



INTEGRATED SLOPE MAINTENANCE SYSTEM



Project in Glance

- Integrated Slope Maintenance Systems (ISMAS) was developed for Jabatan Kerja Raya (Semenanjung) under project “Penyelenggaraan Cerun di Jalan Persekutuan Semenanjung Malaysia melalui kontrak Jangkamasa Panjang mulai tahun 2017”. Its begins in May, 2019 and should be completed in 31st October 2020.
- ISMAS objective is to become a single web based platform that could be used to manage, update and analyse all the slope related information in one single web application. Basically, it is used to prioritize slope preventive maintenance works based on risk rating.
- It offers the users a single window interaction through web browser where users can create, update and monitor all slope maintenance activity.

Why maintenance?

- Some of the major landslide disasters were due to lack of maintenance, e.g. block drains, massive erosion and etc. If these causal factors could be overcome, then the risk of slope failure could be minimized.
- Simple maintenance works (egproper drainage, turfing etc.) sometimes could save major landslide disasters.

Who are the users ?

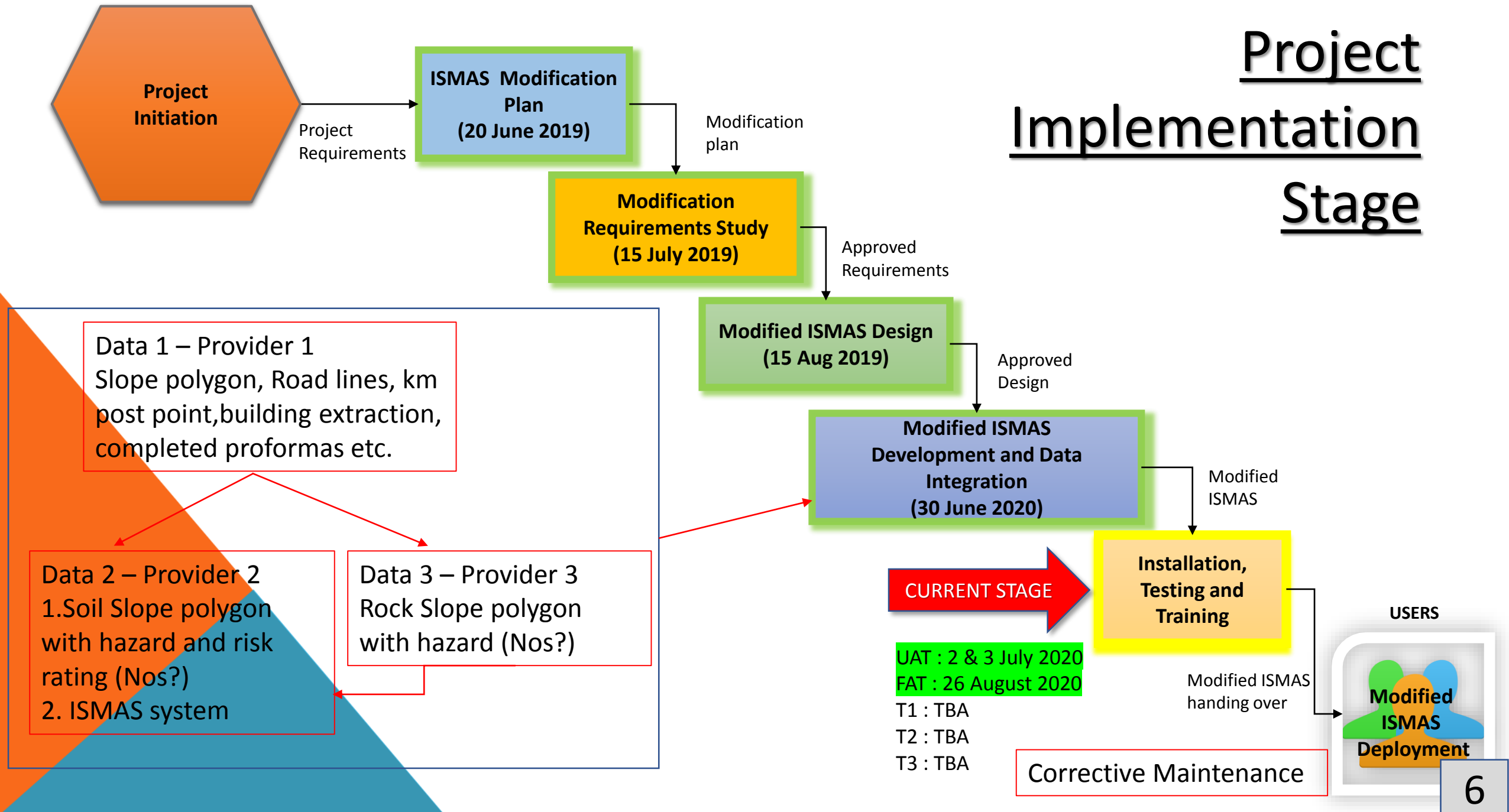
1. Administrator – Able to access all of the pages in the system except maintenance page
2. JKR Bahagian Keselamatan Cerun – Able to view all of the change of data from JKR Negeri, JKR Daerah and Contraktor in Proforma Page and Maintenance Page. Dashboard and Map page are also viewable
3. JKR BPPBC, CKC – Able to view all of the change of data from JKR Negeri, JKR Daerah and Contraktor in Proforma Page and Maintenance Page. Dashboard and Map page are also viewable
4. JKR Negeri – Able to view data in Proforma page based on state that have been assigned. Dashboard and Map page are also viewable
5. JKR Daerah – Able to view and edit some data in Proforma and maintenance page based on district that have been assigned. Dashboard and map page are also viewable
6. Slope Maintenance Provider – Able to view and edit some data in Proforma and maintenance page based on state that have been assigned. Dashboard and map page are also viewable

