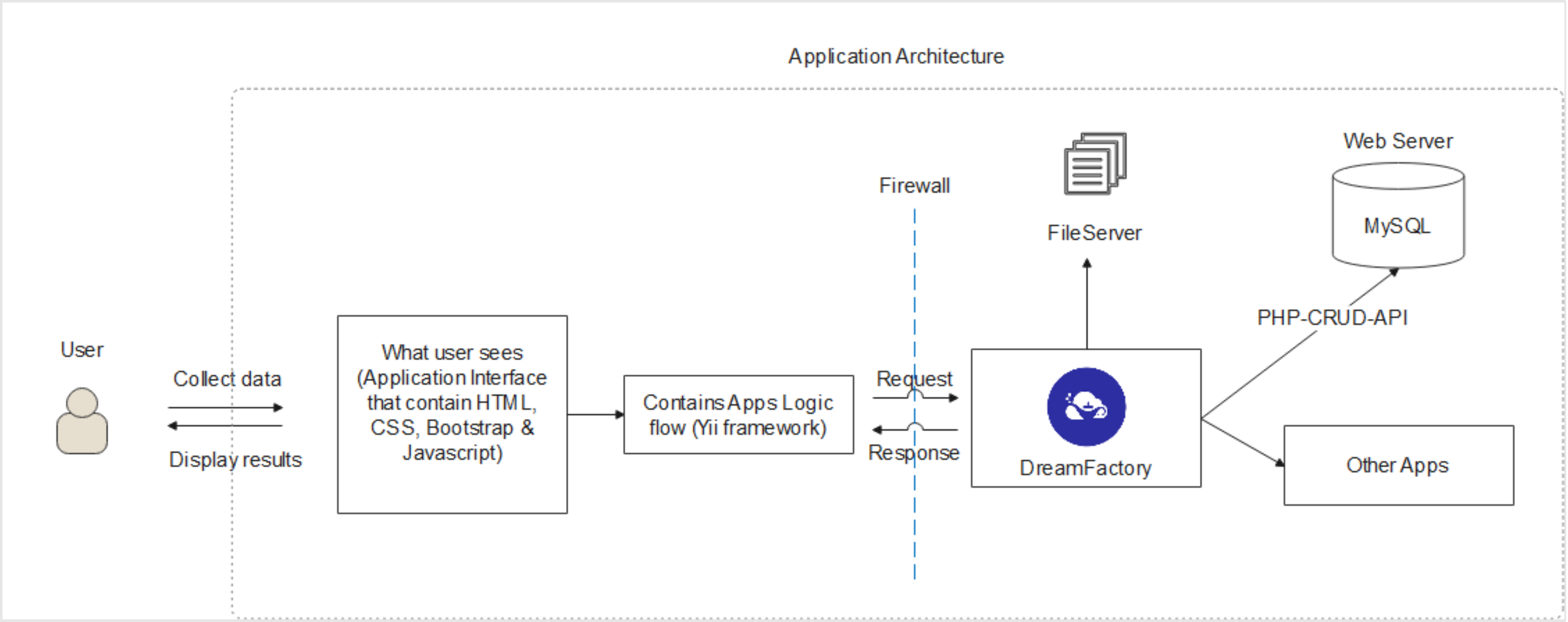


Figure 2.2:1: Application Architecture Diagram from user, frontend to backend interactions

❖ Diagram Description

Figure above show the overall process flow from user view until backend structure.

- User sees and interact with the application interface. Any action from user as click or generate report, the backend will process the request and return the response based on apps logic flow.
- CRUD (create, read, update, delete) operations will be used to send request to backend.
- DreamFactory will be used as a middleware gateway to connect with database and other third-party API for security.
- The database will relate to MySQL web server while FileServer will be used to access the files.

2.3 Hardware Requirement

1. Server Specifications
   - Production Environment

Item	Middleware Server	Database	Front End (LEA)	Front End (NID)	File Server
CPU/vCPU	4	4	4	4	4
RAM/vRAM	8 GB	16 GB	8 GB	8 GB	8 GB
HDD (System)	50 GB	50 GB	50 GB	50 GB	50 GB
HDD (Data)	N/A	50 GB	N/A	N/A	100 GB
Operating System (OS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)
Database	N/A	MySQL 8	N/A	N/A	N/A
Other Software	N/A	N/A	NGINX	NGINX	NFS/SMB

Table 2.3:1: Production Server Specification

   - Development Environment

Item	Middleware Server	Database	Front End (LEA)	Front End (NID)	File Server
CPU/vCPU	4	4	4	4	4
RAM/vRAM	4 GB	8 GB	4 GB	4 GB	4 GB
HDD (System)	50 GB	50 GB	50 GB	50 GB	50 GB
HDD (Data)	N/A	10 GB	N/A	N/A	10 GB
Operating System (OS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)
Database	N/A	MySQL 8	N/A	N/A	N/A
Other Software	N/A	N/A	NGINX	NGINX	NFS/SMB

Table 2.3:2: Development Server Specification

- Testing /Staging Environment

Item	Middleware Server	Database	Front End (LEA)	Front End (NID)	File Server
CPU/vCPU	4	4	4	4	4
RAM/vRAM	4 GB	8 GB	4 GB	4 GB	4 GB
HDD (System)	50 GB	50 GB	50 GB	50 GB	50 GB
HDD (Data)	N/A	10 GB	N/A	N/A	10 GB
Operating System (OS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)	Ubuntu Server (20.04 LTS)
Database	N/A	MySQL 8	N/A	N/A	N/A
Other Software	N/A	N/A	NGINX	NGINX	NFS/SMB

Table 2.3:3: Testing/Staging Server Specification

2. Logical Diagram

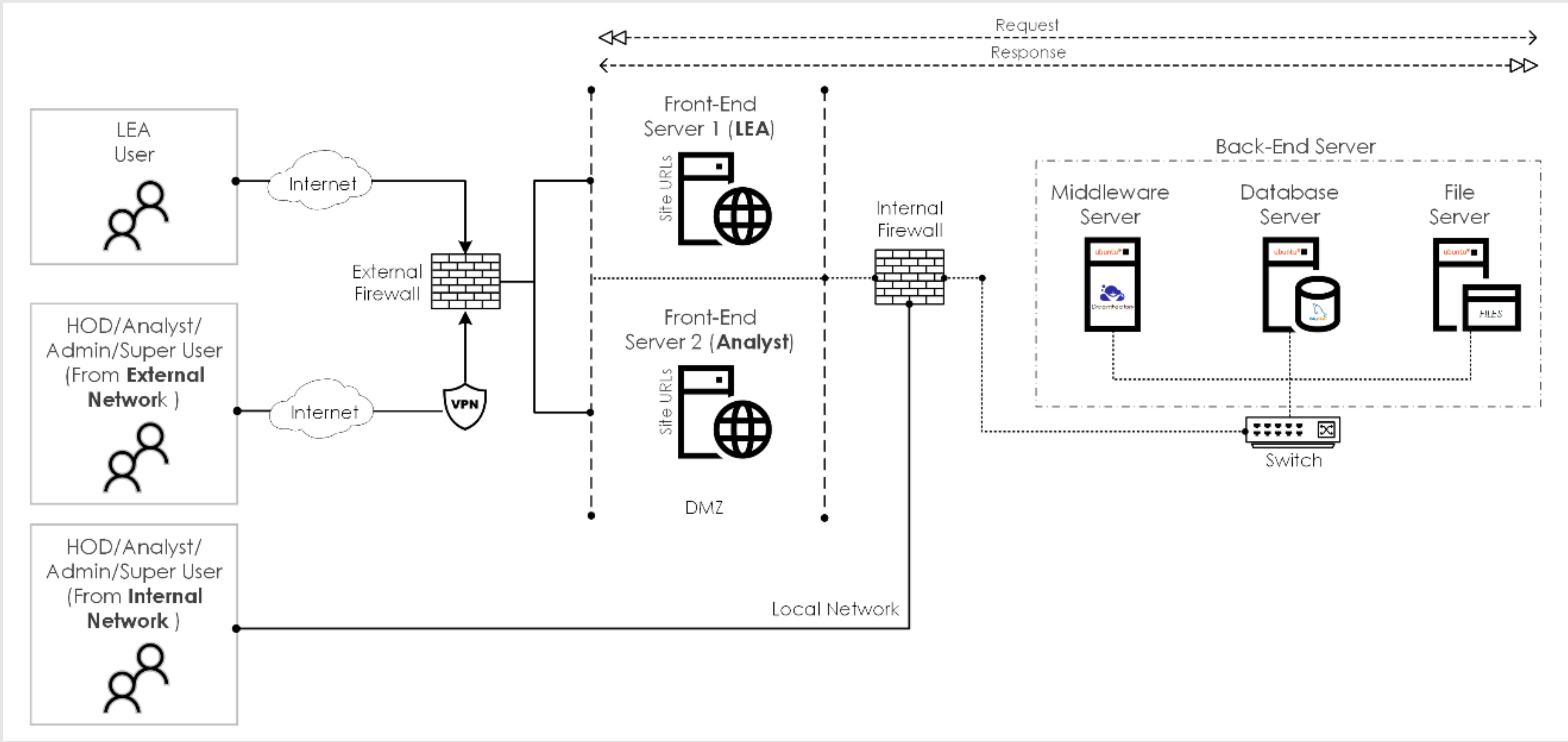


Figure 2.3:1: Logical Diagram

2.4 Software Requirement

1. Overview of DreamFactory Architecture

DreamFactory is an open-source REST API middleware platform that provides RESTful services for building mobile, web, and IoT applications.

DreamFactory automatically generates a comprehensive, customizable, and secure REST API for backend data resources, including SQL, NoSQL, file storage, email, and push notifications. Users can also securely proxy to any remote REST or SOAP service and run your own custom APIs with DreamFactory.

Other important features include server-side scripting with V8 Javascript, Node.js, PHP, and Python, single sign-on, user management, LDAP / Active Directory / OAuth integration, role-based access control on tables and records, interactive API docs, and sample applications to quickly learn by example.

DreamFactory is runtime software. Users' application makes API calls to DreamFactory and DreamFactory returns JSON (or XML) at runtime back to your application over SSL.

The platform runs on Ubuntu, Red Hat, CentOS, and Debian Linux, Windows, and Mac OS X. Like any LAMP stack, DreamFactory scales horizontally and vertically based on the number and size of servers.

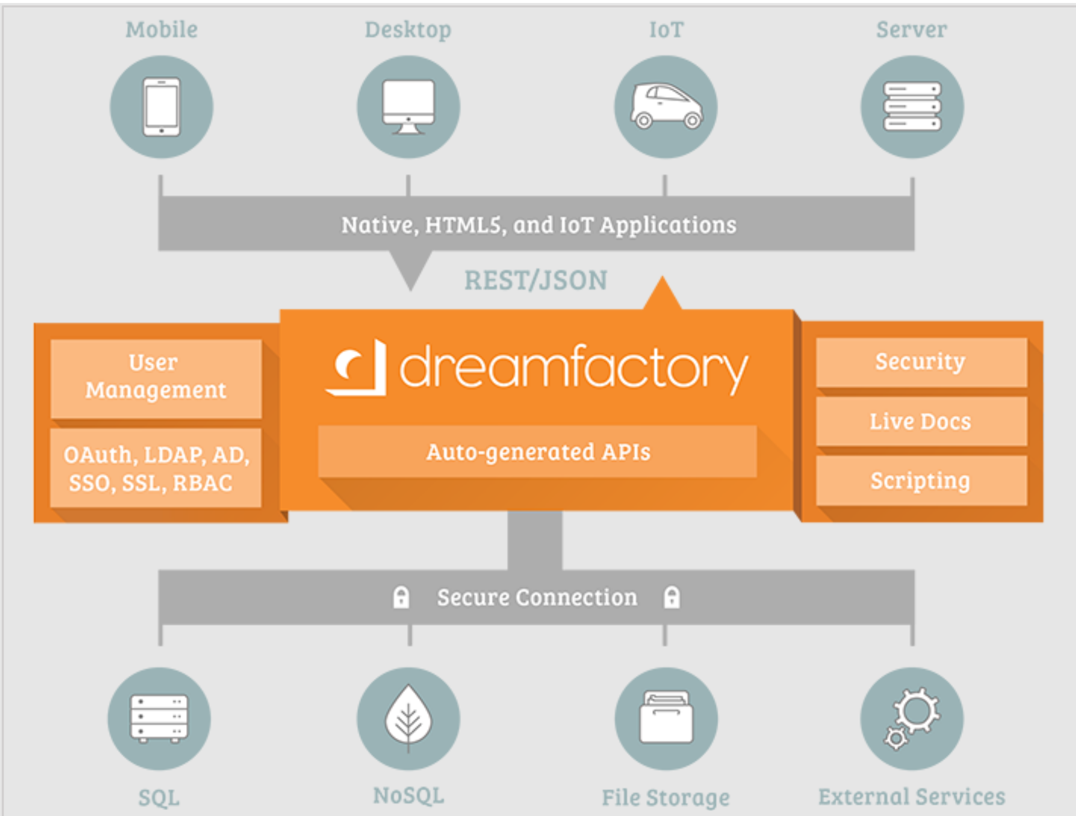


Figure 2.4:1: DreamFactory Architecture

Features	Description
Automatically generate REST API	Generates a comprehensive REST API for SQL and NoSQL and convert any custom-built SOAP services.
Server-side scripting	Provides flexibility to implement custom API endpoints
Security controls	User management system provides runtime security on all API calls and server-side scripts

Table 2.4:1: DreamFactory Description

2. DreamFactory in MCMC

For MCMC development, MySQL database and all the third-party services will be integrated in DreamFactory. The third-party service will act as an external service. The custom API will be created based on the functionality of each API used in the third-party application.

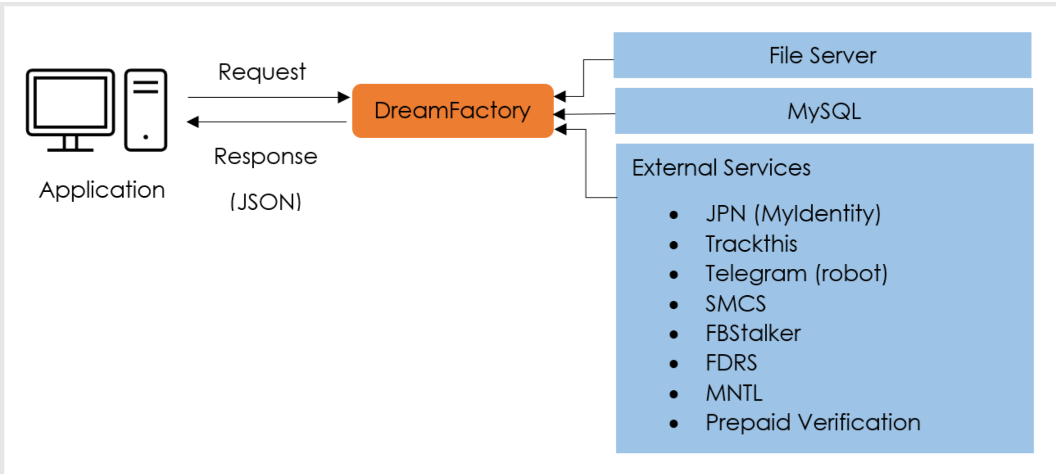


Figure 2.4:2: DreamFactory Architecture for MCMC

3. Yii2 Framework Architecture

Yii2 implements the model-view-controller (MVC) design pattern, which is widely adopted in Web programming. MVC aims to separate business logic from user interface considerations, so that developers can more easily change each part without affecting the other.

In MVC, the model represents the information (the data) and the business rules. The view contains elements of the user interface such as text, form inputs and the controller manage the communication between the model and the view.

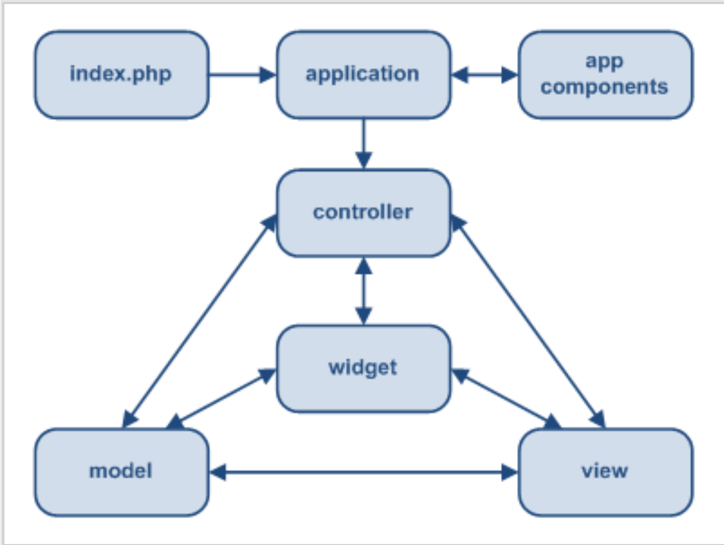


Figure 2.4:3: Yii2 Framework Architecture

Besides implementing MVC, Yii2 also introduces a front-controller, called Application, which encapsulates the execution context for the processing of a request. Application collects some information about a user request and then dispatches it to an appropriate controller for further handling.

4. Yii2 Framework in MCMC

CMS 2.0 will be using a bootstrap theme for the user interface and the login will be using two-factor authentications. The model will be the application core to perform CRUD process to DreamFactory and returns data from REST API in JSON format. The controller will handle the filter query from Yii2 framework to the DreamFactory API.

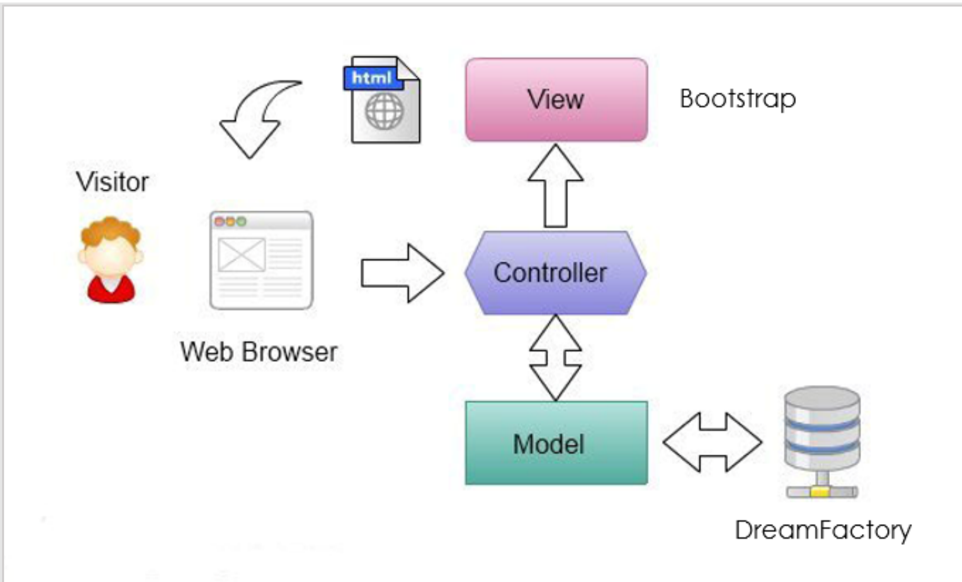


Figure 2.4:4: Yii2 Framework Architecture for MCMC

3 User and Access Management

3.1 Access Matrix for All Module and Users

MODULE	SUBMODULE	HOD				Analyst				Admin				Super User				LEA (Type 1)				LEA (Type 2)				Others			
		ACCESS				ACCESS				ACCESS				ACCESS				ACCESS				ACCESS				ACCESS			
		C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D	C	R	U	D
LEA	Dashboard																	X	X	X		X	X	X					
	Permohonan: MNTL																		X	X									
	Permohonan: Media Sosial																	X	X	X		X	X	X					
	Permohonan: Penyekatan																	X	X	X		X	X	X					
	Statistik																		X				X						
	Profile Icon: Tentang CMS2.0																		X				X						
	Profile Icon: Garis Panduan																		X				X						
	Profile Icon: Butiran Pemohon																		X	X			X	X					
NID	Dashboard		X				X				X				X														
	Case Management		X	X			X	X			X	X			X	X													
	Case Management: Approval		X	X																									
	Statistic: Individual		X				X								X														
	Statistic: Department		X				X								X														
	Crawler: FBStalker	X	X	X		X	X	X							X	X													
	Crawler: JPN	X	X	X		X	X	X							X	X													
	Crawler: MNTL	X	X	X		X	X	X							X	X													
	Crawler: TrackThis	X	X	X		X	X	X							X	X													
	Crawler: Face Recognition	X	X	X		X	X	X							X	X													
	Crawler: SMCS (7 Modules)	X	X	X		X	X	X							X	X													
	Prepaid Verification	X	X	X																									
	TIPOFF	X	X	X		X	X	X						X	X	X													

Administration	User Management: LEA									x	x	x	x																
	User Management: NID & Others	x	x	x	x									x	x	x	x												
	Administration: Offence List & Tagging Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x												
	Administration: Category Management	x	x	x	x		x			x	x	x	x	x	x	x	x												
	Administration: Domain Management	x	x	x	x					x	x	x	x	x	x	x	x												

Table 3.1:1: Access Matrix for All Module and Users

3.2 Overall Sitemap Page Access Permission for NID Users

Menu	Sub Menu 1	Sub Menu 2	Super User	Administrator	Analyst	HOD	Others
Dashboard	Department		X	X	X	X	
	Individual				X		
	Analyst Dashboard					X	
Administration	User Management	LEA		X			
		NID & Others	X			X	
	Offence & Tagging Management		X	X	X	X	
	Category Management		X	X	X	X	
	Domain Management		X	X		X	
Case Management	Assigned to Me				X		
	Department Cases				X	X	
	Analyst Cases					X	
Crawler	JPN		X		X	X	
	TrackThis		X		X	X	

	Telegram		X	X	X	X	
	SMCS	Blog/Web	X		X	X	
		Twitter	X		X	X	
		Instagram	X		X	X	
		Tumblr	X		X	X	
		Pastebin	X		X	X	
		Majalah.com	X		X	X	
		Mudah.my	X		X	X	
	FB Stalker		X		X	X	
	FDRS	Latest Face	X		X	X	
		Face Recognition	X		X	X	
		Face Compare	X		X	X	
		Face Fingerprint	X		X	X	
	MNTL	List	X		X	X	
		MNP Search			X	X	
		Statistic			X	X	
Prepaid Verification	Result List					X	
	Verification					X	
TIPOFF	TIPOFF List		X		X	X	
	Statistic				X	X	
Reporting	Case Report		X	X	X	X	
	Crawler Report		X	X	X	X	
	KPI Report		X	X	X	X	
Auditing			X	X	X	X	
My Profile	About CMS2.0		X	X	X	X	X
	View Profile		X	X	X	X	X
	Log Out		X	X	X	X	X

Table 3.2:1: Overall User Sitemap

3.3 Sitemap by User

3.3.1 Law Enforcement Agency

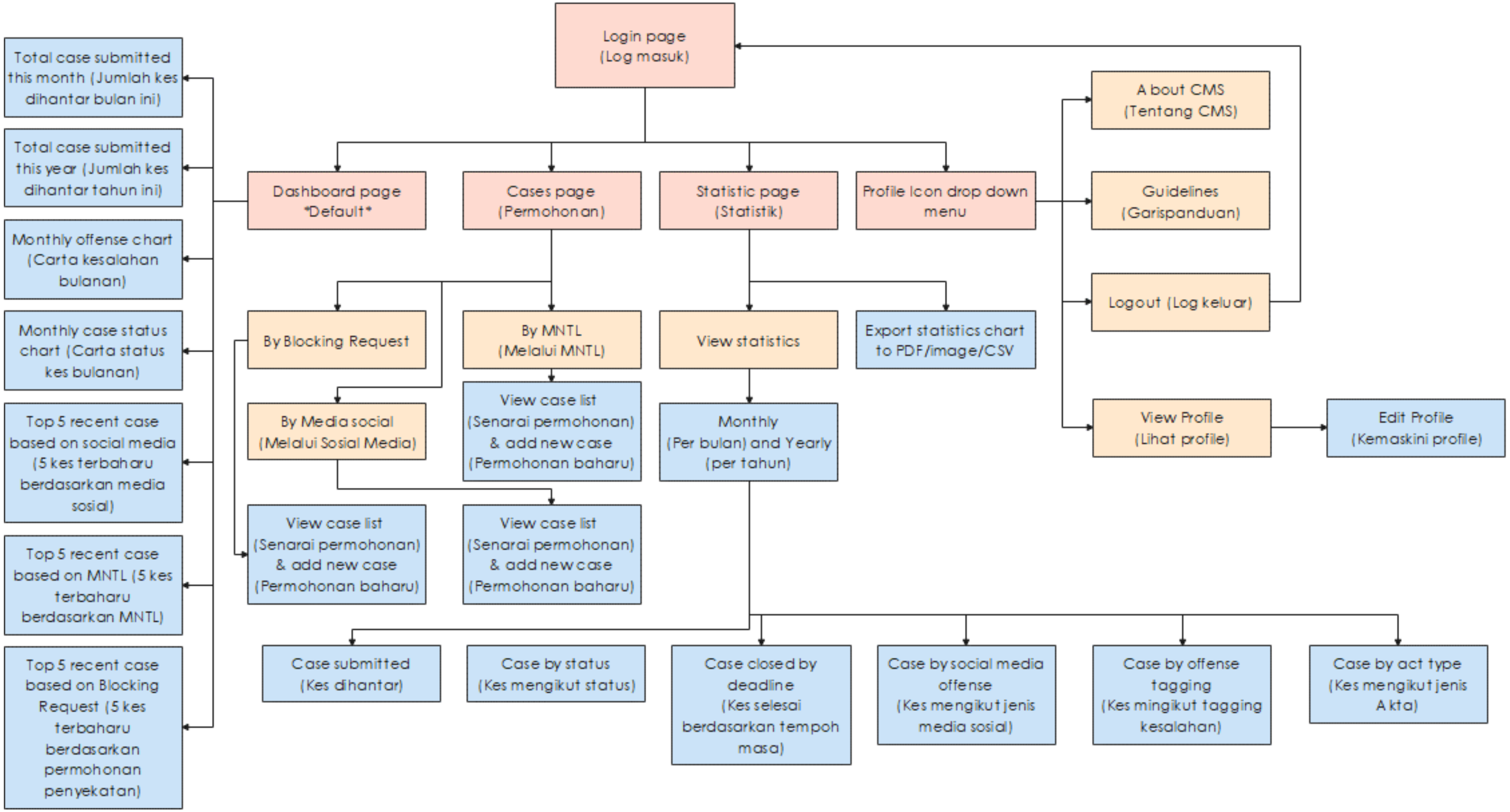


Figure 3.3:1: Overview sitemap for LEA

3.3.2 Super User

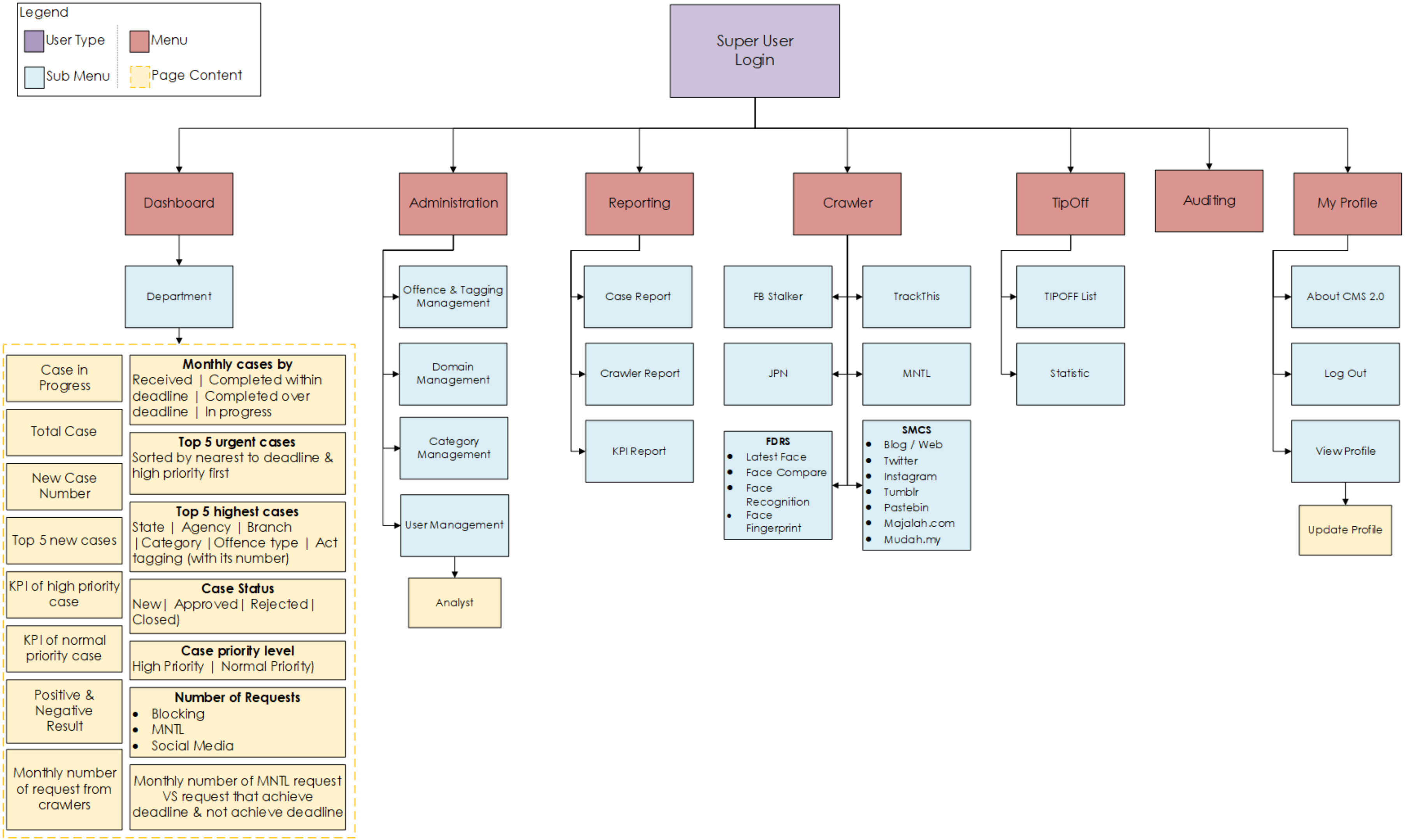


Figure 3.3:2: Super User Sitemap

3.3.3 Administrator

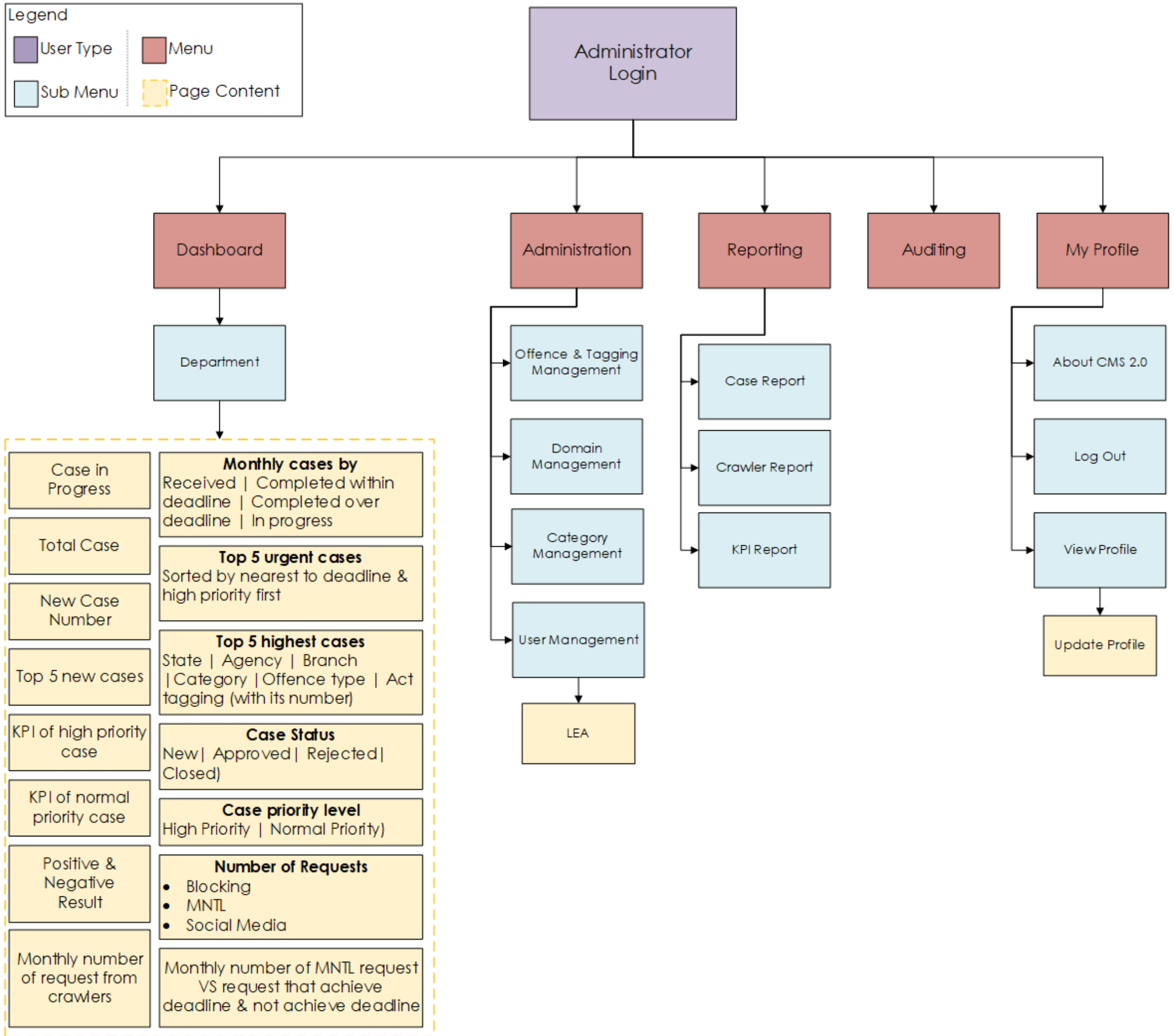


Figure 3.3:3: Administrator Sitemap

3.3.4 Analyst

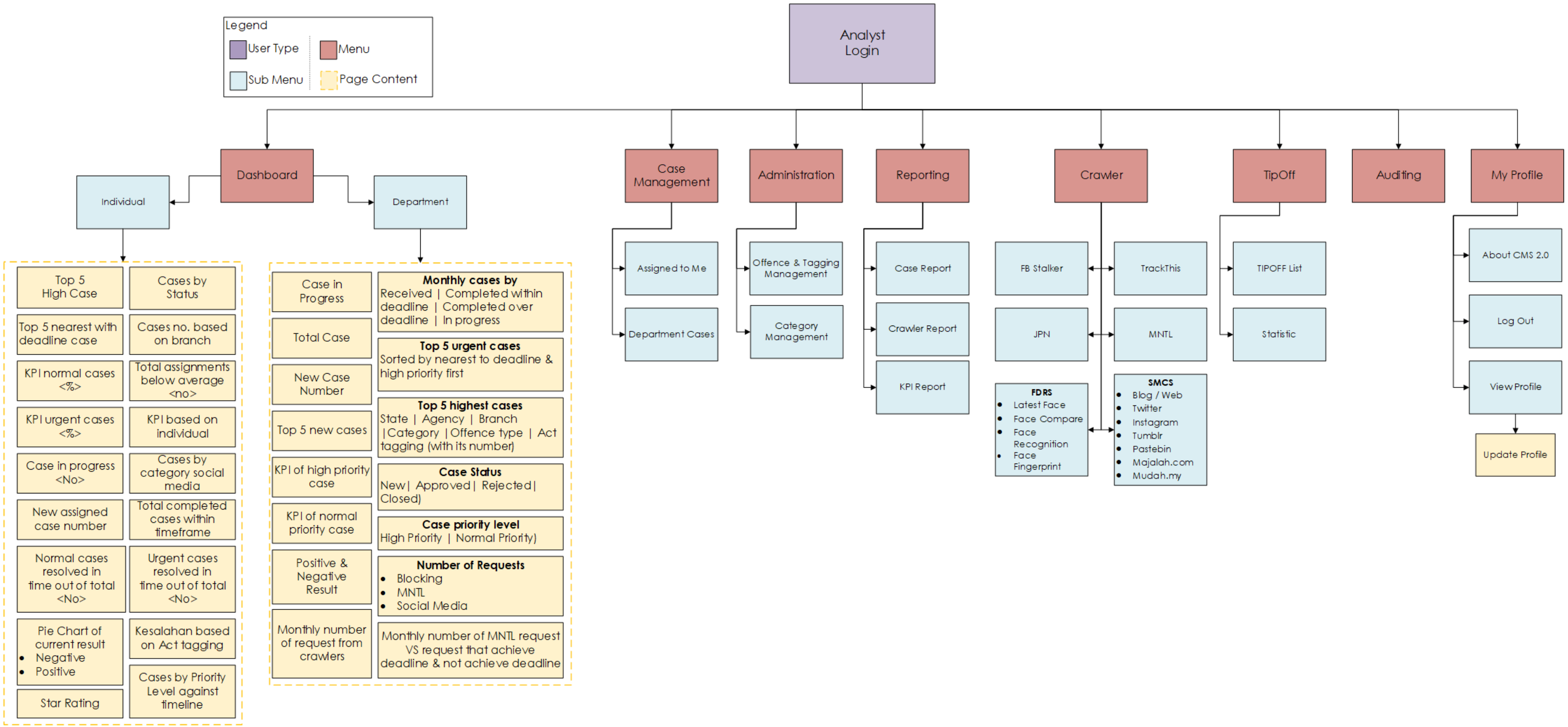


Figure 3.3:4: Analyst Sitemap

3.3.5 Head of Department

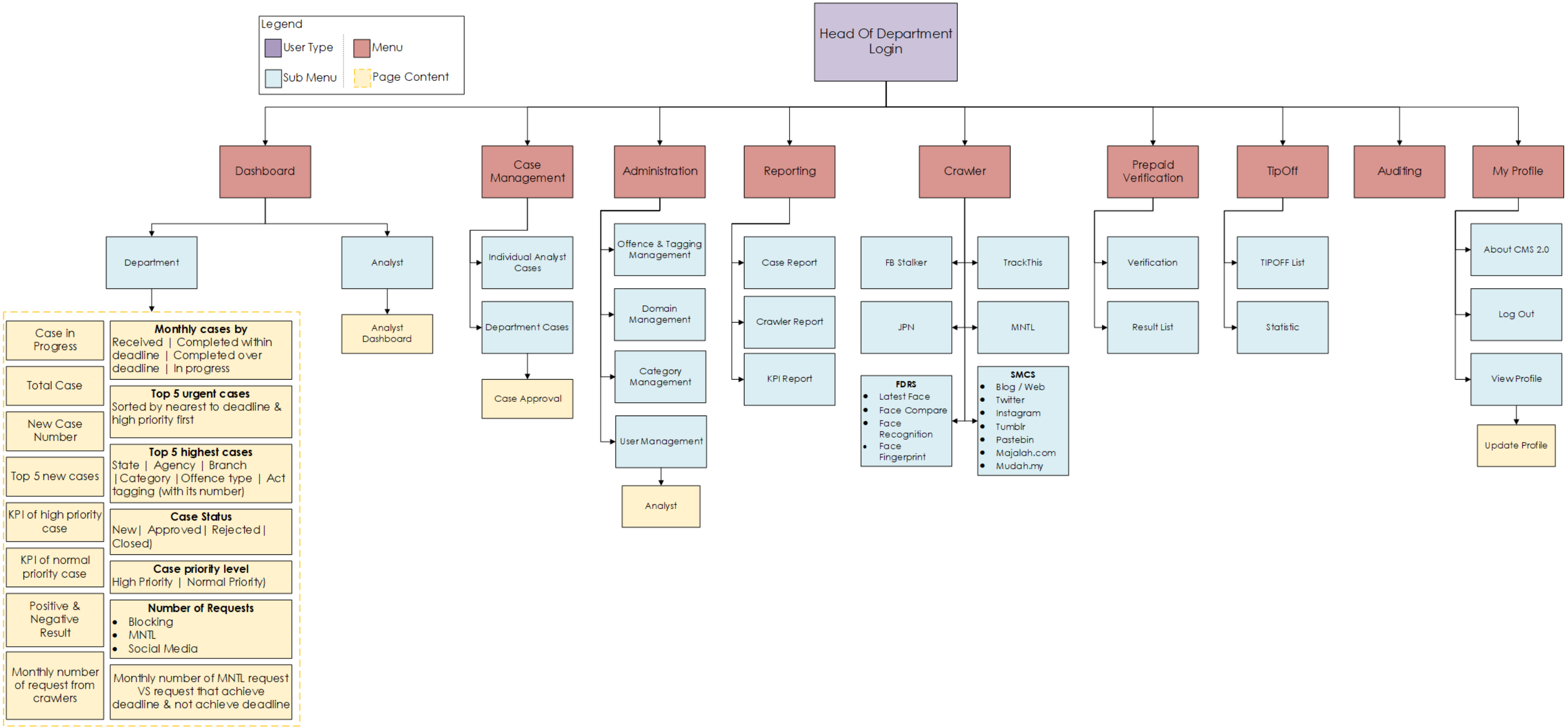


Figure 3.3:5: Head of Department Sitemap

3.3.6 Others Login

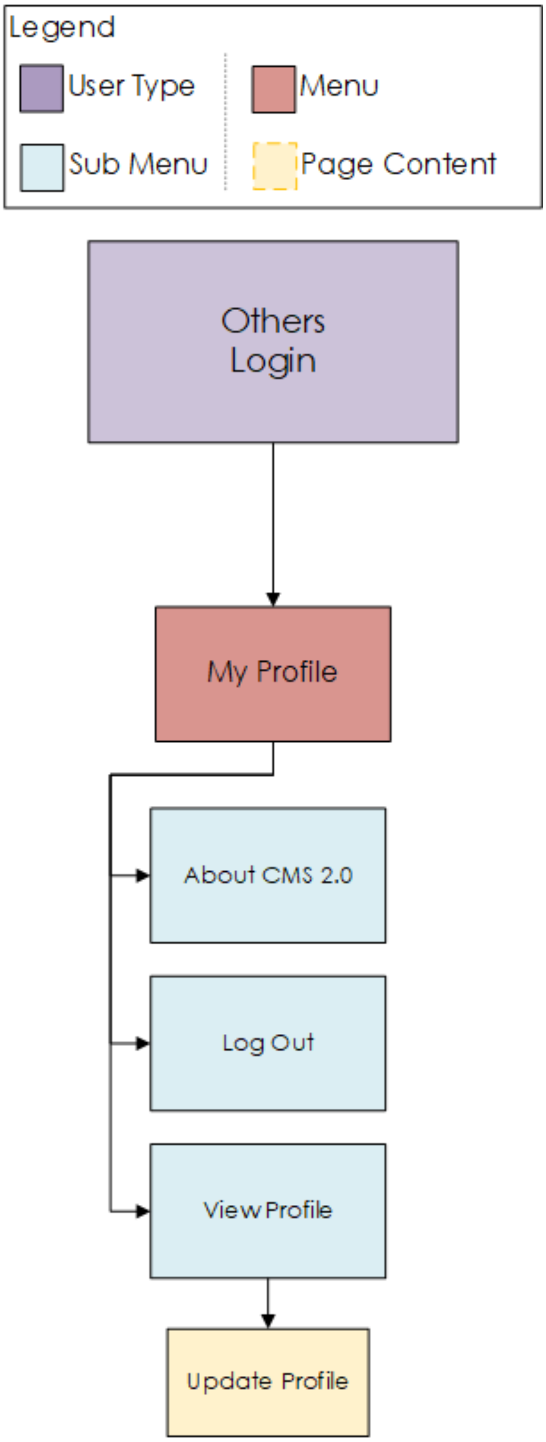


Figure 3.3.6: Others Login Sitemap

3.4 User Management: Administrations

3.4.1 Overview

User management is a core part for administrators to manage user access and roles for this system. User management section will be divided by LEA users and NID users (Super User, Admin, HOD, Analyst and Others).

Below is the access matrix of administrator roles and access rules to manage this module.

Action can be done	Super User	Admin	HOD
Managing Law Enforcement Agency (LEA) Only			
View LEA list	X	X	X
Add new LEA		X	
Resend Invitation		X	
View LEA profile	X	X	X
Edit LEA profile		X	
View access role to LEA	X	X	X
Assign access role to LEA		X	
Remove LEA		X	
Managing NID (Super User / Admin / HOD / Analyst / Others)			
View NID user list	X		X
Add new NID user	X		X
Resend Invitation	X		X
View NID user profile	X		X
Edit NID user profile	X		X
View access role to NID user	X		X
Assign access role to NID user	X		X
Remove NID user	X		X
NOTE: NID refer to Super Admin, Admin, HOD, Analyst and Others			

Table 3.4:1: Access matrix of user management for administrators

3.4.2 Wireframe: User List

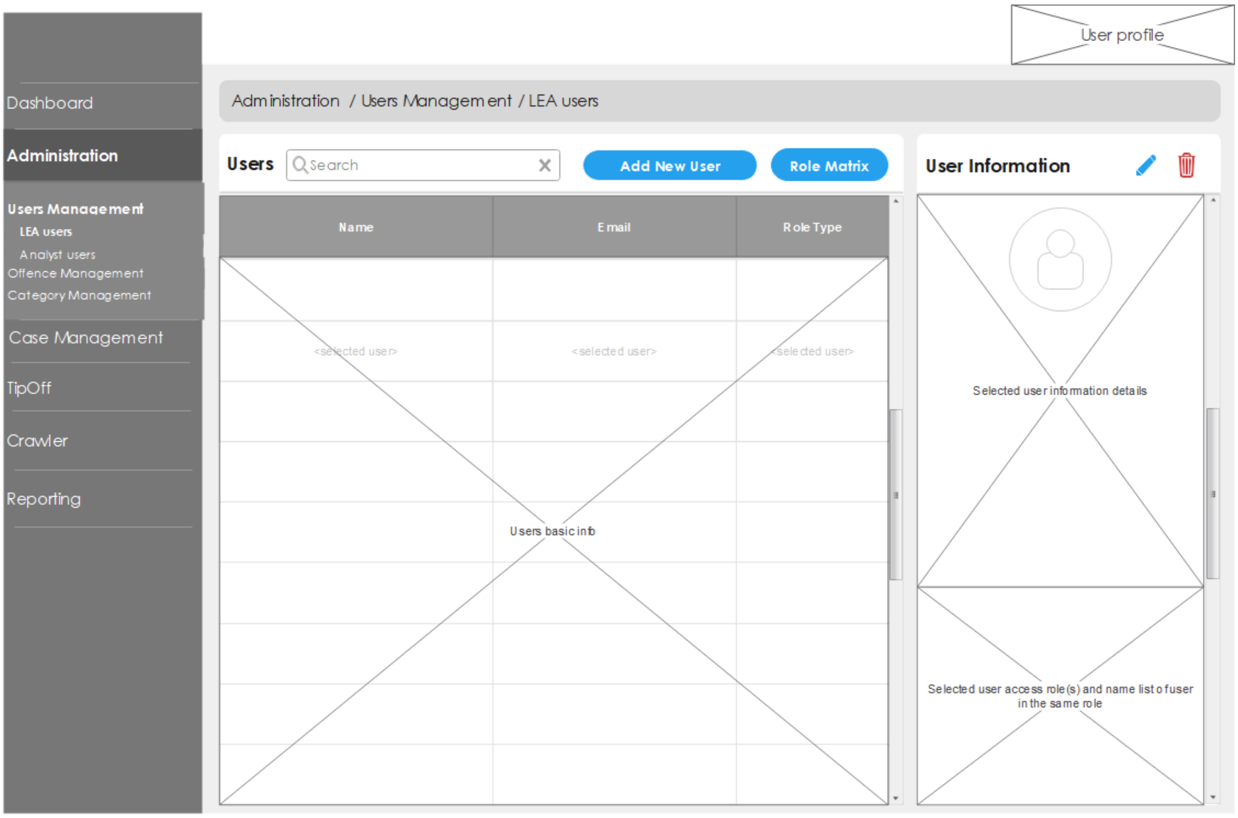


Figure 3.4:1: Wireframe of user list for LEA users

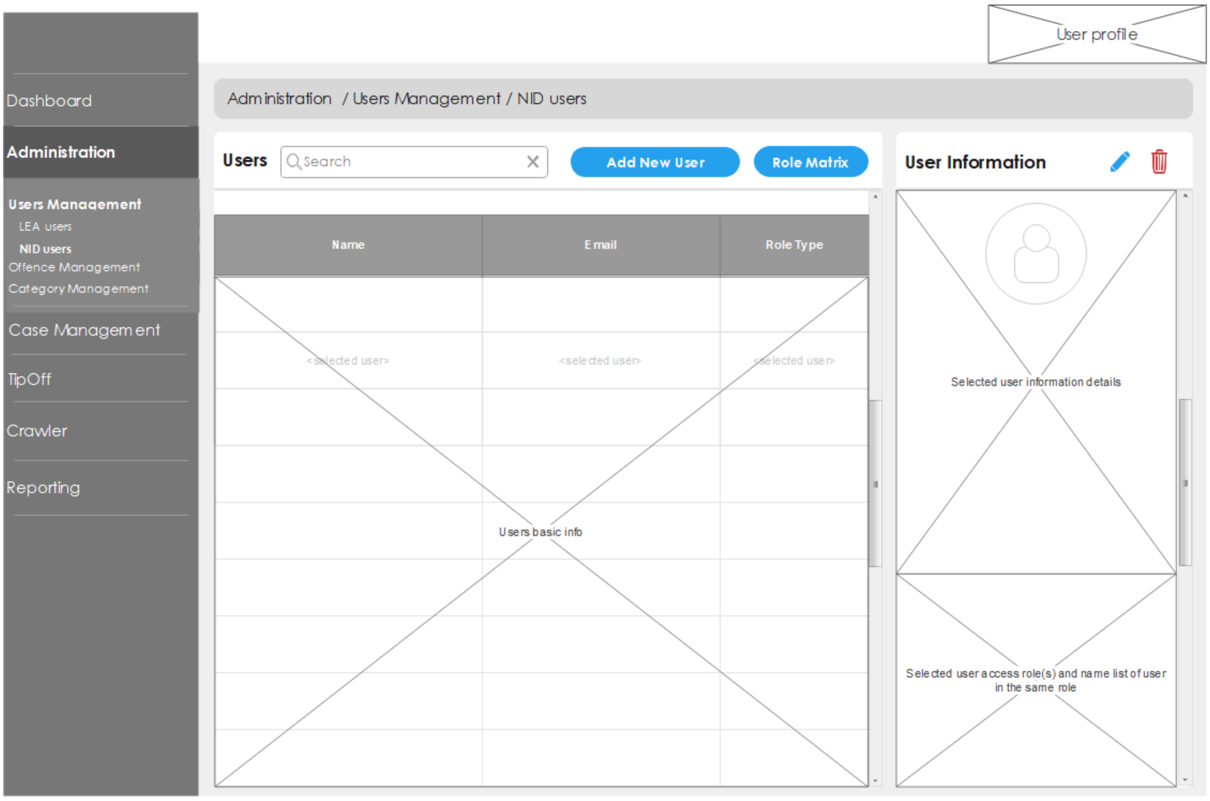


Figure 3.4:2: Wireframe of user list for NID users

❖ Description

User list will show created user list, allow searching in the list, view and edit user profile and their roles, delete user, and add new user. Below is details for each attribute in for both Figure 3.4:1: Wireframe of user list for LEA users (page 35) and Figure 3.4:2: Wireframe of user list for NID users (page 35).

Attribute	Details
Search bar	Field to search by user's name
User basic info table	Will show created user basic info as: 1. Name: created user name 2. Email: created user email 3. Role type: created user role(s)
Add new user button	Click on this button will prompt add new user popup. Refer to Add new user (page 44) section. **NOTE**: The rights matrix above shows default rights for each type of users. • The rights can be customized for individual users in User Management interface page.
Role matrix button	Click on this button will open user list with their assigned role page. Admin can configure individual rules in this page. Refer to Wireframe: Role and Rights (page 37) section.
Selected user information details	Will show selected user details information such as: 1. Profile picture 2. Email address 3. Email type • Personal • Sharing 4. Name 5. IC number 6. Unit name 7. Organisation name 8. Branch 9. City 10. Postcode 11. State 12. Phone No. (Mobile) 13. Phone No. (Office) 14. Telegram ID 15. Authentication method 16. Created date
Edit user	Clicking *Edit User* button will change profile details into form format
Delete user	Delete user will prompt confirmation popup to delete. If okay, then will proceed to delete user
Selected user access role(s) and	Selected user access role(s) will show selected user role. Also, will list out user name list that have same role.

name list of users under same role	

Table 3.4:2: Details information of user list for both LEA and NID users

3.4.3 Wireframe: Role and Rights

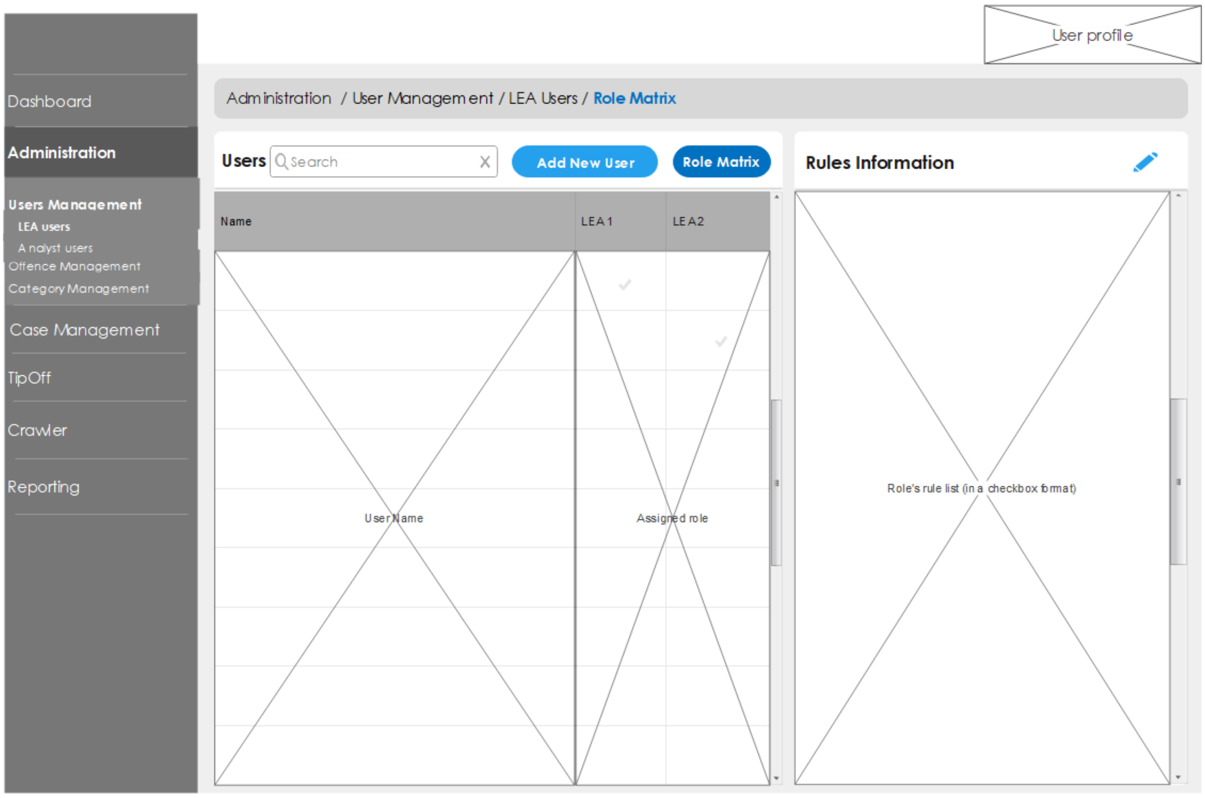


Figure 3.4:3: Wireframe for role matrix and their rights for LEA users

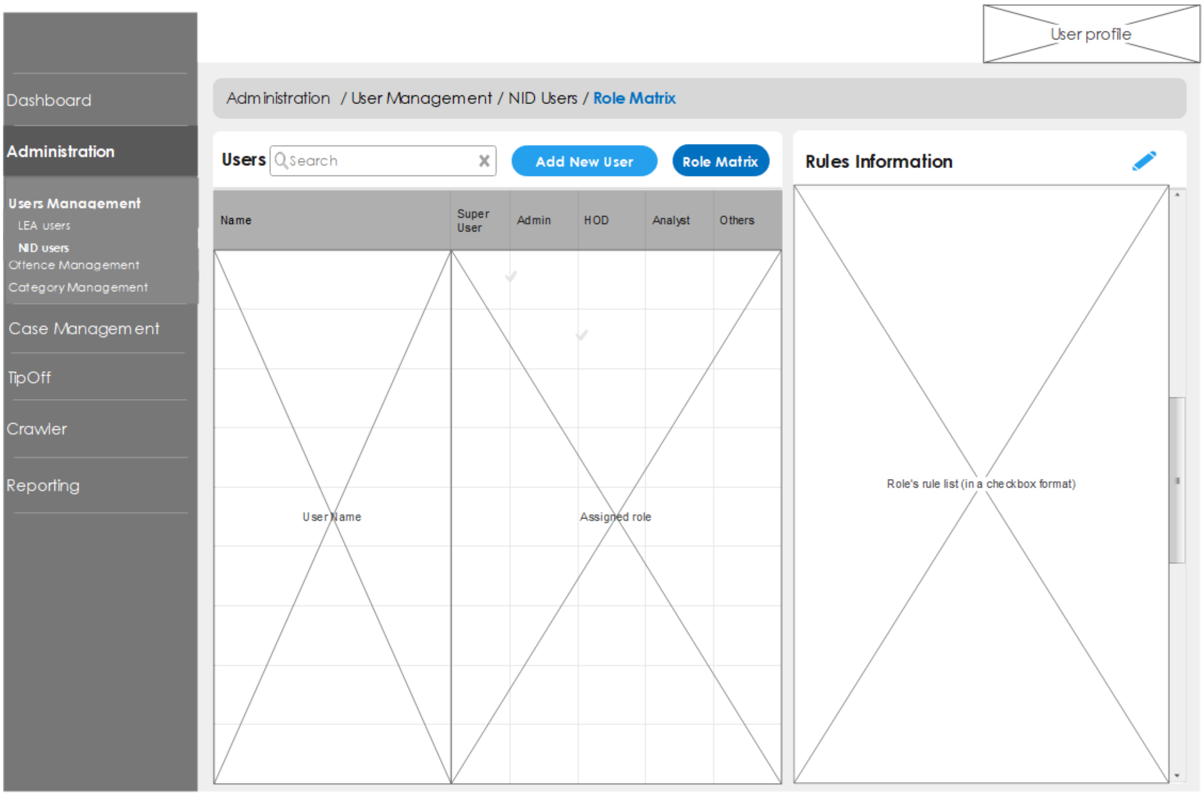


Figure 3.4:4: Wireframe for role matrix and their rights for NID users

- Description

Role and rights page will be executed from clicking Role Matrix button in case list. This page is to let administrator to view created users list with their roles. Also, administrators can configure user's rules(rights) individually. Below is details for each attribute in both Wireframe: Role and Rights Figure 3.4:3: Wireframe for role matrix and their rights for LEA users (page 37) and Figure 3.4:4: Wireframe for role matrix and their rights for NID users (page 38)

<table>
<tr><th>Attribute</th><th>Details</th></tr>
<tr><td>Search bar</td><td>Field to search by user name</td></tr>
<tr><td>Add new user button</td><td>Click on this button will prompt add new user popup. Refer to Add new user (page 44) section.
<table><tr><td>NOTE:</td><td>The rights matrix above shows default rights for each type of users.
The rights can be customized for individual users in User Management interface page.</td></tr></table>
Add new user</td></tr>
<tr><td>Role matrix button (selected)</td><td>Click on this button will open user list with their assigned role page. Admin can configure individual rules in this page. Refer to Wireframe: Role and Rights (page 37) section.</td></tr>
</table>

Role table - User roles - Assigned role	By default, it will list out user with assigned role. Administrators (Super User/HOD/Admin) can assign or unassigned user to the role by check/uncheck in role checkbox. LEA user role list (Managed by Admin): • LEA 1 • LEA 2 NID user role list: (Managed by HOD & Super User): • Super User • Admin • HOD • Analyst • Others
Role's rules list	By default, it will show selected user's assigned rules information. Rule list can refer to Table 3.4:4: Default rights for every role (page 43) **NOTE:** Others user default rules is only accessible to view and update profile, view guidelines, view About CMS 2.0, login and logout. HOD or Super User need to configure its rules manually.
Edit rules	When it is clicked, administrator can configure selected user's rules

Table 3.4:3: Details information of role matrix for both LEA and NID users

Rules	**Roles**						
	Super User	**Admin**	**HOD**	**Analyst**	**LEA 1**	**LEA 2**	**Others**
Dashboard							
Department Dashboard	x	x	x	x			
Individual Dashboard			x				
Own Individual Dashboard				x	x	X	
Permohonan							
By Media Social							
View case list					X	X	
Edit case					X	X	
Download attachment					X	X	
Create new case					X	X	
By Block Request							
View case list					X	X	
Edit case					X	X	
Download attachment					X	X	
Create new case					X	X	
By MNTL							
View case list					X		
Edit case					X		

Rules	Roles						
	Super User	Admin	HOD	Analyst	LEA 1	LEA 2	Others
Download attachment					X		
Create new case					X		
Statistics							
View statistics					x	X	
Export statistics					x	x	
Administrations							
Users Management							
View LEA list	x	x	x				
Add new LEA		x					
Resend Invitation		x					
View LEA profile	x	x	x				
Edit LEA profile		x					
View access role to LEA	x	x	x				
Assign access role to LEA		x					
Remove LEA		x					
View NID user list	x		x				
Add new NID user (Super User, Admin, HOD, Analyst, Others)	x		x				
Resend Invitation	x		x				
View NID user profile	x		x				
Edit NID user profile	x		x				
View access role to NID user	x		x				
Assign access role to NID user	x		x				
Remove NID user	x		x				
NOTE: NID is for Super User, Admin, HOD, Analyst, Others							
Offence management							
View Offence List	x	x	x	x			
Add new offence	x	x	x	x			
Edit offence name	x	x	x	x			
Delete offence	x	x	x	x			
Assign tagging	x	x	x	x			
View tagging list under offence name	x	x	x	x			
Tagging management							
View tagging list	x	x	x	x			

Rules	Roles						
	Super User	Admin	HOD	Analyst	LEA 1	LEA 2	Others
Create new tagging	x	x	x	x			
Edit tagging name	x	x	x	x			
Delete tagging	x	x	x	x			
View offence list under tagging name	x	x	x	x			
Category management							
Add new category	x	x					
Delete category	x	x					
Domain Management							
View whitelisted Domain List	x	x	x				
Add whitelisted Domain List	x	x	x				
Edit whitelisted Domain List	x	x	x				
Delete whitelisted Domain List	x	x	x				
Case Management							
View case list			x	x			
View case list details			x	x			
View attached document			x	x			
View case history & trail			x	x			
Resend email			x	x			
Request to adjust deadline				x			
Approve adjust deadline			x				
Approve request			x				
Reject request			x				
Send feedback			x				
Update case result			x	x			
Assign & reassign analyst			x				
Set case priority level			x				
Set & adjust case deadline			x				
Upload document (PDF, Word, Images- jpeg, jpg)			x	x			
Send request to crawlers			x	x			

Rules	Roles						
	Super User	**Admin**	**HOD**	**Analyst**	**LEA 1**	**LEA 2**	**Others**
Add suspects/witness			x	x			
Edit/remove suspect/witness			x	x			
Crawler							
SMCS							
Add link			x	x			
View link	x		x	x			
Prepaid Verification							
Submit new verification			x				
View result list			x				
TrackThis							
Search query			X	X			
View previous searched query			X	X			
MNTL							
View list			x	x	x		
Create new request			x	x	x		
FBStalker							
View list			x	x			
Send request to add new list			x	x			
JPN							
View list			x	x			
Send request			x	x			
FDRS							
View list			x	x			
Send request to Face Compare, Face Recognition, Face Fingerprint			x	x			
TipOff							
Create new TipOff			x	x			
View TipOff			x	x			
Reporting							
View pre-defined reports	x		x	x			
Download report			x	x			
Email report			x	x			
View saved reports	x		x	x			

Rules	Roles						
	Super User	**Admin**	**HOD**	**Analyst**	**LEA 1**	**LEA 2**	**Others**
Save report			x	x			
Configure custom report			x	x			
Auditing							
Configure & generate audit log	x	x	x	x			

Table 3.4:4: Default rights for every role

NOTE:	• The rights matrix above shows default rights for each type of users. • The rights can be customized for individual users in User Management interface page.

1. Add new user

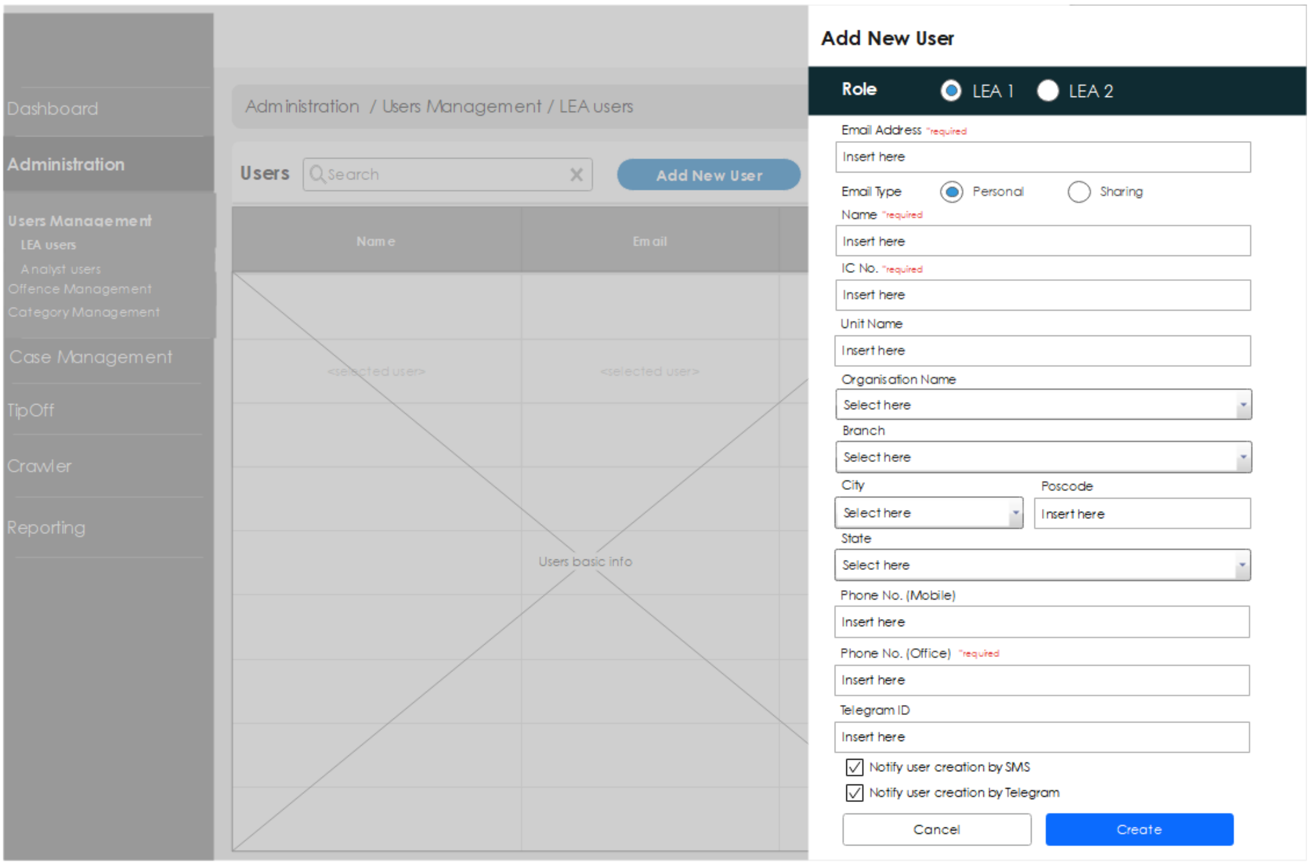


Figure 3.4:5: Wireframe of add new LEA user

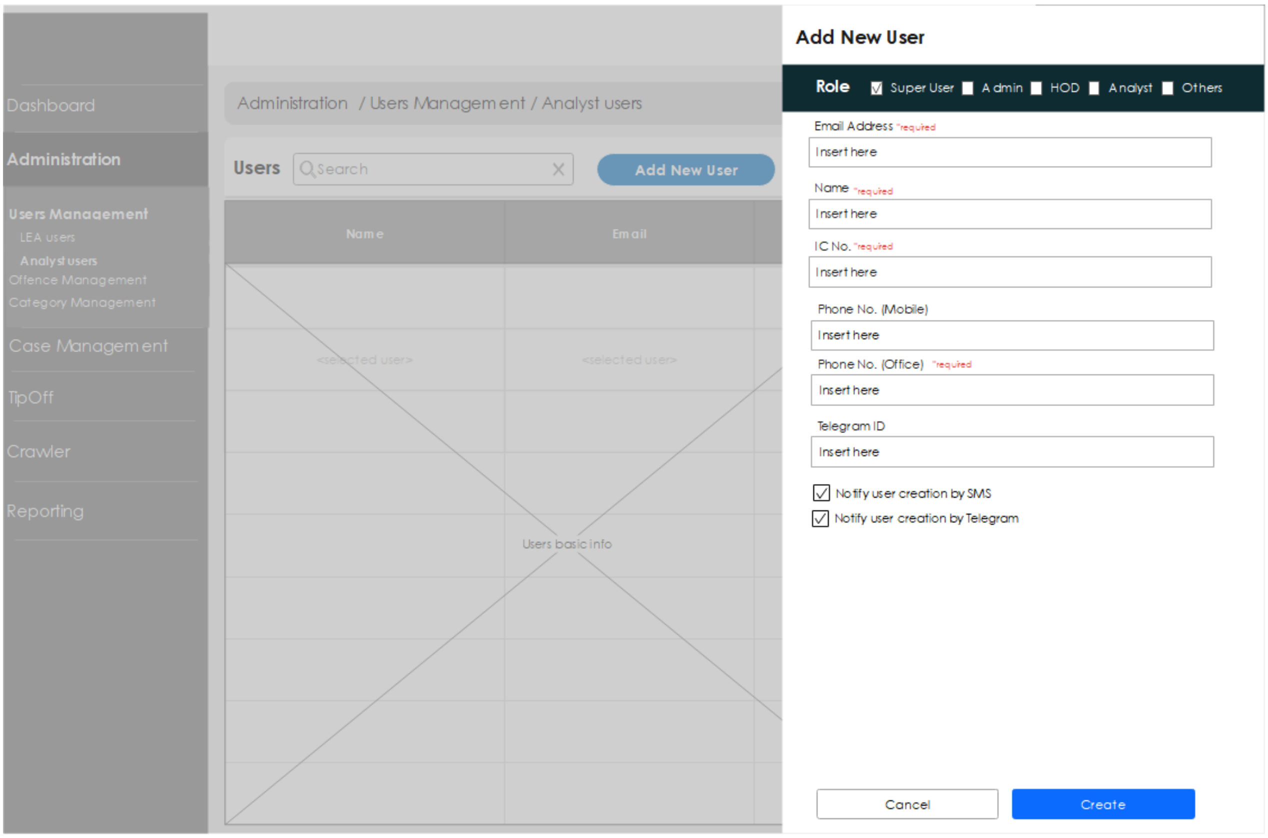


Figure 3.4:6: Wireframe of add new NID user

❖ Description

Add new user popup will be prompted once user click on Add New User button accordingly. Below is form information details for adding new user based on Figure 3.4:5: Wireframe of add new LEA user (page 44) and Figure 3.4:6: Wireframe of add new NID user (page 44)

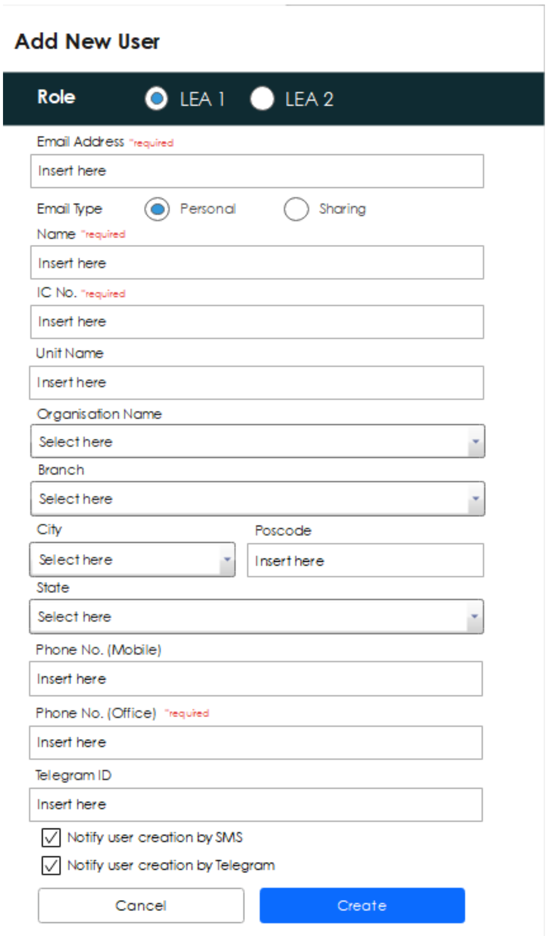


Figure 3.4:7: Add new user for LEA form

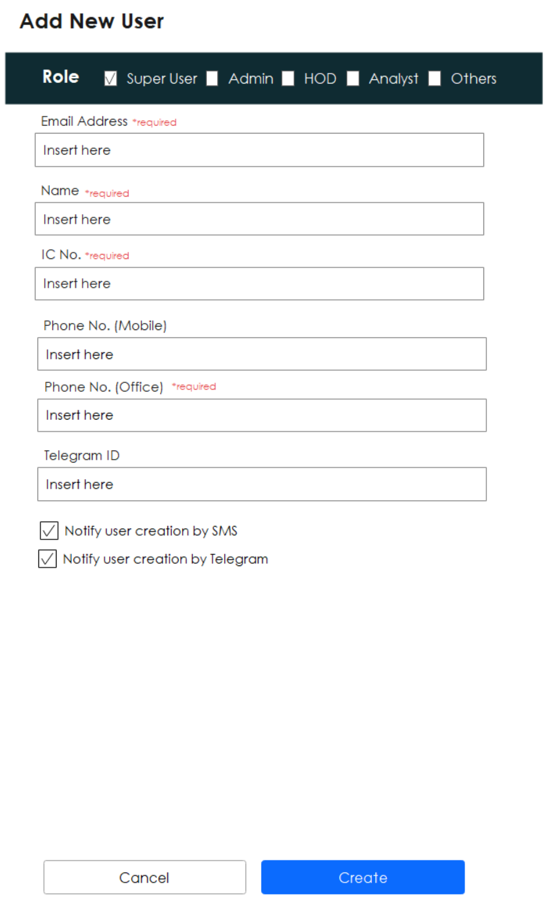


Figure 3.4:8: Add new user for NID

Attributes	Details
Role	Role list for LEA is LEA 1 and LEA 2. Administrator can only choose either one of this roles. While role list for NID is Super User, Admin, Head of Department (HOD), Analyst and Others. Super User and HOD can assign multiple roles when creating new user.
Email address	Email address is mandatory field. Email domain must be @irc.org.my or @*.gov.my or whitelisted domain.
Email type	Email type is for LEA user only. It can be either shared or individual's email
Name	User's name
IC no.	User's IC no
Unit name	For LEA only. Their unit's name in organisation
Organisation name	For LEA only. Their organisation name

Branch	For LEA only. Their organisation's branch name
City	For LEA only. The city name of their branch located
Postcode	For LEA only. City's postcode name
State	For LEA only. State of the city located
Phone No. (Mobile)	User's phone number. Will use this phone number to send SMS notification to user or 2FA during login (if user configure it)
Phone No. (Office)	User's office phone number
Telegram ID	User's Telegram ID. Will use this Telegram ID to send message of notification to user or 2FA during login session (if user configure it)
Notify user creation by SMS	Checkbox to notify user that their account was created by administrator using SMS. But must make sure that user's mobile phone number is configured.
Notify user creation by Telegram	Checkbox to notify user that their account was created by administrator using message in Telegram. But must make sure that user's Telegram ID is configured.

Table 3.4:5: Details information for add new user for LEA and NID

3.5 User Management: Offence, Tagging and Category

3.5.1 Overview

Tagging process involves using labels to provide content with additional information (using a particular set of keywords). With assigning tagging to offence, case information much easier to find. Same goes to category.

The difference is category is for social media mediums while tagging is for offence keyword. Below is the access matrix of offence, tagging and category to be managed by this module.

Action can be done	**Super User**	**Admin**
Offence management		
View Offence List	X	X
Add new offence	X	X
Edit offence name	X	X
Delete offence	X	X
Assign tagging	X	X
View tagging list under offence name	X	X
Tagging management		
View tagging list	X	X
Create new tagging	X	X
Edit tagging name	X	X
Delete tagging	X	X

View offence list under tagging name	X	X
Category management		
Add new category	X	
Delete category	X	

Table 3.5:1: Access matrix of Offence, tagging and category management by administrators

3.5.2 Wireframe: Offence and tagging management

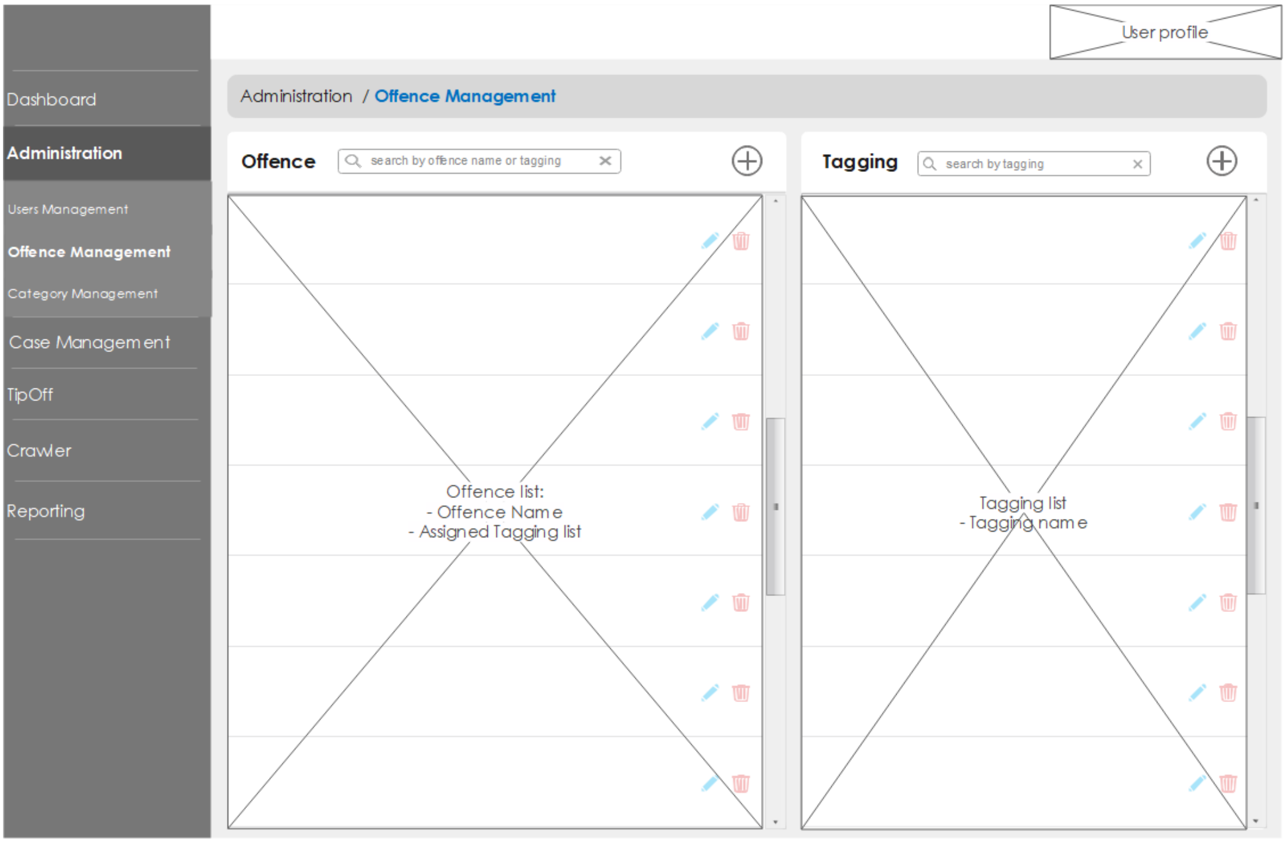


Figure 3.5:1: Wireframe of offence and tagging management page

❖ Description

Offence and tagging management page are under administration menu. Below are information details of this page.

Attribute	Details
Offence search bar	Search bar to search offence name or tagging name
Offence list	Will show offence list and assigned tagging list
Add new offence button	Clicking add new offence button will prompt popup to create new offence and option to assign tagging list
Tagging search bar	Search bar to search tagging name
Tagging list	Will show created tagging list
Add new tagging button	Clicking add new tagging button will prompt popup to create new tagging.

Table 3.5:2: Details information for offence and tagging management

3.5.3 Wireframe: Category management

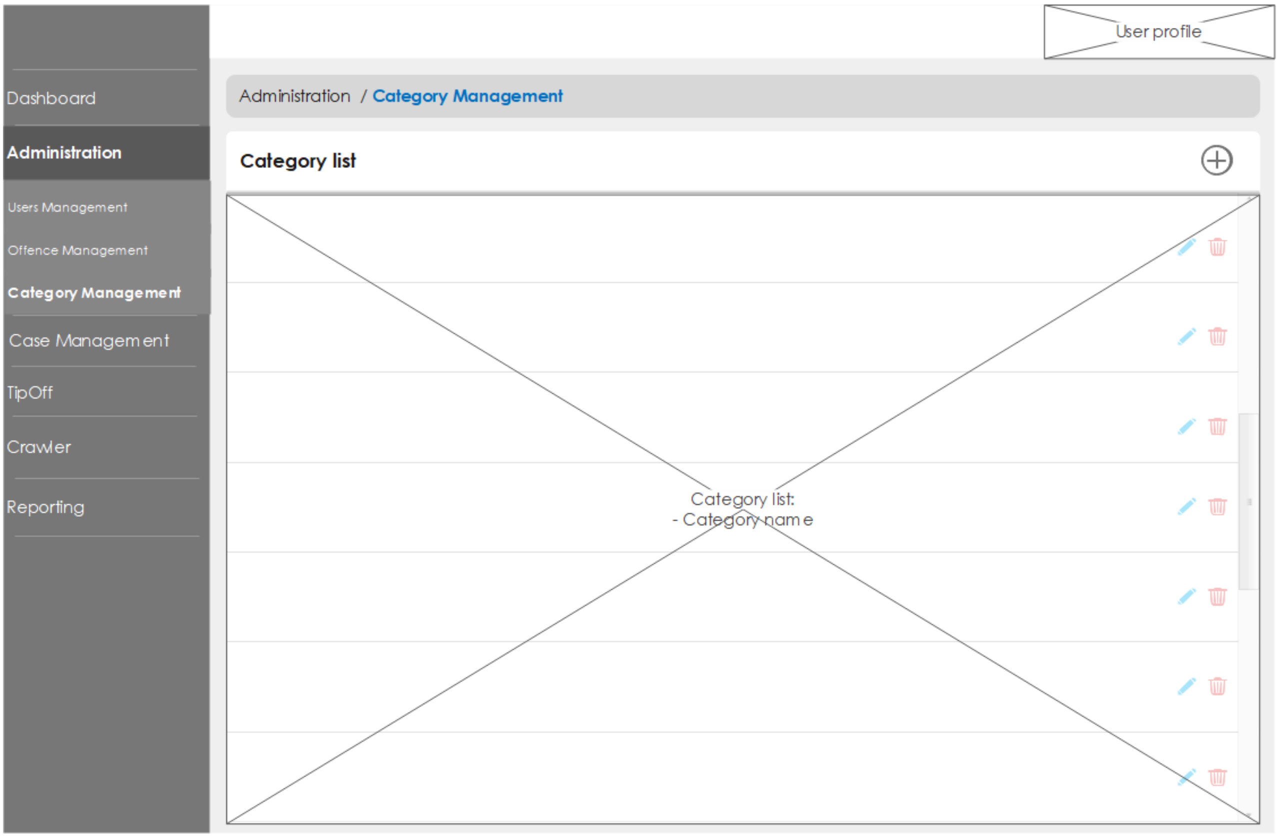


Figure 3.5:2: Wireframe of category management

- ❖ Description

  Offence and tagging management page are under administration menu. Below are information details of this page.

Attribute	Details
Category list	Will show category list
Add new category	Clicking add new category will prompt popup to add new category

Table 3.5:3: Details information of category management

3.6 Domain Management

3.6.1 Overview

Email domain whitelisting is a process to allow which email domain to access the system.

Hardcoded whitelisted domain:

- *@.gov.my
- *@irc.org.my

Other domain specified in the whitelisting also can be used in the system. It can be managed in Domain Management interface. Only Super User, Admin and HOD can manage this module.

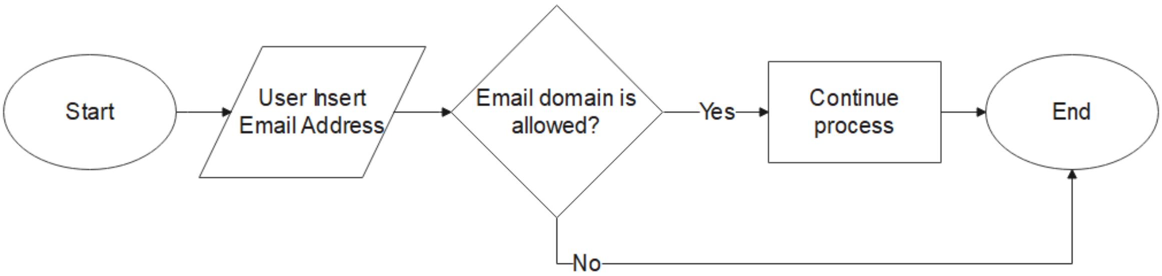


Figure 3.6:1: Process flow of domain validation

3.6.2 Wireframe: Domain Management

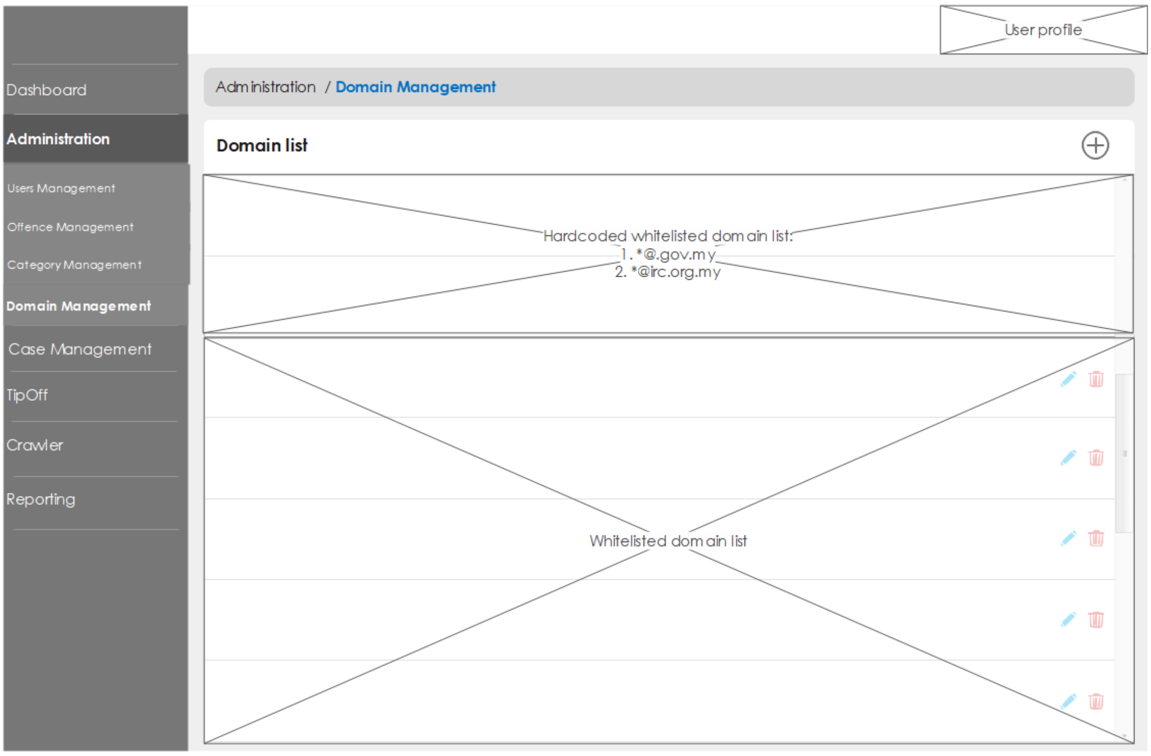


Figure 3.6:2: Wireframe of whitelisted email domain

❖ Description

Email domain management page are under administration menu. Below are information details of this page.

Attribute	Details
Email domain list	Will show email domain list.
Add new domain list.	Clicking add new email domain will prompt redirect to add new email domain whitelisting page.

Table 3.6:1: Detail's information of email domain management

4 Authentication and Authorization

4.1 Registration

4.1.1 LEA Registration Flowchart

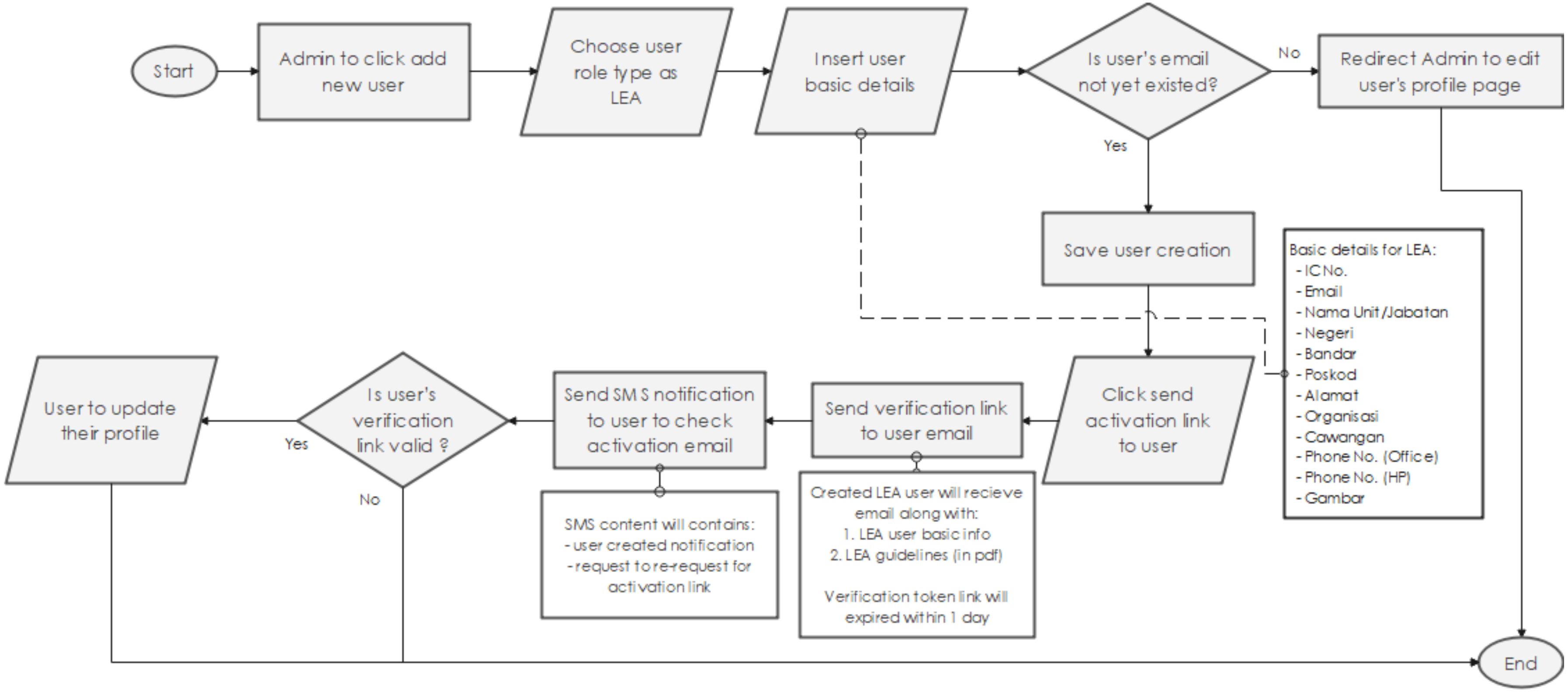


Figure 4.1:1: Flowchart for LEA Registration

- Flowchart Description
  1. LEA user registration can be done by Admin only. During registration, admin need to choose user type as LEA user then insert basic user details.
  2. The system will check whether inserted email is existing or not. If yes, then will redirect to edit profile. Else, will save user creation.
  3. An email will be sent to registered user's email address. The content in email will includes:
     - User activation link. Will expired within 24 hours.
     - Registered user info.
     - LEA user's guideline.
  4. Also, SMS will be sent to user according to their registered phone number. The content in SMS will include:
     - Message of successfully registered user.
     - Email address that activation email was sent.
     - Request to resend activation email.
  5. After user successfully activate their account, they will be redirected to edit profile page for their basic user configuration.
- Basic user info details

Parameter	**Description**
IC no.	• User's ID • Mandatory
Email	• Official government email and whitelisted domain email. • Whitelisted domain is editable in Administration -> Domain Management • Mandatory
Nama	• User's name
Nama Unit/Jabatan	• Department or units name • Mandatory
Negeri	• User's state of staying
Bandar	• User's city of staying
Poskod	• City's postcode of user's
Alamat	• User's address
Organisasi	• User's organization name • Mandatory
Cawangan	• User's branch • Mandatory
No telefon (Pejabat)	• User's office phone number • Mandatory
No telefon(HP)	• User's mobile number • Mandatory

Table 4.1:1: Parameter and Description for LEA

4.1.2 NID Registration Flowchart

The following flowchart is accessible to HOD and Super User only.

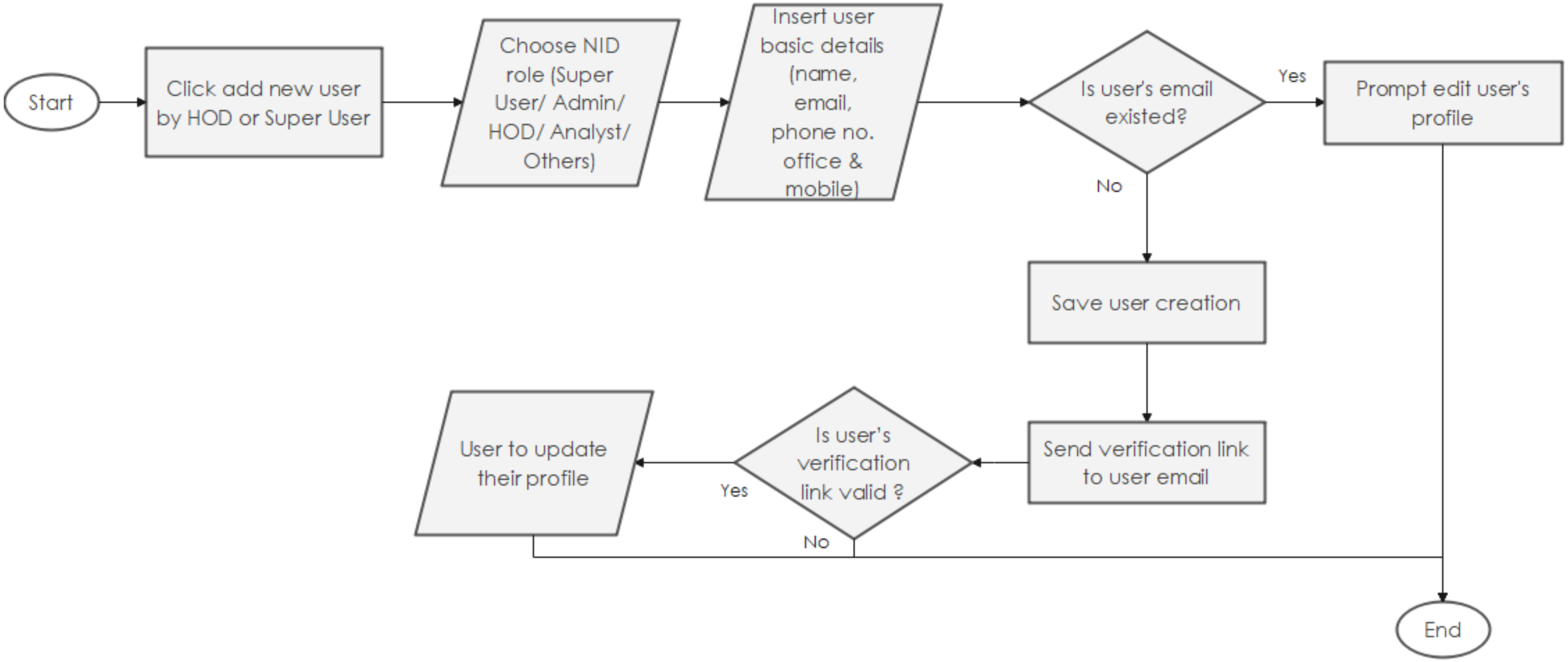


Figure 4.1:2: Flowchart for Analyst Registration

4.1.3 Request to resend account verification link from LEA to Admin or NID to HOD/Super User

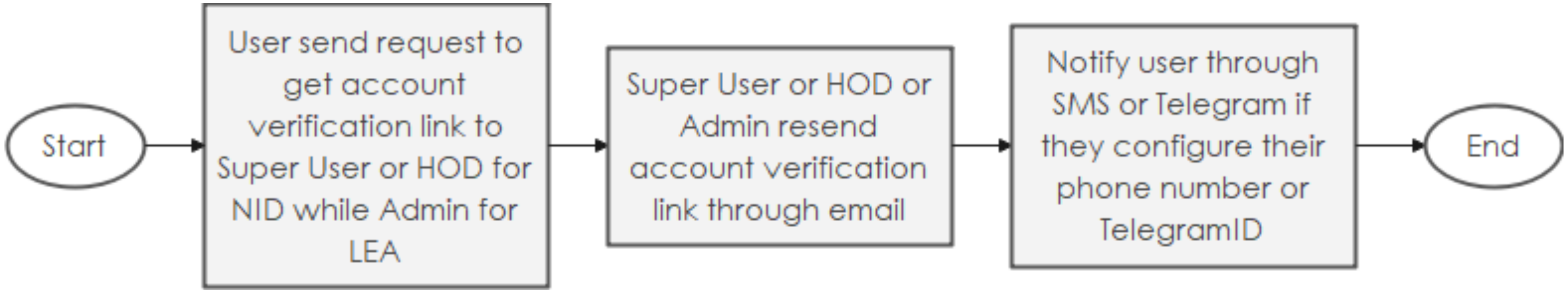


Figure 4.1:3: Flowchart for request and resend account verification link

- Flowchart Description
  1. NID user registration can be done by HOD or Super User. NID is for Super User, Admin, HOD, Analyst and Others user. During registration, registerer need to choose user type then insert basic user details.
  2. The system will check whether inserted email is existing or not. If yes, then it will redirect to edit profile page. Else, it does nothing until user edit their profile by themselves.
- Basic user info details

Parameter	**Description**
Name	User's name
Email	User's email address (*@irc.org.my & whitelisted email domain configured by Admin. Refer to Domain Management (page 48) section.
Phone number (Office)	User's office phone number
Phone number (Mobile)	User's mobile number

Table 4.1:2: Parameter and Description for NID

4.2 Manage Role of User

4.2.1 For LEA user

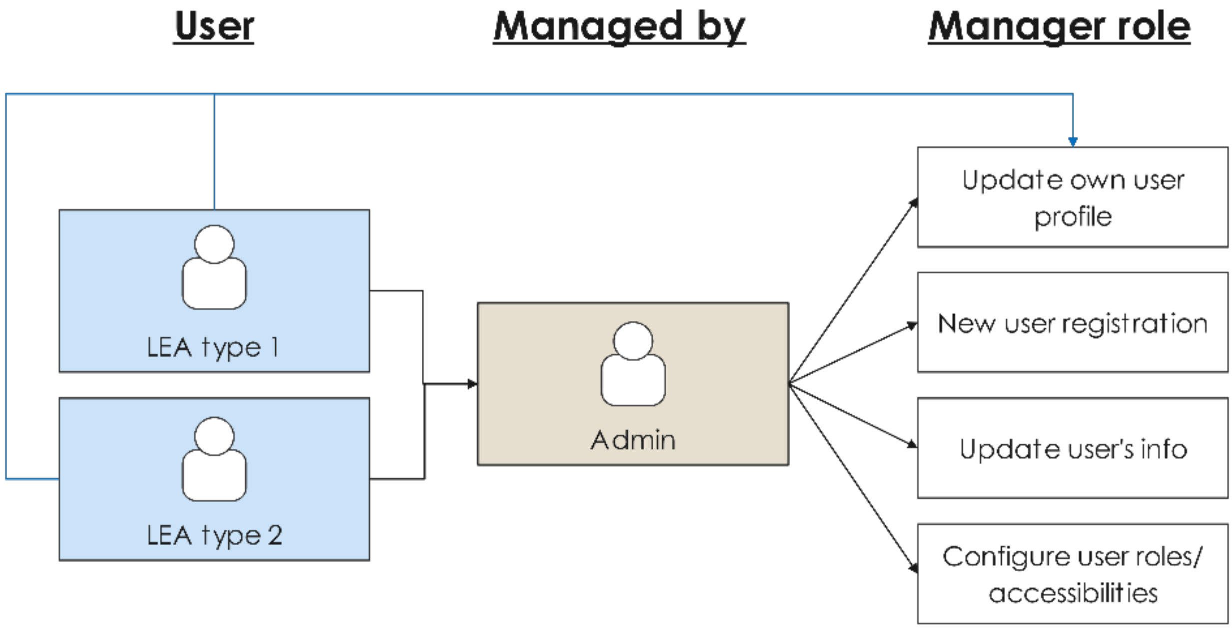


Figure 4.2:1: User Management Roles managed by Administrator

4.2.2 For NID

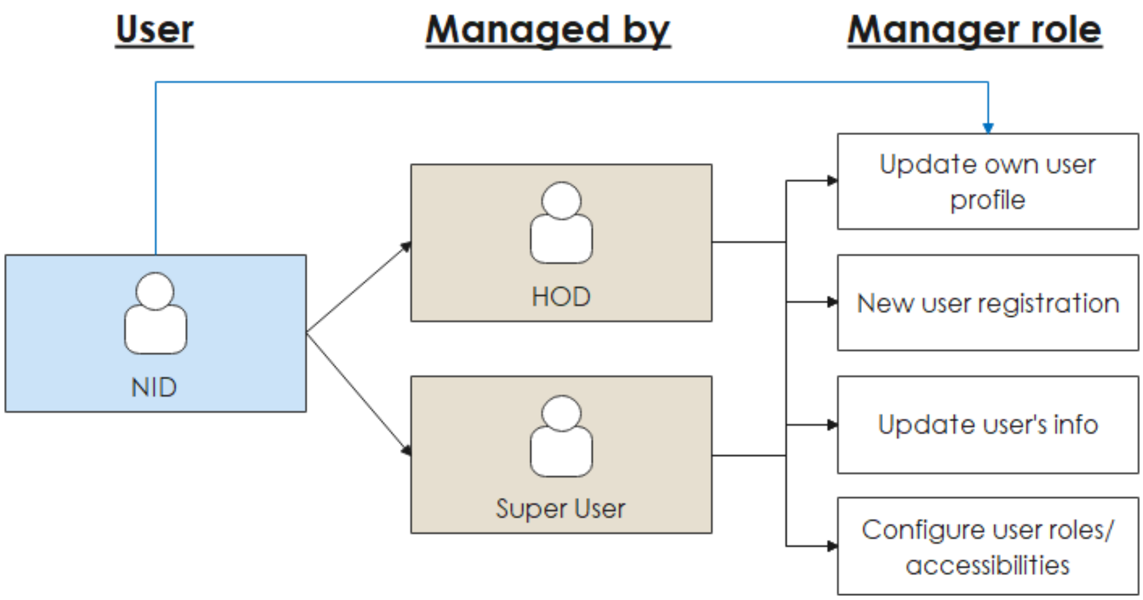


Figure 4.2:2: User Management Roles managed by HOD and Super User

5 Login Page

5.1 Login Flowchart

1. Checking Session

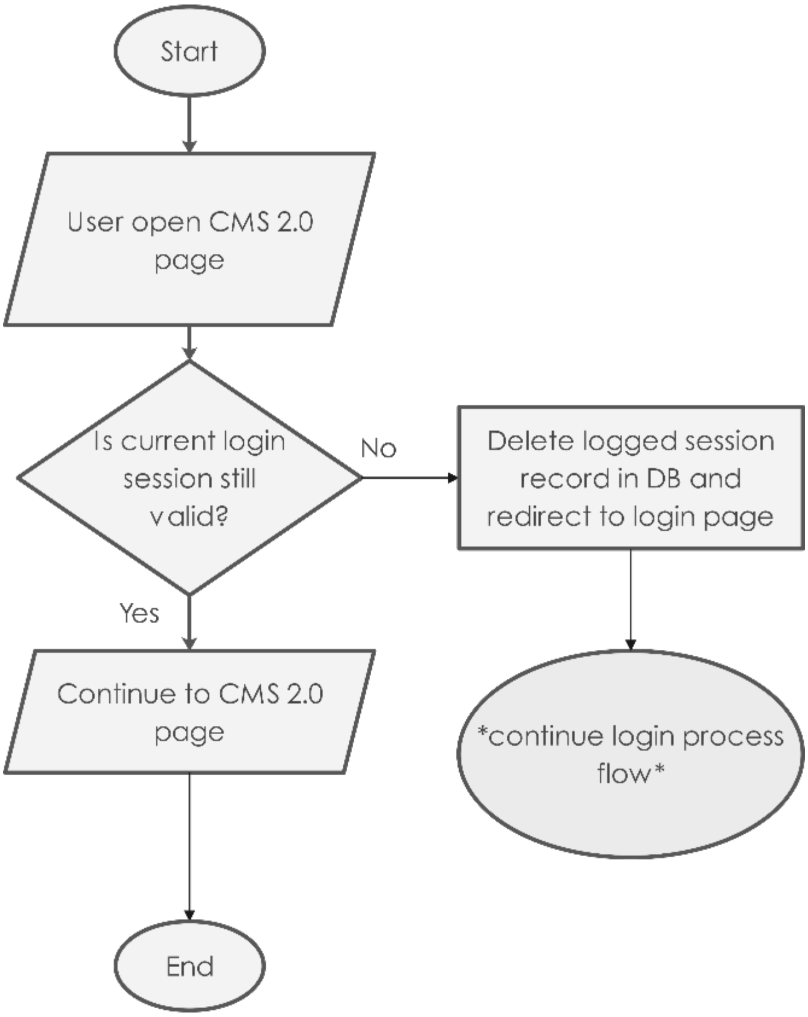


Figure 5.1:1: Flowchart for checking current user session validation

❖ Flowchart Description

1. This flow is to check current session validity when CMS 2.0 page is opened.
2. Once user open CMS page, it will check current logged user's session validity. For LEA user, each session will be valid for 4 hours. A session for NID is valid for 30 days.
3. Process status continues as flowchart below:

2. Continue Login Flowchart

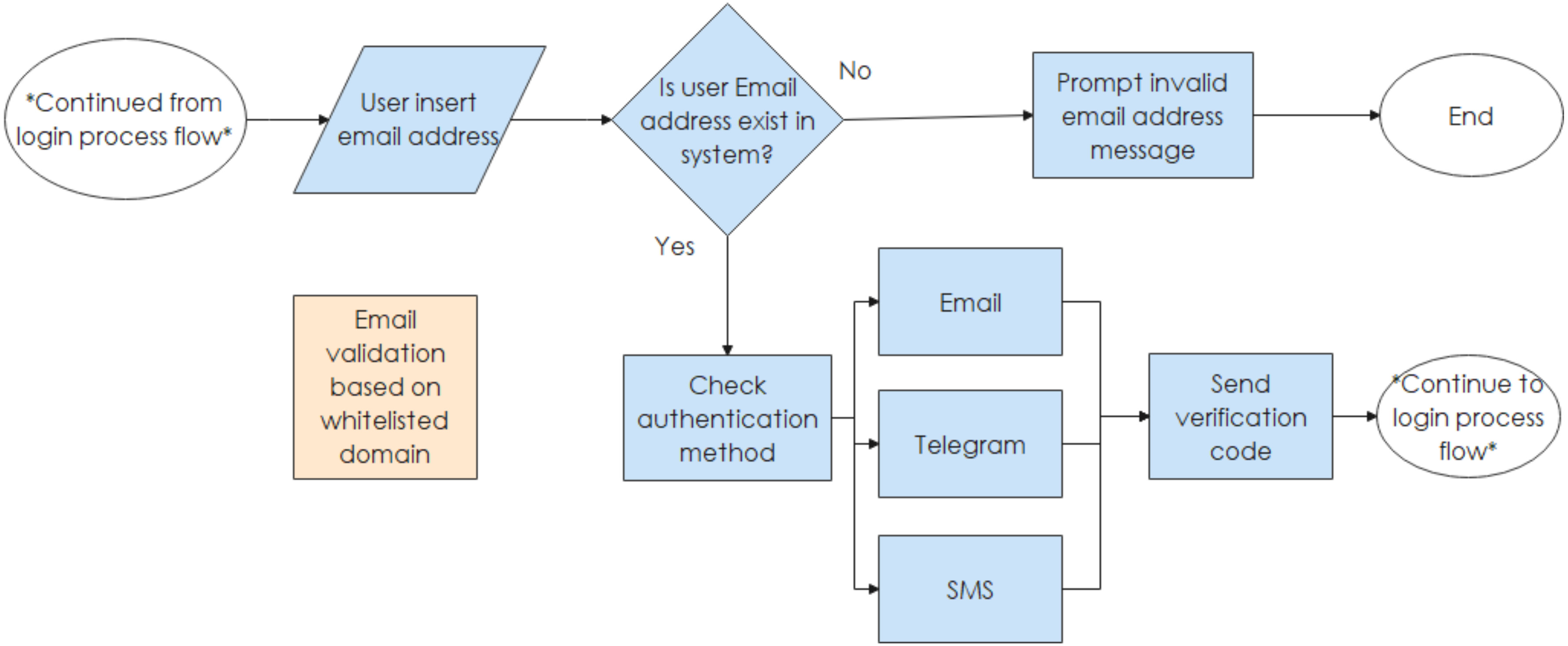


Figure 5.1:2: Checking user existence and configured authentication method

❖ Flowchart Description

1. After user insert their email address, the system will verify the user existence by the email.
2. If user already exists, authentication method will be checked. System will send SMS/Telegram OTP code or email as 2FA verification.
3. Else, system will prompt invalid email address message.