Support Information

1. Maps Information

- Slope polygons
- Proformas
- Roads lines
- Buildings footprints
- KM Posts
- Orthophotos
- Fly through video

Project Implementation Stage



ISMAS System Infrastructure

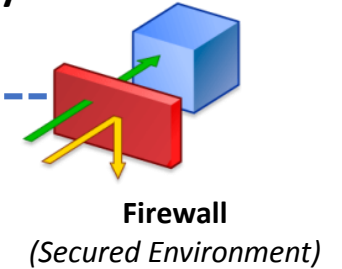
Tile Cache for
map viewer

USER (Jurutera Daerah, Kontraktor,
JKR Negeri, BKC, BPPBC)
Web, Mobile & Desktop

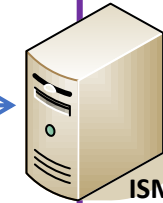


<https://ismas.jkr.gov.my>

JKR DATA CENTRE
(LEVEL 16)



Application, GIS (GeoServer) &
Database Server (PostgreSQL)



ISMAS Server
(previously used for ISIS system)

CAW. KEJURUTERAAN CERUN
(LEVEL 12)

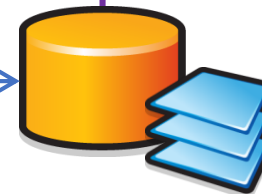
LOCAL AREA
NETWORK

Publish
Services &
Hazard Map



Desktop
(QGIS Desktop)

Managing Raster
Database



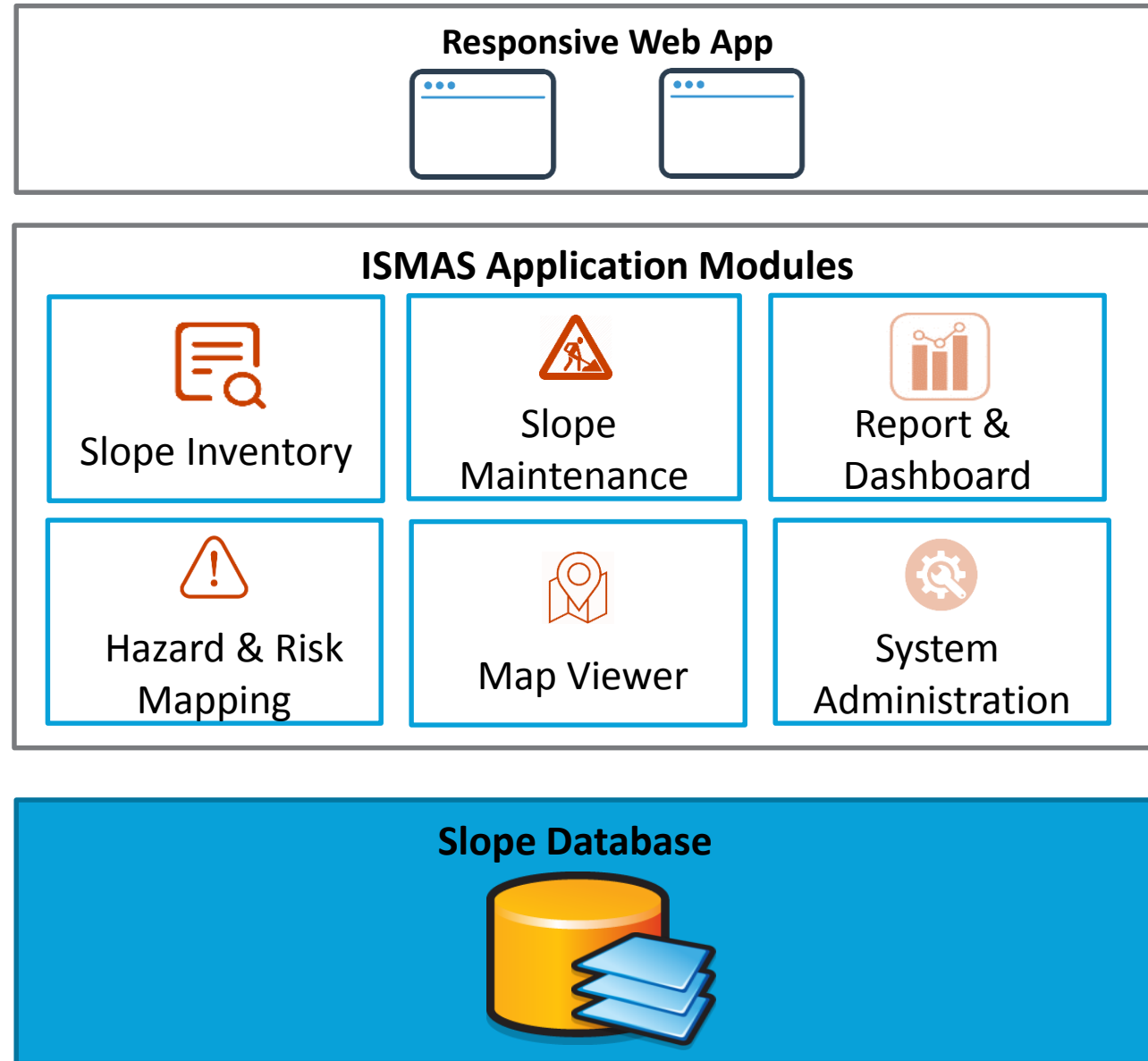
SAN Storage
(LiDAR, Orthophoto,
Raster Data, Map
Cache, Backup Data)