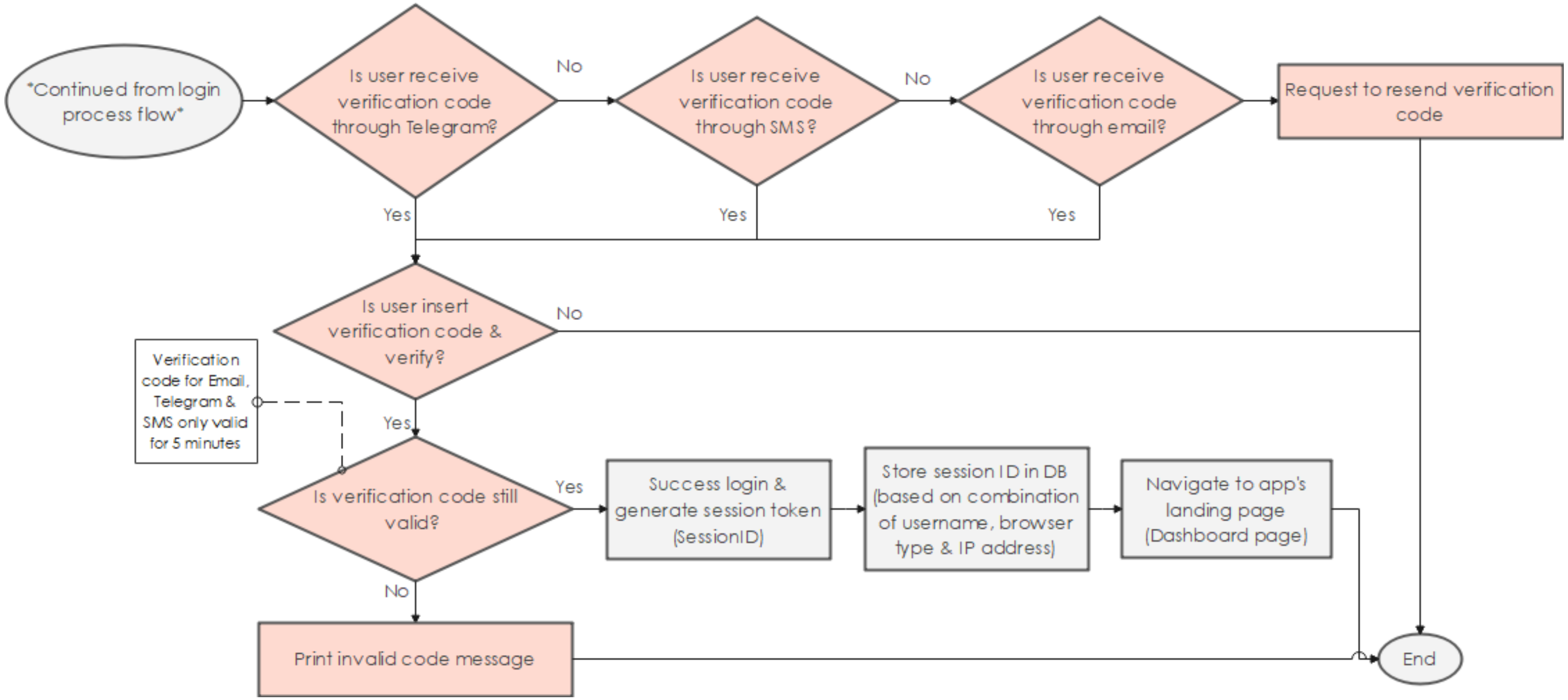


Figure 5.1:3: Checking login token validity for user login

- Flowchart Description
  1. If user receive login verification code from either email or Telegram or SMS, user can insert the code and verify it. Else, there is an option to request repeat sending of activation code.
  2. After verification code is successfully verified, user's session ID will be created and stored in database (DB) then they will be redirected to landing page.

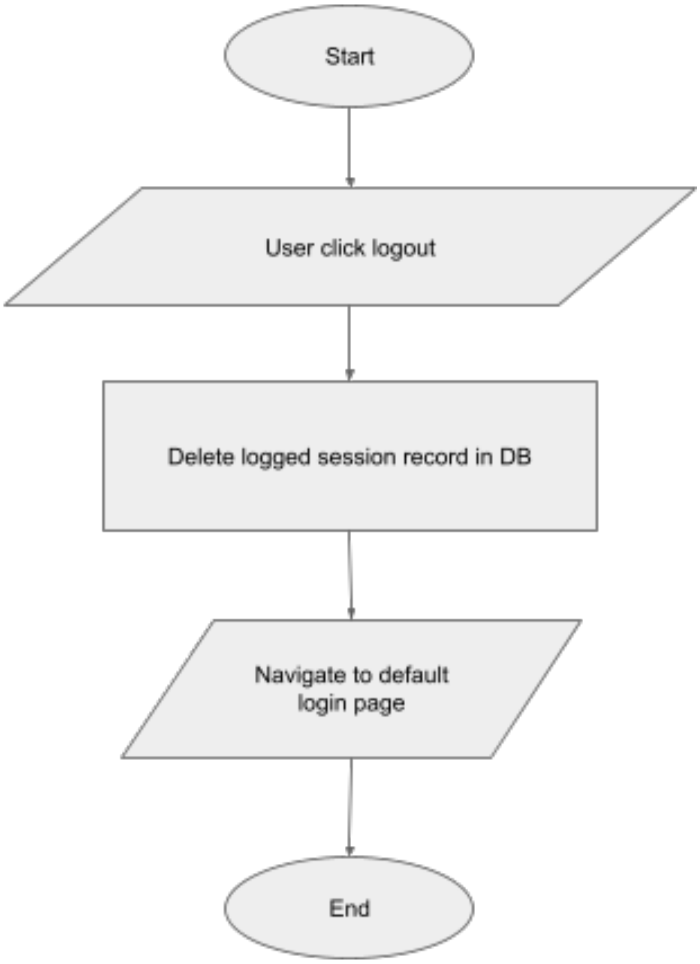


Figure 5.1:4: Flowchart for Logout process

❖ Flowchart Description

Logout user will clear all user's session ID and token then it will redirect back to their login page accordingly.

5.2 Login Wireframe

1. Login as LEA

Figure 5.2:1: Wireframe for LEA Login by SMS

2. Login as LEA verification

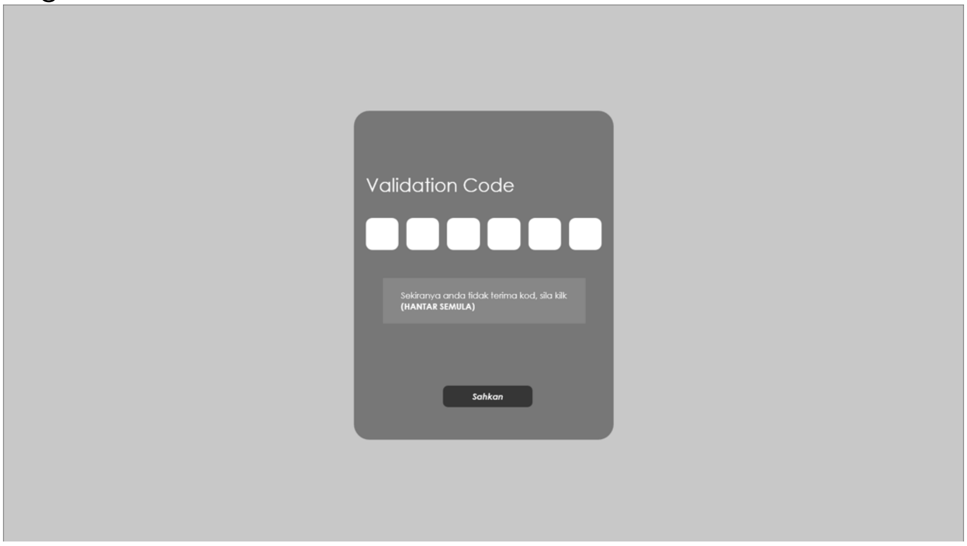


Figure 5.2:2: Wireframe for LEA verification

3. Login as Super User/HOD/Analyst/Administrator/Others

Figure 5.2:3: Wireframe for Super User, HOD, Analyst, Administrator and Others Login Page

5.3 Requirement & Enhancement

Login	1. Need to select the login method to enter the CMS 2.0 profile as below: • By SMS, by Email and by Telegram 2. Login Email input checking by domain name • LEA: @*.gov.my • NID: @irc.org.my

	• Also included checking whitelisted domain name email address configured in Administrations -> Domain Management. Refer to Domain Management (page 48) 3. Logged on session ID • Will be kept on DB instead of session storage (to avoid spoof) • To check user role • Will be created based on combination of username, browser type & IP address o Any changes of those 3 parameters will require user to re-authenticate • Session expiry: o NID: 30 days o LEA: 4 hours • Token expiry: o SMS/Telegram: 5 minutes • If session ID is invalid, delete record in DB as well 4. No validation needed in updating personal profile 5. User able to access. • Own performance information only • Own statistical information to improve their weakness. • Generic statistical information 6. Login activities is recorded as per audit specification in Table 12.2:1 (page 161)

Table 5.3:1: Requirement & Enhancement for Login Page

5.4 Session Management

1. User Open CMS Web

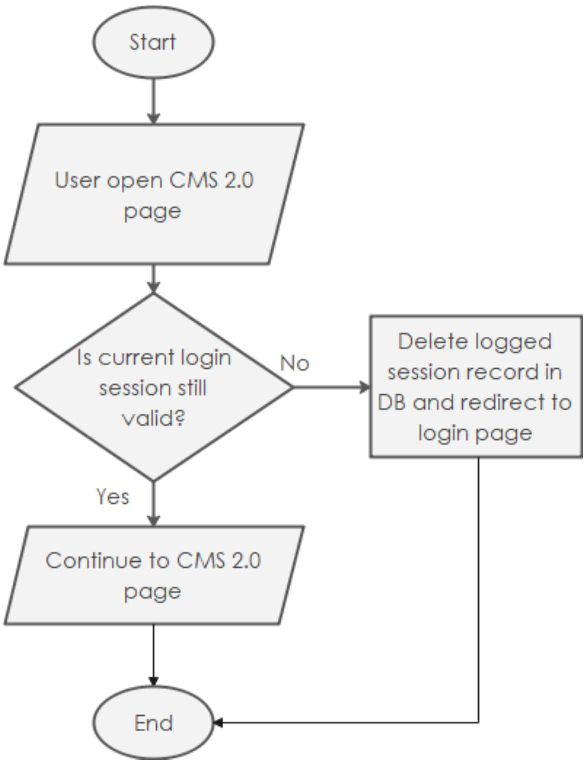


Figure 5.4:1: Flowchart to Open CMS web

2. User Successfully Login

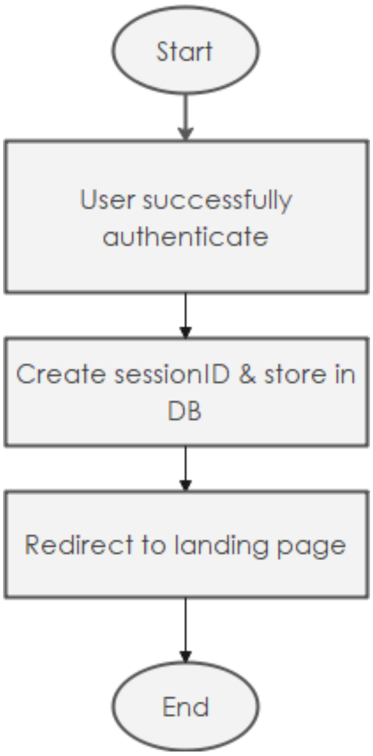


Figure 5.4:2: Flowchart Login to CMS web successfully

❖ Remark

User Session	Timestamp	Note
NID Session ID TTL	**30 days**.	• Once Session ID is invalidated, the record in the database will be deleted as well. • Will be created based on combination of username, browser type & IP address. Any changes of those 3 parameters will require user to re-authenticate
LEA Session ID TTL	**4 hours**.	

Table 5.4:1: User Session ID Reference

5.5 Two Factor Authentication

5.5.1 2FA Flowchart

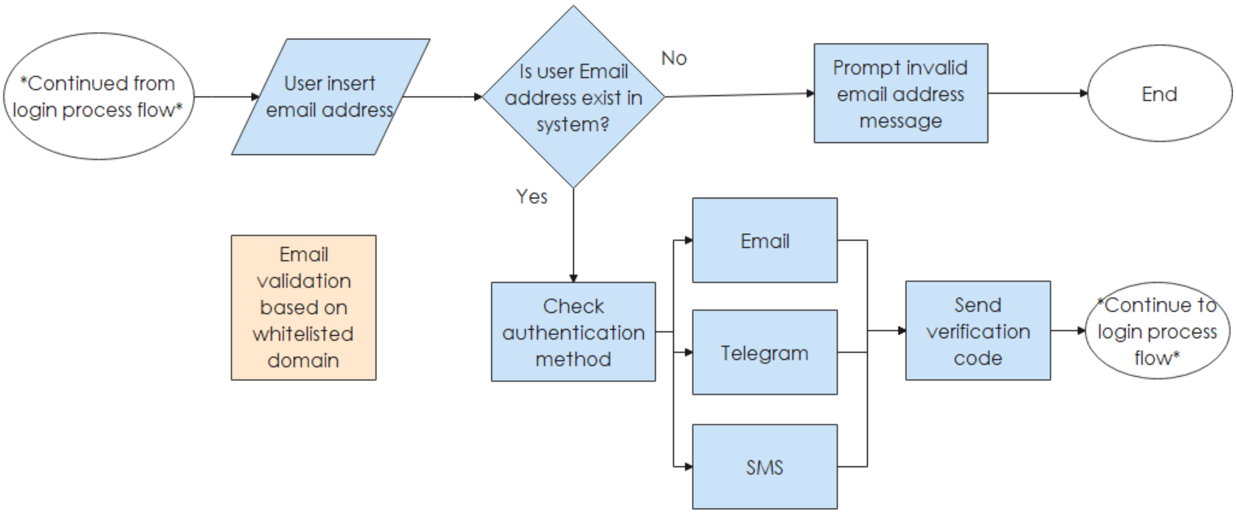


Figure 5.5:1: User login authentication method option

❖ Flowchart Description
There is 3 method of authentication code will be sent to. Which is by email, SMS, and Telegram. By default, the code will be sent to user's registered email. Authentication code will be expired within 5 minutes.

Authentication Method	Description
Email	Default and non-configurable
SMS	Configurable in user profile
Telegram	Configurable in user profile

Table 5.5:1: Authentication Method

❖ Remark:

Input only for email that contain the following domain matches:

- @*.gov.my
- @irc.org.my
- And whitelisted domain email configured in Administrations > Domain Management page (page 48)

6 Law Enforcement Agency (LEA)

6.1 Sitemap

Menu	Sub menu	Content Page

Dashboard		• Jumlah Kes dihantar
		  ○ Bulan
		  ○ Tahun
		• Carta Kesalahan bulanan
		• Carta status kes bulanan
		• 5 Kes terbaharu berdasarkan media sosial
		• 5 Kes terbaharu berdasarkan MNTL

Permohonan Kes	MNTL	• Senarai Carian MNTL • Permohonan Baru
	Media Sosial	• Senarai Permohonan • Permohonan Baru
	Penyekatan	• Senarai Permohonan • Permohonan Baru
Statistik		• Kes Dihantar • Kes mengikut Status • Kes Selesai Berdasarkan Tempoh Masa • Kes Mengikut Jenis Media Sosial • Kes Mengikut Tagging Kesalahan • Kes Mengikut Jenis Akta **NOTE** Will be displayed in Monthly and Yearly
Profil	Tentang CMS2.0	
	Garis Panduan	
	Lihat Profil	Kemaskini Profil
	Log Keluar	

Table 6.1:1: Sitemap for LEA

6.2 Dashboard

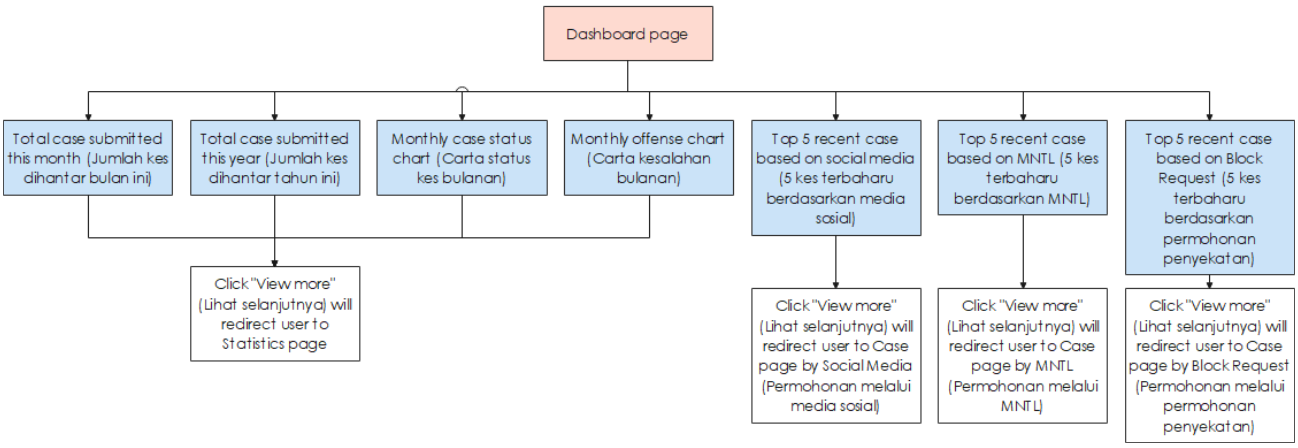


Figure 6.2:1: Overview of Dashboard Page

- Description
  1. To create Dashboard for LEA as a summary review on the current status.
  2. The Dashboard contains:
     a. Display Total Number of Yearly Case. Parameter Specification:

Parameter	Description
Total case this year	• Will show the sum of created case for current year. • Type: number

b. Display Total Number of Monthly Case. Parameter Specification:

Parameter	Description
Total case this month	• Will show the sum of created case for current month. • Type: number

c. Display Total Number of Today's Case. Parameter Specification:

Parameter	Description
Total case today	• Will show the sum of created case for current date. • Type: number

d. Display Monthly Analytics Status Chart (Pending Case, Closed Case, Rejected Case, etc. Sample of chart as below:

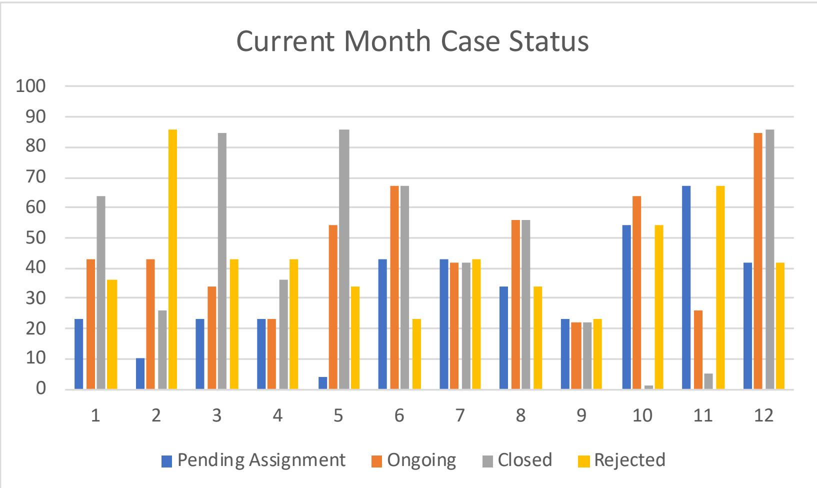


Figure 6.2:2: Sample monthly analytics status chart

- Description
  - To show monthly record and default is current month.
  - Show status ([pending assignment/ongoing/closed/rejected) vs date chart.
  - Have "more" hyperlink. Once clicked, it will navigate to Statistic page.
  - Parameter Specification

Parameter	Description
Case status: Pending assignment	• Will show current value of cases pending assignment to analyst

Case status: Ongoing	• Will show monthly sum value of cases already assigned to analyst and the investigation is still ongoing Type: number
Case status rejected	• Will show monthly sum value of status rejected • Type: number
Case status closed	• Will show monthly sum value of status closed • Type: number

e. Display Monthly Case by Act Chart. Sample of chart as below:

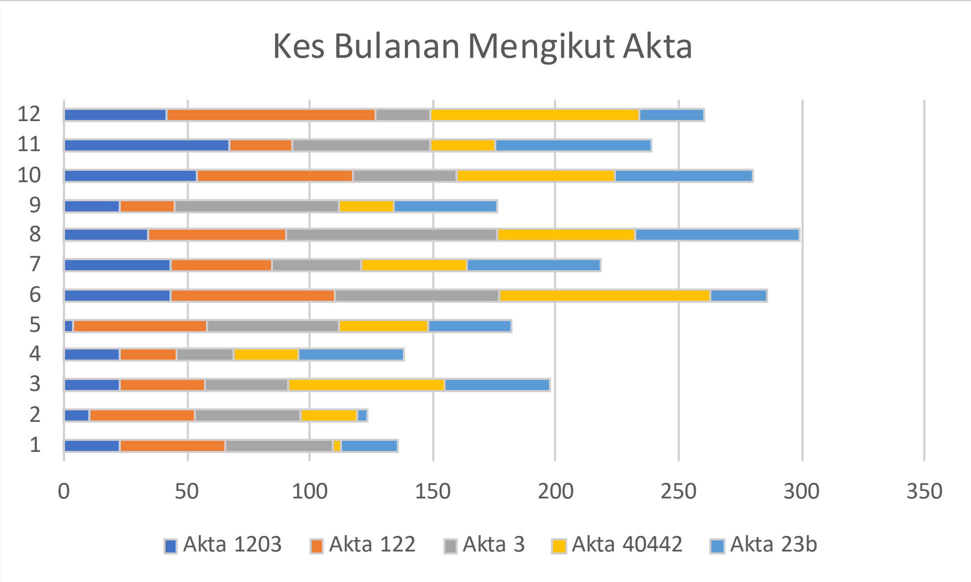


Figure 6.2:3: Sample of monthly case by act chart

- Description
  - To show monthly record.
  - Show case number by offence type line chart.
  - Have "more" hyperlink. Once clicked, it will navigate to Statistic page.
  - Parameter Specification

Parameter	Description
Case by act	• Will show monthly cases by offence type • Type: number

f. Senarai Permohonan Media Sosial Terbaru

- Description
  - To show top 5 of latest record from cases page (social media only)
  - Have hyperlink "more". Once clicked, it will navigate to Case list page by social media.
  - Parameter Specification

Parameter	Description

Date Submitted	• Will show the date case created. Type: DATETIME
Case No	• Will show the case revision number. Type: string
Case Summary	• Will show the case summary. Type: string
Status	• Will show the status of case. Type string

g. Senarai MNTL Carian Terbaru

- Description
  - Only visible for user who can access MNTL functions.
  - Will show top 5 of latest record from cases page (MNTL only)
  - Have hyperlink “more”. Once clicked, it will navigate to Case list page by MNTL.
  - Parameter Specification

Parameter	Description
Phone Number	• Will show the phone number. • Type: String
Telco Name	• Will show the telco name. • Type: String
Contact Name	• Will show the phone number owner name. • Type: string

h. Senarai Permohonan Penyekatan

- Description
  - To show top 5 of latest record from cases page (blocking request only)
  - Have hyperlink “more”. Once clicked, it will navigate to Case list page by blocking request.
  - Parameter Specification

Parameter	Description
Date Submitted	• Will show the date case created. Type: DATETIME
Case No	• Will show the case revision number. Type: string
Case Summary	• Will show the case summary. Type: string
Status	• Will show the status of case. Type string

3. Below is sample wireframe for Dashboard:
    a. Dashboard Layout

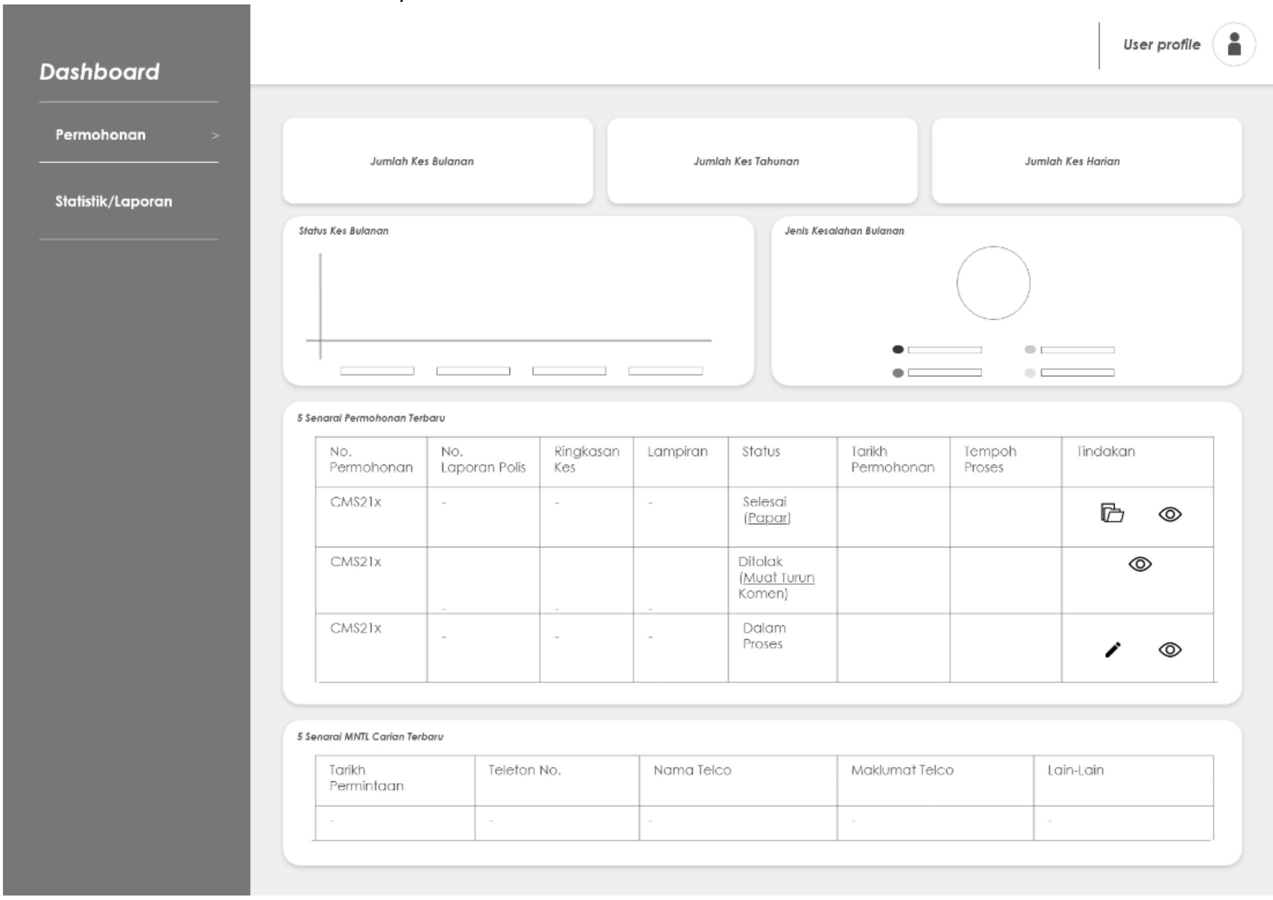


Figure 6.2:4: Dashboard Layout

b. Dashboard with submenu

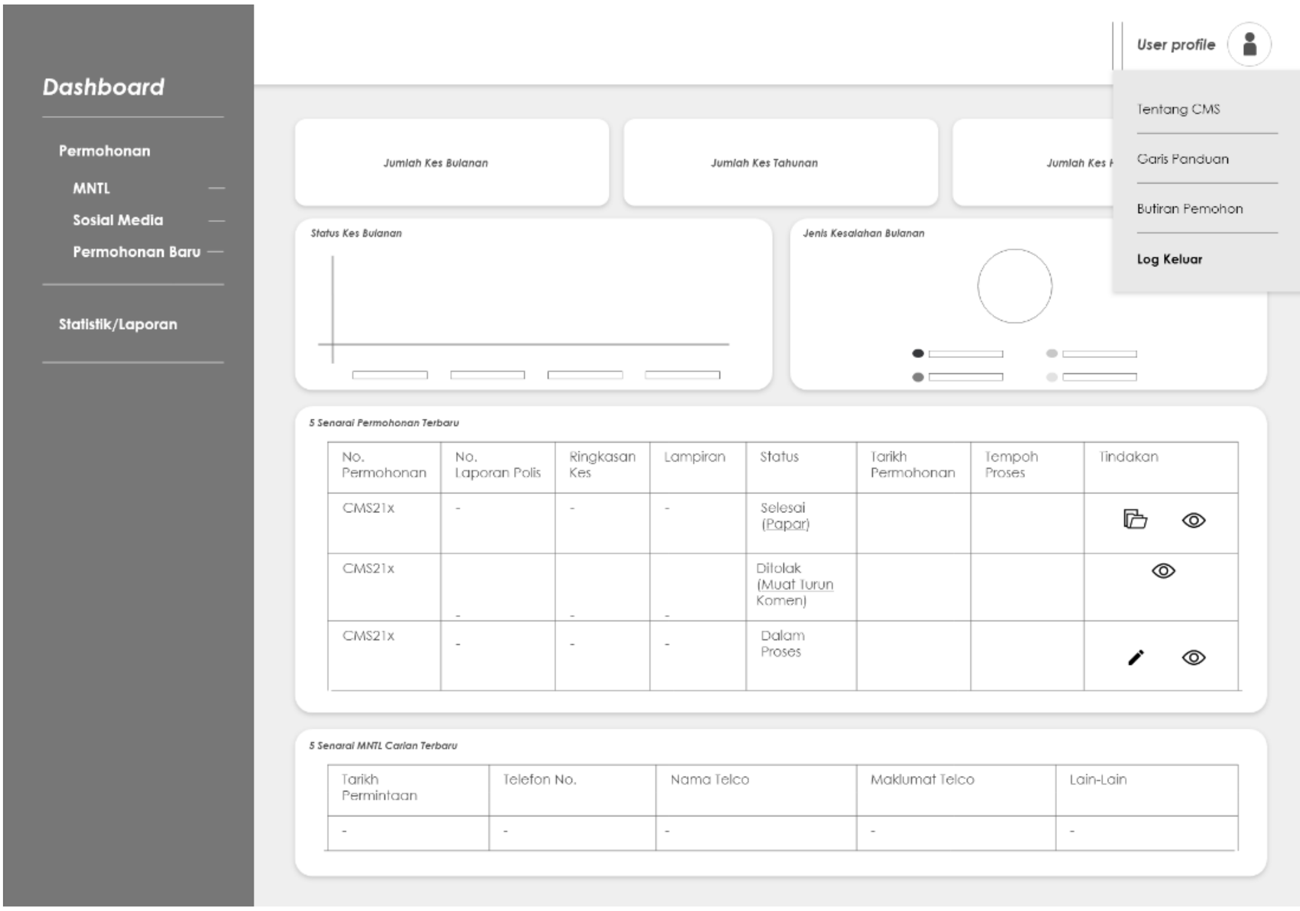


Figure 6.2:5: Dashboard with submenu

6.3 Permohonan Kes

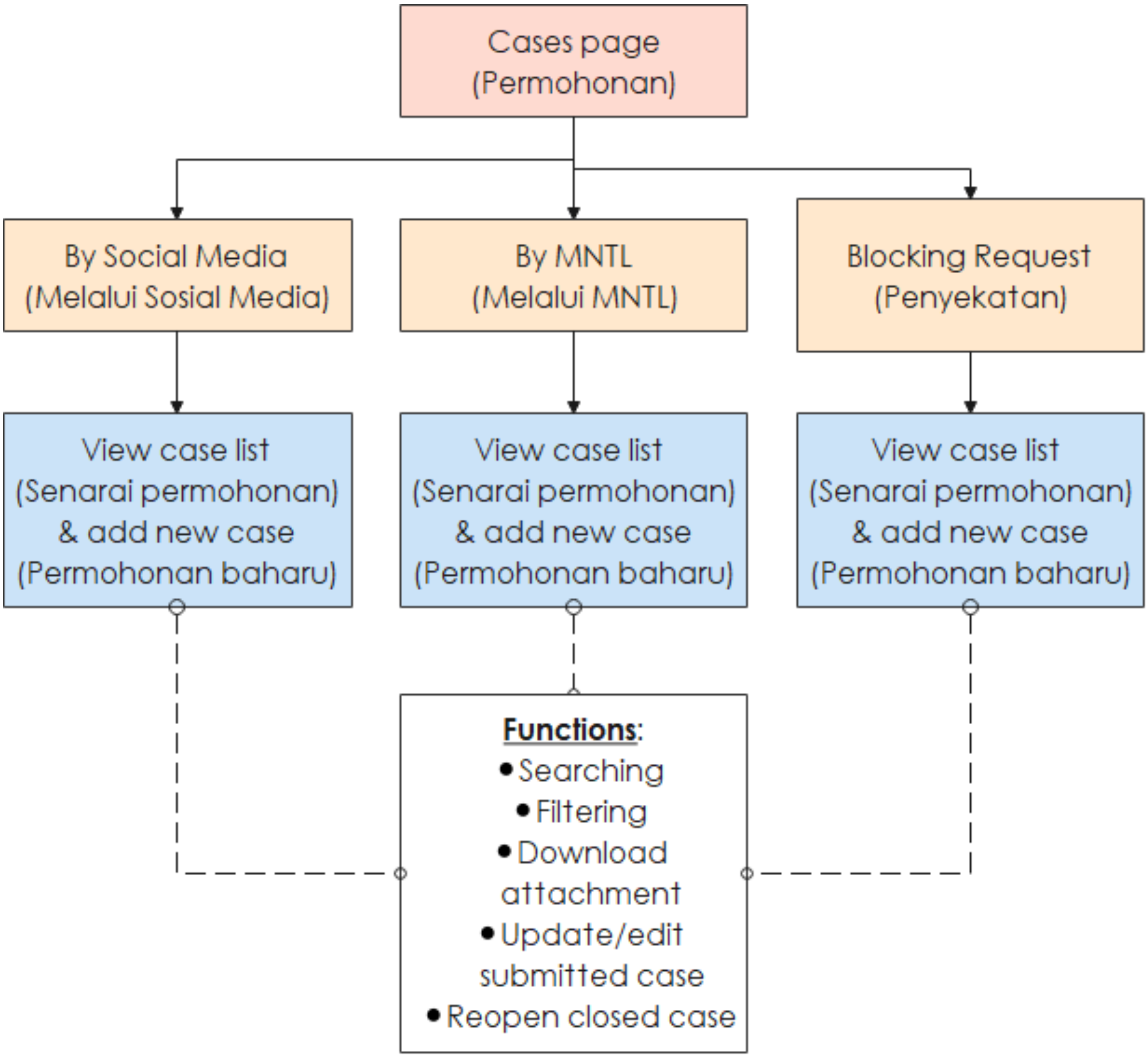


Figure 6.3:1: Overview of Case Page

6.3.1 MNTL

1. Senarai Carian MNTL
   - Show historical search list for less than or equal to 90 days
   - Search by:

Input Field	Requirements
Phone number	- country code

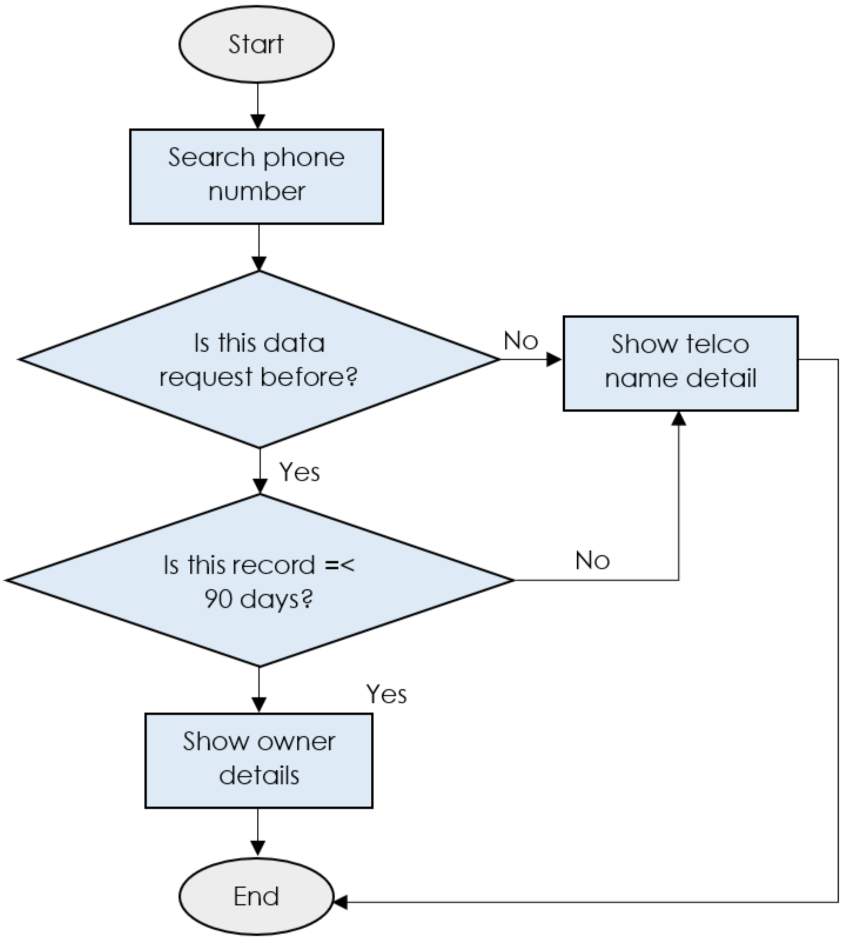


Figure 6.3:2: Phone Number Search Flow

- Description

  The beginning of the process started with the searching of the phone number. When the phone number requested from MNTL system was not found from the previous case, the telco name and contact information will be shown.

  Else if the phone number is existed in the system, the system will filter result that less than or equal to 90 days only. If it is true, owner details and case report number data will show as table below. If the filtered data is exceeded three months, the telco name details will be show.

  If phone number is not requested before in the system, the search list is show as table below:

Tarikh Permintaan	Telefon No.	Nama Telco	Maklumat Telco	Lain-lain
-	-	-	-	-

Column	Description
Tarikh Permintaan	The date request of the phone number from MNTL
Nombor Telefon	The phone number request from MNTL
Nama Telco	The Telco Name get from the MNTL search record

Maklumat Telco	The contact information gets from the MNTL search record
Lain-lain	Any additional information from MNTL
Remarks: 1. Latest search data should display on the top of list.	

Table 6.3:1: Search List of Phone Number not Requested Before

Else if phone number is existed in the system; the search list is show as table below:

Telefon No.	Telco	Nama	IC / Passport	Alamat	Tarikh Didaftarkan	Status	Tarikh Dibuat	Tarikh Selesai	Hari yang Diambil
-	-	-	-	-	-	-	-	-	-

Column	
Telefon No.	The phone number of the owner
Telco	The telco name of the phone number owner
Nama	The full name of the phone number owner
IC/ Pasport	The IC/Passport number of the phone number owner
Alamat	The address of the phone number owner
Tarikh Didaftarkan	The activation date of phone number
Status	The phone number latest status. Eg: Active or Terminated
Tarikh Dibuat	The date of MNTL created
Tarikh Selesai	The date of MNTL processing completed
Hari yang Diambil	Days taken for the report case to close
Remarks: 1. Latest search data should display on the top of list.	

Table 6.3:2: Search List of Phone Number Existing in the System

2. Permohonan Baru MNTL

Parameter	Enhancement
Pilihan Mengisi	• ‘Bagi Pihak’ or ‘Diri Sendiri’. • If choose ‘bagi Pihak’, need to key in field ‘No Telefon’ and ‘Email’ for that IO.
No. Laporan Polis	• Mandatory to key in either one (1). • *No Laporan Polis*: - Must be in unique number. - Not allow to have same number
No. Kertas Siasatan	
No. TP	• Optional input for this TIPOFF number
Phone No.	• Required input for phone number
Telco Name	• Read only • Auto generated after enter phone number
Date 1	• Optional input for Date 1
Date 2	• Optional input for Date 2
Remarks: 1. To add guideline as a reference for LEA how to key in for each field. 2. If the form is request on behalf of IO, the staff need to key in email and phone number for that IO. Only official email address allows to key in (. gov.my). 3. Other scenario, if case closed, but IO received new information for the case, it can re-open, only key in related information by referring the same case.	

Table 6.3:3: Enhancement for Permohonan Baru MNTL

6.3.2 Sosial Media

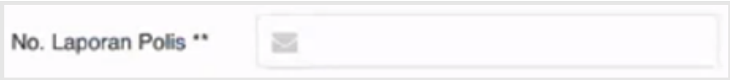
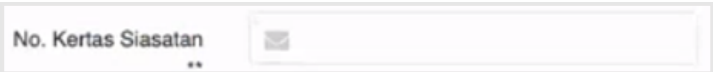
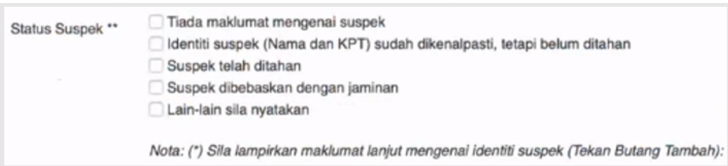
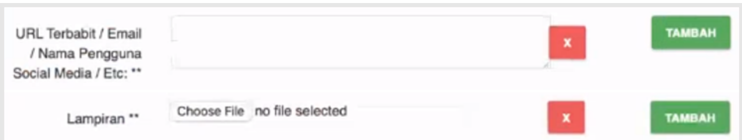
1. Senarai Permohonan

No. Permohonan	No. Laporan Polis	Ringkasan Kes	Lampiran	Status	Tarikh Permohonan	Tempoh Proses	Tindakan
CMS21x	-	-	-	Selesai (Papar)	-	-	
CMS21x	-	-	-	Ditolak (Muat Turun Komen)	-	-	
CMS21x	-	-	-	Dalam Proses	-	-	

Column	Requirement Enhancement
Status	To add 'Papar' or 'Download' button under status 'Closed'
	Comment can be downloaded or view under status 'Rejected' in a system (pdf).
Tindakan	Legend: Buka Semula Kes Edit Kes Lihat Butiran Kes
Remarks: 1. Latest data should display on the top of list. Maintain unique number: CMS21 (year)1(running number)	

Table 6.3:4: List of Table for Social Media

2. Permohonan Baru Media Sosial

Existing Parameter	Enhancement
Pilihan Mengisi	• ‘Bagi Pihak’ or ‘Diri Sendiri’. • If choose ‘bagi Pihak’, need to key in field ‘No Telefon’ and ‘Email’ for that IO.
No Laporan Polis  	• Mandatory to key in either one (1). • *No Laporan Polis*: - Must be in unique number. - Not allow to have same number
No Kertas Siasatan  	
Kesalahan  	• Allowed to add multiple kesalahan • Check suggested kesalahan from guidelines by clicking on the icon displayed.
Ringkasan Kes  	Limit the input text length to 2000 characters
Status Suspek  	• Dropdown option to choose ‘Suspek’ and ‘Saksi’. • If choose ‘Suspek’ requirement as below: - Optional will be display and allowed to choose multiple - Each option can add ‘IC’ and ‘Name’.
URL Terbabit/Email/ Nama Pengguna Social Media/Etc.  	• Insert placeholder in URL input field. E.g.: https://www.Facebook.com/azmi.mohd.8/ • Uploading Features: - Separate each type of uploading input, sample as:

<table>
<tr>
<td></td>
<td>
URL Terbabit / Email / Nama Pengguna Sosial Media / Etc. | Surat Rasmi :* | Muatnaik
Laporan Polis : | Muatnaik
URL :
+

- Compulsory to upload Surat Rasmi & Screenshot if added Naming that is not URL
- Optional to upload ‘Report Polis’
- Allow attachment in the following format
  - PDF/PNG/JPEG/JPG
- Maximum can key in for URL is fifteen (15), if required to add more, create the new form with refer on the same case number
- 5 URLs handled by one Analyst
</td>
</tr>
<tr>
<td>
Tujuan Permohonan

Tujuan Permohonan ** | * Sila tandakan yang berkenaan
☐ Mengenalpasti pengendali akaun / laman sosial / laman web
☐ Mohon maklumat terus daripada Facebook /Twitter / etc:
☐ Maklumat lain, sila nyatakan :
</td>
<td>
• Allowed to select multiple related option
• Remove option ‘Mohon maklumat terus daripada Facebook/Twitter/etc’. sample as below:

Tujuan Permohonan: | *Sila tandakan yang berkenaan
☐ Mengenalpasti pengendali akaun/laman sosial / laman web
☐ Maklumat lain, sila nyatakan :
</td>
</tr>
<tr>
<td colspan="2">
Remarks:
1. To add guideline as a reference for LEA how to key in for each field.
2. If the form is request on behalf of IO, the staff need to key in email and phone number for that IO. Only official email address allows to key in (. gov.my).
3. Other scenario, if case closed, but IO received new information for the case, it can re-open, only key in related information by referring the same case.
</td>
</tr>
</table>

Table 6.3:5: List of Requirement needed for Social Media Permohonan Baru

6.3.3 Permohonan Penyekatan

Blocking request (Permohonan Penyekatan) is almost similar to Social Media cases (page 74), but with no requirement for suspect or witness.

1. Senarai Permohonan

   Refer case list in Table 6.3:4: List of Table for Social Media (page 74) above.

2. Permohonan Baru

Parameter	**Requirement**
Pilihan Mengisi	• 'Bagi Pihak' or 'Diri Sendiri'. • If choose 'bagi Pihak', need to key in field 'No Telefon' and 'Email' for that IO.
No Laporan Polis	• Mandatory to key in either one (1). • *No Laporan Polis*: - Must be in unique number. - Not allow to have same number
No Kertas Siasatan	
Kesalahan	• Allowed to add multiple kesalahan • Check suggested kesalahan from guidelines by clicking on the icon displayed.
Ringkasan Kes	Limit the input text length to 2000 characters
URL Terbabit/Email/ Nama Pengguna Social Media/Etc.	• Insert placeholder in URL input field. E.g.: https://www.Facebook.com/azmi.mohd.8/ • Uploading Features: - Separate each type of uploading input, sample as:

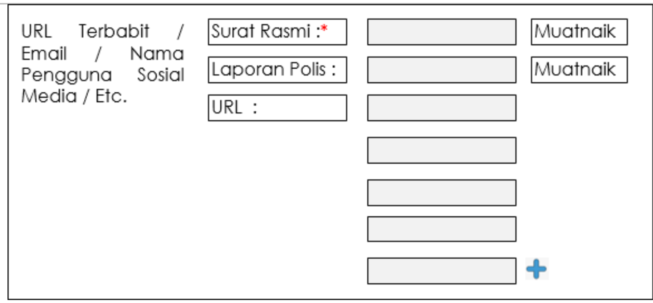
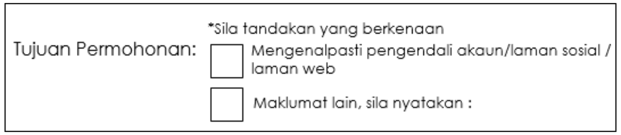
	 - Compulsory to upload Surat Rasmi & Screenshot if added Naming that is not URL - Optional to upload 'Report Polis' - Allow attachment in the following format - PDF/PNG/JPEG/JPG - Maximum can key in for URL is fifteen (15), if required to add more, create the new form with refer on the same case number - 5 URLs handled by one Analyst
Tujuan Permohonan	• Allowed to select multiple related option • Remove option 'Mohon maklumat terus daripada Facebook/Twitter/etc'. sample as below: 
Remarks: 1. To add guideline as a reference for LEA how to key in for each field. 2. If the form is request on behalf of IO, the staff need to key in email and phone number for that IO. Only official email address allows to key in (. gov.my). 3. Other scenario, if case closed, but IO received new information for the case, it can re-open, only key in related information by referring the same case.	

Table 6.3:6: List of Requirement needed for Blocking Request's Permohonan Baru

6.3.4 Flowchart: Buka Semula Kes

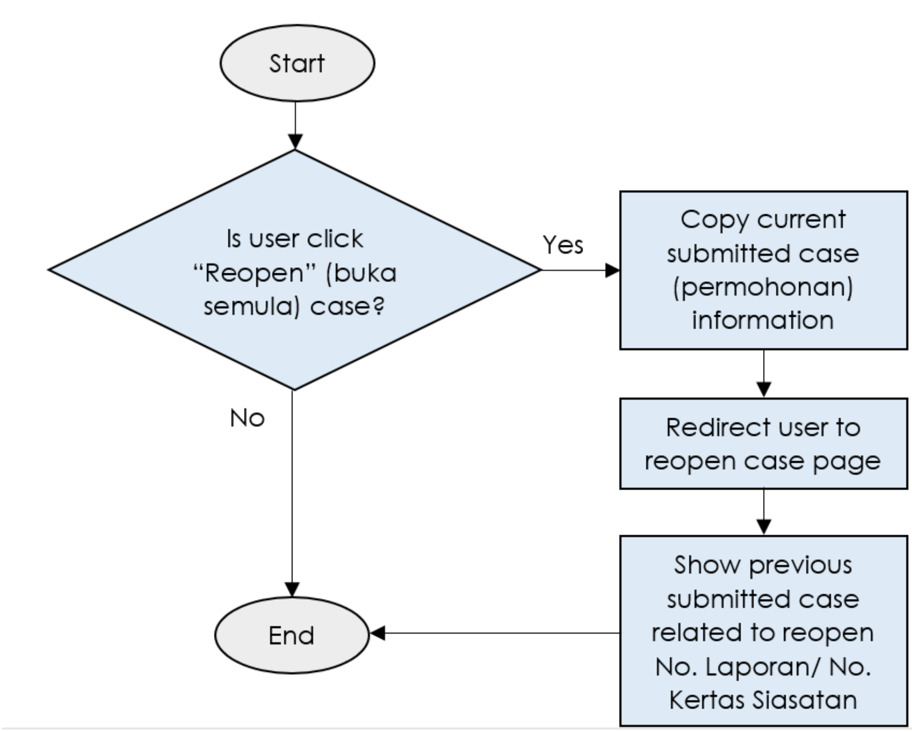


Figure 6.3:3: Flowchart of Re-Open case

6.3.5 Flowchart: Kemaskini Kes

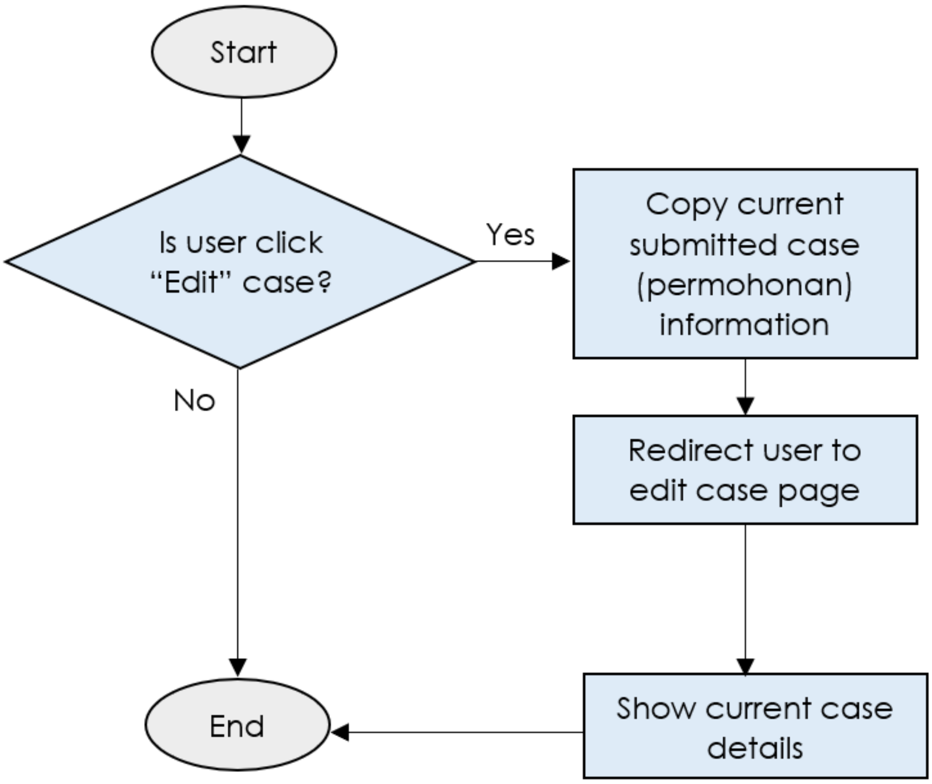


Figure 6.3:4: Flowchart of Update Case

6.4 Statistik

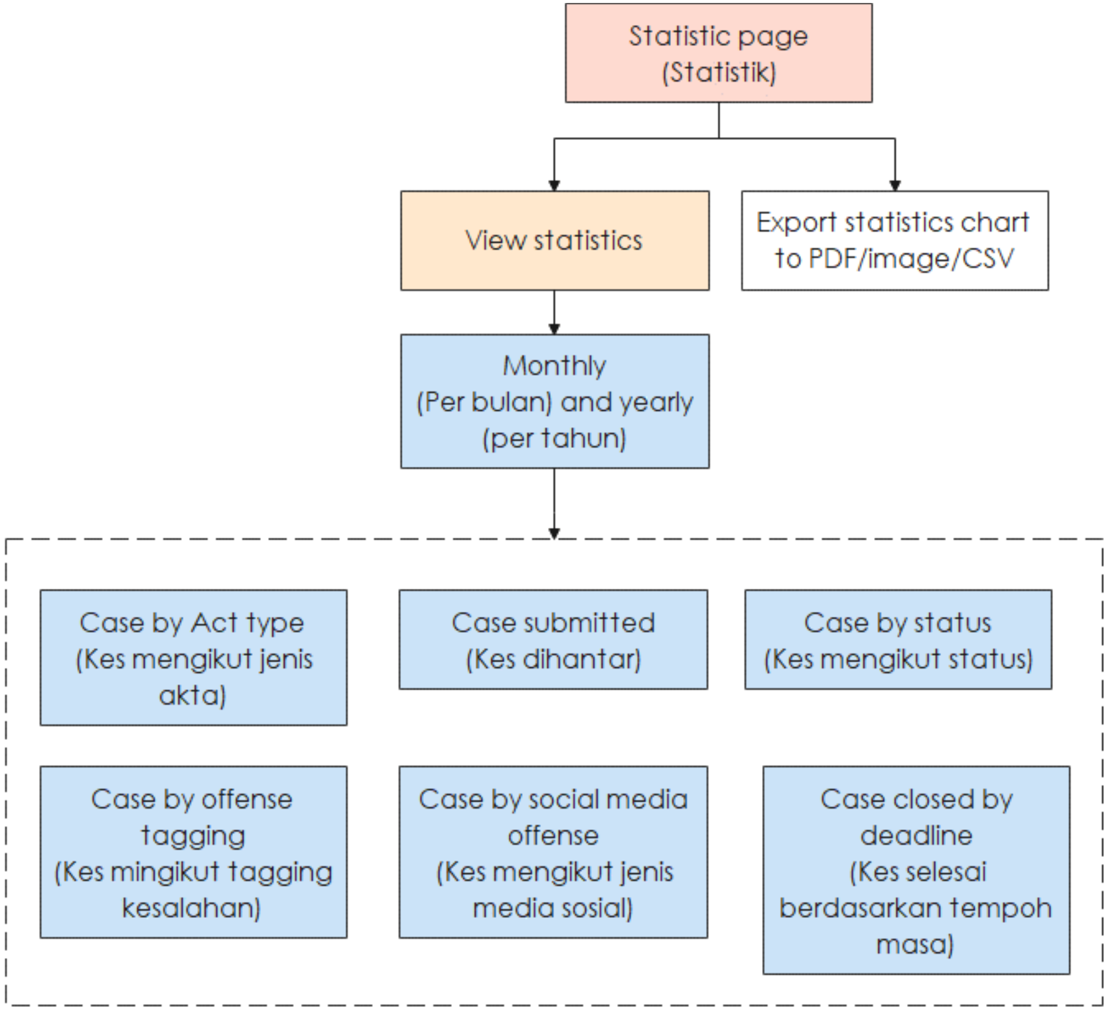


Figure 6.4:10: Overview of statistic page

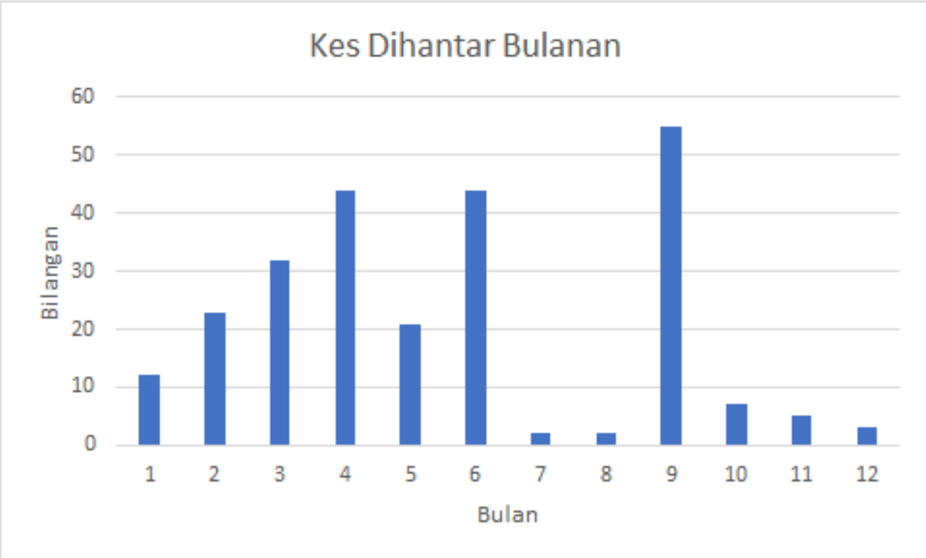
NOTE	LEA only allowed to see their own statistic.

- Below is the list of Statistic will be displayed

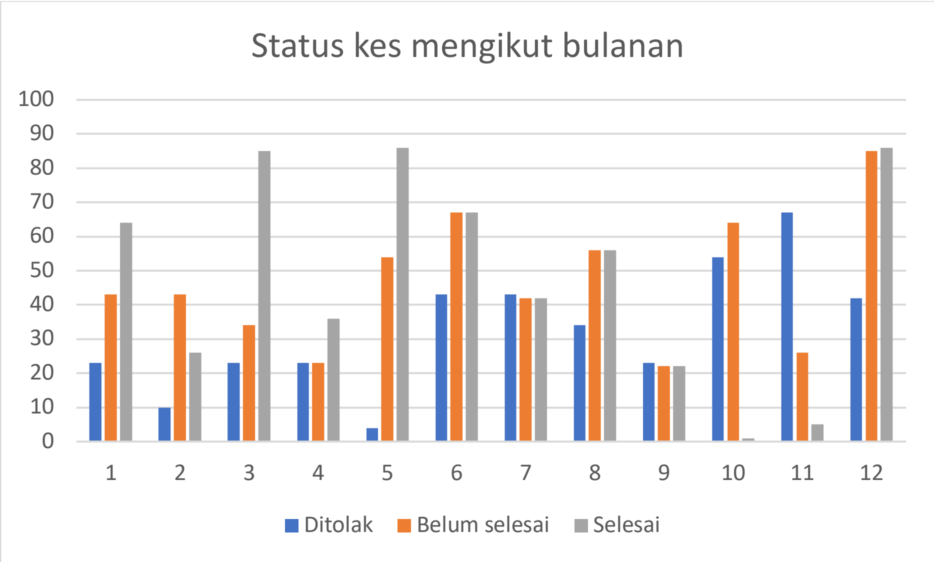
Existing Statistic	Enhancement Statistic
• Kes Dihantar Per Tahun • Kes Dihantar Per Bulan • Kes Dihantar Per Hari	• Jenis Sosial Media • Kes Selesai Dalam Tempoh Masa (within Dateline <14 Day) • Kes Selesai Luar Tempoh Masa (Out of Dateline >14 Day) • Kes Mengikut Status • Kes Mengikut Bulan • Kes Mengikut Tahun • Kes Mengikut Jenis Kesalahan • Kes Kesalahan Mengikut Tagging
NOTE: This existing statistic will be remained with additional new statistic	

Table 6.4:1: List of Existing and New Statistic

a. Kes Dihantar Bulanan

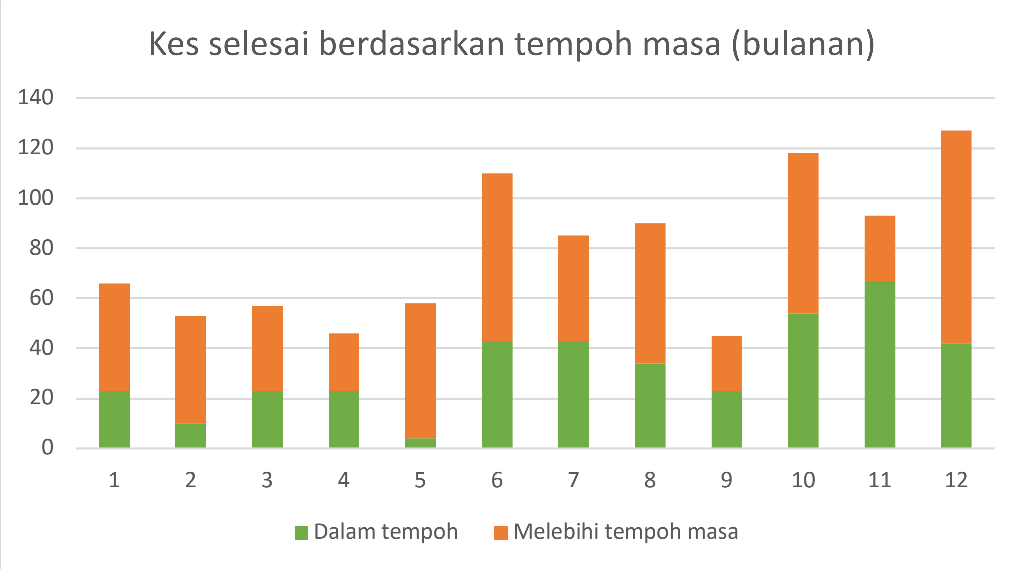


b. Status Kes Mengikut Bulanan



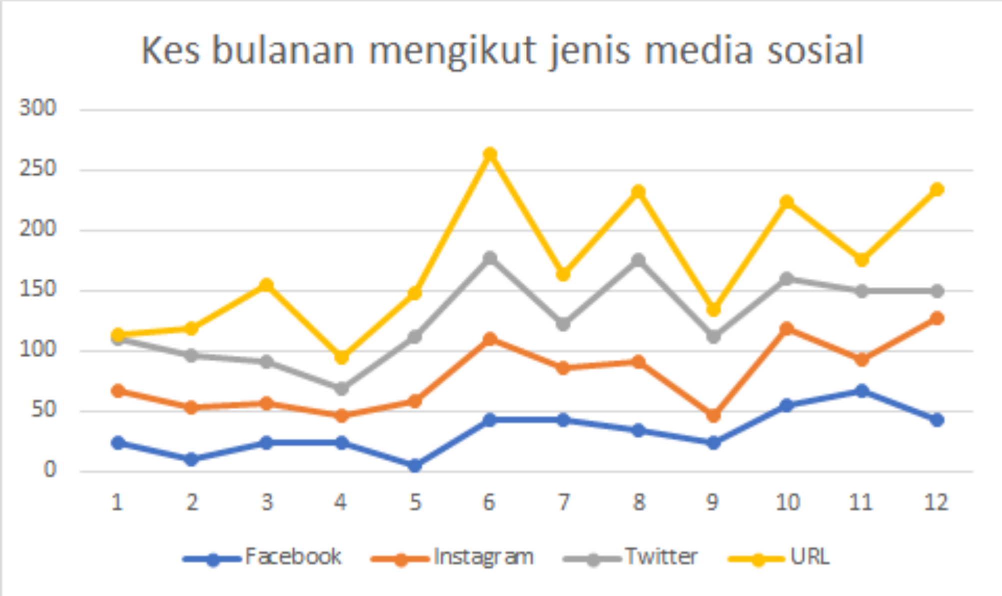
Parameter	Description
Number of Pending	• Number of pending cases by day • Type: Number
Number of Closed	• Number of closed cases by day • Type: Number
Number of Rejected	• Number of rejected case by day • Type: Number

c. Kes Selesai Dalam Tempoh Masa (Within Dateline) (<14 Day) & Kes Selesai Luar Tempoh Masa (Out of Dateline) (>14 Day) (Bulanan)



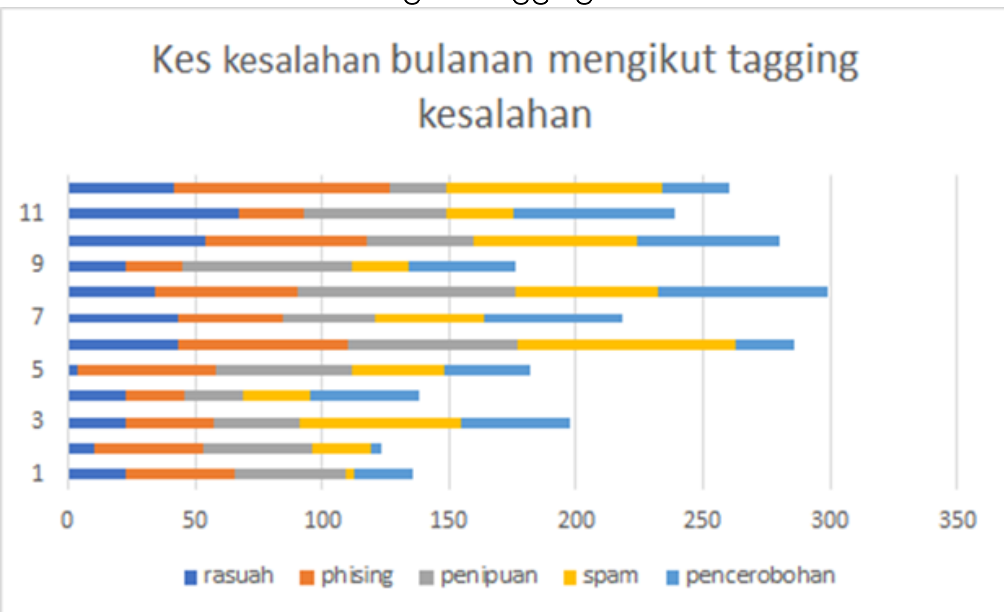
Parameter	Description
Case Closed within deadline	• Number of case closed within deadline by daily/monthly/yearly respectively • Type: Number
Case Overdue from deadline	• Number of case overdue from deadline by daily/monthly/yearly respectively • Type: Number

d. Jenis Sosial Media (Monthly)



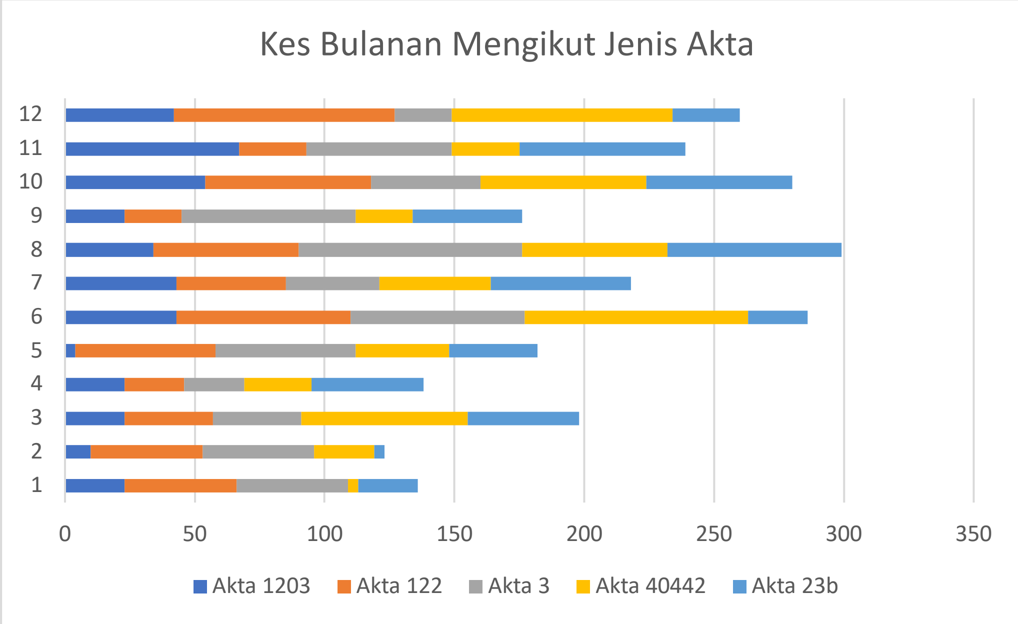
Parameter	Description
Case number based on social media type	• Case number based on social media type by daily/monthly/yearly respectively. • Type: number

e. Kes Kesalahan Bulanan Mengikut Tagging



Parameter	Description
Case number based on tagging	• Case number based on tagging by daily/monthly/yearly respectively. • Type: number

f. Kes Bulanan Mengikut Jenis Akta



Parameter	Description
Case number by act	• Will show up case number based on act types by monthly/yearly

6.5 Profil

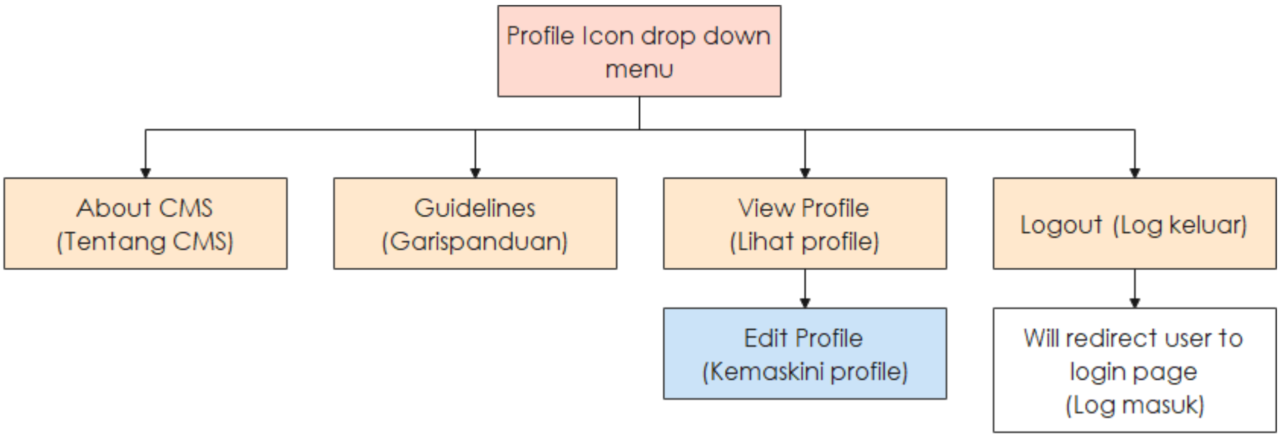


Figure 6.5:1: Flowchart of Profile Picture Menu

Submenu	**Requirement Enhancement**
Tentang CMS	Follow existing introduction
Garis Panduan	User can download through system
Lihat Profil • Kemaskini Profil	Kemaskini Maklumat • Sorting back the appearance data at parameter 'Organisasi', too many duplication data. • No validation to update the profile • Validate on Telegram ID, Phone number and email. • Set Default authorization is **email** and User can choose either one which is by:

	• Telegram • SMS
Log Keluar	User back to Login Page

Table 6.5:1: Requirement needed in Profile

6.6 Use Case Diagram

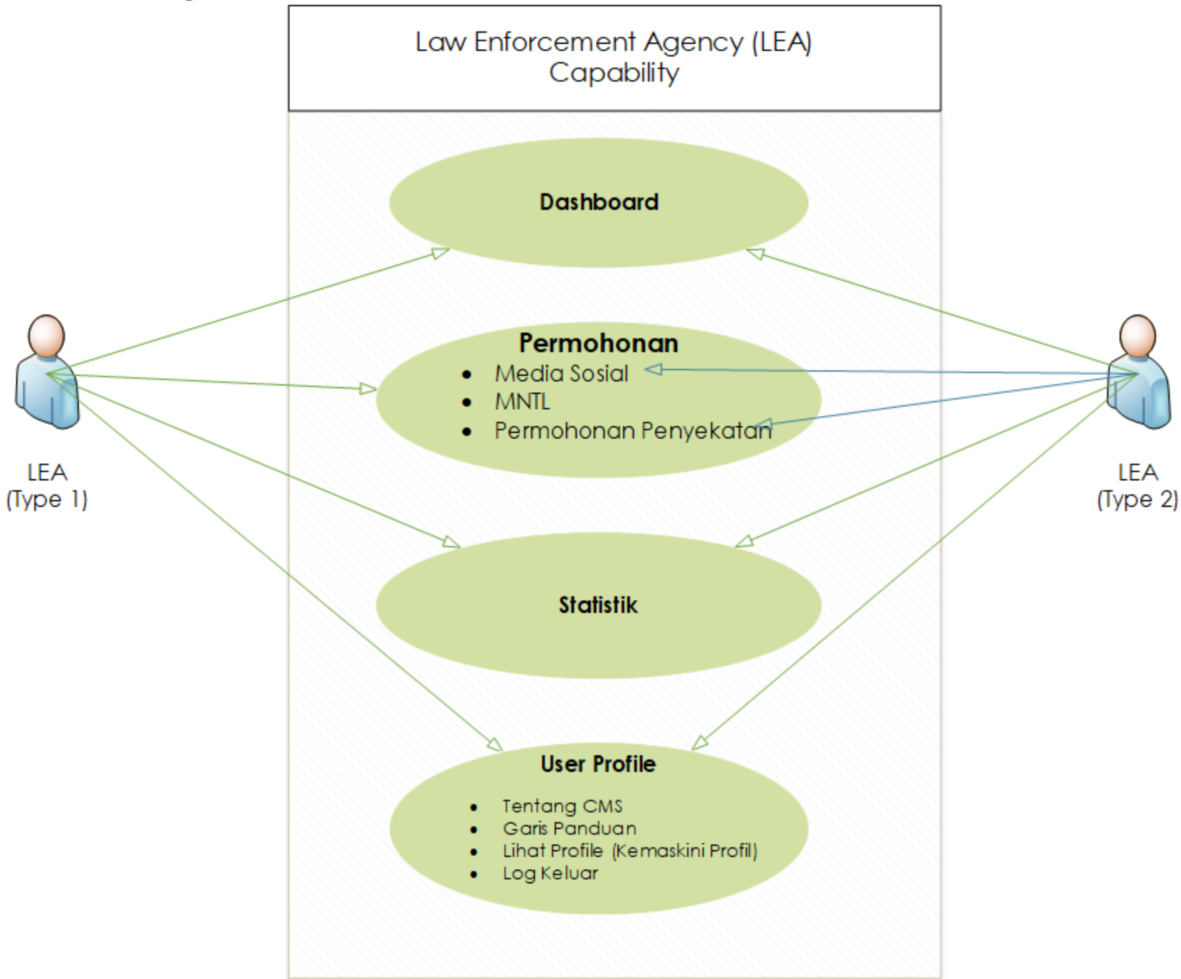


Figure 6.6:1: Use Case Diagram

6.6.1 Use Case Definition

Identifier	Definition
Actors	**LEA Type 1**
Name	Law Enforcement Agency Module
Purpose	1. To do submission on case 2. To view statistic for own profile 3. To update own Profile 4. To know purposed of CMS 2.0
Pre-Condition	Successfully login to CMS 2.0
Description	1. Full access on CMS2.0 which contains: a. Dashboard b. Permohonan • Media Sosial • Senarai Permohonan

	• Permohonan Baru • MNTL • Senarai Carian MNTL • Permohonan Baru • Penyekatan (Blocking Request) • Senarai Permohonan • Permohonan Baru c. Statistik & Laporan d. User Profile • Tentang CMS2.0 • Garis Panduan Profiling • Butiran Permohonan • Log Out
Identifier	**Definition**
Actors	**LEA Type 2**
Name	Law Enforcement Agency Module
Purpose	1. To do submission on case 2. To view statistic for own profile 3. To update own Profile 4. To know purposed of CMS 2.0
Pre-Condition	Successfully login to CMS 2.0
Description	• Certain access to CMS2.0 which is: • Dashboard • Permohonan • Media Sosial o Senarai Permohonan o Permohonan Baru • Penyekatan (Blocking Request) o Senarai Permohonan o Permohonan Baru • Statistik & Laporan • User Profile • Tentang CMS2.0 • Garis Panduan Profiling • Butiran Permohonan • Log Out

Table 6.6:1: Use Case of LEA Type 1 and LEA Type 2

7 Case Management

7.1 Overview

Case management is the module where all cases will be managed (approved/rejected/closed/in process of investigation) by HOD and Analyst by default.

Previously, case management is to manage case and refer the case information. Now, case management will be much easier when user can investigate case from case details by themselves. The improvement will include the case information, view, and configure related suspects and witness information, related cases, also, improved on investigating case flow in this module.

7.2 Access Matrix

Page accessibility	**Analyst**	**HOD**
My Cases	X	
Department cases	X	X
Analyst's cases		X
Case details	X	X
Action can be done	**Analyst**	**HOD**
View case list	X	X
View case list details	X	X
View & upload attached document	X	X
View case history & trail	X	X
Resend email	X	X
Request to adjust deadline	X	
Approve adjust deadline		X
Approve request		X
Reject request		X
Send feedback		X
Update case result	X	X
Assign & reassign analyst		X
Set case priority level		X
Set & adjust case deadline		X
Upload document (PDF, Word, Images-jpeg, jpg)	X	X

Table 7.2:1: Access Matrix for Case Management

7.3 Flowchart

7.3.1 Reopen Case

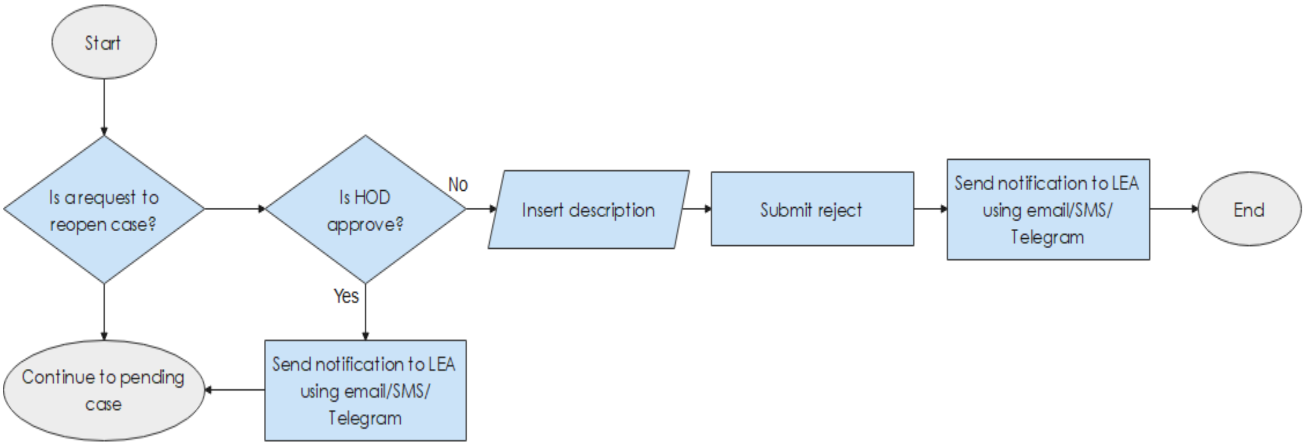


Figure 7.3:1: Flow chart for request to reopen case from LEA to HOD

- Description

  Reopen case will be requested from LEA to HOD.

  The process flow for LEA re-open is once LEA choose to reopen the closed case, the system will copy all information of chosen case, and automatically assign a new case number. They can refer to previous cases on *No. Laporan Polis* (Enquiry Paper) or *No. Kertas Siasatan* (Investigation Paper). LEA can edit/update the reopened case information and submit it.

  Once the case is submitted, it will be HOD role to decide whether to approve or not. If HOD approve this reopen request, the case will be treated as new pending case. HOD needs to assign Analyst, and set priority level, deadline, categories, etc. (for more info, can refer to Pending Case (page 89) section). Else, once HOD reject, the process will be same as Reject Case (page 93) section.

7.3.2 Pending Case

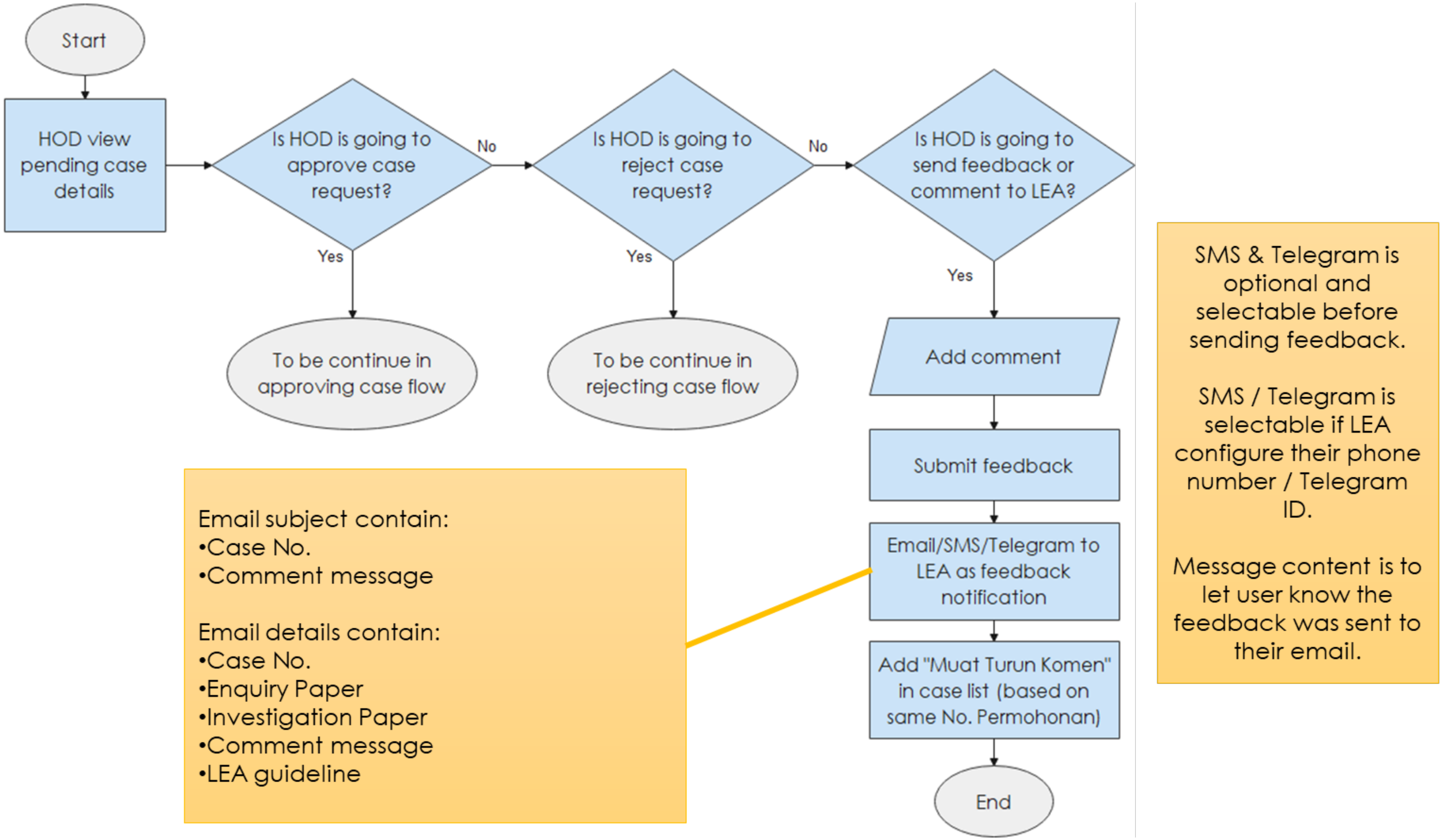


Figure 7.3:2: Flow chart for pending case (new case) for HOD

- Description

  Pending case is an approved reopen case or newly submitted case from LEA to HOD for approval. There is options HOD can perform which is:

Action	Remark
Approve	Refer to section Approve Case (page 91)
Reject	Refer to section Reject Case (page 93)
Send feedback or comment the case request	Send feedback is for HOD to send comment on case requested to LEA. LEA can download the comments on case status in *Permohonan* (Case) page to view the comments and case information

Table 7.3:1: Action by HOD

7.3.3 Approve Case

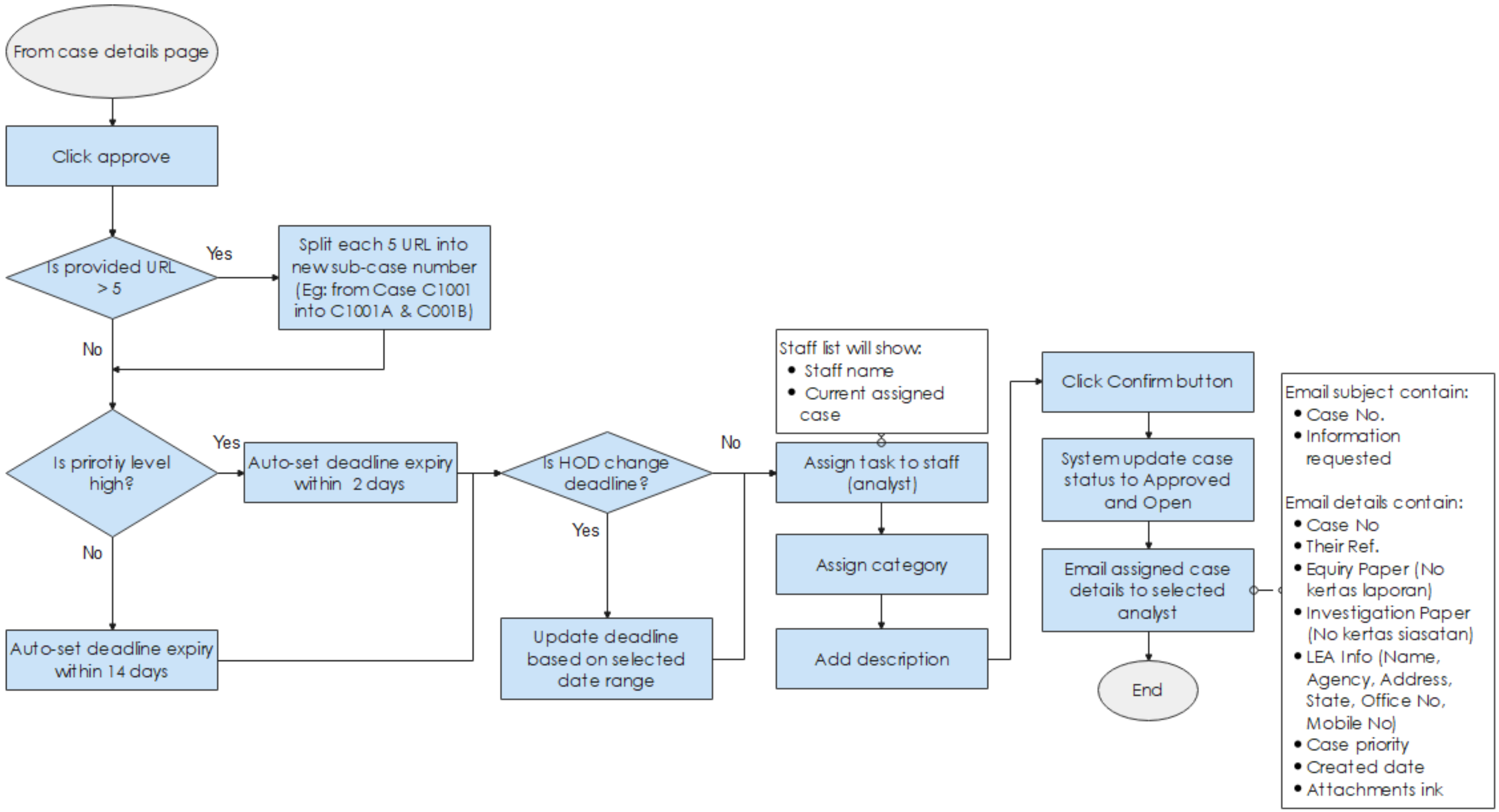


Figure 7.3:3: Flow chart of approval case

- Description

Case approval is the process where the case status will be changed from "Pending" to "Approved" and open, case assigned to analyst and then, they will start the process of investigation.

Prior to HOD approval of the case, system will check on number of URL provided by the user. Up to a maximum of 15 URLs can be added for a single case, with the initial group of 5 URLs is displayed by default. In the event more than 5 URLs are submitted, the case will be split into multiple case numbers, with a maximum of 5 URLs per case number. Each case number can be assigned to separate analyst and can be investigated & closed independently.

Example:

Condition	Before Approve	After Approved
Case that will create new sub-case	Case No: **C1001** Case details 1. Provided URL: a. https://www.instagram.com/fazley13/ b. https://www.instagram.com/fazley14/ c. https://www.instagram.com/fazley15/ d. https://www.instagram.com/fazley16/ e. https://www.instagram.com/fazley17/ f. https://www.instagram.com/fazley18/ g. https://www.instagram.com/fazley19/ 2. Other case information	Case No 1(sub-case): **C1001(A)** Case details 1. Provided URL: a. https://www.instagram.com/fazley13/ b. https://www.instagram.com/fazley14/ c. https://www.instagram.com/fazley15/ d. https://www.instagram.com/fazley16/ e. https://www.instagram.com/fazley17/ 2. Other case information Case No 2(sub-case): **C1001(B)** Case details 1. Provided URL: a. https://www.instagram.com/fazley18/ b. https://www.instagram.com/fazley19/ 2. Other case information
Case that did not create sub-case (URL number less than 5)	Case No: **C1002** Case details 1. Provided URL: a. https://www.instagram.com/izaraaishahofficial/ b. https://www.instagram.com/fazley14/ 2. Other case information	Case No: **C1002** Case details 1. Provided URL: a. https://www.instagram.com/izaraaishahofficial/ b. https://www.instagram.com/fazley14/ 2. Other case information

Table 7.3:2: Example of case and new sub-case creation from case approval process

7.3.4 Reject Case

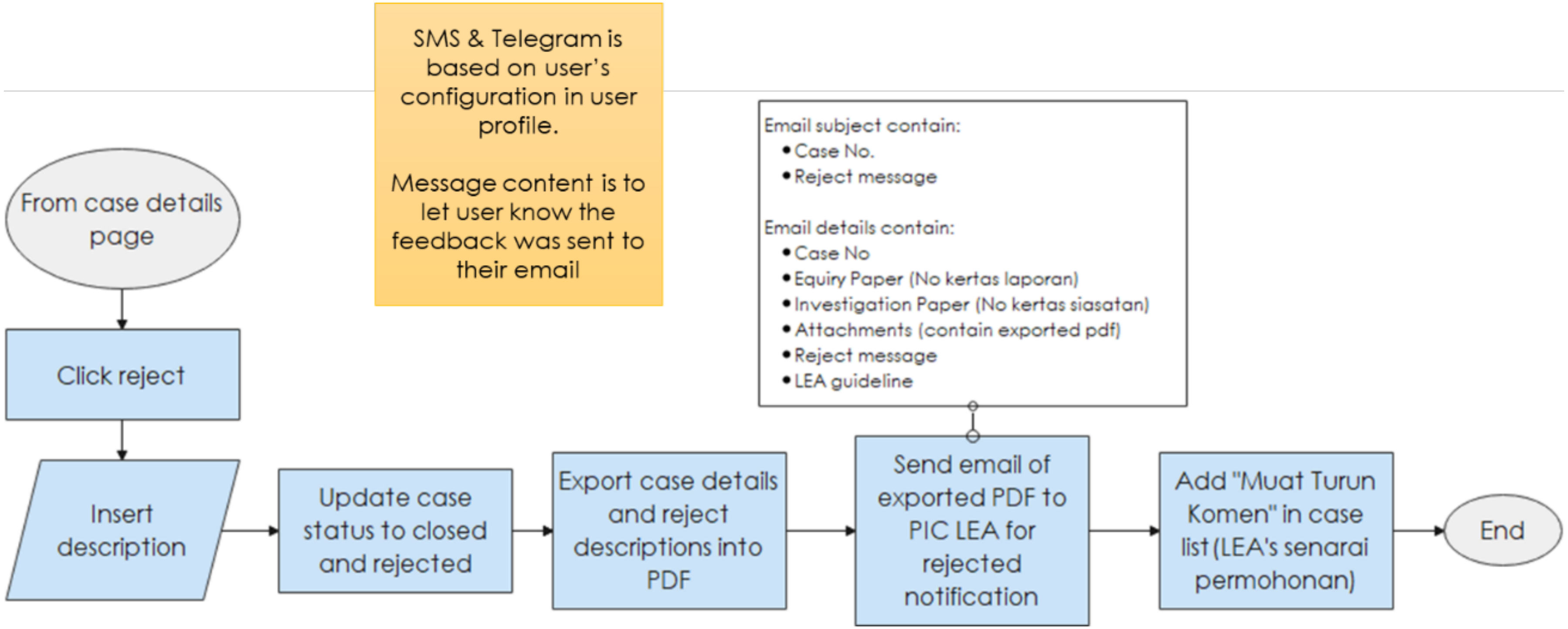


Figure 7.3:4: Flow chart of rejected case process by HOD

- Description

Reject case is the process where the case status will be changed from "pending" to "rejected" along with reject notes/description, LEA can see the status in *Permohonan*(Case) page and download the reject info from there.

7.3.5 Update Status

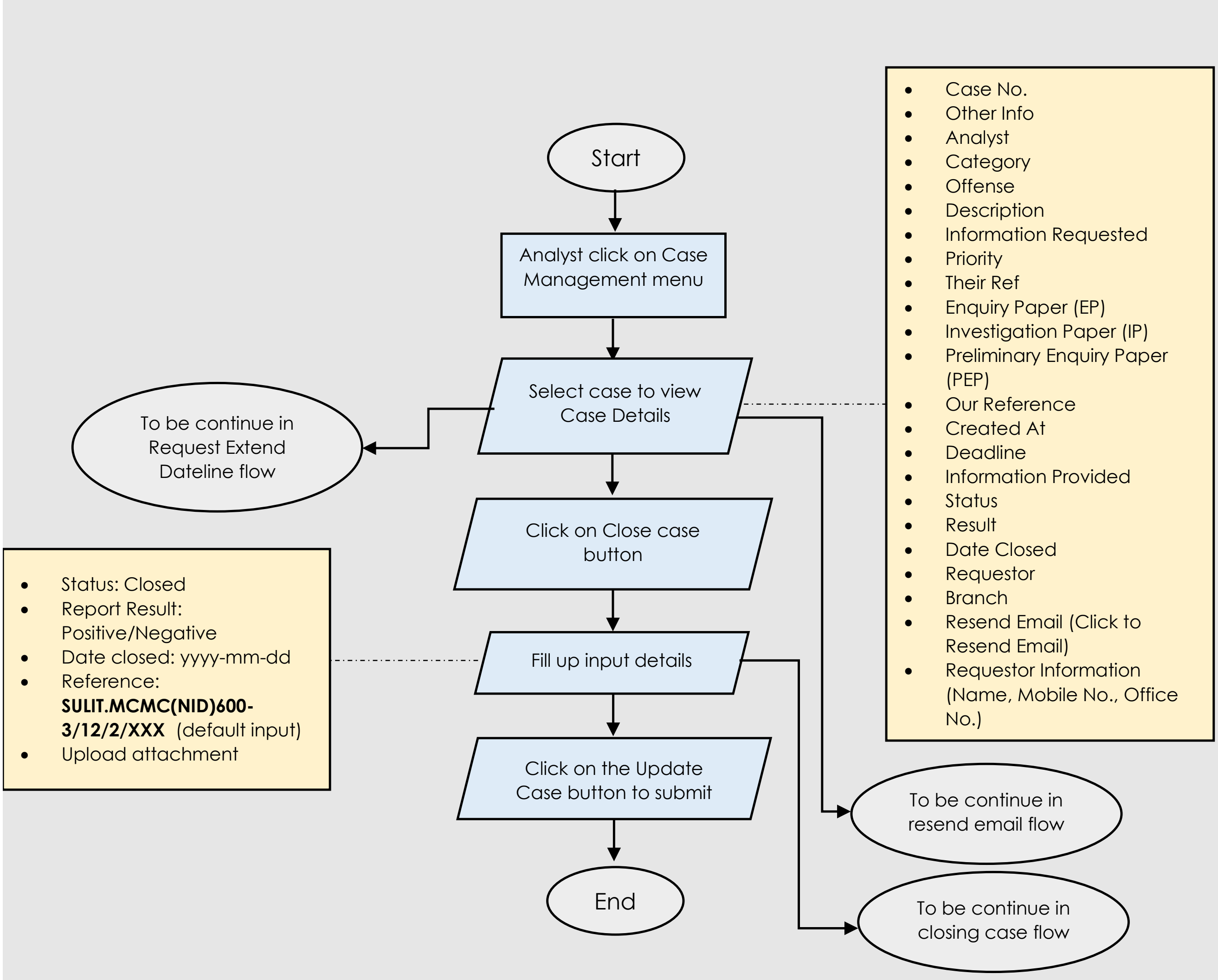


Figure 7.3:5: Flow chart of update status of open case

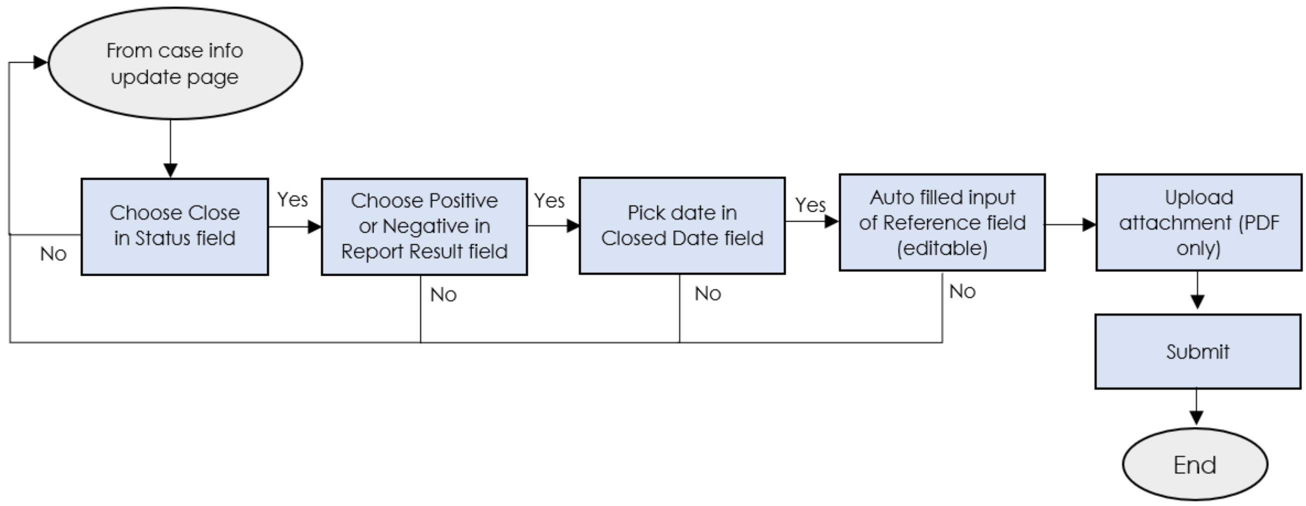


Figure 7.3:6: Update status input field

❖ Description

Once case was assigned to analyst, case status will be approved and open. Update status is needed to close the case and will do after analyst finish their investigations.