ADMINISTRATOR (BPPBC)
Site Administration

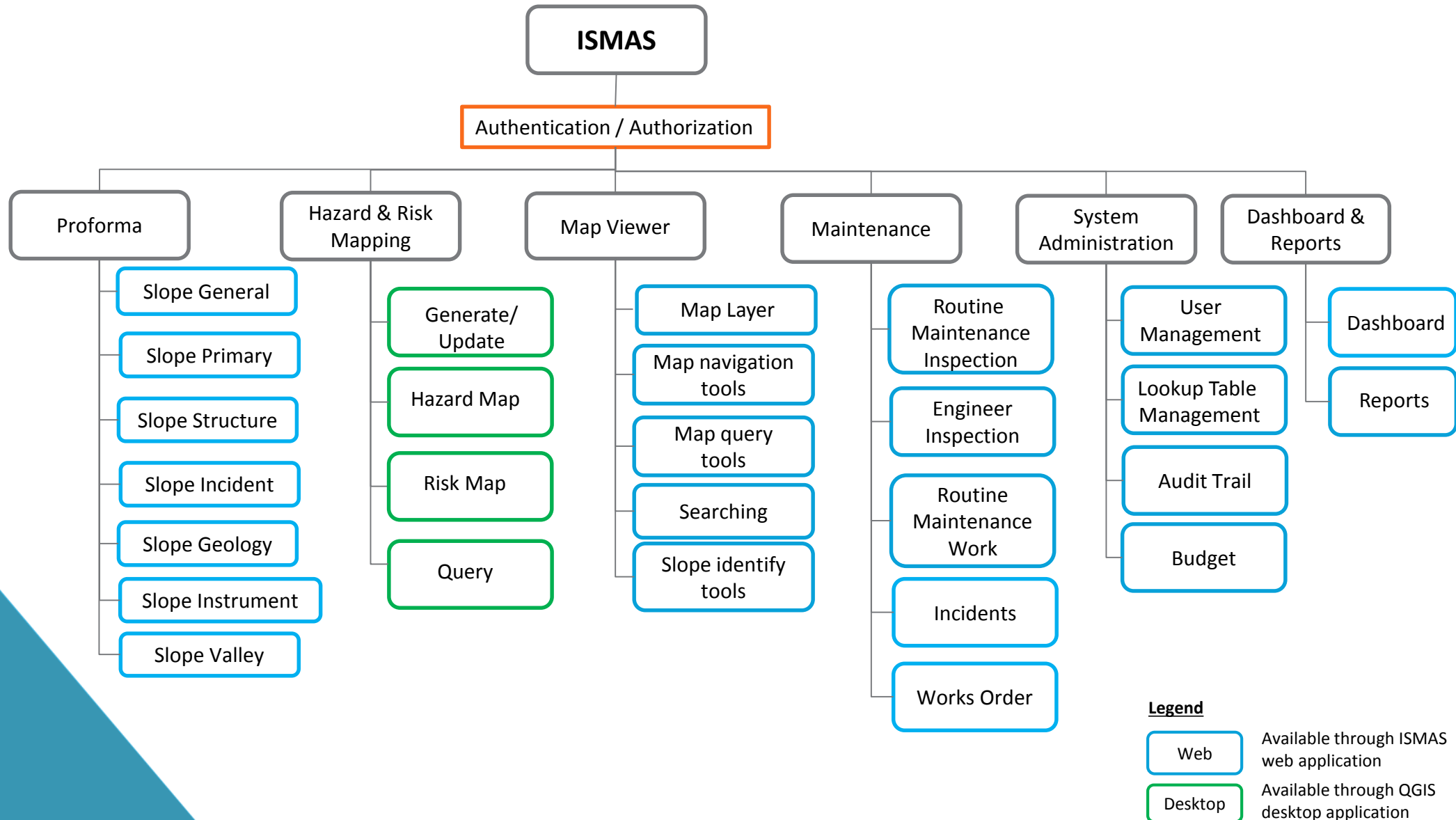


ISMAS

ISMAS System Architecture



ISMAS Main Modules



alamy.my/ismas/


Jabatan Kerja Raya |... HRMIS Login Page Maybank2u.com -... New Tab Welcome to Touch... (1) Home / Twitter ISMAS MyGovUC | Dashbo...


ISMAS INTEGRATED SLOPE MAINTENANCE SYSTEM


LOGIN


REPORT TO US

✉ aduan.jkr@lgovuc.gov.my
🗣 JKR "aduan anda" ke 32728

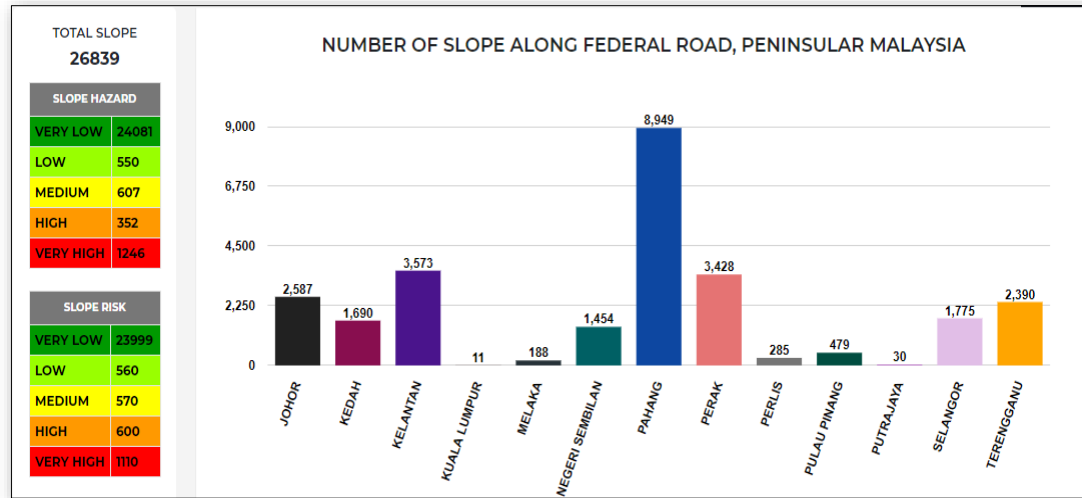

Slope Inventory
Store data regarding slope registration.