Update status of case requires analyst to key in an important detail as report result, date closed, reference and attached documents.

Result Positive	Suspect successfully detected
Result Negative	Suspect fail to detect

7.3.6 Resend Email

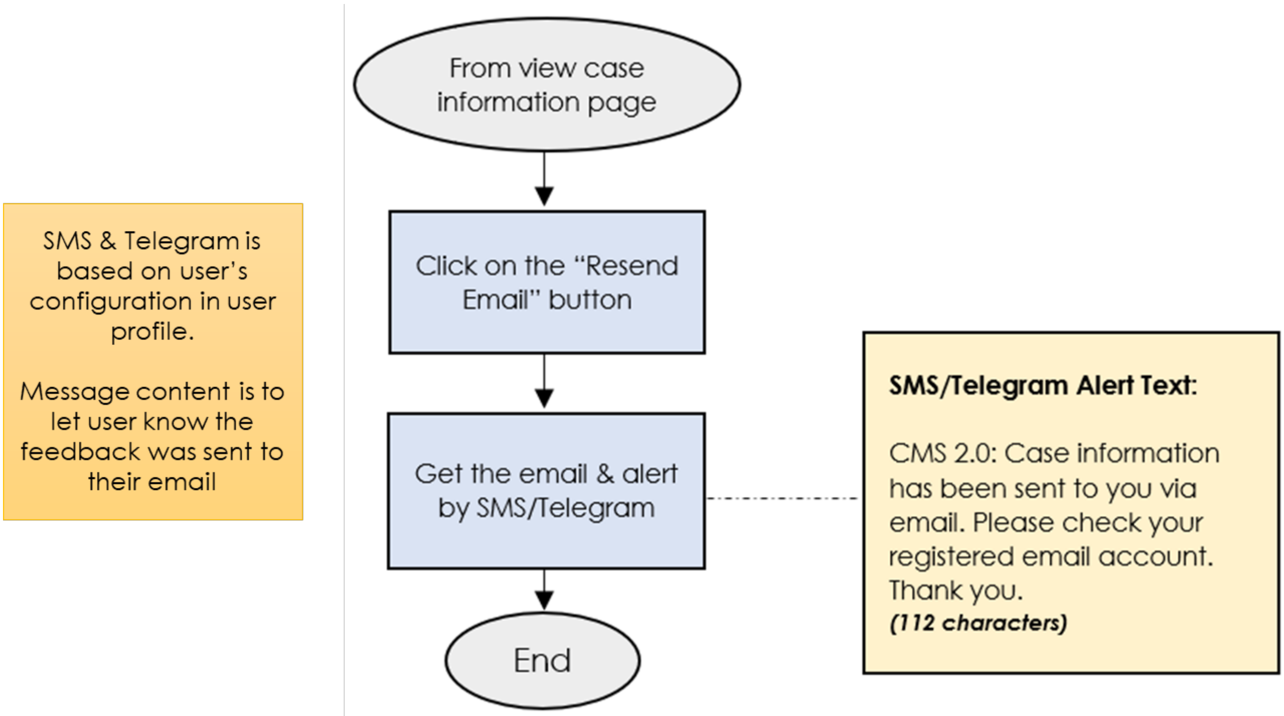


Figure 7.3:7: Flow chart of resend email to assigned analyst.

❖ Description

Resend email will send case report to assigned analyst's registered email.

7.3.7 Extend Deadline

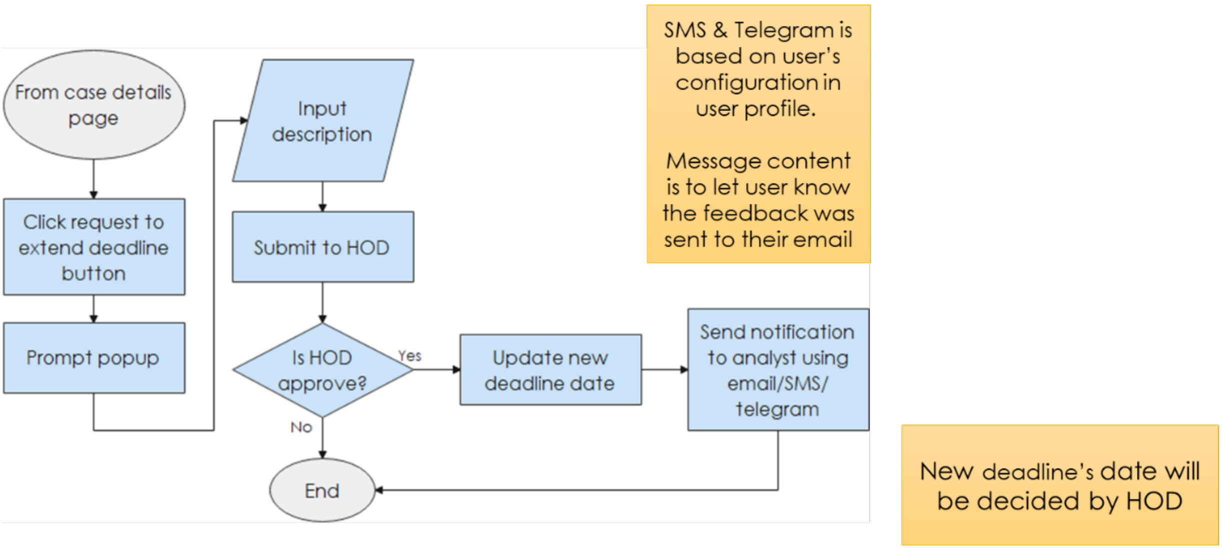


Figure 7.3:8: Extend deadline requested by analyst and approved by HOD.

❖ Description

Extend deadline only can be requested by analyst and will be approved by HOD. New extended date will be decided by HOD themselves. HOD can approve or reject the request along with reject note to analyst.

7.4 Sample Wireframe

7.4.1 Wireframe: Case List

1. Analyst
   - My cases

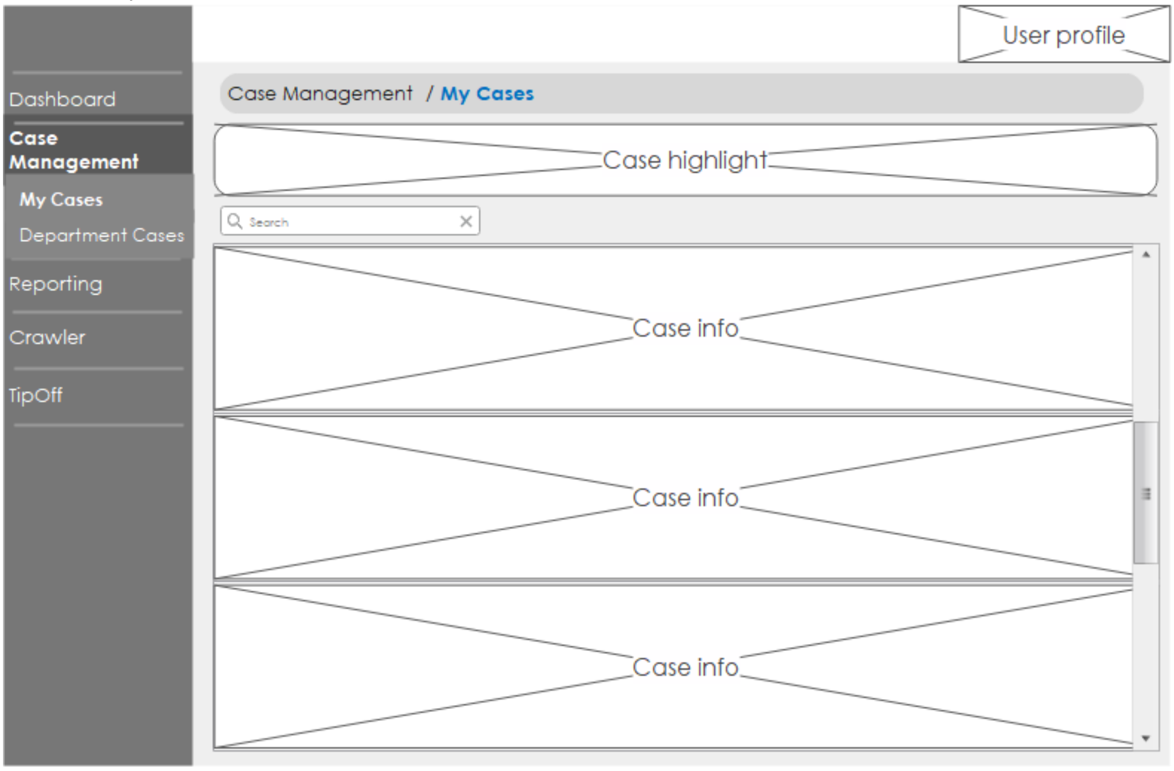


Figure 7.4:1: Wireframe of my cases for Analyst

- Department cases

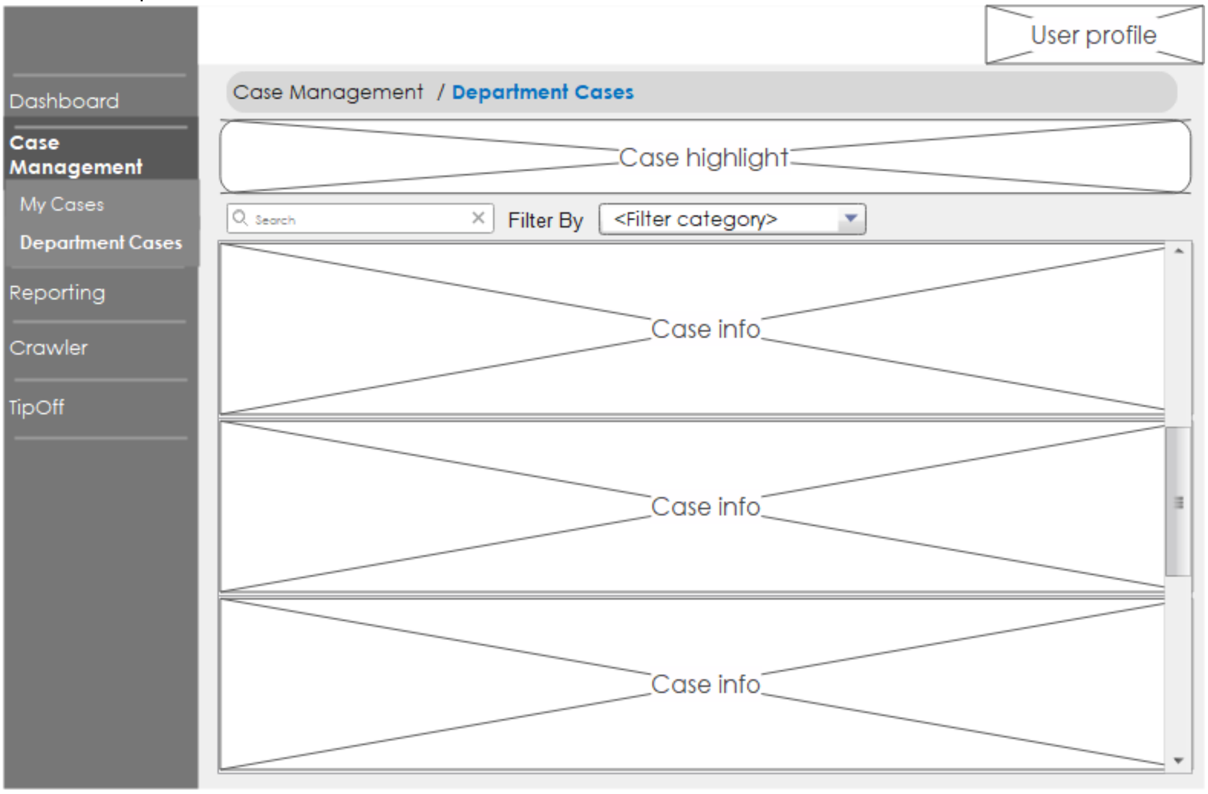


Figure 7.4:2: Wireframe of Department Cases for Analyst

2. Head of department
   - Department cases

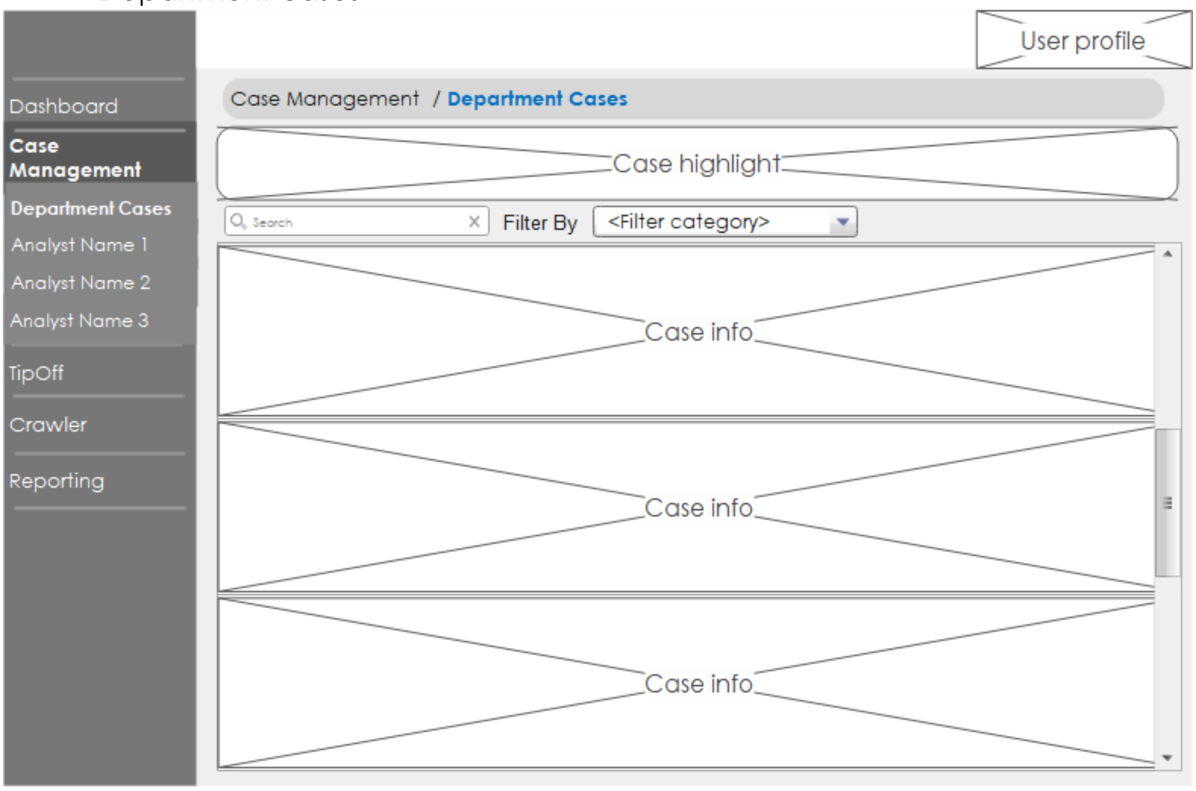


Figure 7.4:3: Wireframe of Department Cases for HOD

- Individual cases (each analyst)

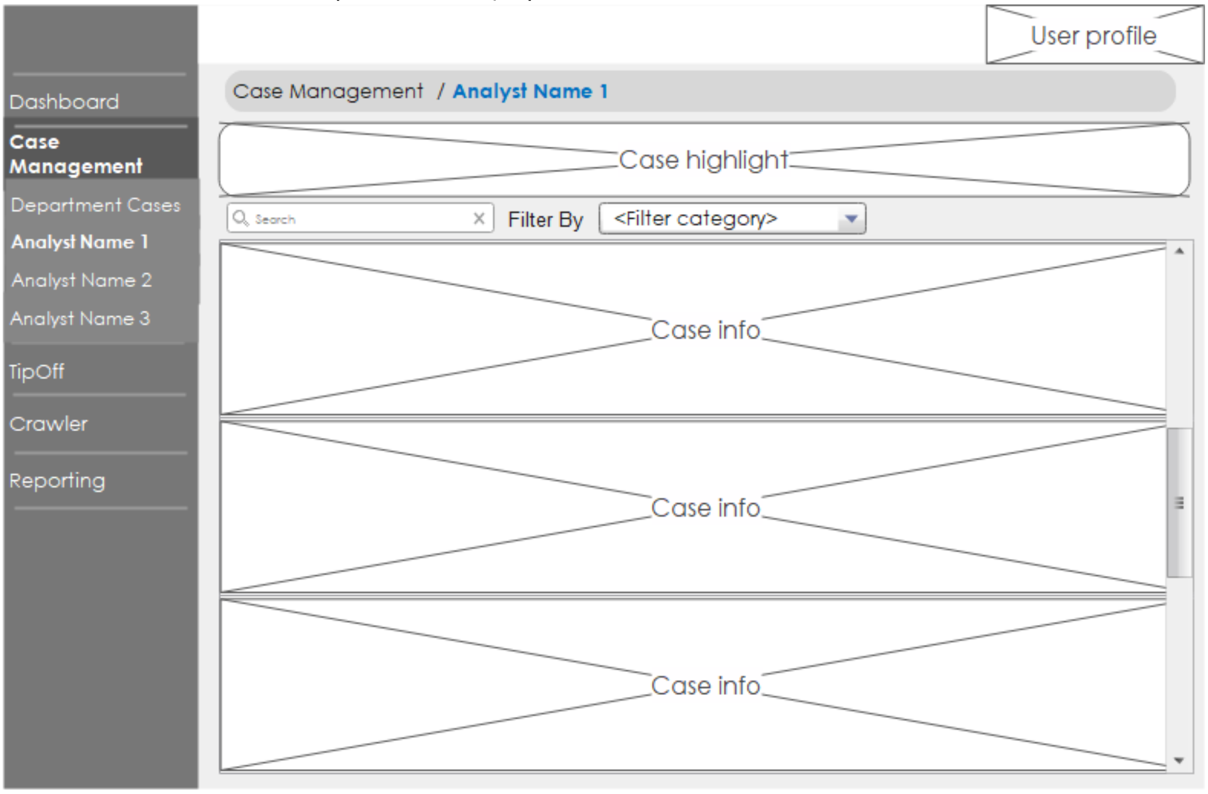


Figure 7.4:4: Wireframe of Individual Analyst Cases for HOD

3. Case list wireframe details

<table>
<tr><th>Attribute</th><th>My cases & individual cases</th><th>Department cases (Analyst & HOD)</th></tr>
<tr><td>Case Highlight

Case highlight will show analyzed number of cases for user extra attention.</td><td>Case highlight will contain:
1. No. of open case
2. No. of case near deadline (<3 days)
3. No. of high priority case / total assigned case</td><td>Case highlight will contain:
1. No. of total case
2. No. of new case & unassigned
3. No. of approved case & still open
4. No. of high priority case / No. of approved case</td></tr>
<tr><td rowspan="2">Case Info

Case info will show basic case information in this view. For details, user can click on case and it will navigate to case details page.</td><td colspan="2">Case info will contain:
1. Case No.
2. Description
3. Requestor Name
4. Creation date
5. Case status
6. Priority Level
7. Deadline</td></tr>
<tr><td>Case info list will be ordered by:
1. Open with high
2. Open with normal
3. Closed with high
4. Closed with normal</td><td>Case info list will be ordered by:
1. Open with high
2. Open with normal
3. Closed with high
4. Closed with normal
5. Rejected</td></tr>
<tr><td>Search bar</td><td colspan="2">User can search case list by:
- Case No.
- Description
- Requestor Name (LEA name)
- No. Laporan Polis (Enquiry paper)
- No. Kertas Siasatan (Investigation paper)
- Their ref</td></tr>
<tr><td>Filter</td><td><u>For Individual cases only</u>
Filter by:</td><td>Filter by:</td></tr>
</table>

	- Status (open and closed) - Priority level (high and normal)	- Status (pending, approved, rejected, closed) - Priority level (high and normal)

Table 7.4:1: Details information for all case list wireframe

7.4.2 Wireframe: Case Details

1. Case Details

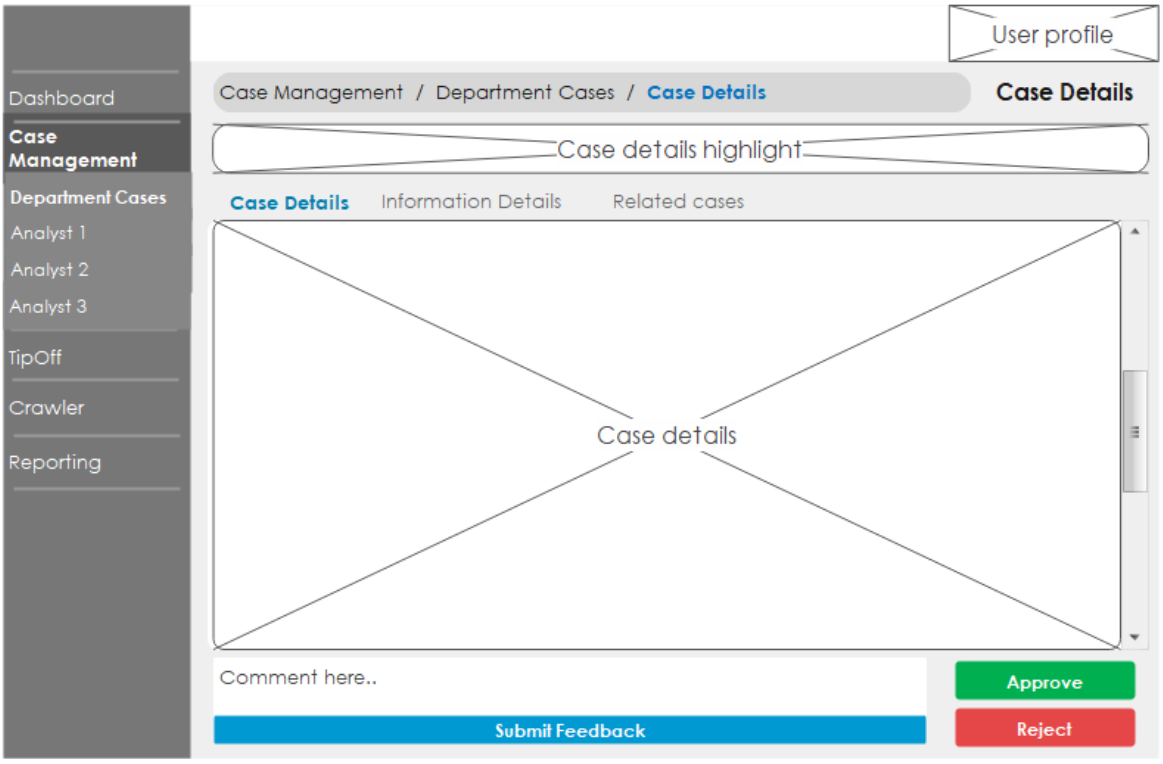


Figure 7.4:5: Wireframe of Case Details

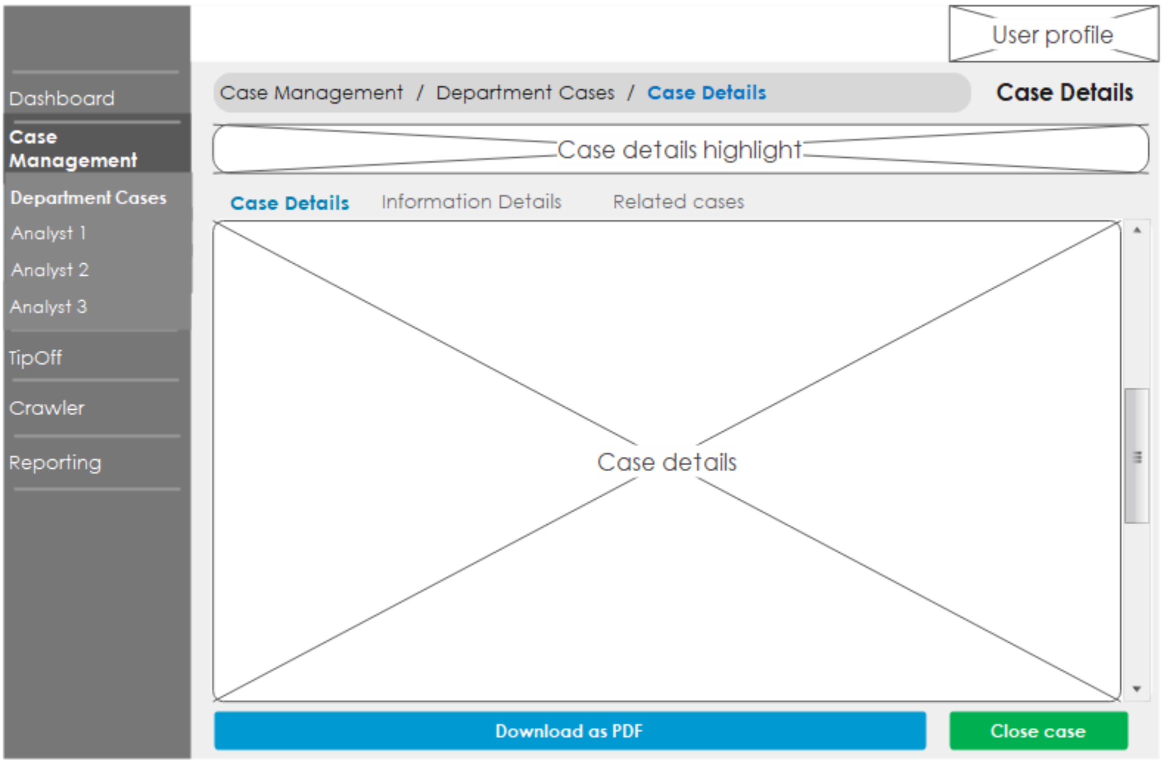


Figure 7.4:6: Wireframe of Case details (after case approved)

<table>
<tr><th>Attribute</th><th>Button option based on scenario</th><th>Details</th></tr>
<tr><td>Case details highlight</td><td>none</td><td>Highlighted case details as:
Case No.
Received Date
Their ref.
Requestor Name (LEA Name)</td></tr>
<tr><td>Case details</td><td>For pending case, rejected case, approved case until closed</td><td>To display case details submitted by LEA.

Attribute:
<table>
<tr><th>Details during pending & rejected case</th><th>Details after approved until closed</th></tr>
<tr><td>Case No
Received date
Offence & tagging
Description
Their Ref
Preliminary Enquiry Paper (PEP)
Enquiry Paper (EP)
Investigation Paper (IP)
Requestor details:
Name
Email
Mobile no
Office no
Agency
Branch
State
Attached documents</td>
<td>Case No.
Received date
***Deadline
Case result
***Assigned analyst
Priority level
Category
Offense & tagging
Description
Their Ref
Preliminary Enquiry Paper (PEP)
Enquiry Paper (EP)
Investigation Paper (IP)
Requestor details:
Name
Email
Mobile no
Office no
Agency
Branch
State
Resend Email
View case timeline (redirect link – refer to Case Timeline (page 109) section)
Attached documents
Upload new attachment
Jpeg, jpg, png, Word and PDF</td></tr>
</table></td></tr>
</table>

		NOTE *** Can be updated only by HOD
Approve	For pending case only	To approve pending case. Once clicked, it will prompt popup to configure: 1. Priority level 2. Deadline date (with *date picker)* 3. Analyst list to be assigned (analyst name & currently assigned case number) 4. Assign category 5. Add description (or Tipoff option) More info can refer to Approve Case (page 91) section
Reject		To reject pending case. Once clicked, it will prompt popup to insert rejection description More info can refer to Reject Case (page 93) section
Comment & Submit Feedback		To send feedback to requestor More info can refer to Pending Case (page 89) section on Feedback part
Download as PDF	For approved case (assigned to analyst)	Will generate case report as PDF
Close case		To update case status and close case. More info can refer to Update Status (page 94) section

Table 7.4:2: Details information for case details wireframe

2. Information Details

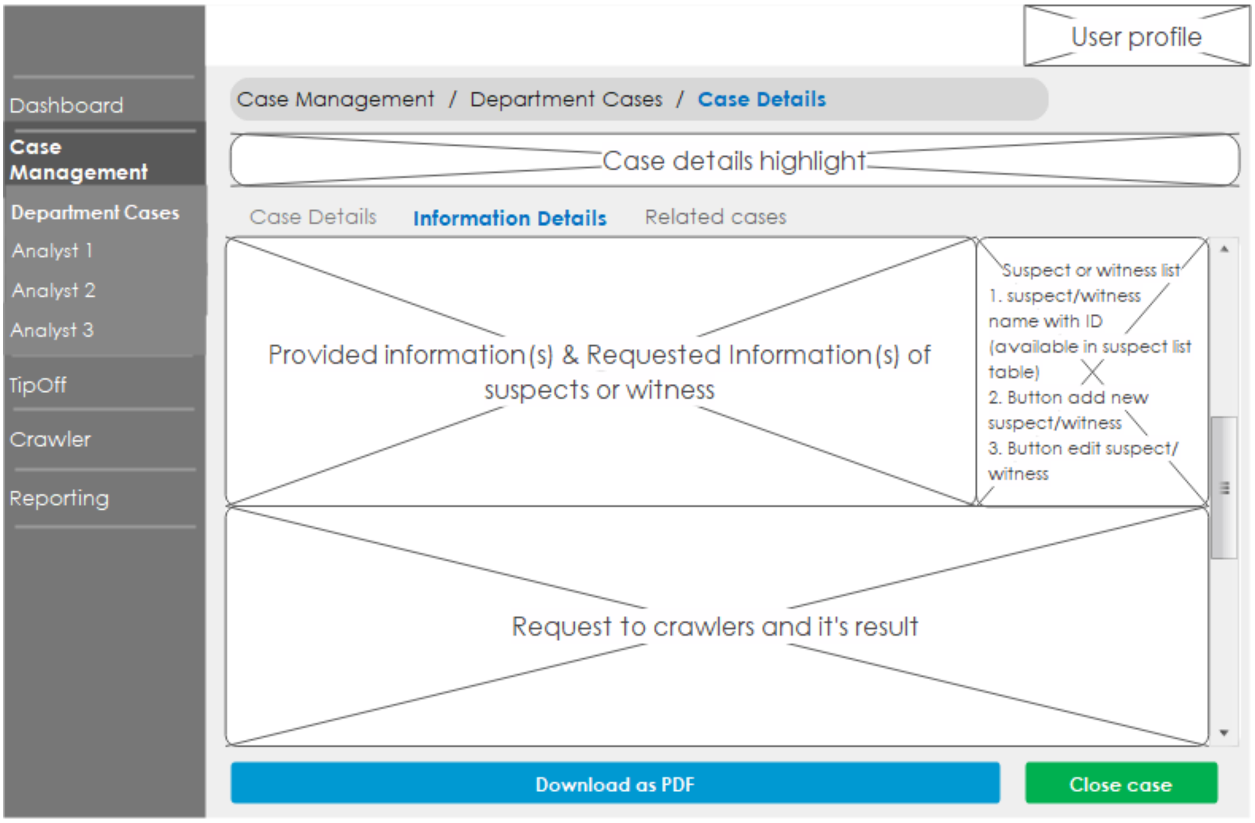


Figure 7.4:7: Wireframe of Case Details - Information Details

Attribute	Button option based on scenario	Details
Case details highlight	*none*	Highlighted case details as: • Case No. • Received Date • Their ref. • Requestor Name (LEA Name)

Provided information of suspect or witness		Provided suspect/witness information is passed during LEA fill up new case form.
		
		Attributes will be:
		1. Suspect or witness status and details
		  • No. info / detected not arrested / arrested / released with bail
		  • IC & name list
		2. Phone no. info
		3. URL/Social media/email
		  • Each 5 URL grouped into 1 case
		  • Max 15 URL (3 sub-case)
		
		Refer to Approve Case (page 91) section for sub-case creation flow

Requested information of		Requested information is passed during LEA fill up new case form.

<table>
<tr><td>suspect or witness</td><td></td><td>Attribute will be:
1. To detect account's admin/owner
2. To get direct information from FB/twitter etc
3. Others (stated by LEA)</td></tr>
<tr><td>Suspect or witness list</td><td></td><td>This field will show the list of assigned suspect or witness with case.

Users can:
1. View assigned suspect and witness list
2. Button to prompt add new suspect or witness and automatically assigned with current viewed case number
3. Button to edit assigned suspect or witness details<table><tr><td>NOTE</td><td>Add new suspect will use JPN request function to get suspect information</td></tr></table></td></tr>
<tr><td>Request to crawlers and its result</td><td></td><td>Request to crawlers basically is API request function to crawlers. The request(s) will automatically assign current viewed case number with the result.

Affected crawlers are:<table><tr><td>Crawlers</td><td>Request API/description</td></tr><tr><td>JPN</td><td>Request to get a person details based on IC number</td></tr><tr><td>Trackthis</td><td>Request to get person details based on single query execution or combination query execution</td></tr><tr><td>SMCS</td><td>Request to add URL for:
1. Blog/web
2. Twitter
3. Instagram
4. Tumblr
5. Pastebin
6. Majalah.com
7. Mudah.my</td></tr><tr><td>FBStalker</td><td>Request to add new Facebook URL</td></tr><tr><td>FDRS</td><td>Request to:
1. Make comparison (face compare)
2. Face recognition
3. Face Fingerprint
4. List of Latest Faces</td></tr><tr><td>MNTL</td><td>Request to create new MNTL request</td></tr></table></td></tr>
</table>

		NOTE Refer to Integration (page 130) and TIPOFF (page 125) topics for more info of crawler's integration flow.
Approve	For pending case only	To approve pending case. Once clicked, it will prompt popup to configure: 1. Priority level 2. Deadline date (with calendar picker) 3. Analyst list to be assigned (analyst name & currently assigned case number) 4. Assign category 5. Add description (or TIPOFF option) More info can refer to section Approve Case (page 91)
Reject		To reject pending case. Once clicked, it will prompt popup to insert rejection description More info can refer to section Reject Case (page 93)
Comment & Submit Feedback	For pending case only For approved case (assigned to analyst)	To send feedback to requestor More info can refer to Pending Case (page 89) section on Feedback part
Download as PDF		Will generate case report as PDF
Close case		To update case status and close case. More info can refer to Update Status (page 94) section

Table 7.4:3: Details information of Case Details - Information Details

3. Related Cases

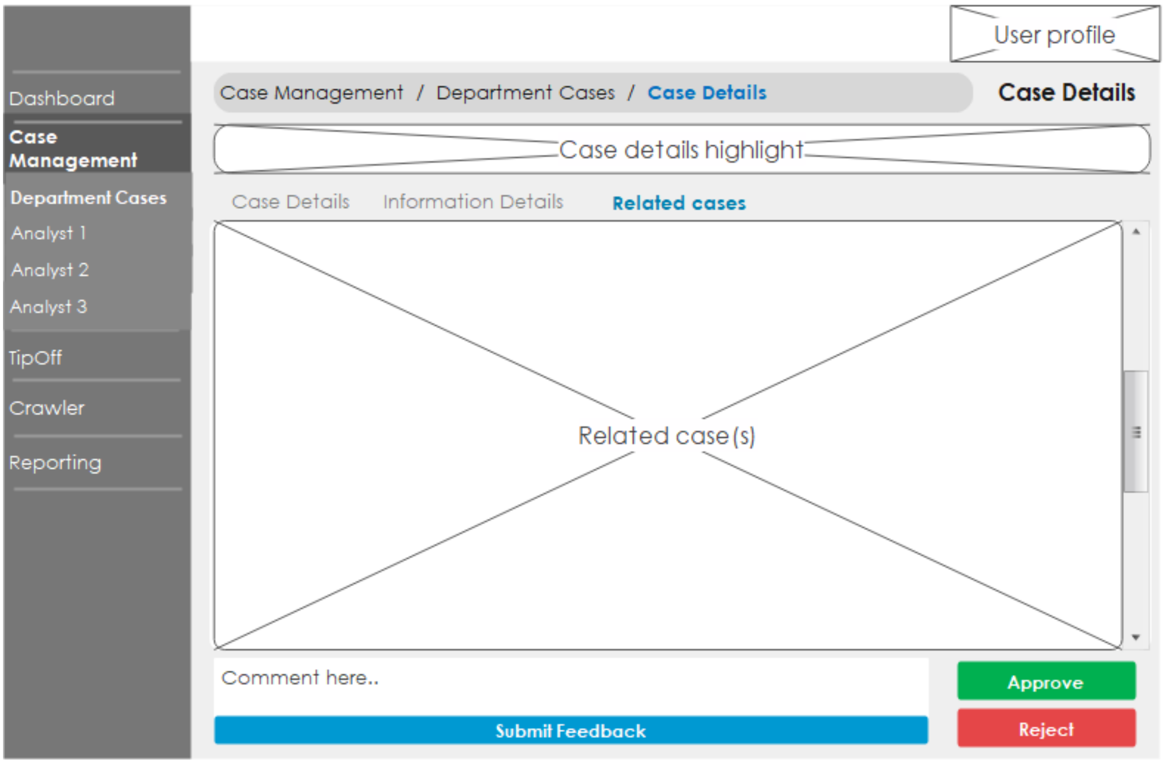


Figure 7.4:8: Wireframe of Case Details - Related cases

Attribute	Button option based on scenario	Details
Case details highlight	none	Highlighted case details as: • Case No. • Received Date • Their ref. • Requestor Name (LEA Name)
Related case(s)		Related case(s) will show previous case history and its details that have same (either one): 1. Their Ref No. 2. Enquiry Paper (No. Laporan Polis) 3. Investigation Paper (No. Kertas Siasatan) Related case details will be: • Case no. • Analyst name • Received date • Closed date • Status • Result • Attachment(s)
Approve	For pending case only	To approve pending case. Once clicked, it will prompt popup to configure: 1. Priority level 2. Deadline date (with calendar picker)

		3. Analyst list to be assigned (analyst name & currently assigned case number) 4. Assign category 5. Add description (or TIPOFF option) More info can refer to section Approve Case (page 91)
Reject		To reject pending case. Once clicked, it will prompt popup to insert rejection description More info can refer to section Reject Case (page 93)
Comment & Submit Feedback		To send feedback to requestor More info can refer to Pending Case (page 89) section on Feedback part
Download as PDF	For approved case (assigned to analyst)	Will generate case report as PDF
Close case		To update case status and close case. More info can refer to Update Status (page 94) section

Table 7.4:4: Details information of Case Details - Related Cases

4. Case Timeline

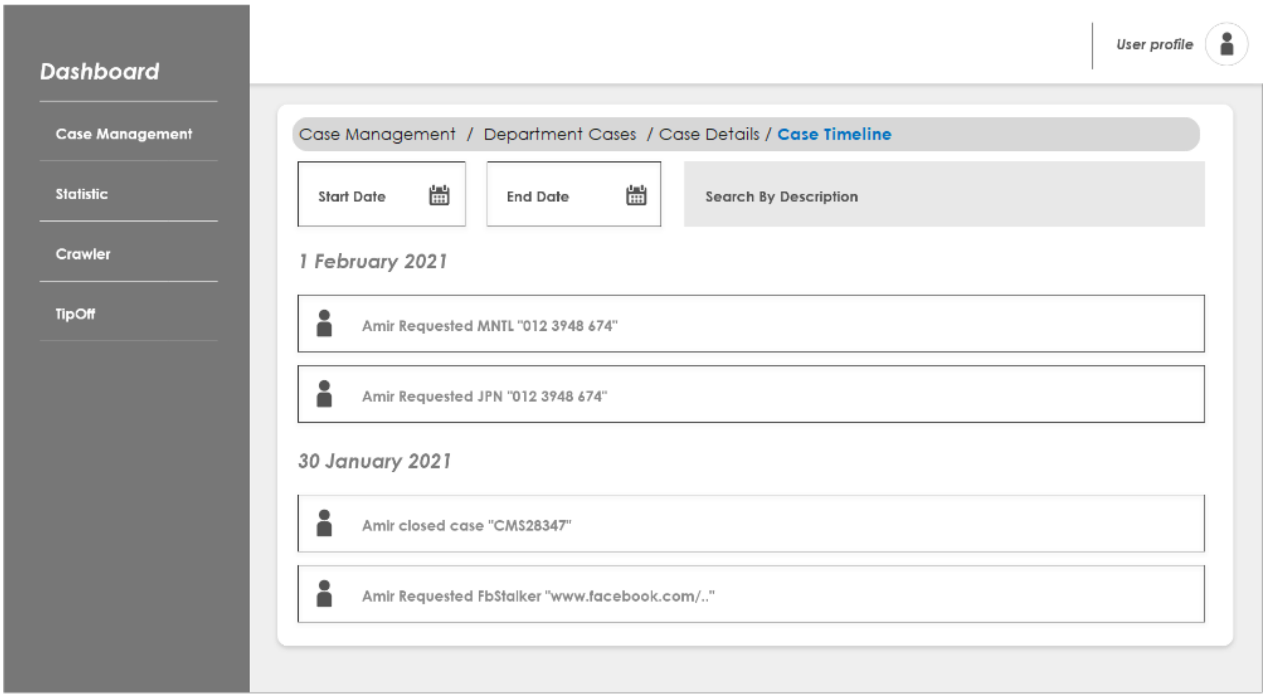


Figure 7.4:9: Wireframe of Case Details - Case Timeline

Attribute	Button option based on scenario	Details
Start date	none	Start date of searched timeline. Can insert value of date or can get date from *date picker*

End date		End date of searched timeline. Can insert value of date or can get date from *date picker*
Search bar		Search timeline description
Case timeline details		Case historical timeline of what analyst did those case
Approve	For pending case only	To approve pending case. Once clicked, it will prompt popup to configure: 1. Priority level 2. Deadline date (with *date picker)* 3. Analyst list to be assigned (analyst name & currently assigned case number) 4. Assign category 5. Add description (or TIPOFF option) More info can refer to section Approve Case (page 91)
Reject		To reject pending case. Once clicked, it will prompt popup to insert rejection description More info can refer to section Reject Case (page 93)
Comment & Submit Feedback		To send feedback to requestor More info can refer to Pending Case (page 89) section on Feedback part
Download as PDF	For approved case (assigned to analyst)	Will generate case report as PDF
Close case		To update case status and close case. More info can refer to Update Status (page 94) section

Table 7.4:5: Details information of Case Details - Case Timeline

7.4.3 Wireframe: Suspect and Witness

1. Suspect List

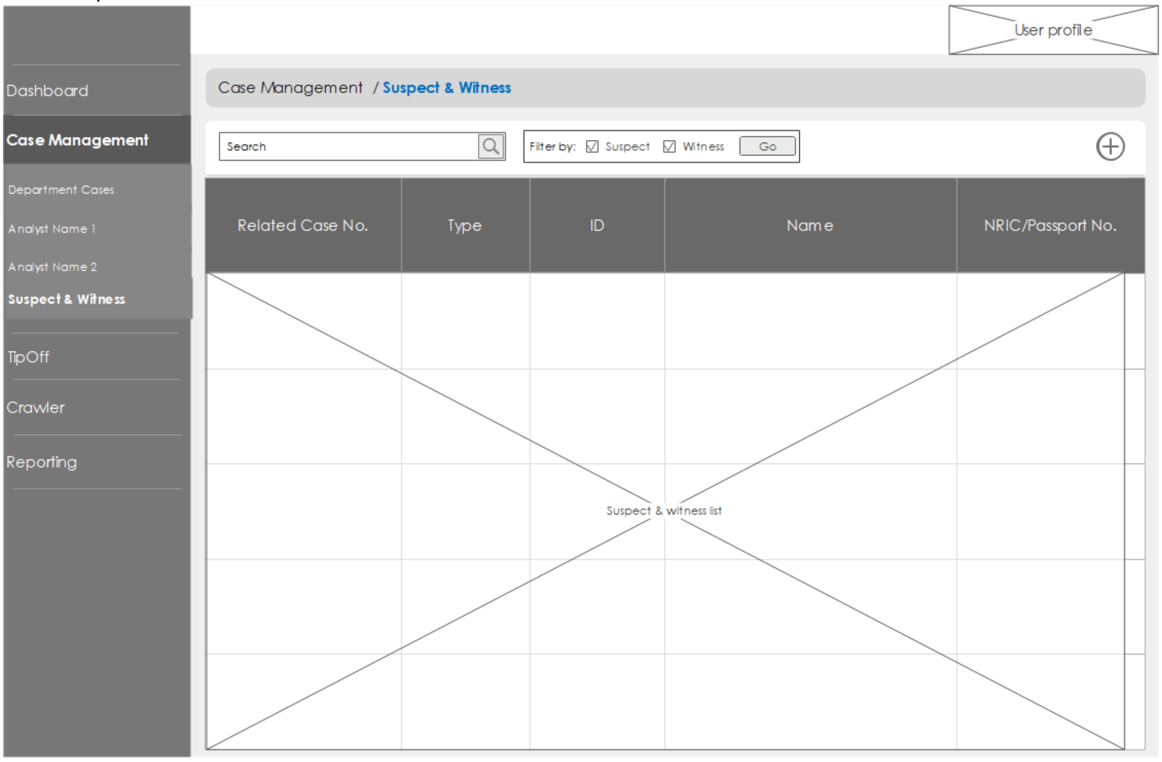


Figure 7.4:10: Wireframe of suspect list

Attribute	Details
Search bar	Can search list by: 1. ID (suspect: Sxxx & witness: Wxxx) 2. Type (suspect / witness) 3. Name 4. NRIC 5. Passport 6. Related Case No.
Filter	Filter list by suspect or witness or both
Suspect and witness list table	The list will be grouped and sorted based on related case no. **NOTE** Some suspect can be a suspect or witness in another case. Same goes to witness.
Add new button	Will prompt popup to create new suspect or witness. Refer to section Add New Suspect (page 112)

Table 7.4:6: Details information of suspect list

2. Suspect Details

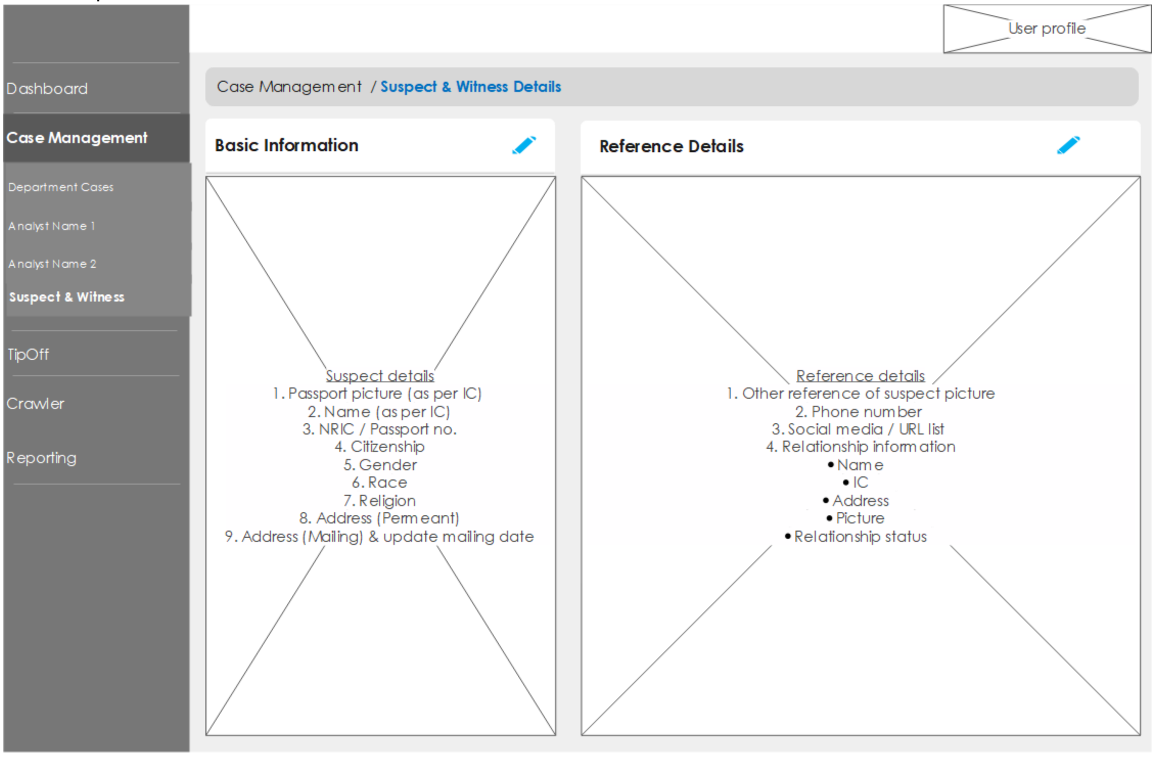


Figure 7.4:11: Wireframe of suspect details

Attribute	Details
Suspect details	Will show suspect/witness basic details returned from JPN API. Also, user can edit the details manually.
Reference details	Will show other reference details of suspect/witness. User can edit the details manually.

Table 7.4:7: Details information of suspect details

3. Add New Suspect

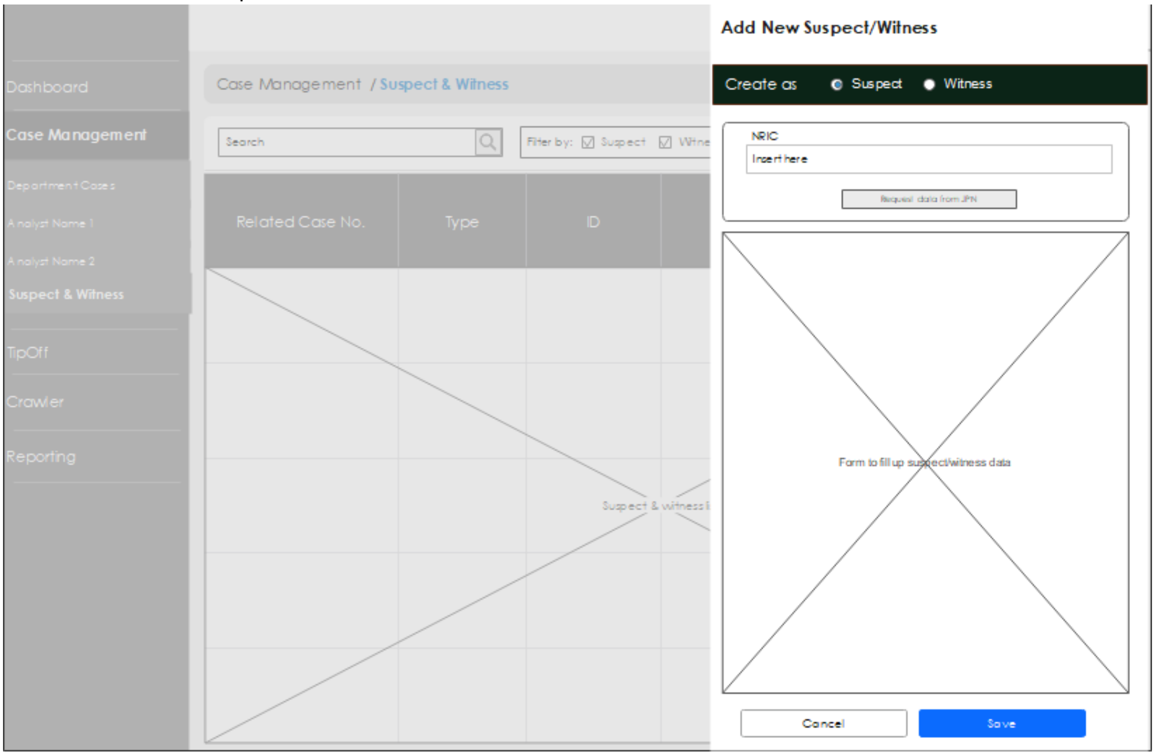


Figure 7.4:12: Wireframe of add new suspect form

Attribute	Details
Create as selection	Radio button to choose which role to create. Either suspect or witness
Insert IC number field	IC number field to be fill up to get person personal information from JPN API
Form to fill up details	Suspect/witness basic details and other reference details form. By default, value of basic details will be returned by JPN API, others can edit manually

Table 7.4:8: Details information of add new suspect or witness

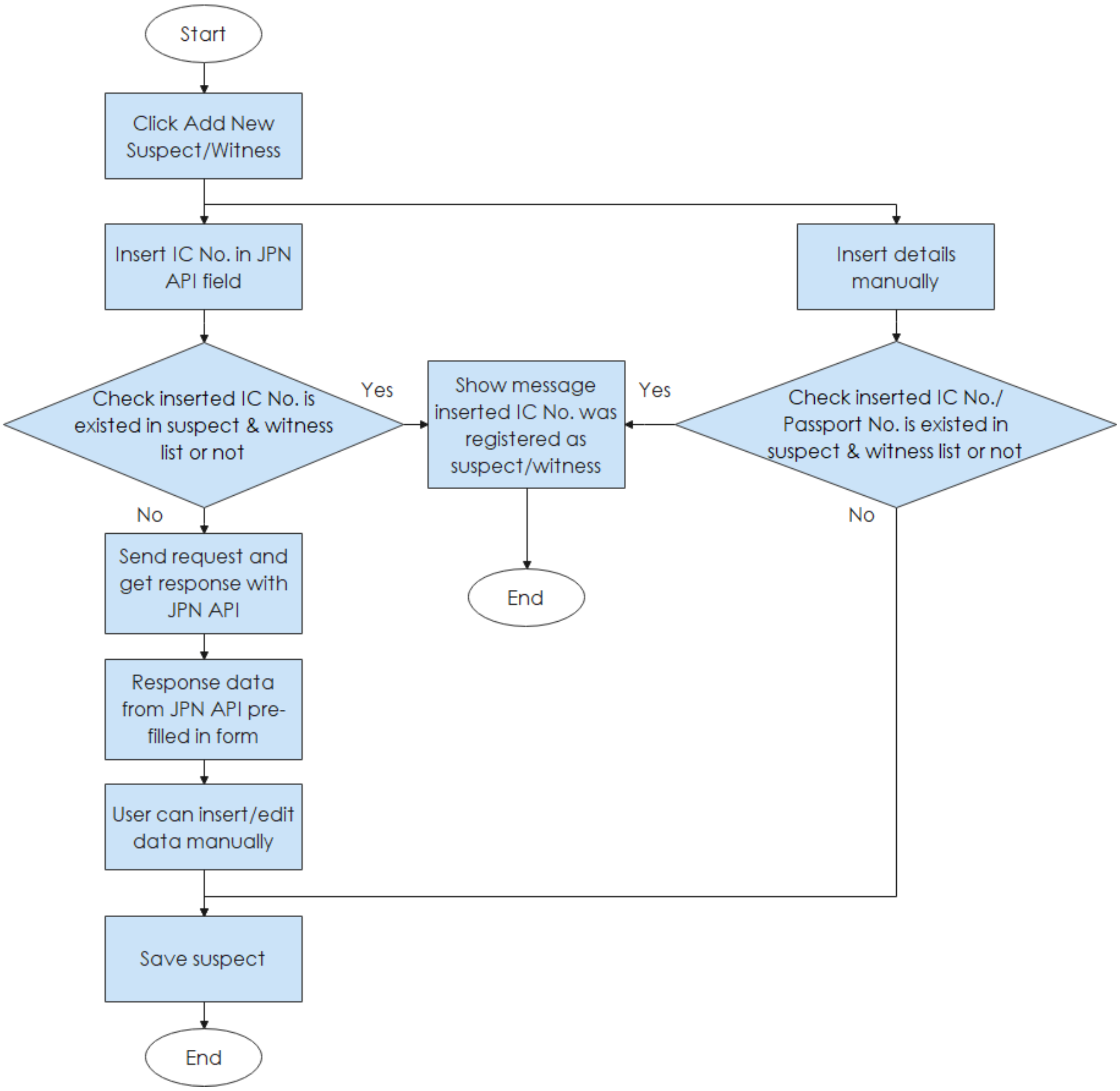


Figure 7.4:13: Suspect or Witness creation flow

8 Dashboard

8.1 Wireframe: Department

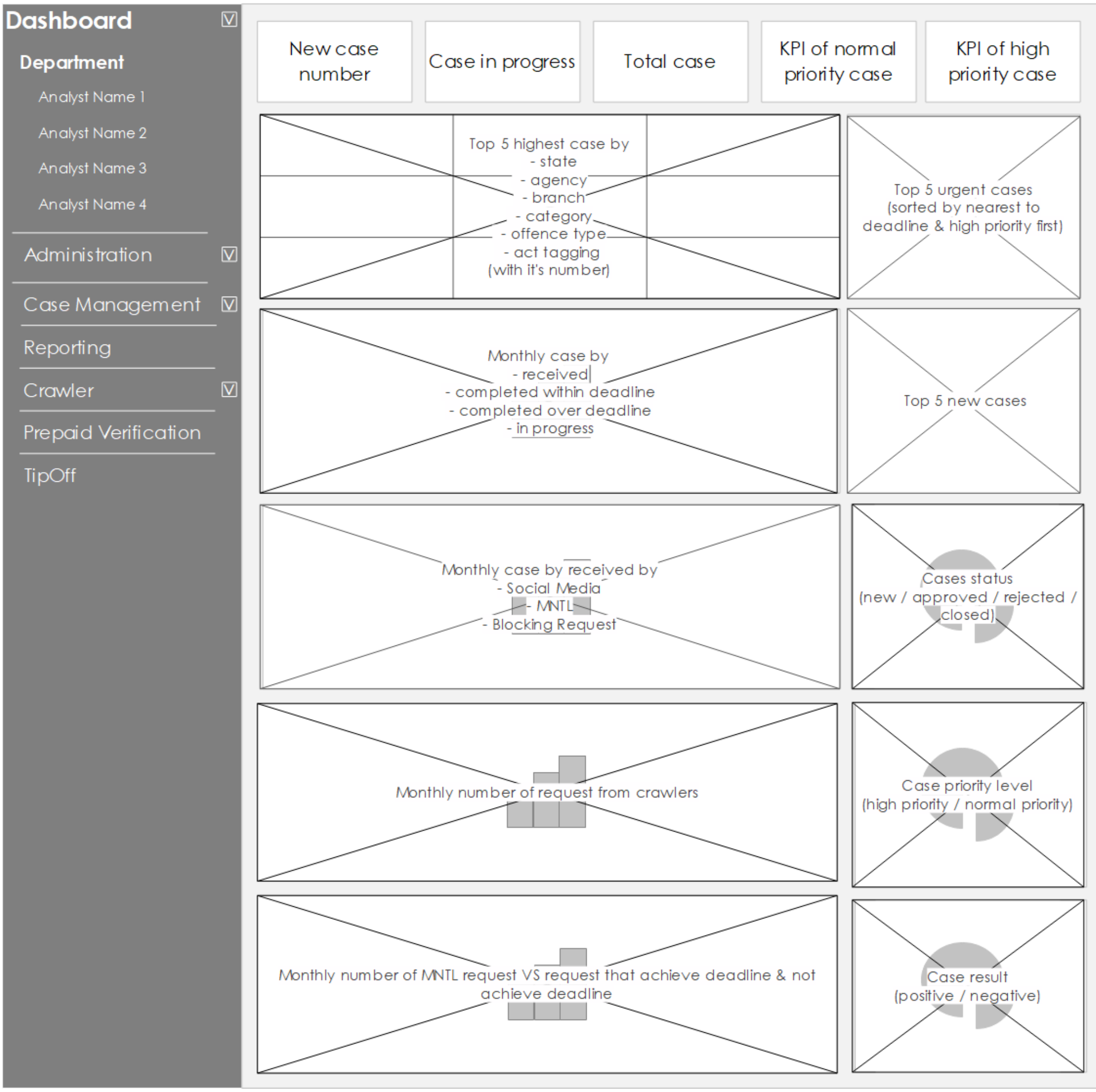


Figure 8.1:1: Wireframe of Department dashboard for HOD view

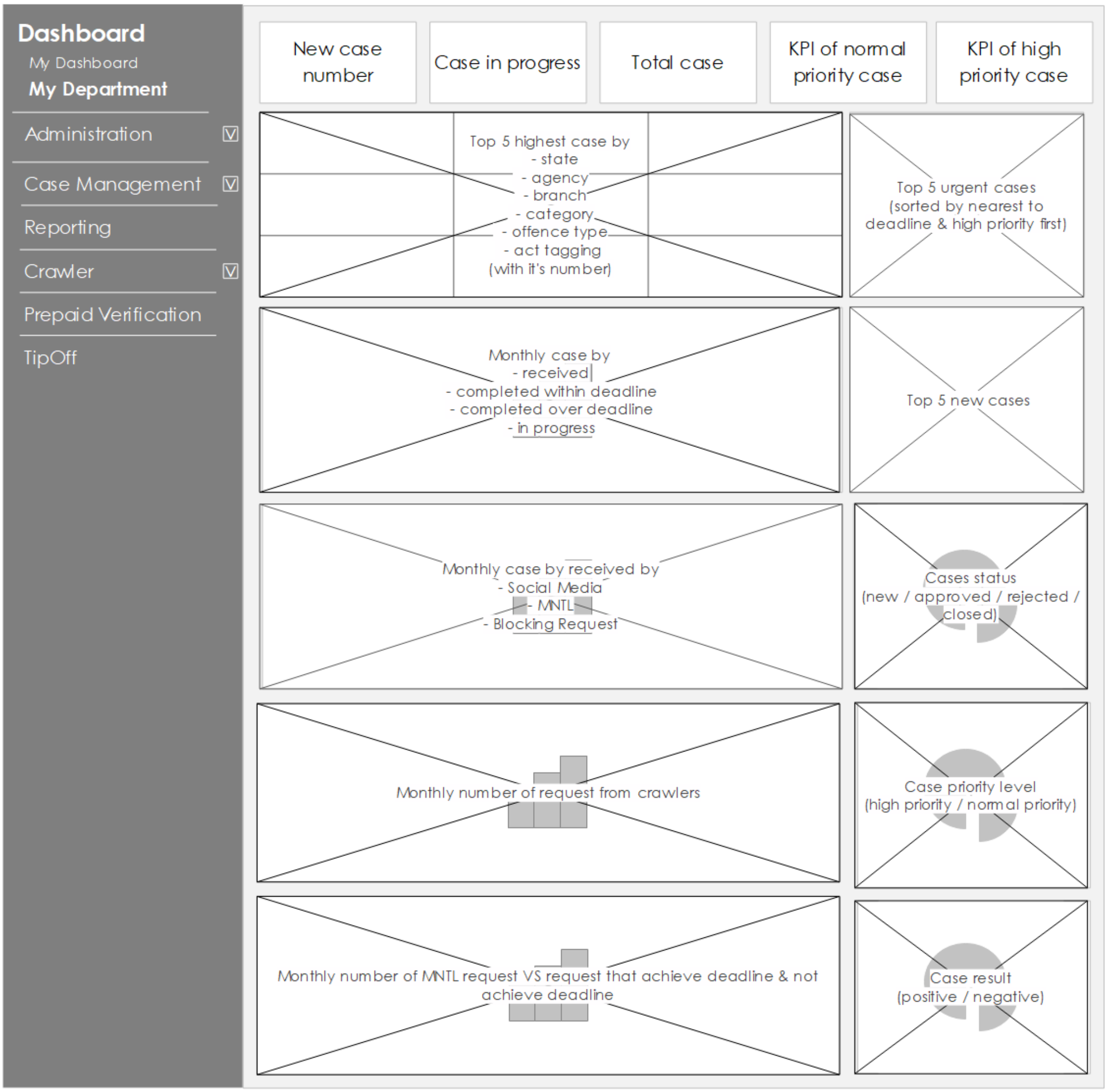


Figure 8.1:2: Wireframe of Department dashboard for analyst view

8.2 Wireframe: Individual

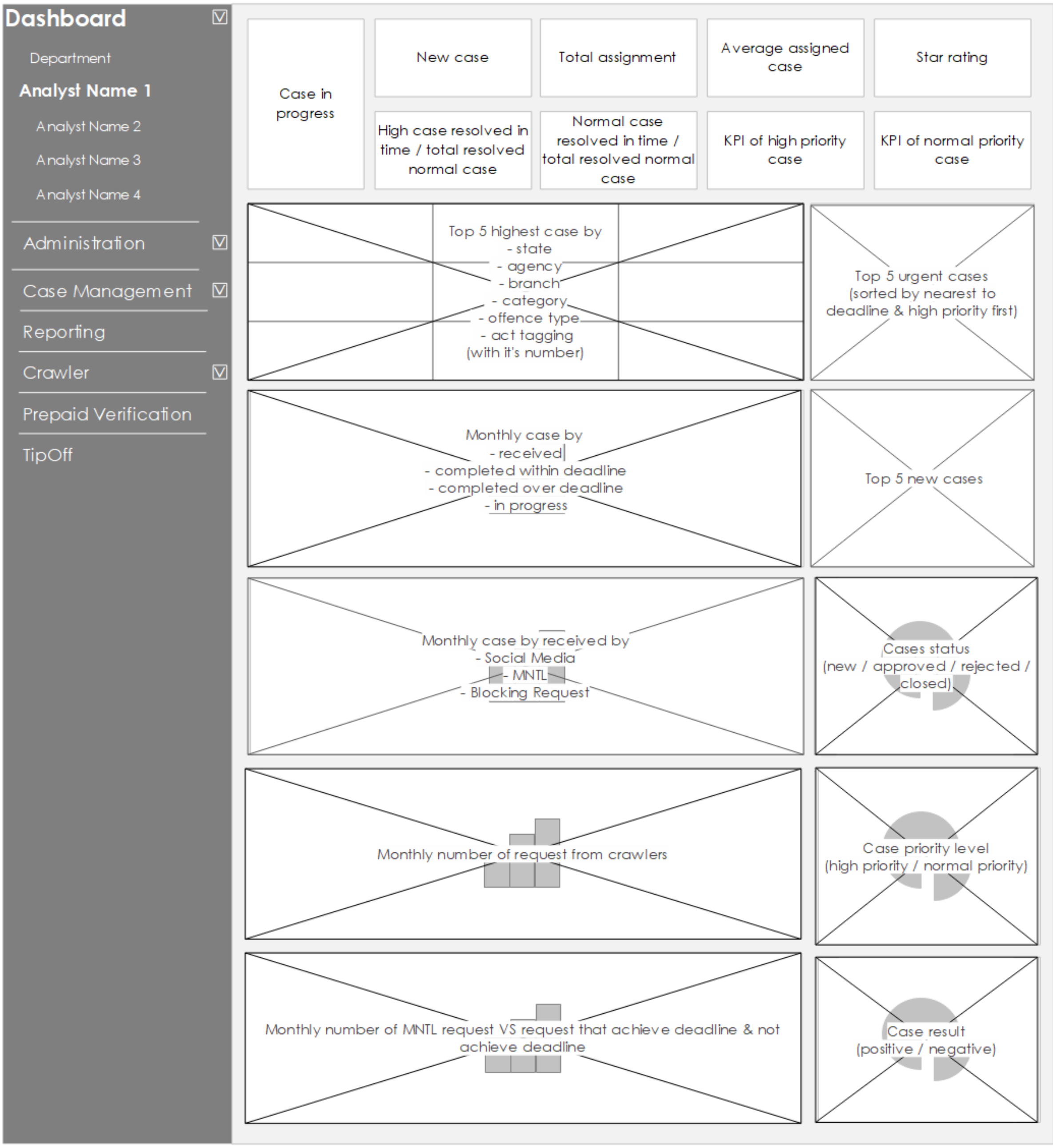


Figure 8.2:1: Wireframe of individual analyst(s) dashboard for HOD view

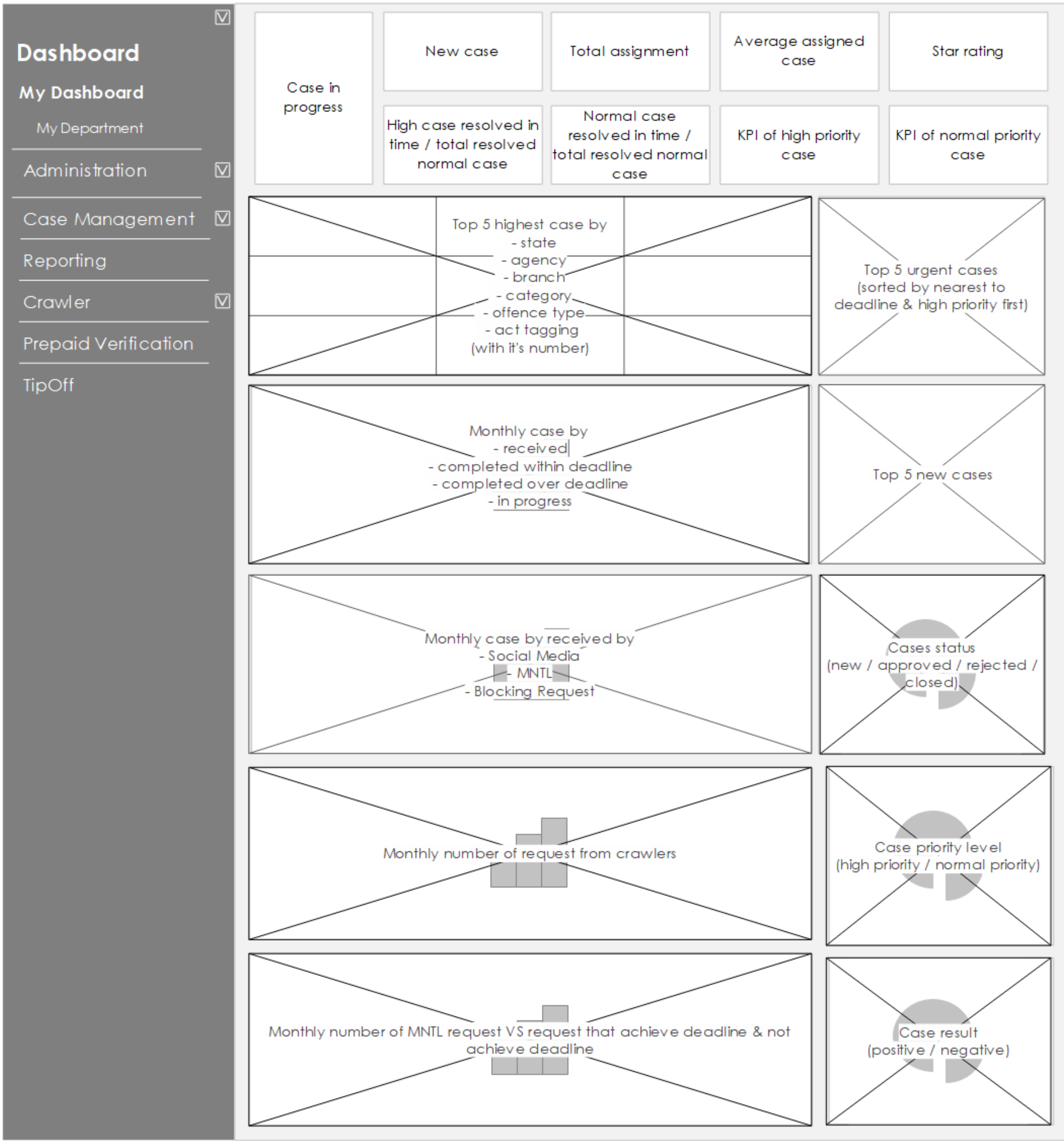


Figure 8.2:2: Dashboard for individual(own) dashboard for analyst view

8.3 Dashboard Details Information

Dashboard type	Attribute	Details
All	Case in progress	Number case still open and approved
All	New case	Number case in not yet approved (pending)
Department dashboard only	Total case	Sum of current case
Individual dashboard only	Total assignment case	Sum of assigned case to individual analyst
Individual dashboard only	Average assigned case	Average number case will be assigned to each analyst

<table>
<tr><td>Individual dashboard only</td><td>Star rating</td><td>Individual analyst Star Rating by year

Formulae:
Star rating per case (%) = select case_no, start_date, deadline, date_close, daystaken(int), overlimit(int), 100-(round (sqrt (power((day_limit+1) ,2) + power((days_taken),2)), 0))

<table>
<tr><th>Star rating level</th><th>Score star rating value per case</th></tr>
<tr><td>5</td><td>>=85</td></tr>
<tr><td>4</td><td>>= 82</td></tr>
<tr><td>3</td><td>>= 78 and overlimit <= 0</td></tr>
<tr><td>2</td><td>>= 65 and overlimit <= 0</td></tr>
<tr><td>1</td><td>>= 65 and overlimit <= 1</td></tr>
<tr><td>0</td><td>Else</td></tr>
<tr><td colspan="2">NOTE:
- This value is for per case for single analyst
- To change per analyst, must be average out with another analyst</td></tr>
</table>
</td></tr>
<tr><td>Individual dashboard only</td><td>High case resolved in time / total resolved high case</td><td>Comparison number of high cases resolved in time over sum of resolved high level case</td></tr>
<tr><td>Individual dashboard only</td><td>Normal case resolved in time / total resolved normal case</td><td>Comparison number of normal cases resolved in time over sum of resolved normal level case</td></tr>
<tr><td>All</td><td>KPI of high priority case</td><td>Percentage of resolved high priority case within time over all high case</td></tr>
<tr><td>All</td><td>KPI of normal priority case</td><td>Percentage of resolved normal priority case within time over all normal case</td></tr>
<tr><td>All</td><td>Top 5 new case</td><td>List top 5 latest pending case</td></tr>
<tr><td>All</td><td>Top 5 urgent cases</td><td>List top 5 urgent open case</td></tr>
<tr><td>All</td><td>Top 5 highest case by state, agency, branch, category, offence type, tagging (with its number)</td><td>List to top 5 data based on state, agency, branch, category, offence type, tagging that contain highest case number</td></tr>
</table>

All	Case status	Chart that will show case number over case status. Status type is: 1. New (pending) 2. Approved 3. Rejected 4. Closed
All	Case priority level	Chart that will show case number over case priority level. Priority type is: 1. High priority 2. Normal priority
All	Monthly number of requests using crawlers	Chart of monthly number of requests to crawler based on individual analyst or whole department. Affected crawler: 1. JPN 2. Trackthis 3. SMCS 4. FBStalker 5. FDRS 6. MNTL 7. TipOff
All	Monthly case by received, completed within deadline, completed over deadline and in progress	Chart of case performance based on individual analyst or whole department. Chart attribute will be: 1. Number of cases received (assigned to analyst) or approved if for department view 2. Number of cases completed within deadline 3. Number of cases completed over deadline 4. Number of cases still in progress (approved and open)
All	Monthly case received by Social Media, MNTL and Blocking Request	Chart of case received based on individual analyst or whole department Chart attribute will be: 1. Number of cases received by Social Media 2. Number of cases received by MNTL 3. Number of cases received by blocking request

All	Monthly number of requests MNTL vs request that achieve deadline & not achieve deadline	Chart of case performance based on MNTL request. Chart attribute to be varied with number of requests to MNTL will be: 1. Number of requests to MNTL that achieve deadline 2. Number of requests to MNTL that not achieve deadline

Table 8.3:1: Details information of dashboard

9 Reporting

9.1 Flowchart

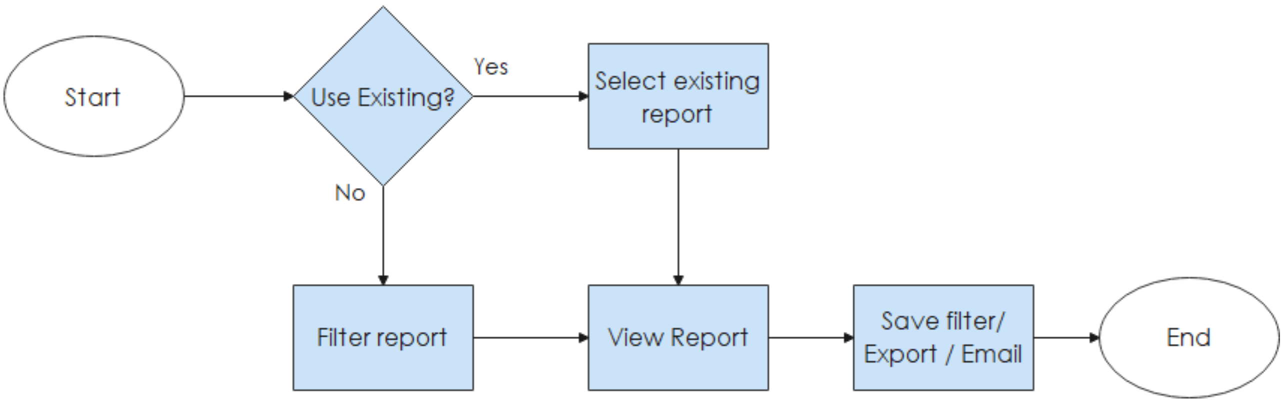


Figure 9.1:1: Flowchart for Reporting

9.2 Sample Wireframe

9.2.1 Wireframe: Saved Report

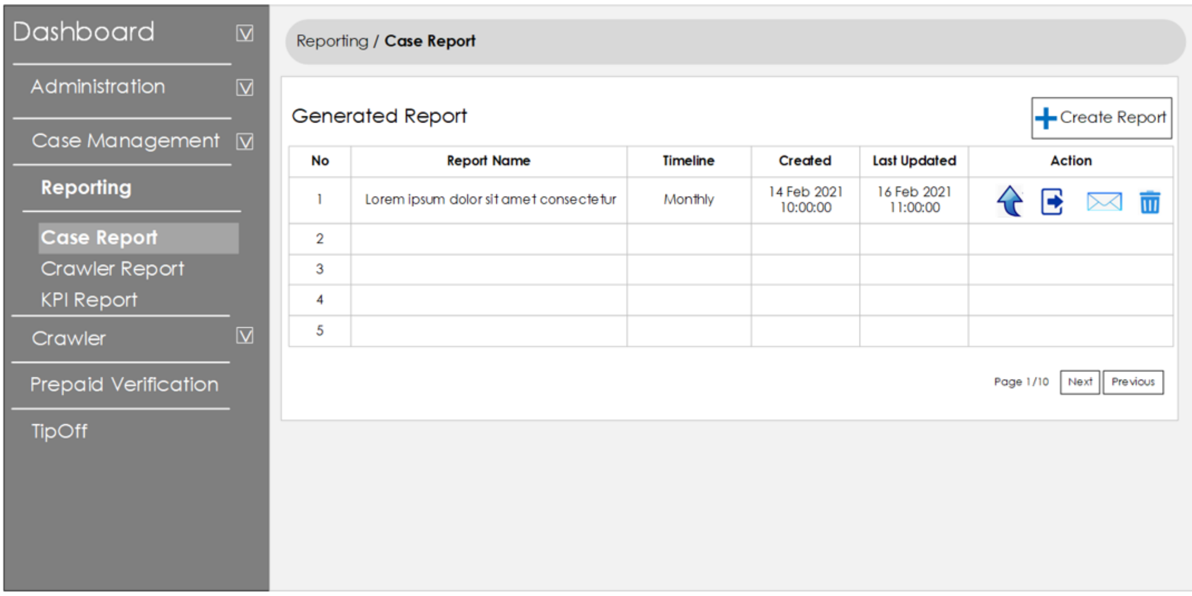


Figure 9.2:1: Wireframe for Save Report

NOTE	This page will show for all submenu Reporting (Case, Crawler and KPI).

9.2.2 Wireframe: Case Report

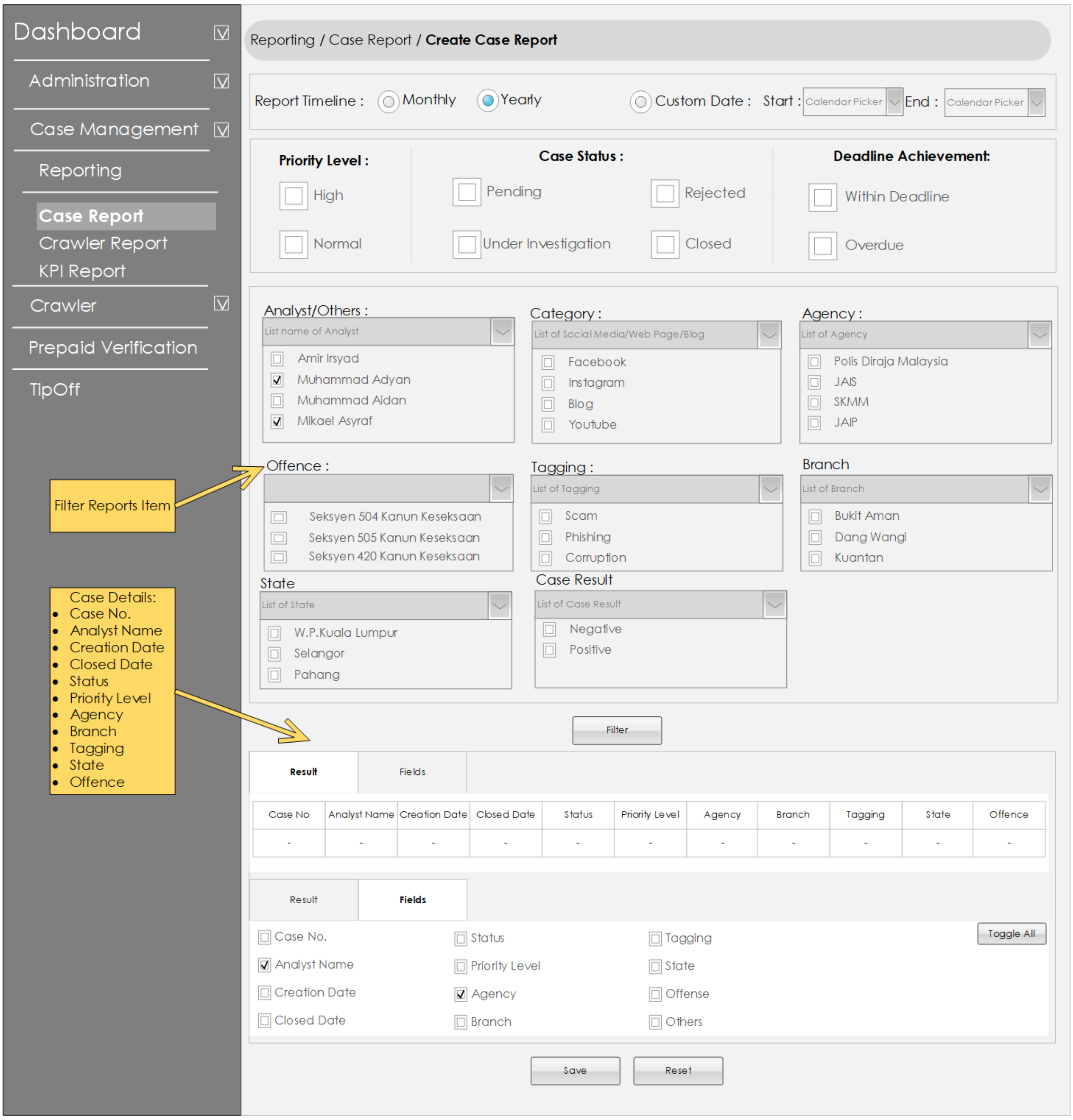


Figure 9.2:2: Case Report Landing Page

1. Configuration Attribute

Attribute	Option	Remarks
Report timeline	Monthly	Current month
	Yearly	Current year
	Custom date range	Select date from date picker
Priority level	High	
	Medium	
Case status	Pending	

	Under investigation	
	Rejected	
	Closed	
Case result	Positive	Suspect identified
	Negative	Suspect not identified
Deadline achievement	Within deadline	
	Overdue	
Analyst	Individual	Analyst list will show in a box
Category	<Category List>	Category list will show in a box
Offence	<Offence List>	Offence list will show in a box
Tagging	<Tagging List>	Tagging list will show in a box
Agency	<Agency List>	Agency list will show in a box
Branch	<Branch List>	Branch list will show in a box
State	<State List>	State list will show in a box

Table 9.2:1: Details Configuration Attribute

9.2.3 Wireframe: Crawler Report

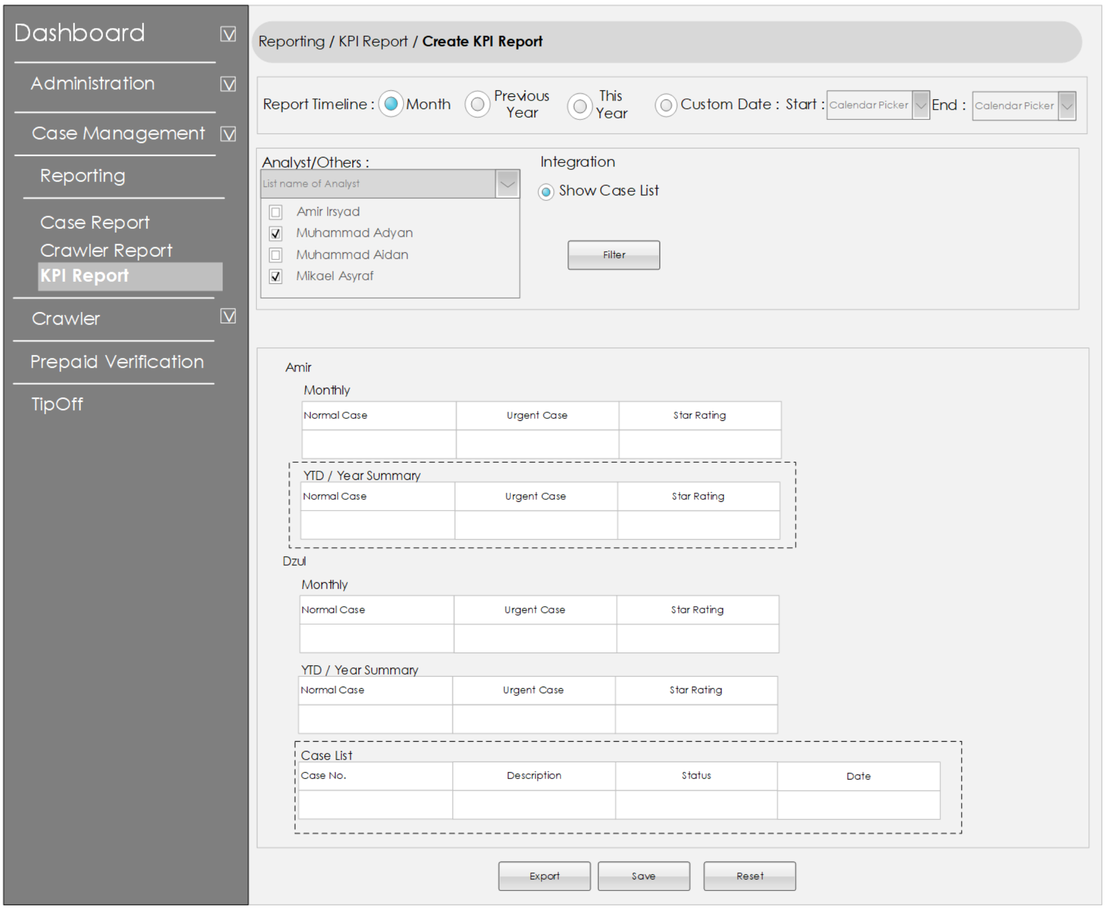


Figure 9.2:3: Crawler Report Landing Page

9.2.4 Wireframe: KPI Report

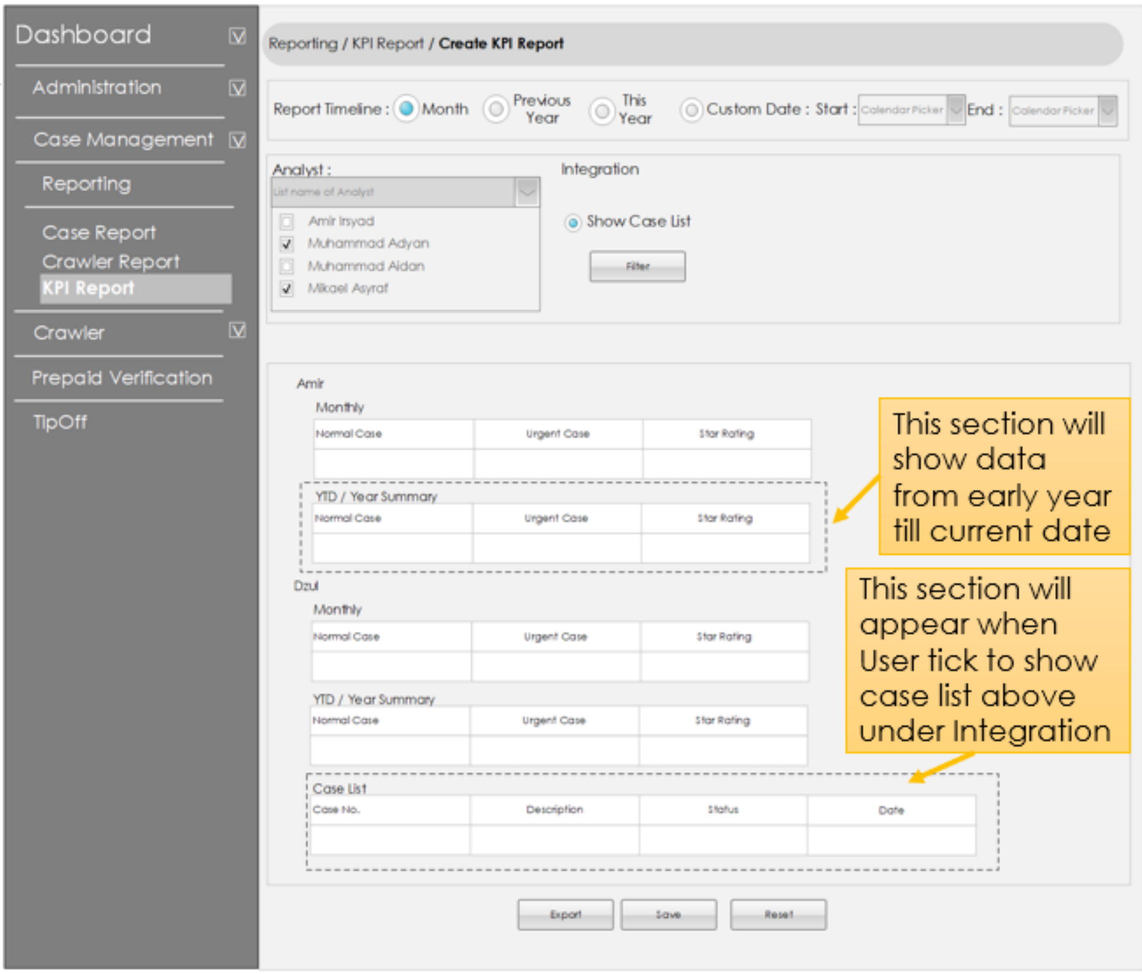


Figure 9.2:4: KPI Report Landing Page

10 TIPOFF

10.1 Overview

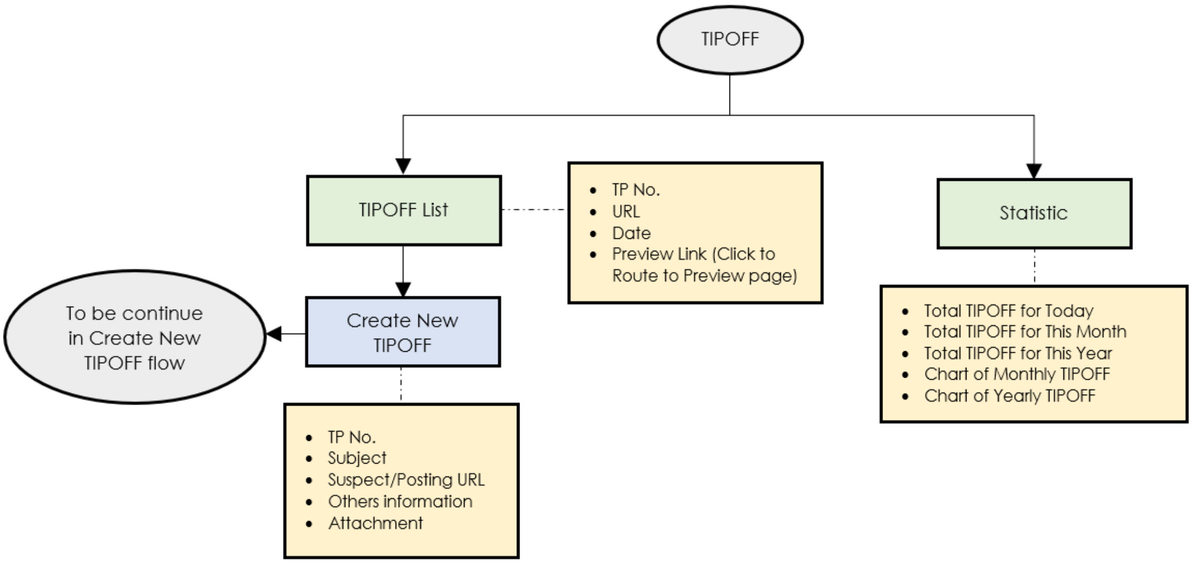


Figure 10.1:1: TIPOFF Overview and Sitemap

❖ Description

TIPOFF page consists of TIPOFF List and Statistic page. For the TIPOFF List page, all the historical TIPOFF list details are show in table view. In the same page, there is a Create New TIPOFF function and Search function.

In the statistic page, the related data and chart of TIPOFF will be displayed. For further information, refer the wireframe as shows in Figure 10.3:1: Landing Page Layout for TIPOFF (page 126).

10.2 Flowchart

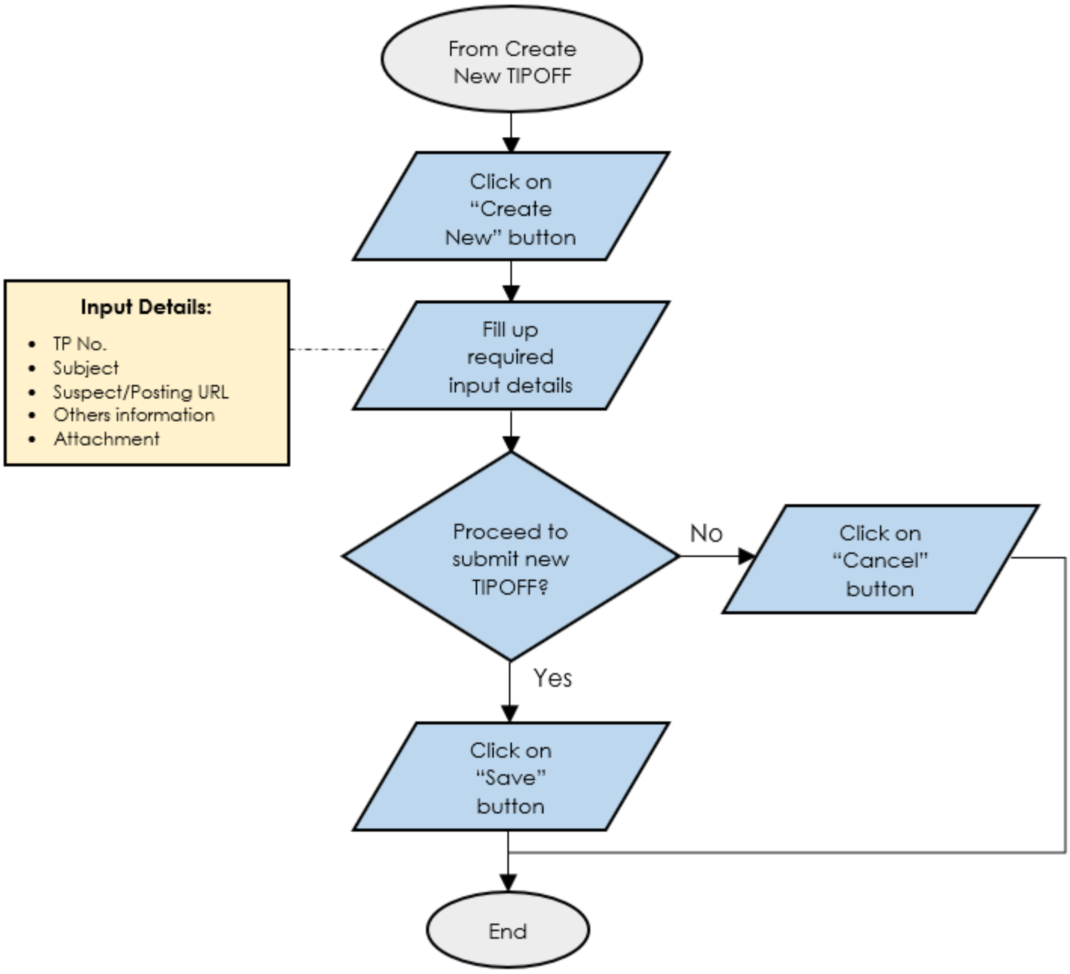


Figure 10.2:1: Flowchart to Create New TIPOFF

❖ Description

To create New TIPOFF, click on the Create New TIPOFF button in the default page of TIPOFF. Fill up the required input field of TP number, Subject Name, URL of Suspect/Posting and optional field for Others Information and Attachment.

Then, click on the Save button to complete the process. Click on Cancel button to erase all the input data and end the process.

10.3 Sample Wireframe

10.3.1 Wireframe: Existing Layout

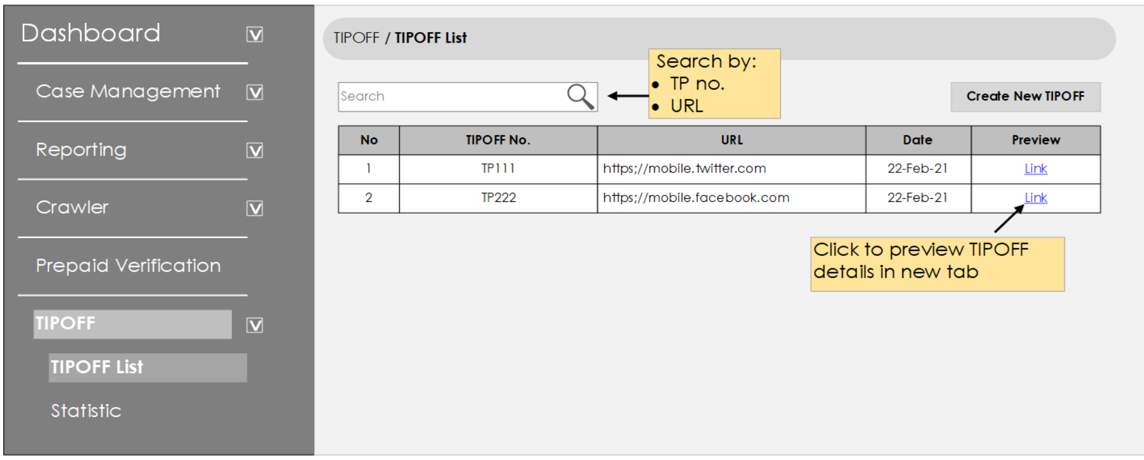


Figure 10.3:1: Landing Page Layout for TIPOFF

Attribute	Description
TIPOFF No.	The TP number is the specific value for each TIPOFF case
URL	The suspect or posting URL
Date	The date of save the new TIPOFF case
Preview	The link to view the further details from API

Table 10.3:1: Attribute and Description for each parameter

10.3.2 Wireframe: Tipoff Details

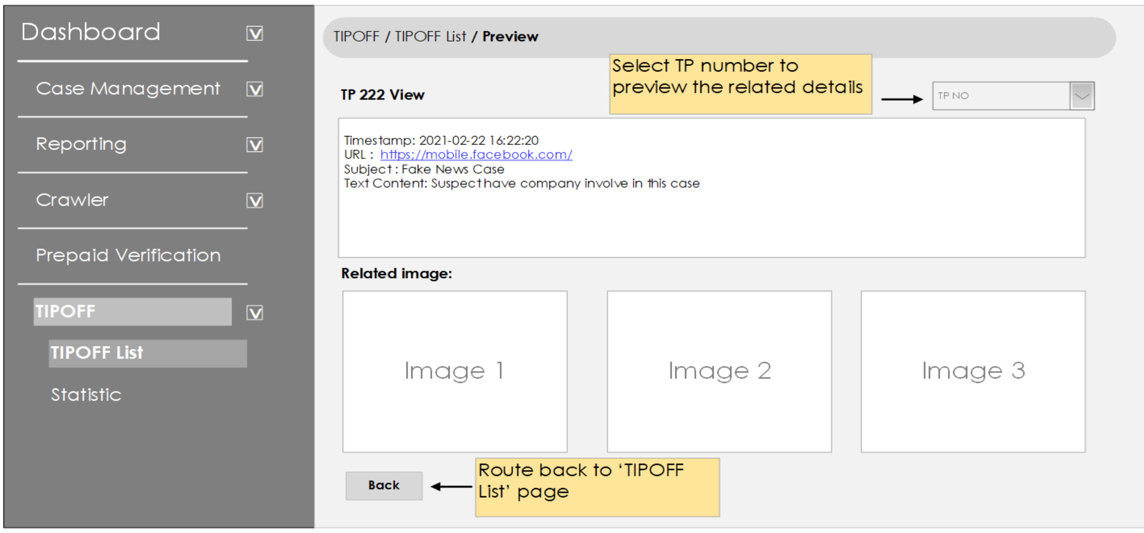


Figure 10.3:2: View TIPOFF Details

- Description

This preview page shows the selected TIPOFF details which including of the timestamp, related suspect/posting URL, subject, text content and related snapshot of images. The TP No. dropdown function is enabled to route to the specific TIPOFF details view. Click on the Back button to route to the Existing TIPOFF page.

10.3.3 Wireframe: Create New

Figure 10.3:3: Create New TIPOFF

❖ Description

To save a new TIPOFF case, fill up the required input field and click on the Save button to complete the process. Click on the Cancel button to delete the current input data and end the process.

10.3.4 Wireframe: Statistic

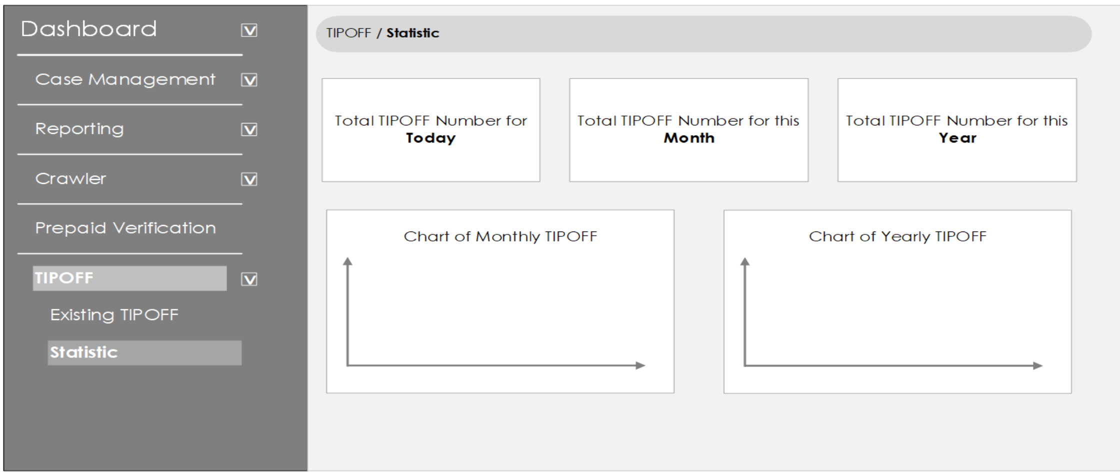


Figure 10.3:4: Landing Page for TIPOFF Statistic

Attribute	Description
Total TIPOFF Number for Today	The total of TIPOFF number by today
Total TIPOFF Number for This Month	The total of TIPOFF number for this current month.
Total TIPOFF Number for This Year	The total of TIPOFF number for this current year. Value for each month will be show.
Chart of Monthly TIPOFF	Total value for each date will be show in the monthly chart
Chart of Yearly TIPOFF	Total value for each month will be show in the yearly chart

Table 10.3:2: Attribute and Description for each parameter

11 Integration

11.1 JPN

1. Flowchart: New Request

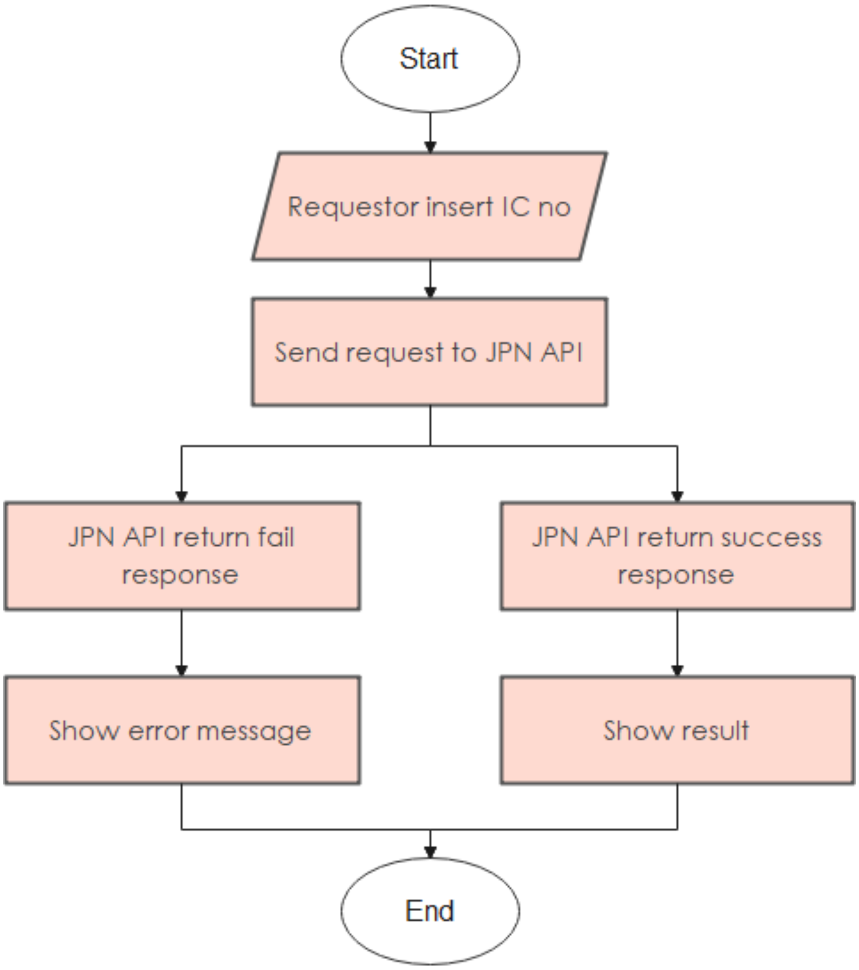


Figure 11.1:1: Process Flow of Requesting Personal Details using JPN API

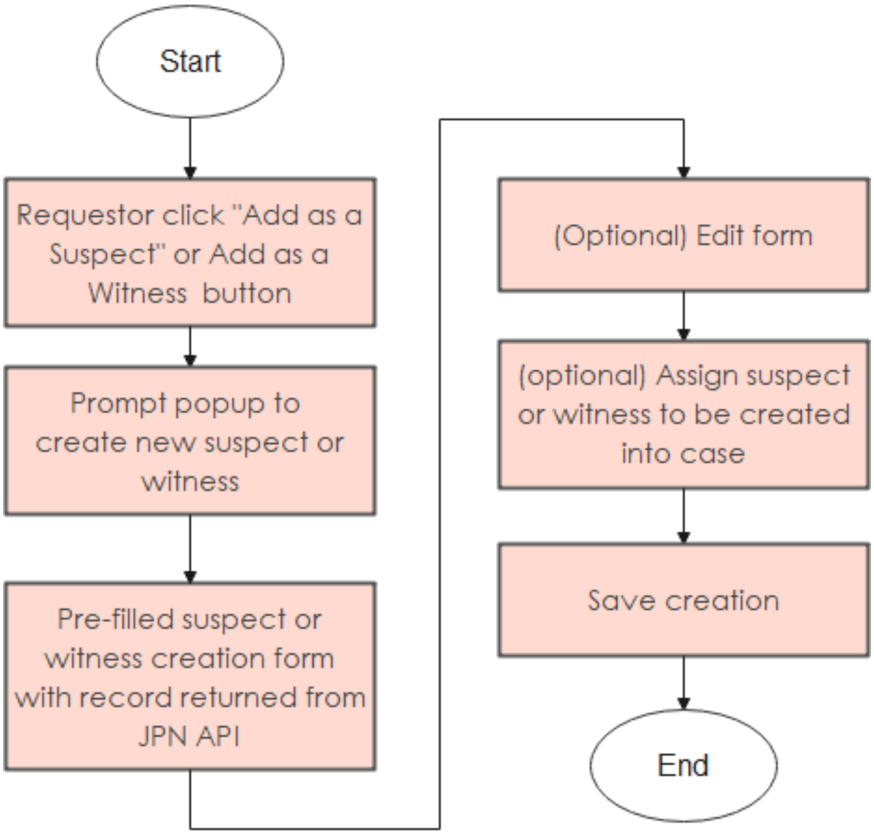


Figure 11.1:2: Process flow of suspect or witness creation from result returned by JPN API

- Description

  JPN API is third party API to get a basic personal information. Personal information can be retrieved based on their IC number or passport number (for non-Malaysian).

  After personal information is successfully retrieved, user can choose whether to create as new suspect or new witness. Then case number is required to be inserted so that created suspect/witness information will bind with inserted case number.

11.1.1 Wireframe: JPN

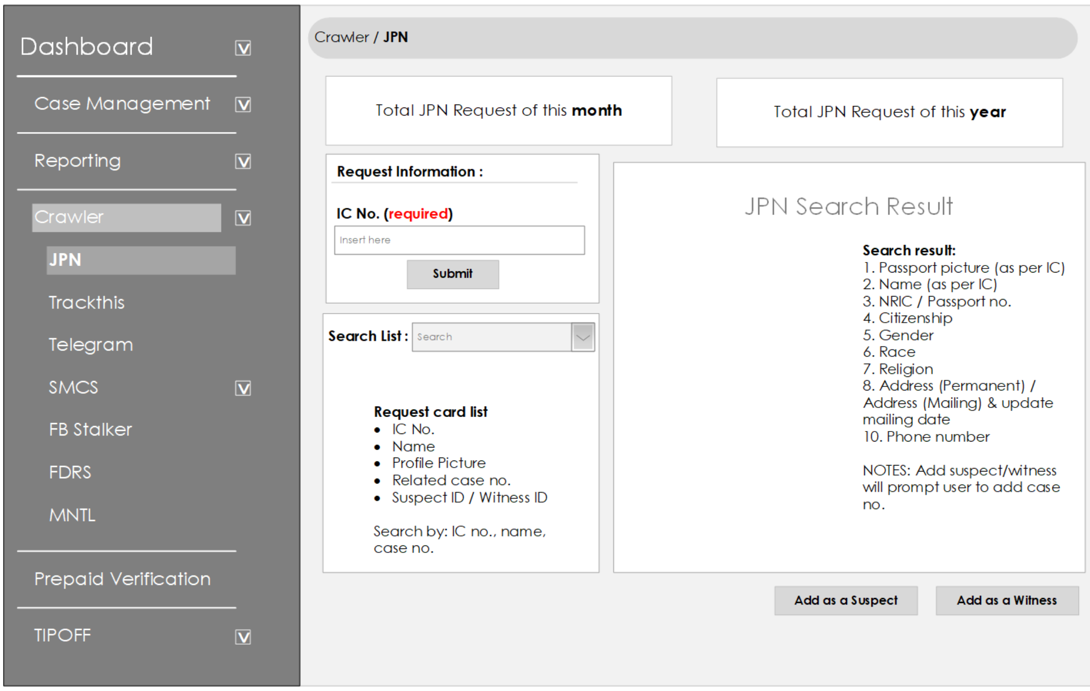


Figure 11.1:3: Wireframe of JPN page

Attribute	Details
Total JPN request of this month	Sum of request to JPN API monthly. Default is this month
Total JPN request of this year	Sum of request to JPN API yearly. Default is this year
IC No. field	Field to insert IC no to submit request to JPN API to get person's personal details
Requested list – JPN search result	Return result from JPN API based on inserted IC no. Attribute will be: 1. Passport picture (as per IC) 2. Name (as per IC) 3. NRIC / Passport no. 4. Citizenship 5. Gender 6. Race 7. Religion 8. Address (Permanent) 9. Address (Mailing) & update mailing date 10. Phone number
Button add as a suspect	Clicking this button will create new suspect and will prompt field to add case no.
Button add as a witness	Clicking this button will create new witness and will prompt field to add case no.
Search bar	Search previous requested list. Can be searched by: 1. IC no. 2. Name 3. Assigned case no. (if any)

Requested card list	Requested card list is the list of previous requested result in card form. The list will be sorted by latest returned request. Attribute to be shown in each card: 1. IC No. 2. Name (as per IC) 3. Profile picture (as per IC) 4. Related case no. 5. ID (suspect ID or witness ID) Action can be done: 1. Click on the card will show their full result 2. Able to assign suspect/witness in list with case no.

Table 11.1:1: List of Attribute and Details for JPN Page

11.2 Trackthis

1. Flowchart

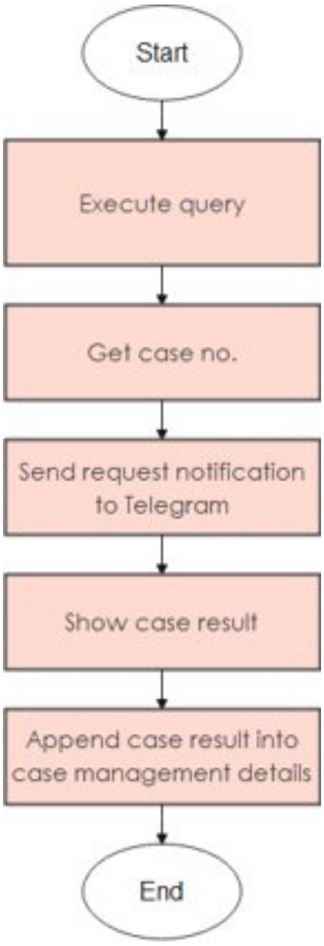


Figure 11.2:1: Flow chart of TrackThis

❖ Description

Trackthis is the third-party API to get inserted personal information. Inserted value can be executed by query. The query can be single query only or combination of multiple queries. Below is details on query option.

Result will be:

- Notify in Telegram to logged user Telegram account
- Append into case investigation result part under case details page in case management as shows in Figure 7.4:7: Wireframe of Case Details - Information Details (page 104)

Option	Category
Single query	1. IC No. 2. Name 3. Phone No. 4. Email address 5. Address
Combination queries	

Table 11.2:1: Query option and it's category

11.3 Wireframe: Telegram

1. Flowchart: 2FA

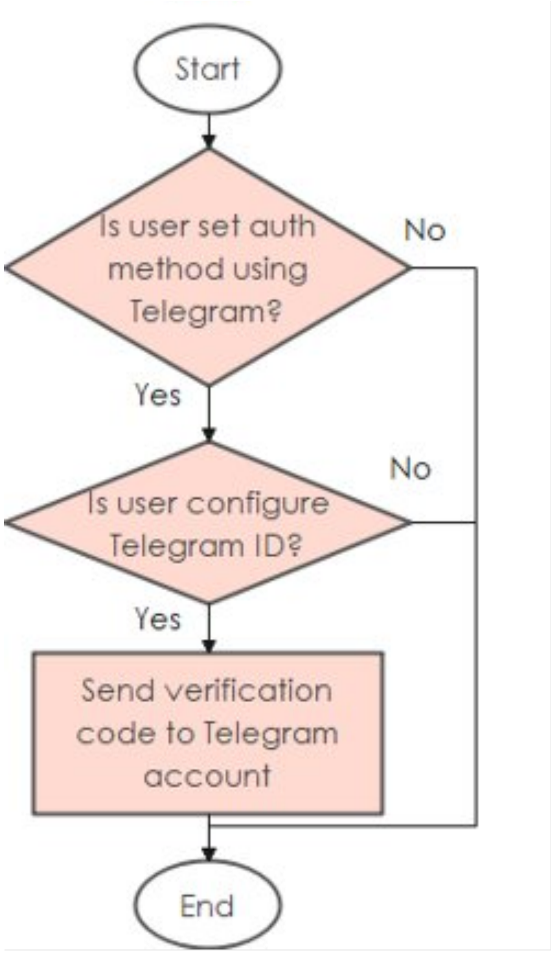


Figure 11.3:1: Process Flow of two-factor authentication for user login

❖ Description

One of authentication method is using two-factor authentication to Telegram. But first, user need to configure their Telegram ID and set authentication method in user profile or else, the 2FA process will be fail.

Once verification code is successfully received by user. They need to insert the verification code in authentication field and, if it is passed, they will be able to login and redirected to the landing page (dashboard page).

Also, verification code for Telegram will be expired within 5 minutes. Or else, user need to send request for a verification code once again.

2. Flowchart: Messaging / Notification

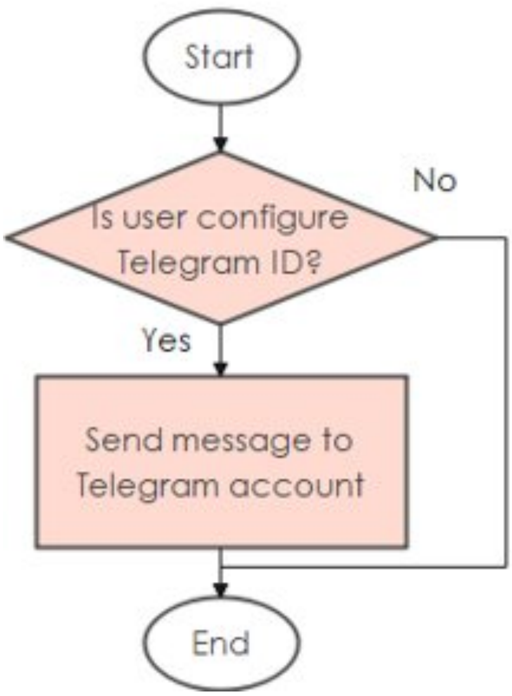


Figure 11.3:2: Process Flow of messaging or notification

❖ Description

One of notification method improved is by using Telegram. Notification will be for:

- Login
- New user activation
- New case approved by HOD (for LEA)
- New case assigned by HOD to analyst
- Case rejected
- HOD give feedback to case created to LEA
- Extend deadline status
- Closed case
- Crawler API request

11.4 SMCS

1. Flowchart

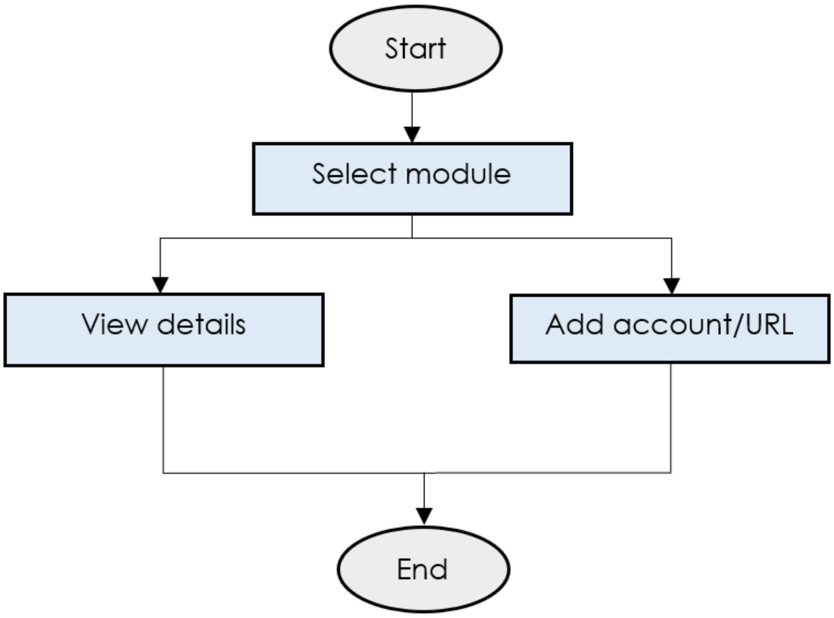


Figure 11.4:1: SMCS Flow chart

❖ Description

SMCS is a third-party service which serve a purpose get an information for a URL link. There are 7 modules in SMCS which includes Blog/Web, Twitter, Instagram, Tumblr, Majalah.com, Mudah.my, and Pastebin.com.

Once the information successfully retrieved, user can view the existing URL information or create a new URL link to monitor.

1. Wireframe: SMCS
   - Wireframe as show below is a sample landing page of SMCS - Blog/Web.
   - This landing page applicable for all under SMCS which is Twitter, Instagram, Tumblr, Pastebin, Majalah.com and Mudah.my

11.4.1 Wireframe: Blog/Web

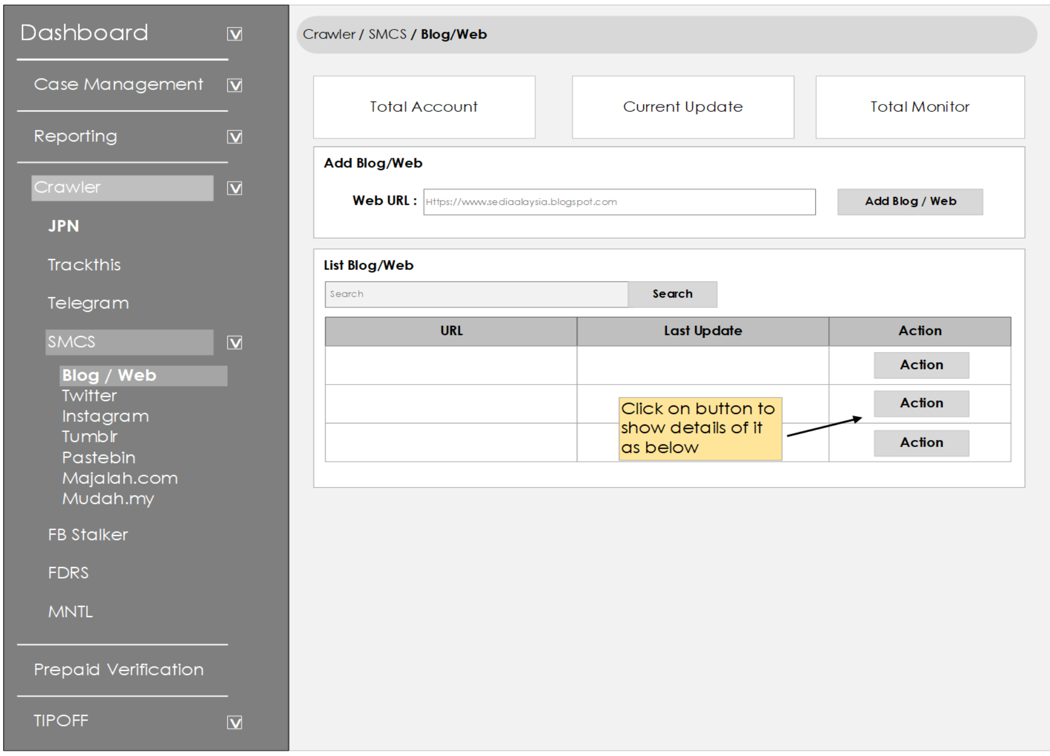


Figure 11.4:2: Landing Page of SMSC - Blog/Web

Attribute	Details
Total account	Sum of account URL link based on the module selected from side menu
Current update	Sum of current update URL link based on the module selected from side menu
Total monitor	Sum of URL monitor account link based on the module selected from side menu
Add URL field	Fields to input URL to monitor
Button add URL	Clicking this button will query the URL and get the data to monitor.
Search field	Fields to input URL to search
Search button	Clicking this button will search the URL in the table and show the data requested.
Table list	The table will show the list of previous requested URL in system. The list will be sorted by the latest date request. Attribute to be shown in each column: 1. URL 2. Last update 3. Action Action can be done: 1. Click on the 'Action' button will show the full info about the URL link

Action button	Clicking this button will show the timeline and link for the URL

Table 11.4:1: List of Attribute and Details for SMCS Page

11.4.2 Wireframe: Action Page

The list of posting is a timeline history and a clickable URL link to view the details information about the URL.

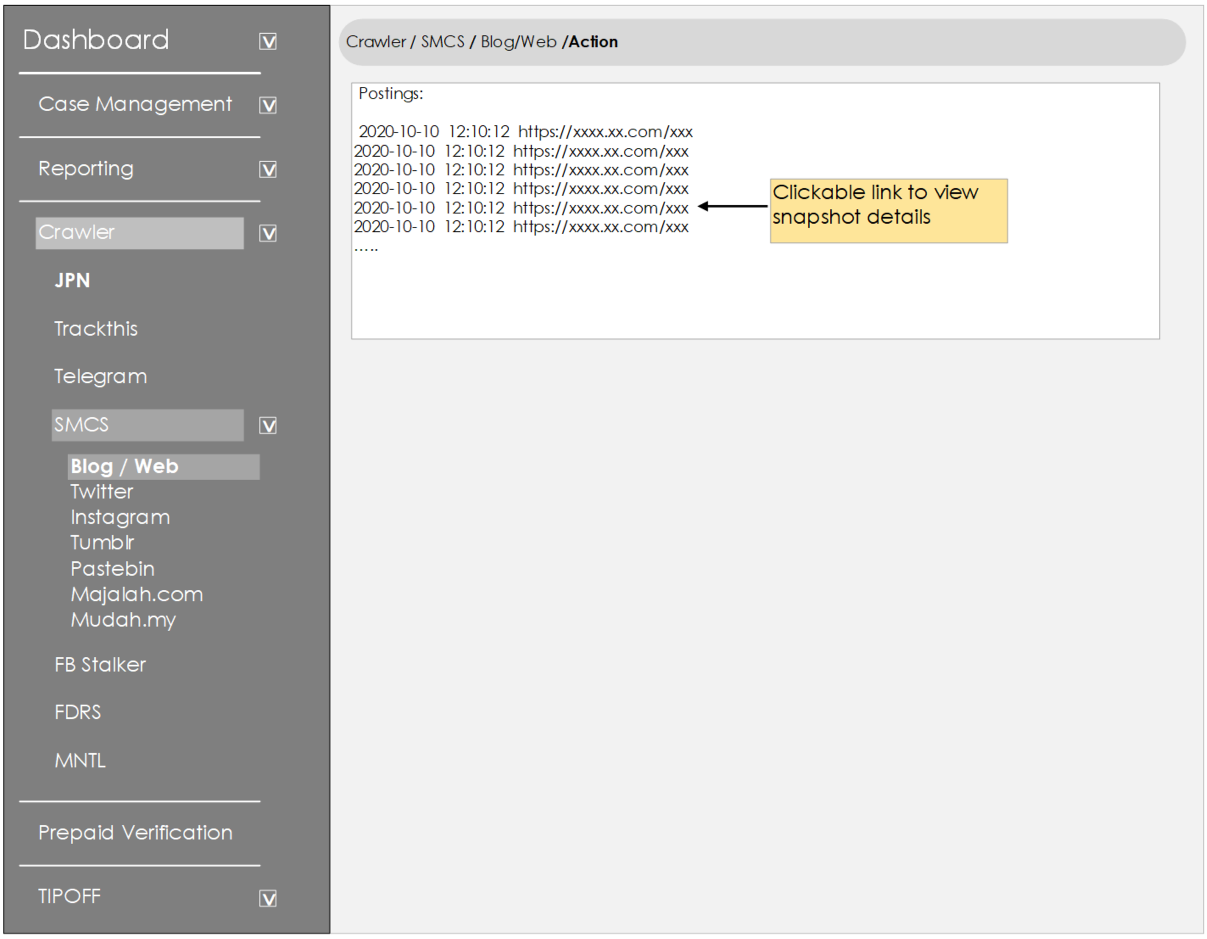


Figure 11.4:3: Details Action Landing Page

11.5 FBStalker

1. Flowchart

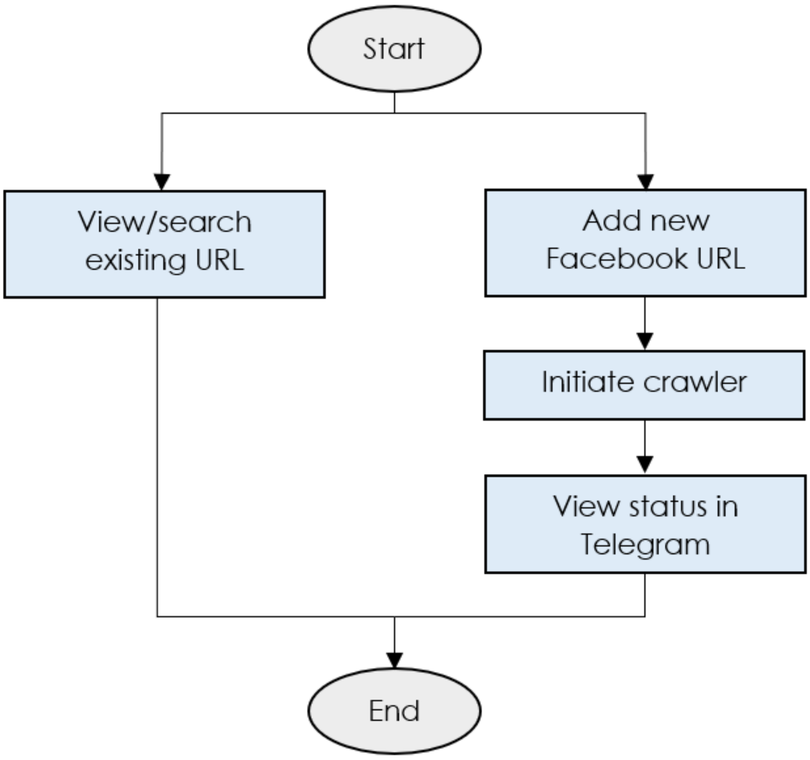


Figure 11.5:1: FB Stalker Flowchart

❖ Description

FBStalker is a third-party integration service to get information from a Facebook URL link. User can view the existing URL information or create a new Facebook URL link to initiate crawler.

11.5.1 Wireframe: FB Stalker

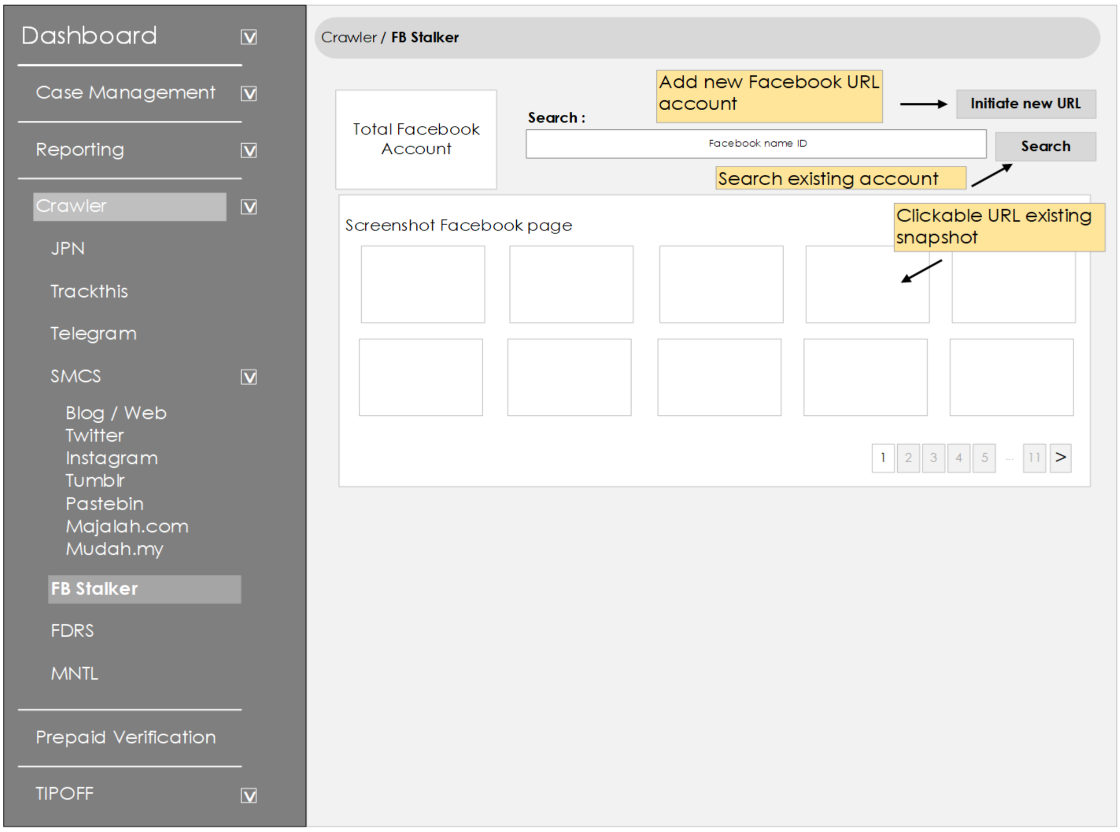


Figure 11.5:2: FB Stalker Landing Page

Attribute	Details
Total account	Sum of Facebook account URL link.
Initiate new URL	Clicking this button will open a page to add new Facebook URL link
Search field	Field to search the existing data based on Facebook URL or name id.
Search button	Clicking this button will search the URL from existing URL request
Screenshot existing page	The snapshot from existing URL will be shown here. Action can be done 1. Click on the snapshot to view snapshot detail 2. Click on pagination button to view next page of snapshot

Table 11.5:1: List of Attribute and Details for FB Stalker Page

11.5.2 Wireframe: FB Stalker / Crawler

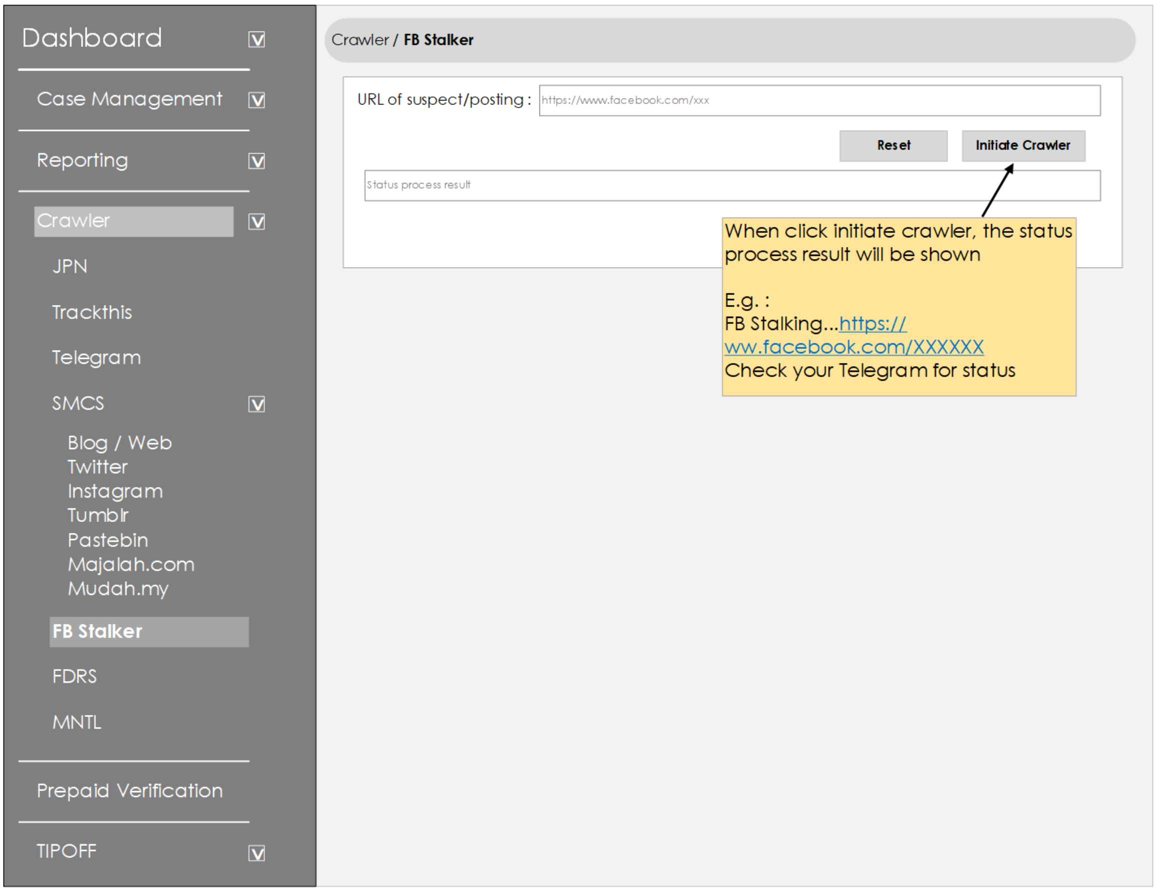


Figure 11.5:3: FB Stalker - Crawler

Attribute	Details
Posting URL field	URL of Facebook link to crawl
Reset button	Clicking this button will clear the search field
Initiate crawler field	Clicking this button will initiate crawler for the link provided
Status process result	This section will show status process result and next action in Telegram

Table 11.5:2: List of Attribute and Details for FB Stalker - Crawler Page

11.5.3 Wireframe: Account Info

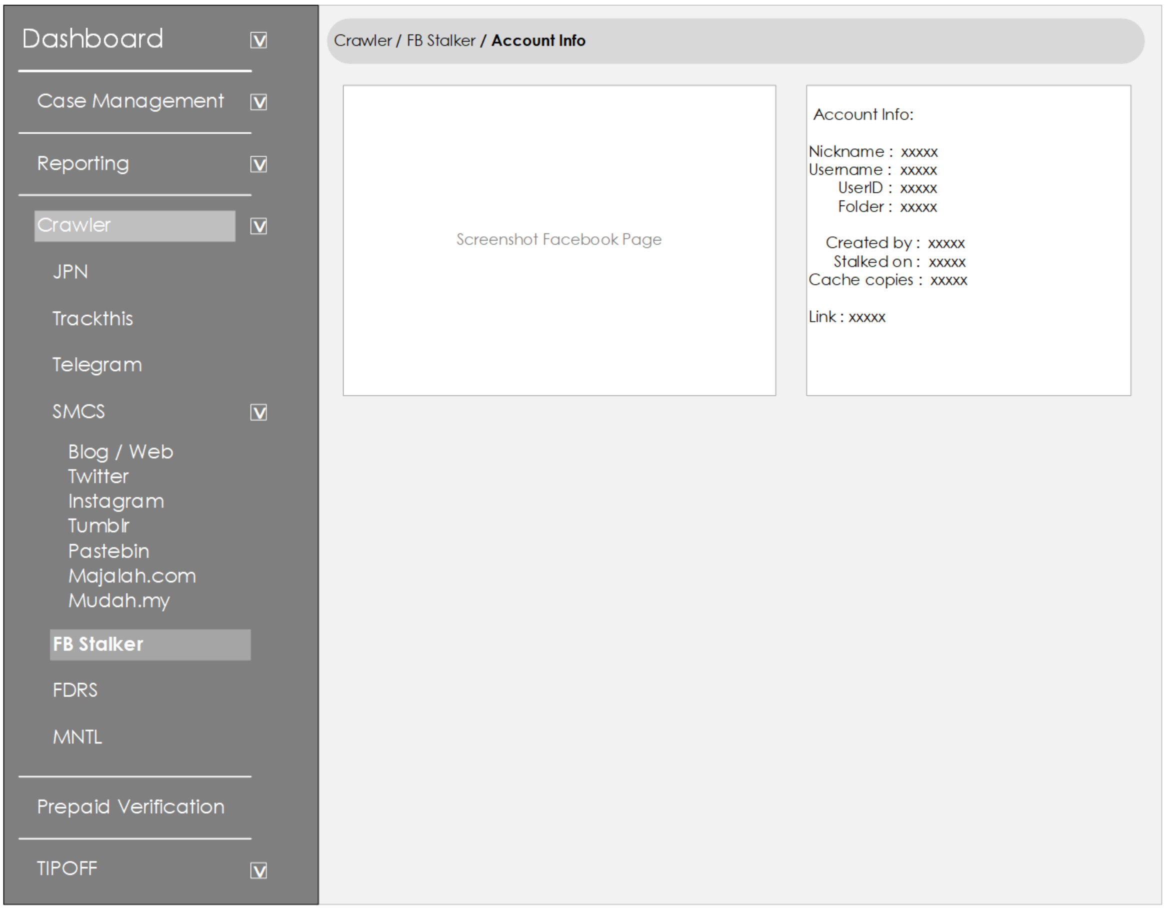


Figure 11.5:4: FB Stalker - Account Info

Attribute	Details
Screenshot Facebook page	This section will show a screenshot of Facebook page
Account info	This section will show account info details consist of: • Nickname • Username • User ID • Folder • Created by • Stalked on • Cache copies • Link

Table 11.5:3: List of attributes and details of FB Stalker - Crawler

11.6 FDRS

1. Overview

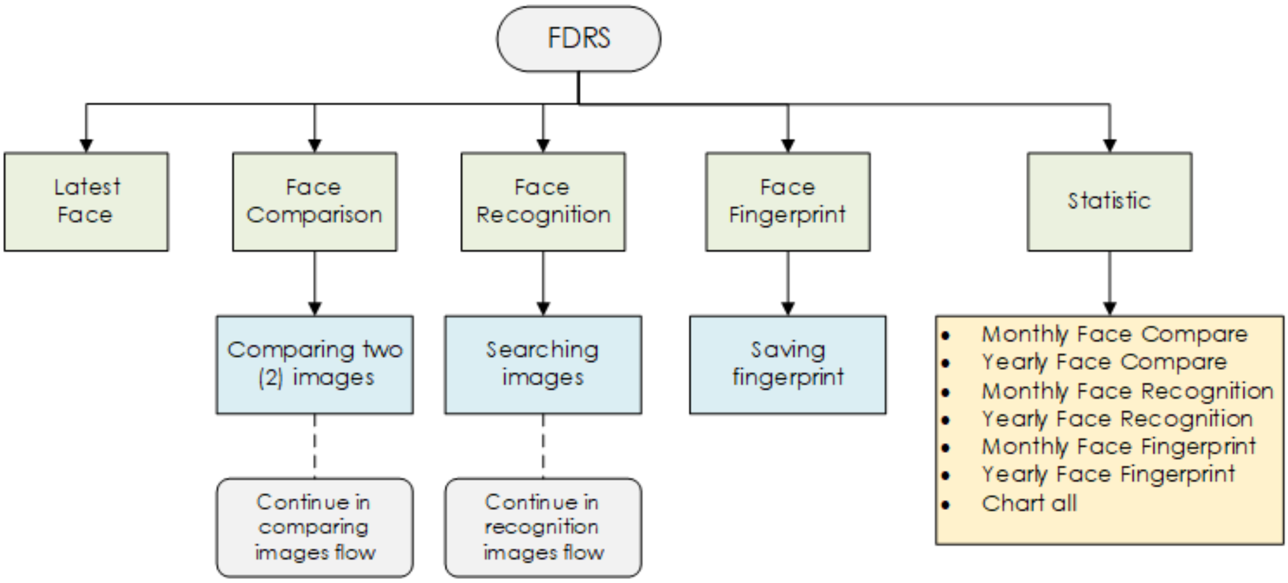


Figure 11.6:1: Sitemap and Overview of FDRS

❖ Description

Face detection recognition system (FDRS) consists of five sub-menus which is Latest Face, Face Comparison, Face Recognition, Face Fingerprint and Statistic. For the face comparison page, the upload image function is existed to use in comparing two images.

Face recognition and face fingerprint consist of the upload function as well to do image searching and save uploaded images in database. For the statistic page, the monthly and yearly of total face compare, face recognition and face fingerprint will be showed. The chart for all this result will be plotted.

2. Flowchart: Face Comparison

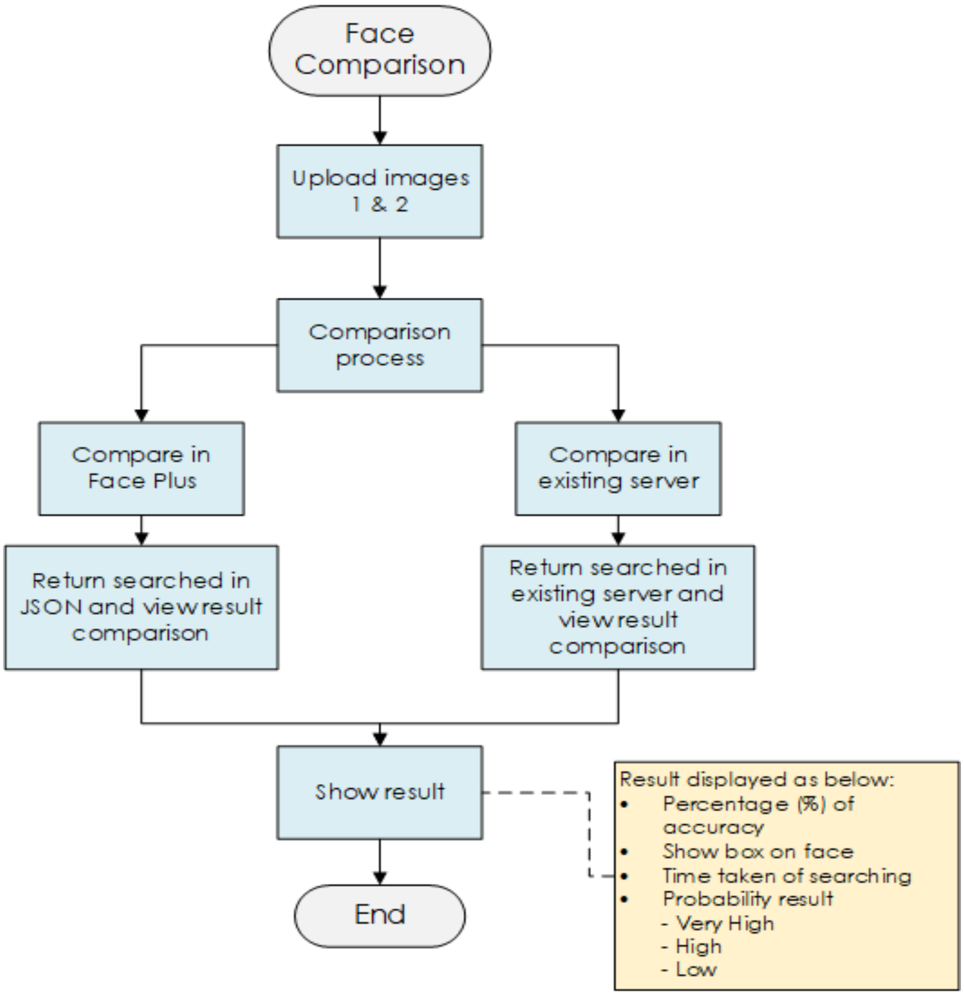


Figure 11.6:2: Flowchart for Face Comparison

❖ Description

In this face compare process flow, upload two images to do the comparison in Face Plus API or existing server. Both the Face Plus API and existing server will return result of percentage of accuracy (%), box on face, time taken to do searching, and probability result (very high, high, and low).

3. Flowchart: Face Recognition

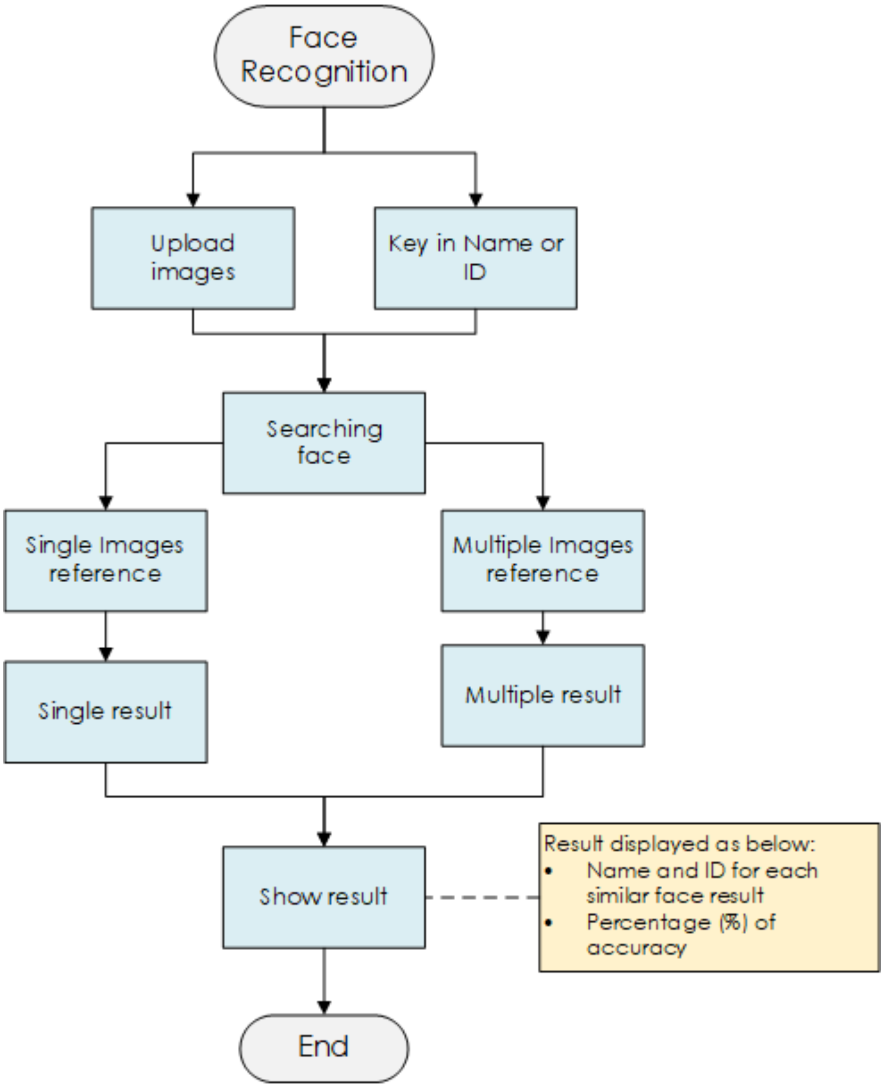


Figure 11.6:3: Flowchart for Face Recognition

❖ Description

In face recognition process flow, upload image and key in the name or ID of the image owner to be save in database. Then do the face search in single image or multiple image reference. The result will be displayed the name and ID for each similar face result return from database and percentage of similarity accuracy (%) on all the images.

11.6.1 Wireframe: Statistic

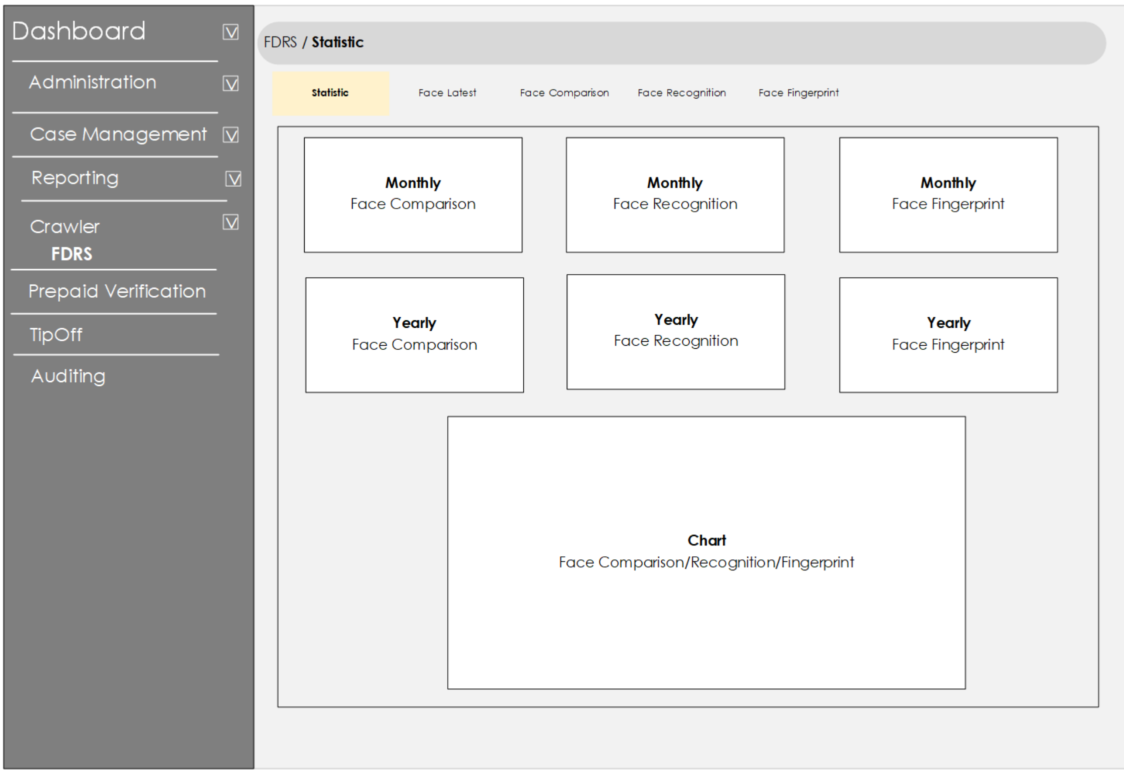


Figure 11.6:4: FDRS - Statistic Landing Page

Attribute	Details
Monthly Face Comparison	Total value for current month face comparison that have searched
Monthly Face Recognition	Total value for current month face recognition that have searched
Monthly Face Fingerprint	Total value for current month face fingerprint that have uploaded
Yearly Face Comparison	Total value for current year face comparison that have searched
Yearly Face Recognition	Total value for current year face recognition that have searched
Yearly Face Fingerprint	Total value for current year face fingerprint that have uploaded
Chart	All chart for face comparison, face recognition and face fingerprint will be plotted

Table 11.6:1: List of Attribute and Details for FDRS - Statistic Page

11.6.2 Wireframe: Latest Face

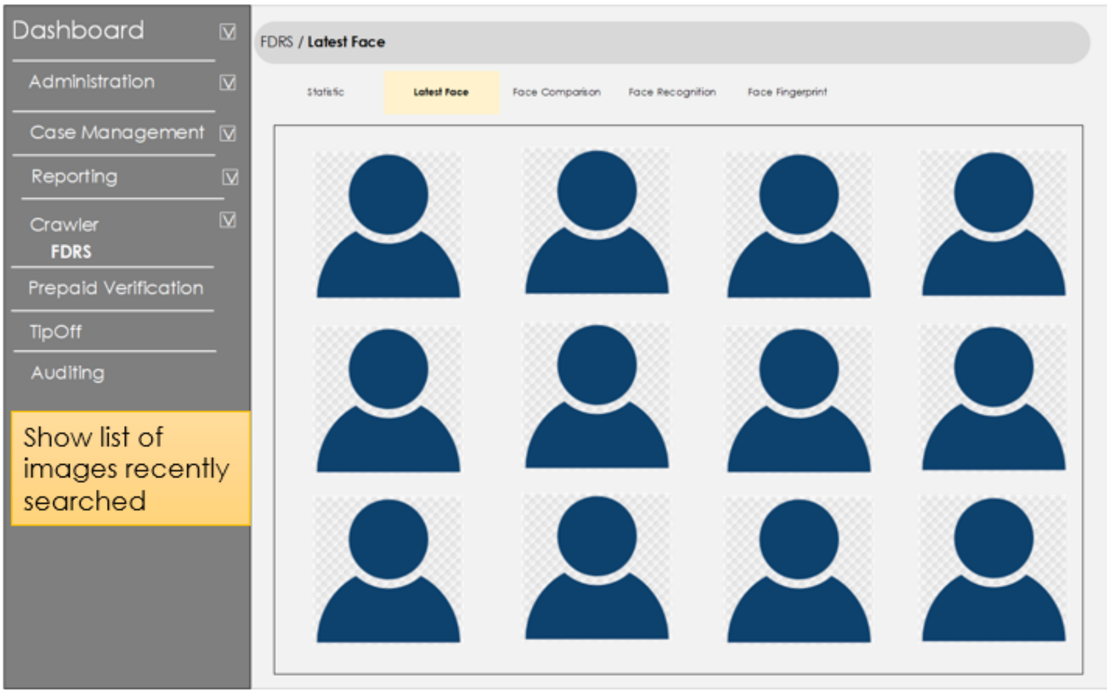


Figure 11.6:5: FDRS – Latest Face Landing Page

11.6.3 Wireframe: Face Comparison

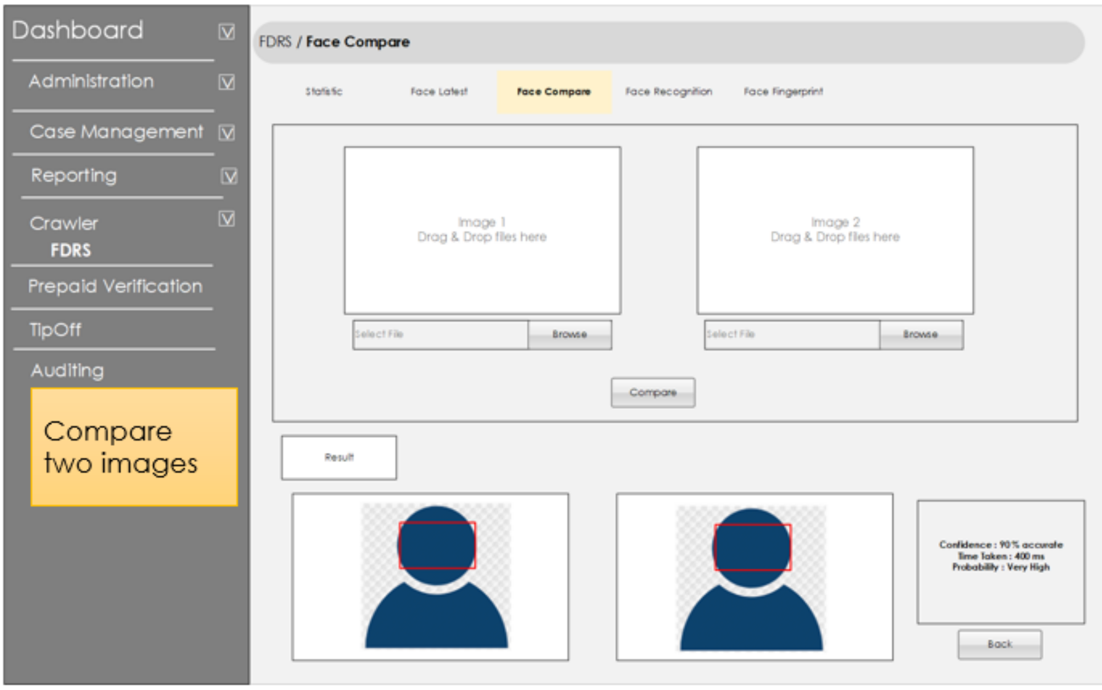


Figure 11.6:6: FDRS – Face Comparison Landing Page

11.6.4 Wireframe: Face Recognition

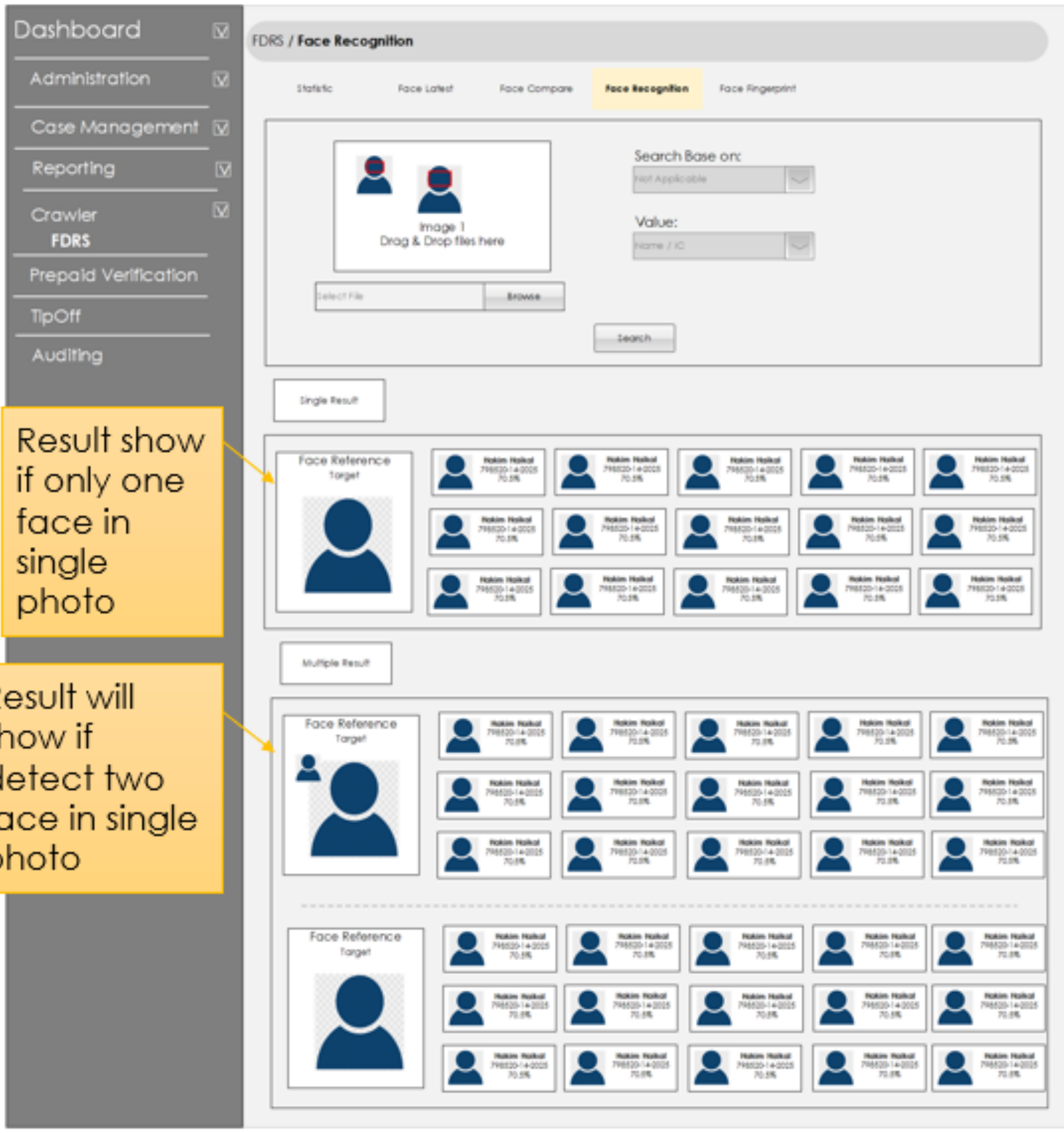


Figure 11.6:7: Face Recognition Landing Page

11.6.5 Wireframe: Face Fingerprint

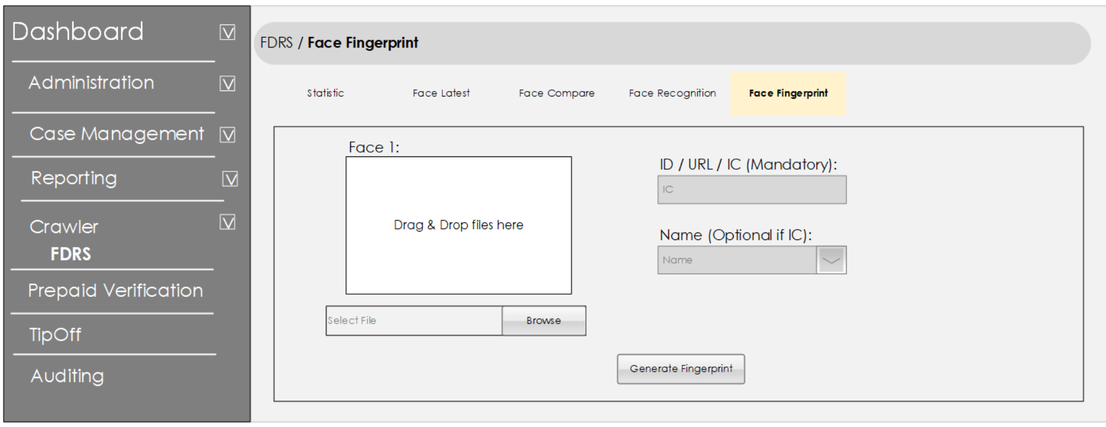


Figure 11.6:8: Face Fingerprint Landing Page

11.7 MNTL

1. Overview

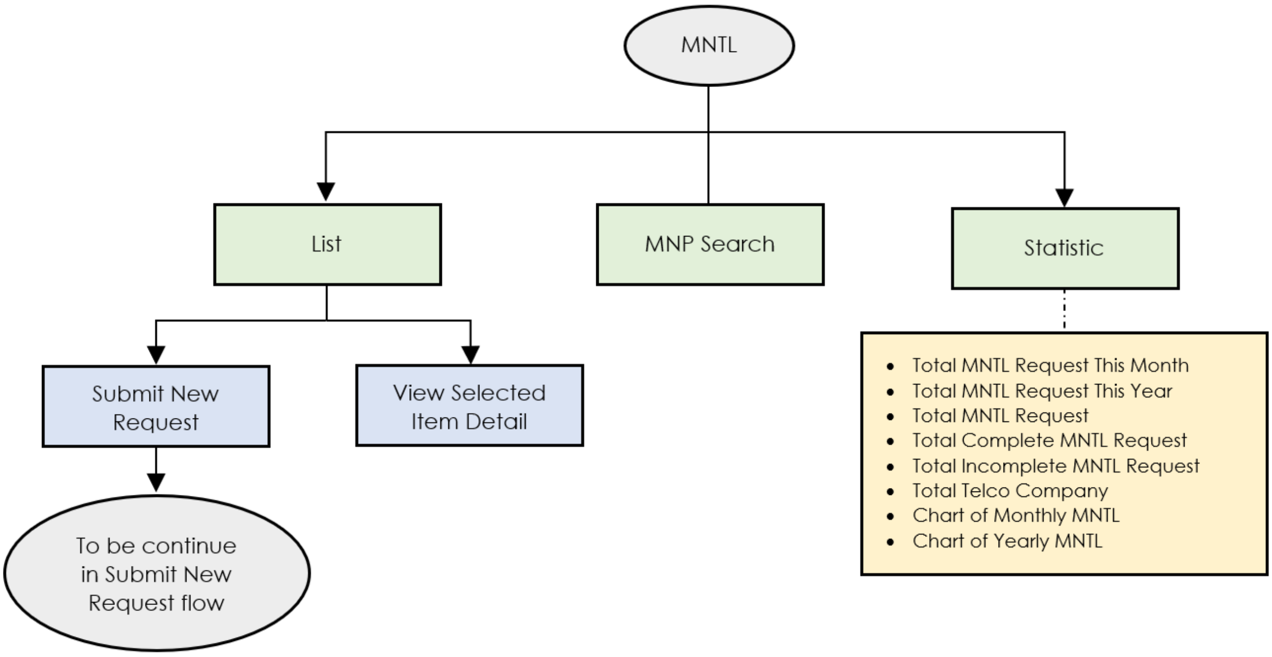


Figure 11.7:1: MNTL Sitemap and Overview

❖ Description

The MNTL consists of three sub-menus, which is List, MNP Search and Statistic. The list page shows the historical record of MNTL request which includes Start and End Date filter function and Search function. The filter function description can refer in wireframe of the List page in Figure 11.7:3: MNTL Landing Page (page 149).

2. Flowchart: Submit new MNTL

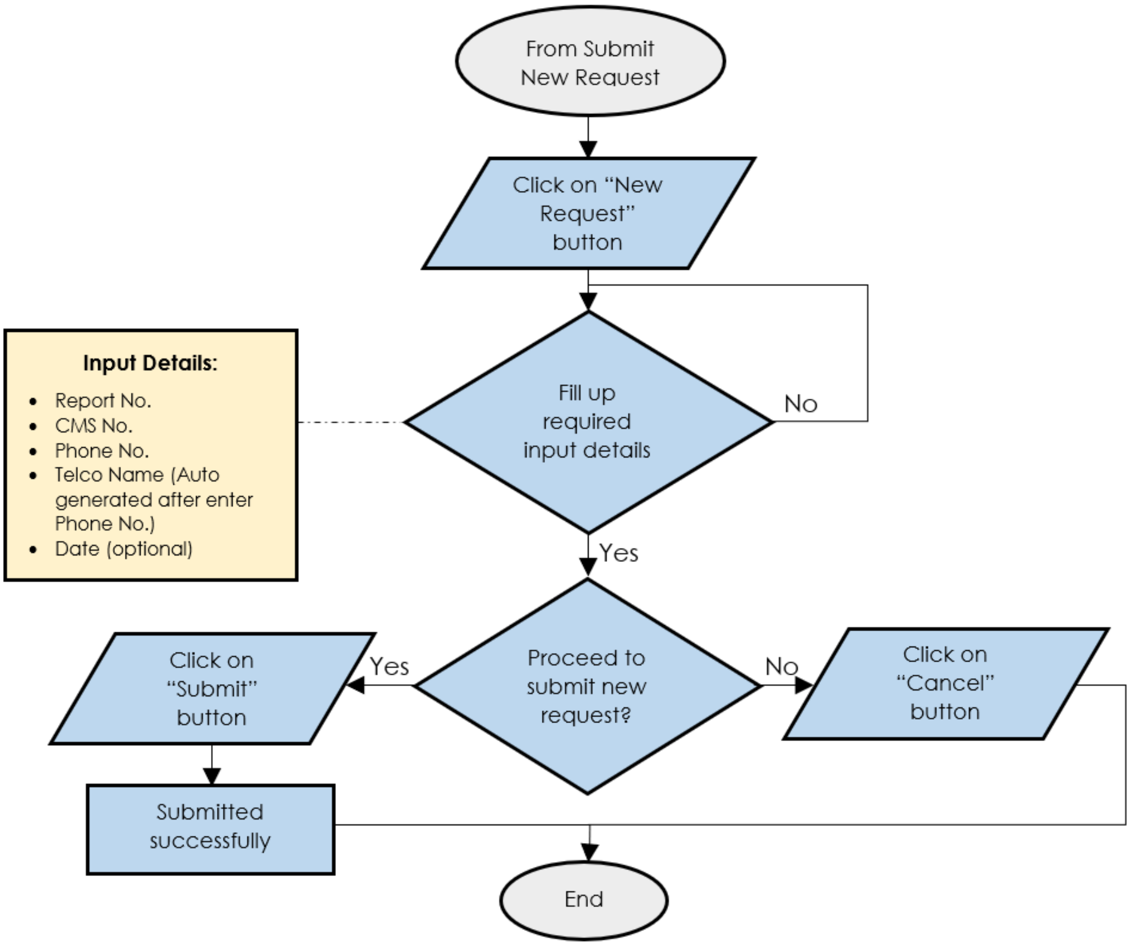


Figure 11.7:2: Process Flow to submit new MNTL

❖ Description

From the List page, click on the New Request button and fill up the input details that required in the page. Then proceed to submit when all the details are fill up. The details for required input field is show in the MNTL New Request wireframe below.

11.7.1 Wireframe: MNTL List

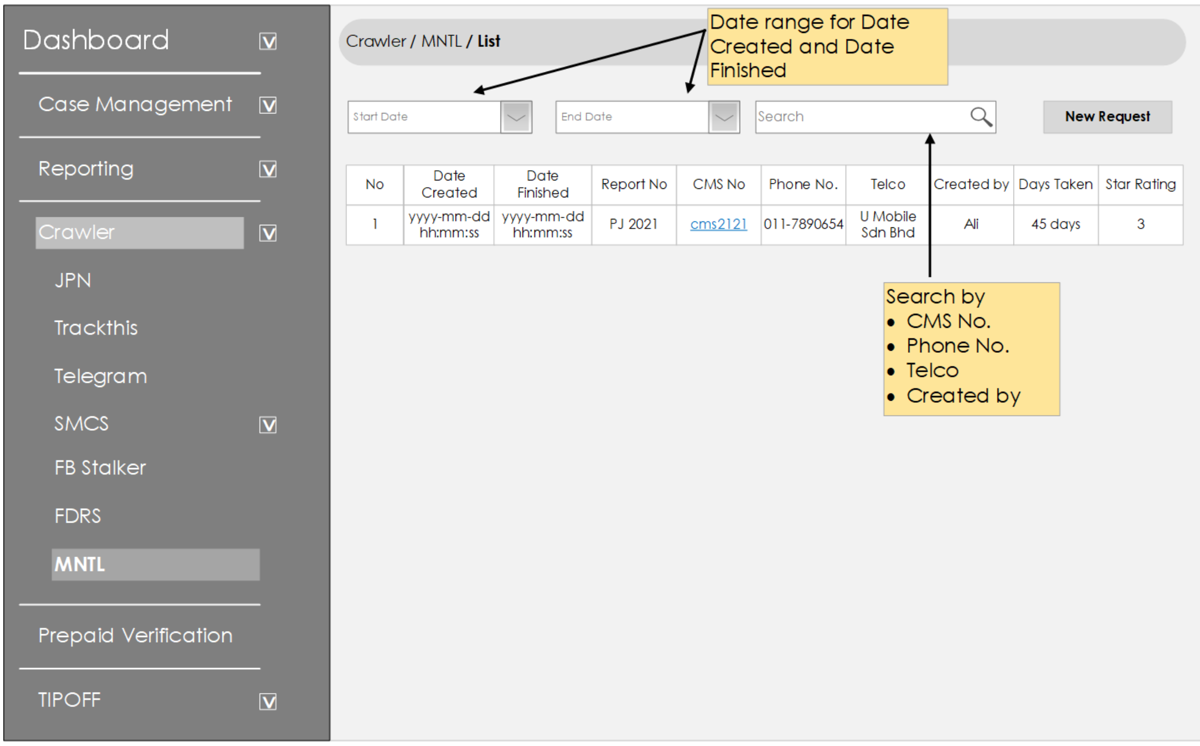


Figure 11.7:3: MNTL Landing Page

❖ Description

This is the default list page in MNTL. The Start Date & End Date filter is the date range of Date Created and Date Finished. While the Search filter can be search by Report Number, CMS Number, Phone Number, Telco and Created by details. The historical list is displays in table and with the column as in the wireframe which includes the following information:

- Date Created
- Date Finished
- Report Number
- CMS Number
- Phone Number
- Telco
- Created By
- Days Taken
- Star Rating

11.7.2 Wireframe: MNTL Preview Details

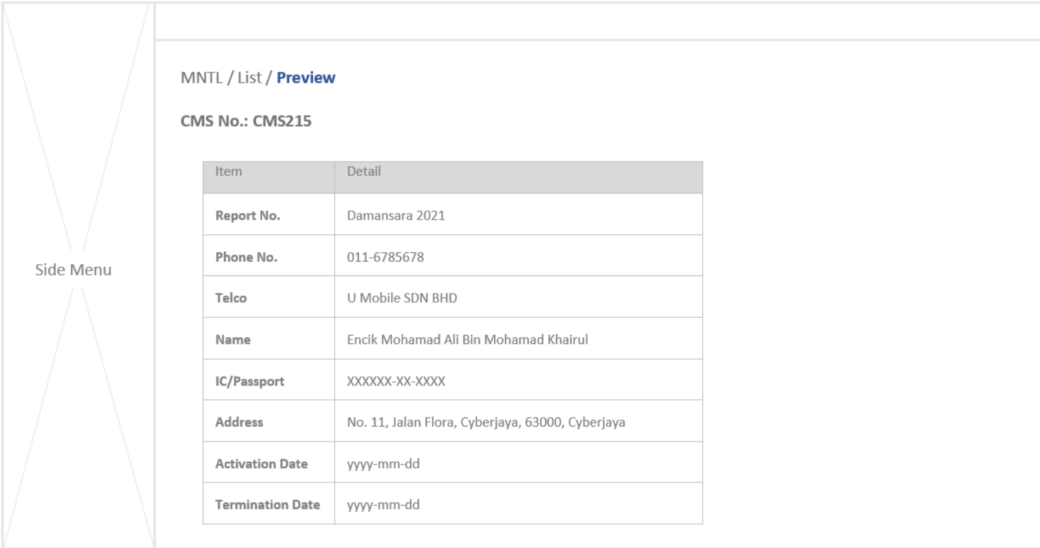


Figure 11.7:4: MNTL Preview Landing Page

The image above shows the preview page from selected CMS item. The table display about the telco details get from the phone number.

Item	Description
Report No.	Case report number
Phone No.	Phone number of the owner
Telco	Telco company name
Name	Full name of the owner
IC/Passport	Identity card or passport number of the owner
Address	Full address of the owner
Activation Date	Phone number registration date
Termination Date	Phone number termination date

Table 11.7:1: List of Attribute and Details for MNTL - Preview Page

11.7.3 Wireframe: MNTL New Request

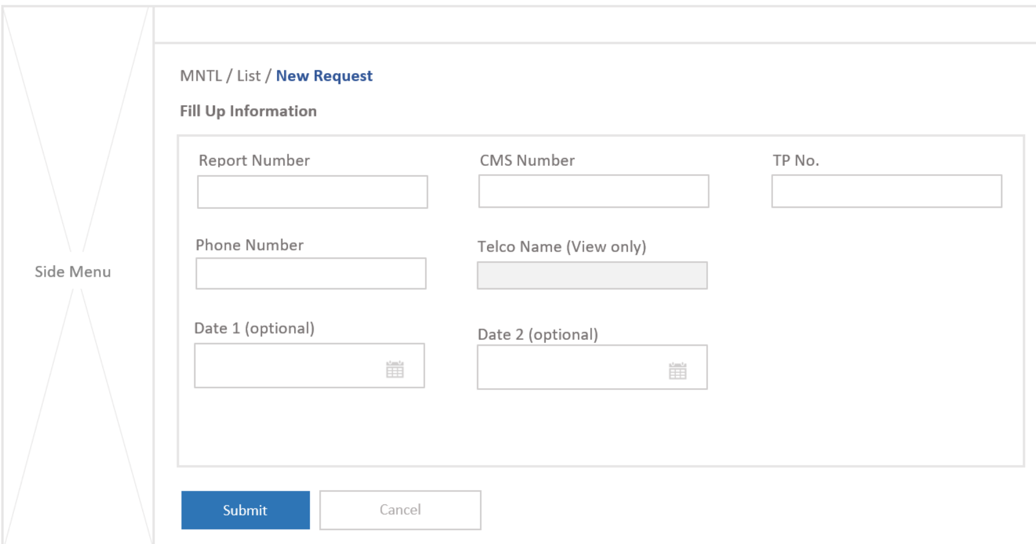


Figure 11.7:5: MNTL New Request Landing Page

The image above shows the application form of MNTL new request. Click the Submit button to save all information in the database.

Attribute	Description
Report No.	Value of report number
CMS No.	Value of CMS number
TP No.	Value of TIPOFF number
Phone No.	Required field for phone number
Telco Name	Auto-generated telco name after entered phone number. This field is support for view only.
Date 1	Optional field for date 1. Insert in text field or select from date picker.
Date 2	Optional field for date 2. Insert in text field or select from date picker

Table 11.7:2: List of Attribute and Details for MNTL – New Request Page

11.7.4 Wireframe: MNTL - MNP Search

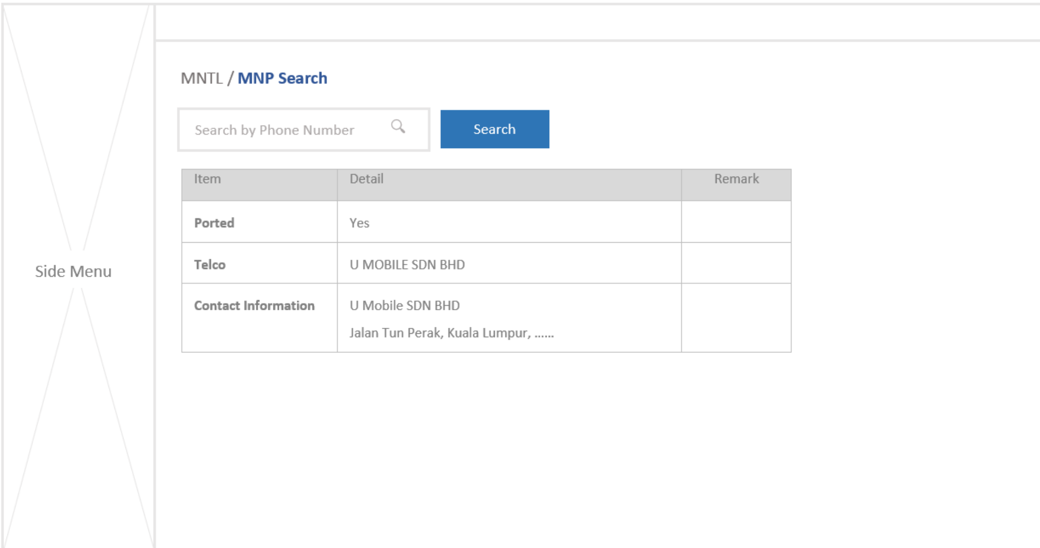


Figure 11.7:6: MNTL - MNP Search Landing Page

MNP search is by entering the phone number and get result return from API. The result details are described in table below.

Attribute	Description
Ported	Ported value (Yes/No) from phone number
Telco	Telco company name get from the phone number
Contact Information	Related telco company contact details get from the phone number

Table 11.7:3: List of Attribute and Details for MNTL – MNP Search Page

11.7.5 Wireframe: MNTL - Statistic

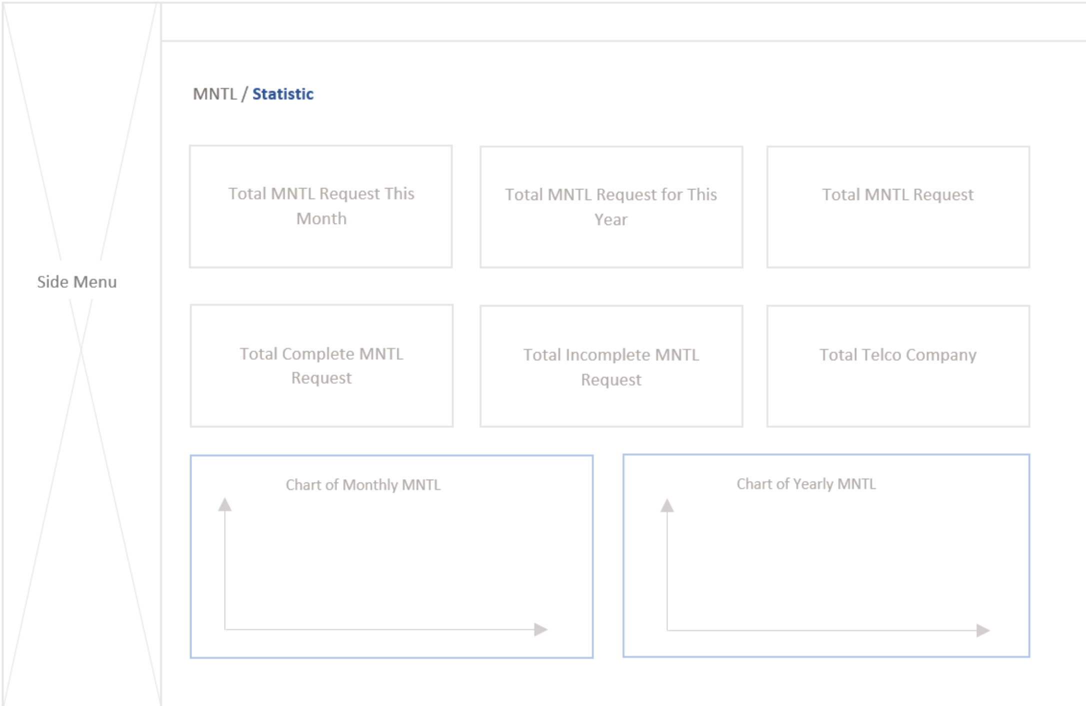


Figure 11.7:7: MNTL Statistic Landing Page

The MNTL statistic page shows only MNTL related information. MNTL statistic details:

Attribute	Description
Total MNTL Request for this Month	The total value of MNTL request in this current month
Total MNTL Request for this Year	The total value of MNTL request in this current year
Total MNTL Request	Overall value of MNTL request until today
Total Complete MNTL Request	The total value of complete MNTL request until today
Total Incomplete MNTL Request	The total value of incomplete MNTL request until today
Total Telco Company	Total telco company request until today
Chart of Monthly MNTL	Monthly chart of MNTL request. Show in total value per day
Chart of Yearly MNTL	Yearly chart of MNTL request. Show in total value per month

Table 11.7:4: List of Attribute and Details for MNTL – Statistic Page

11.8 Prepaid Verification

1. Overview

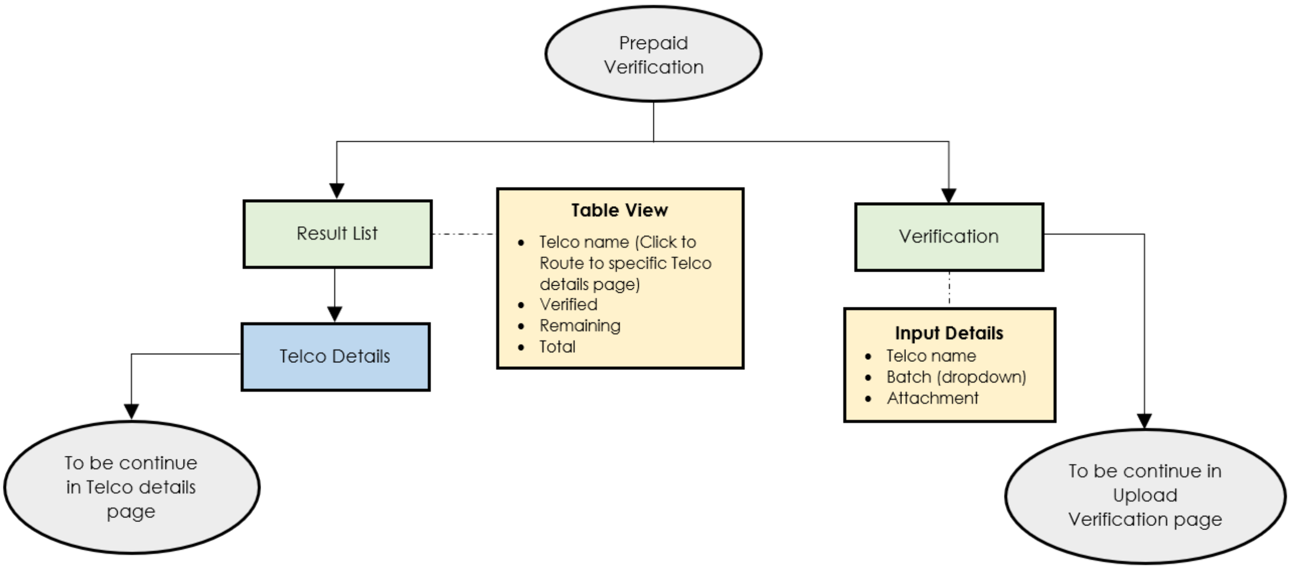


Figure 11.8:1: Overview Prepaid Verification Sitemap

❖ Description

Prepaid verification consists of two sub-menus which is Result List and Verification. For Result List page, the historical telco details are show in 4-column table which including:

- Telco name
- Verified
- Remaining
- Total

The telco name is clickable and can route to the specific telco details only. While Verification page is use as create new prepaid verification application. The telco name and batch option are required to fill up, but attachment can be optional before click on the Submit button to send to backend.

2. Flowchart: Download Document

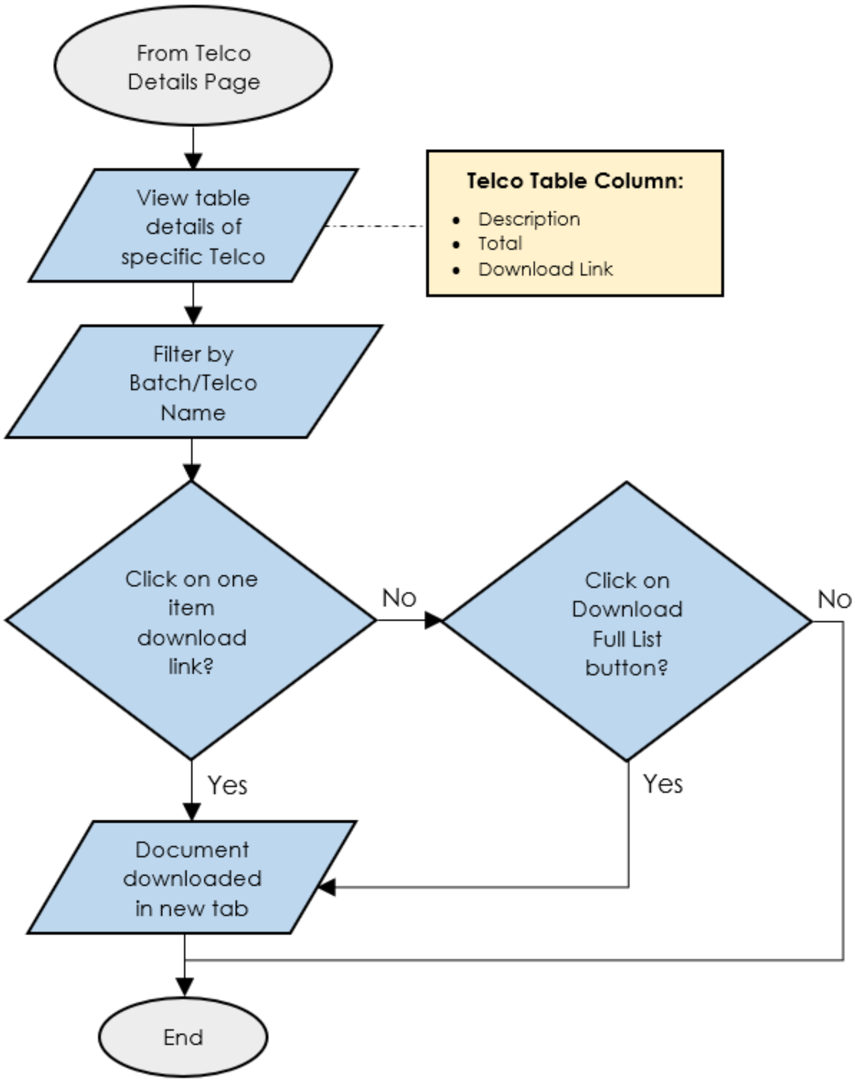


Figure 11.8:2: Flowchart for Download Document

❖ Description

The download document of prepaid verification process flow shows from the specific Telco Details page to download link of one item or download full list and it save in local file from calling external URL. The specific Telco Details page displays the description, total value, and the download link of single item or full list download button in table view. The table list can be filter by Batch Number or Telco Name before download action is taken.

3. Flowchart: Submit Verification

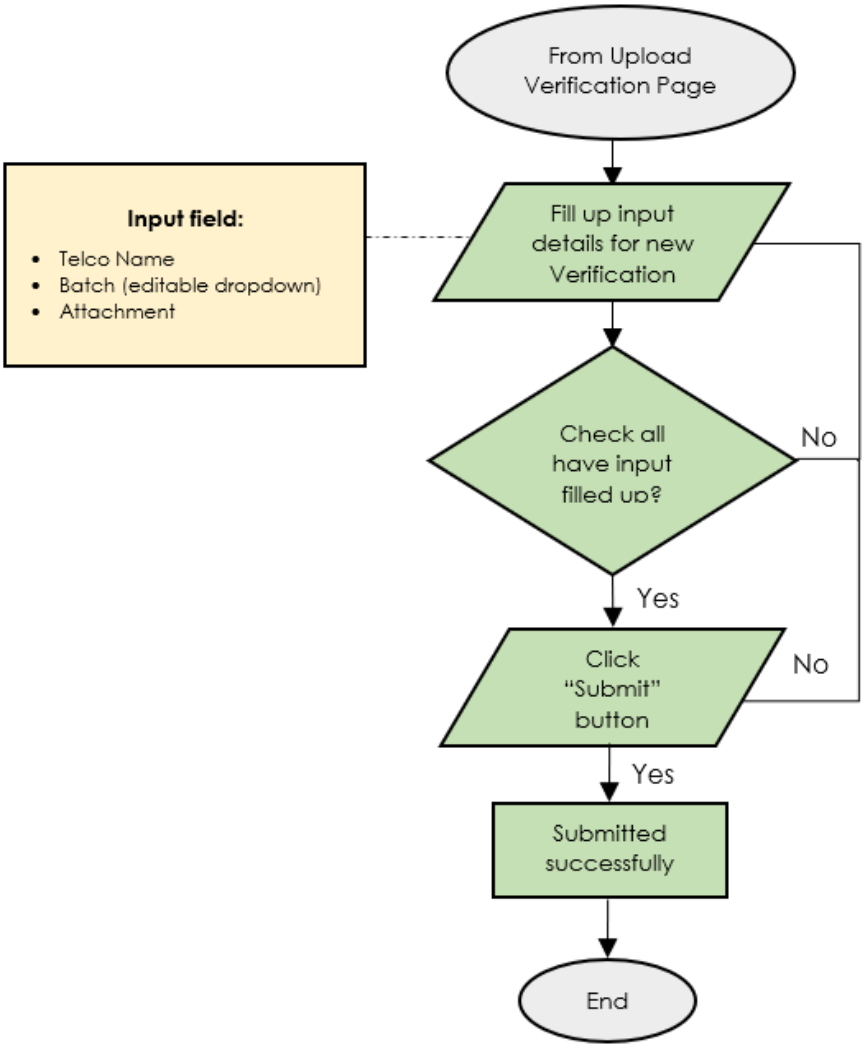


Figure 11.8:3: Flowchart for Submit Verification

❖ Description

The submit verification process flow show the required input field of Telco name and Batch number, while attachment is optional. Click on the Submit button to end the flow of verification application.

11.8.1 Wireframe: Result List

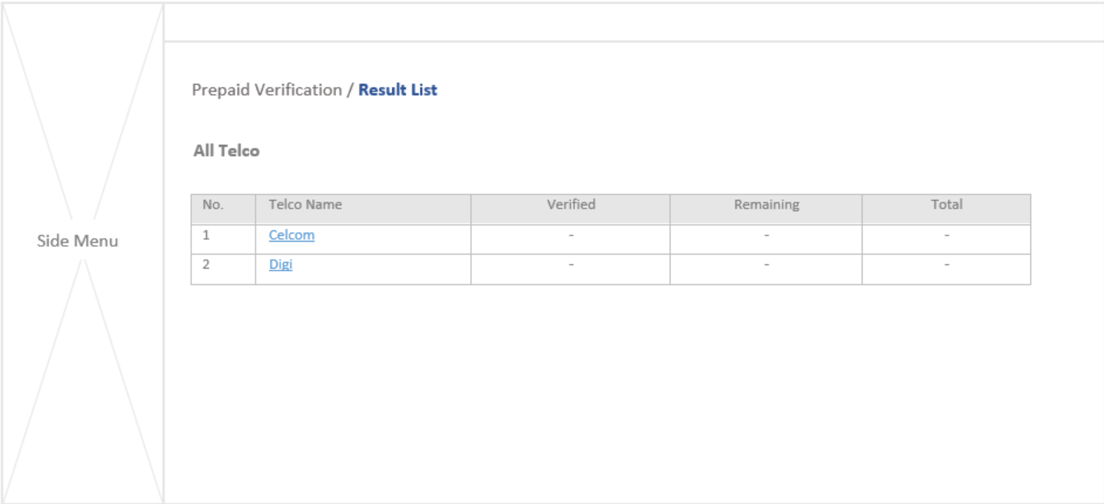


Figure 11.8:4: Prepaid Verification Result List Landing Page

The Result List page shows all the historical verification details with the verified, remaining, and total information as the wireframe above.

Attribute	Description
Telco Name	The telco name is clickable. Click and route to its details page
Verified	Verified value of the related telco
Remaining	Remaining value of the related telco
Total	Total value of the related telco

Table 11.8:1: List of Attribute and Details for Prepaid Verification - Result List

11.8.2 Wireframe: Telco Details

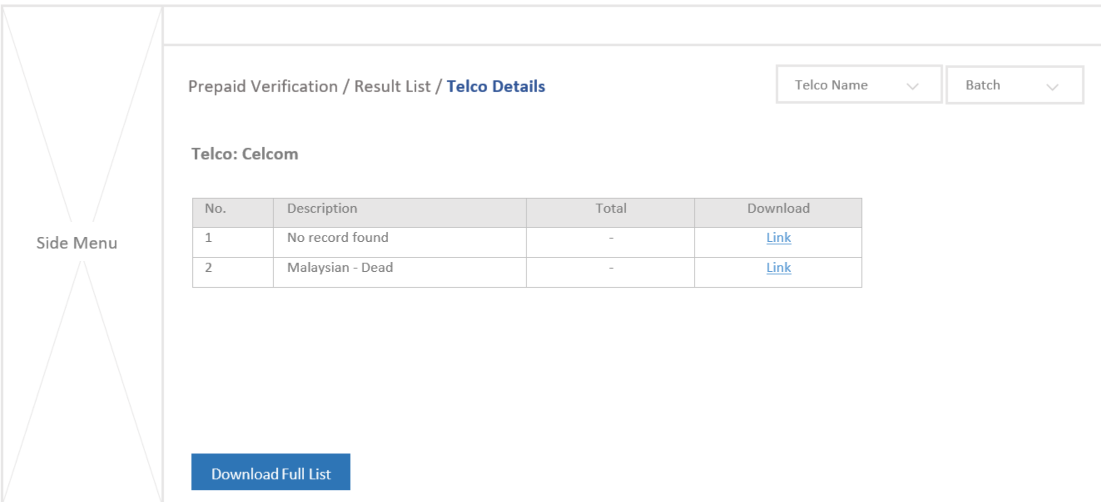


Figure 11.8:5: Prepaid Verification Telco Details Landing Page

❖ Description

The Telco Details page are shows after clicked on the selected telco. The download Link is used to save the selected document. To download all list details from this page, click on the Download Full List button. The function of telco name and batch number filter is in dropdown list. Select another telco name will route to its telco details information. Select batch number to filter the related telco details list.

11.8.3 Wireframe: Verification

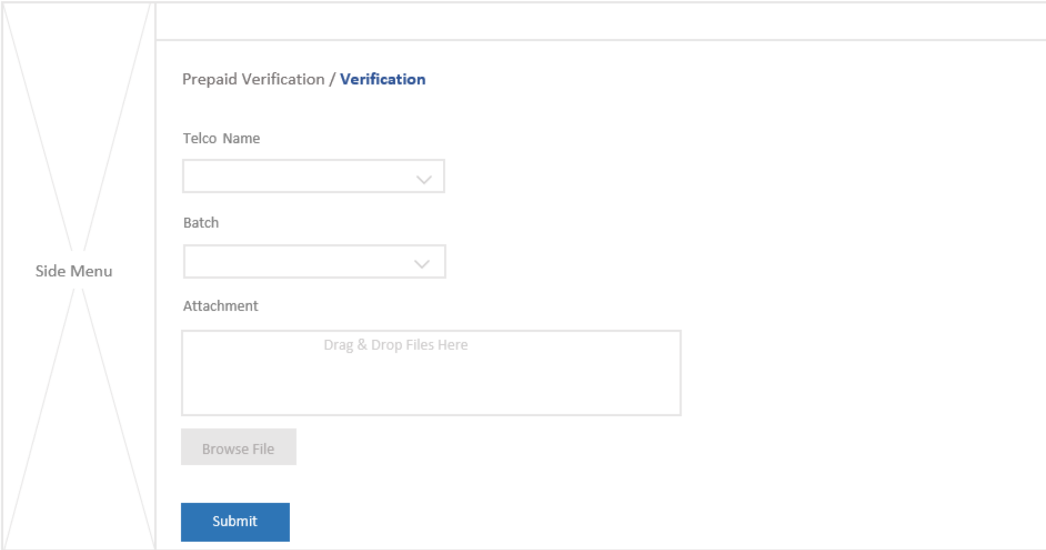


Figure 11.8:6: Prepaid Verification – Verification Landing Page

❖ Description

Insert table input or dropdown of Telco Name, Batch & Upload attachment field. Attachment format is including of IC, Name & phone number. Click on the Submit button to complete the verification process.

12 Auditing

12.1 Flowchart

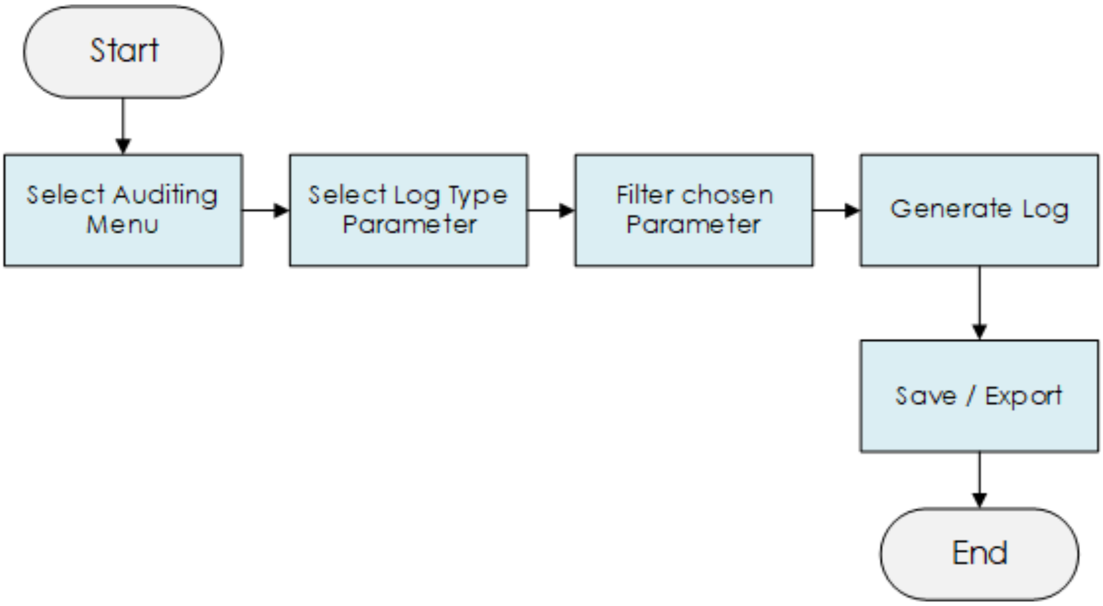


Figure 12.1:1: Flowchart of Auditing

- Description

  At the beginning of the flow, select the Auditing menu then select log type parameter which includes of LEA Activity Log, NID Activity Log, Case Management Activity Log and External API Calls. Filter the required parameter of start date/time, end date/time, user ID, activity, user agent or IP address. Then, click Generate to show the filtered list in the same page. To download the report, click on the Export button.

12.2 Wireframe

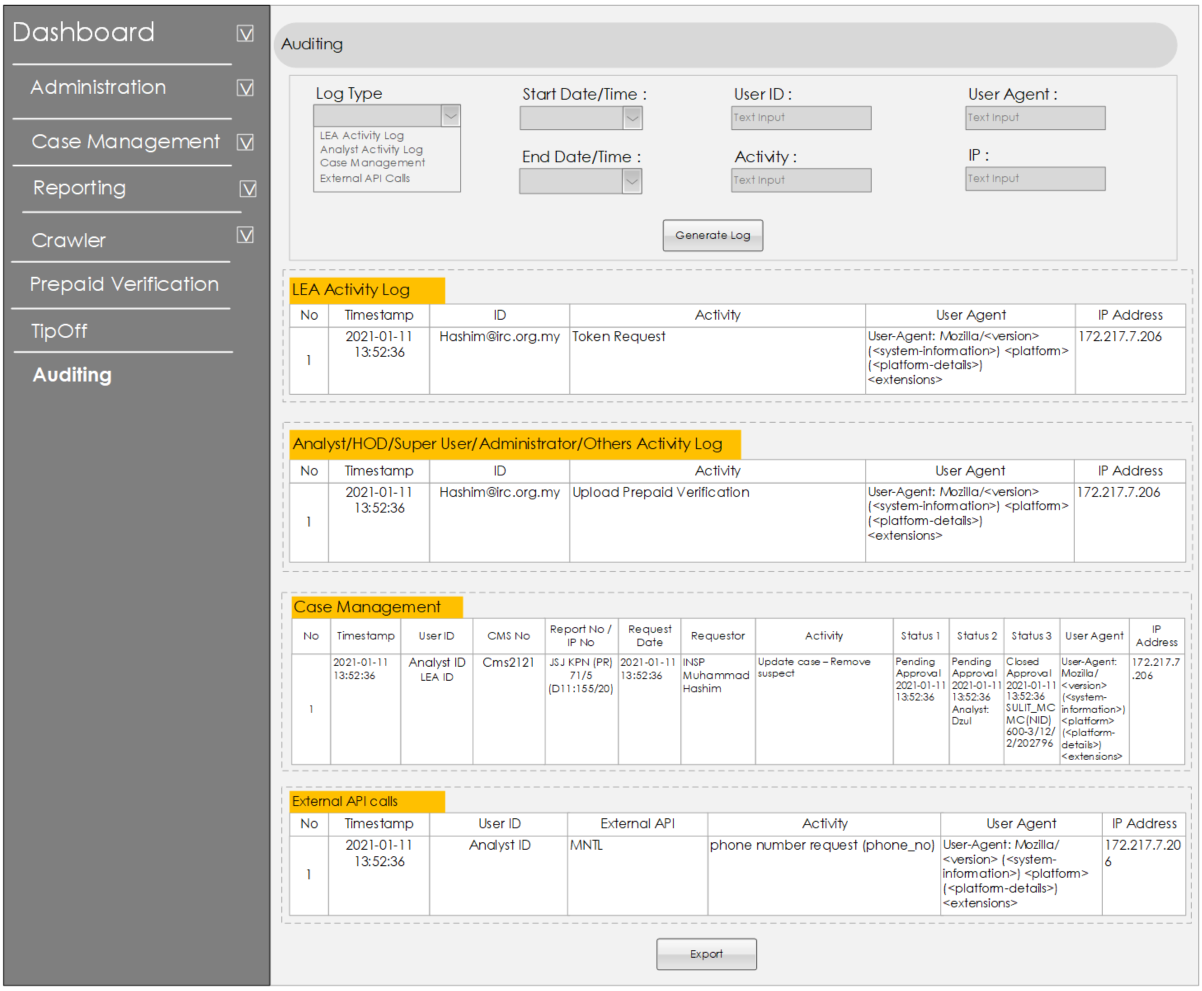


Figure 12.2:1: Auditing Landing Page

12.2.1 User Activity Log

Log Type	Activity
LEA Activity Log	• Token Request • Login Failure • Login Successful • Access case (CMSxxxx) • Edit/update case (CMSxxxx) • Document download (filename: ...) • Document upload (filename: ...) • Create case – Social Media (CMSxxxx) | MNTL(CMSxxxx) | • Update Profile • Session Timeout
Analyst/HOD/Super User/Administrator/Others Activity Log	• Token Request • Login Failure • Login Successful • Profile update • Edit/update case • Document upload (filename: ...)

	• External API request (MNTL – Phone number request – xxxxxx) • External API request (JPN – ID request – xxxxxx-xx-xxxx) • Create new report (ReportID) • Generate report (ReportID) • Edit/Update report (ReportID) • Delete report (ReportID) • Create user – Analyst (userID) • Create user – LEA (userID) • Edit user – LEA (userID) • Create Offence – LEA (userID) • Edit/Update Offence • Delete Offence • Create Tagging] • Edit/Update Tagging | • Delete Tagging • Create Category • Edit/Update Category • Delete Category • Update offense - Assign tagging (OffenseID: xxx, TaggingID: xxx)
Case Management	• Case rejected • Case approved (assigned to: analystID • Update case – Add suspect • Update case – Remove suspect • Update case – Edit suspect • Update case – Add witness • Update case – Add URL • Update case – Add phone number • Update case – Upload document • Change status (Closed)
External API calls	• Phone number request (phone_no) • Send message (phone_no) • Send email (email address) • Send message (TelegramID) • Phone number request • Detection request (fdid…) • URL request (url.…) • ID request (xxxxxx-xx-xxxx) • xxx request (xxxx)

Table 12.2:1: Activity Log by each User

End of Document