Slope Maintenance
Pertaining to preventive and corrective

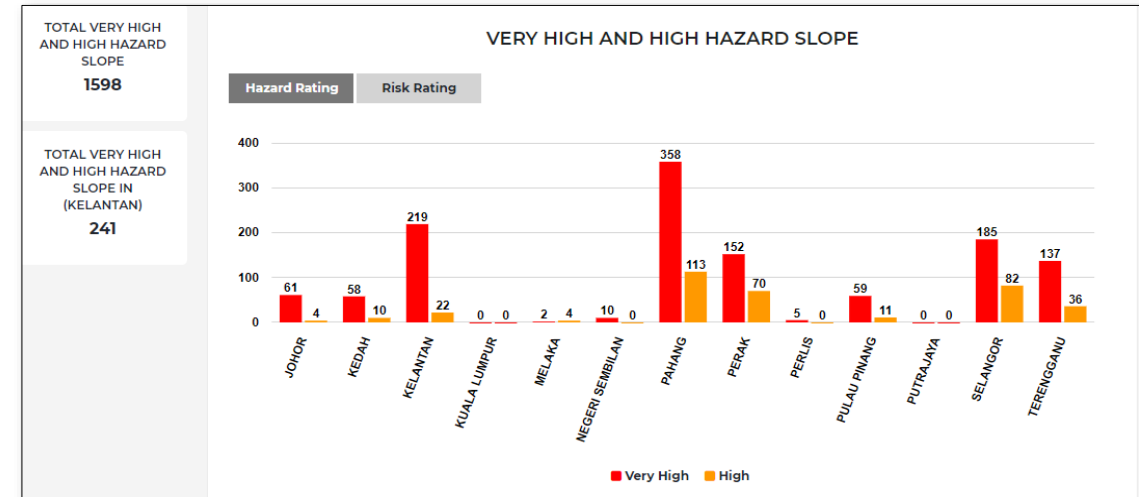

Hazard & Risk
Collect data regarding the slope


Map Viewer
Pin-point the location of slope features

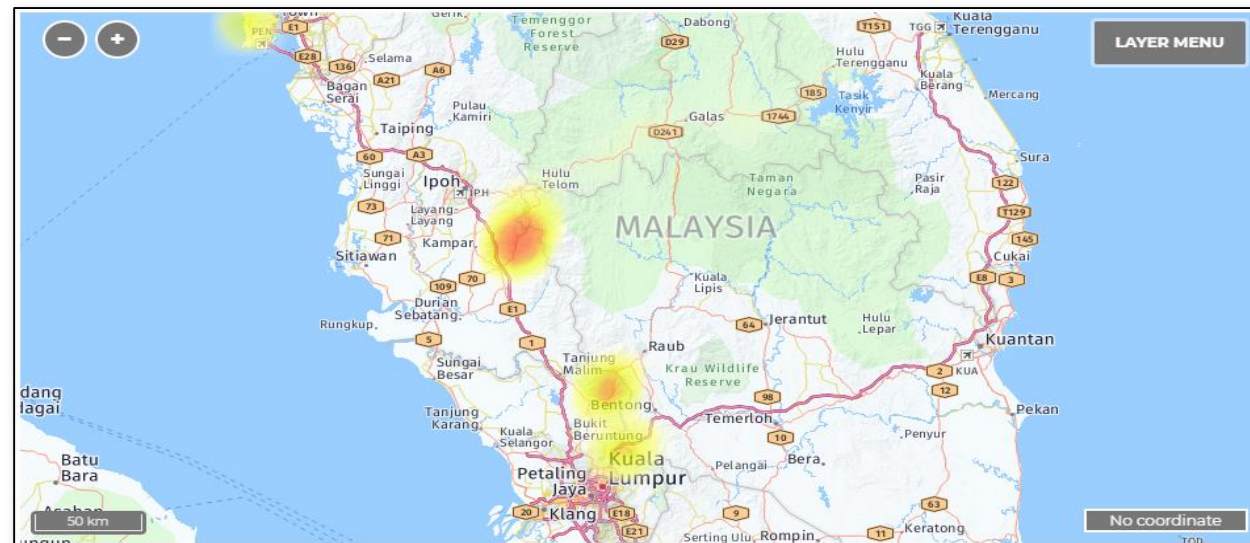
ISMAS Module - Dashboard



Number of Slope by Slope Hazard & Risk and by State

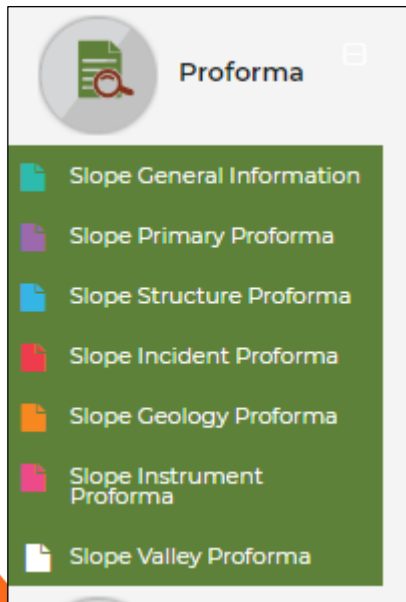


Number of very high and high hazard slope by State



Slope hotspot map based on slope incident

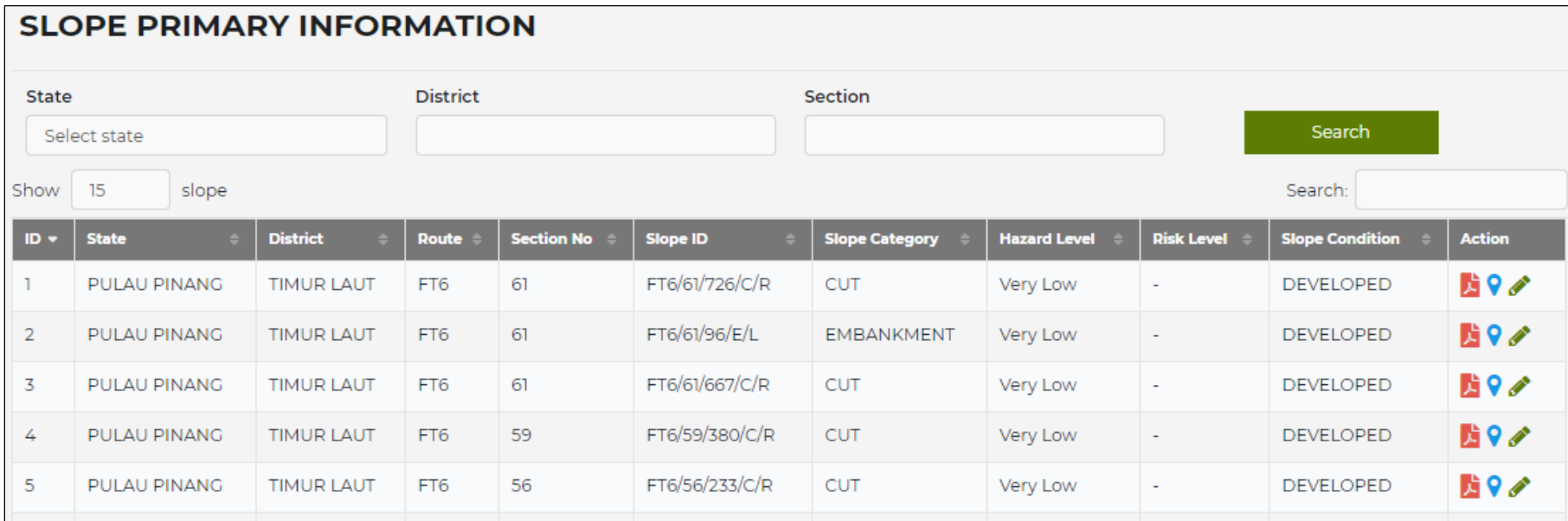
ISMAS Module – Proforma (Slope Inventory)


















The menu displays a 'Proforma' header with a magnifying glass icon. Below it, a list of seven options is shown, each with a colored icon: 'Slope General Information' (blue), 'Slope Primary Proforma' (purple), 'Slope Structure Proforma' (light blue), 'Slope Incident Proforma' (red), 'Slope Geology Proforma' (orange), 'Slope Instrument Proforma' (pink), and 'Slope Valley Proforma' (white).

- Proforma
- Slope General Information
- Slope Primary Proforma
- Slope Structure Proforma
- Slope Incident Proforma
- Slope Geology Proforma
- Slope Instrument Proforma
- Slope Valley Proforma

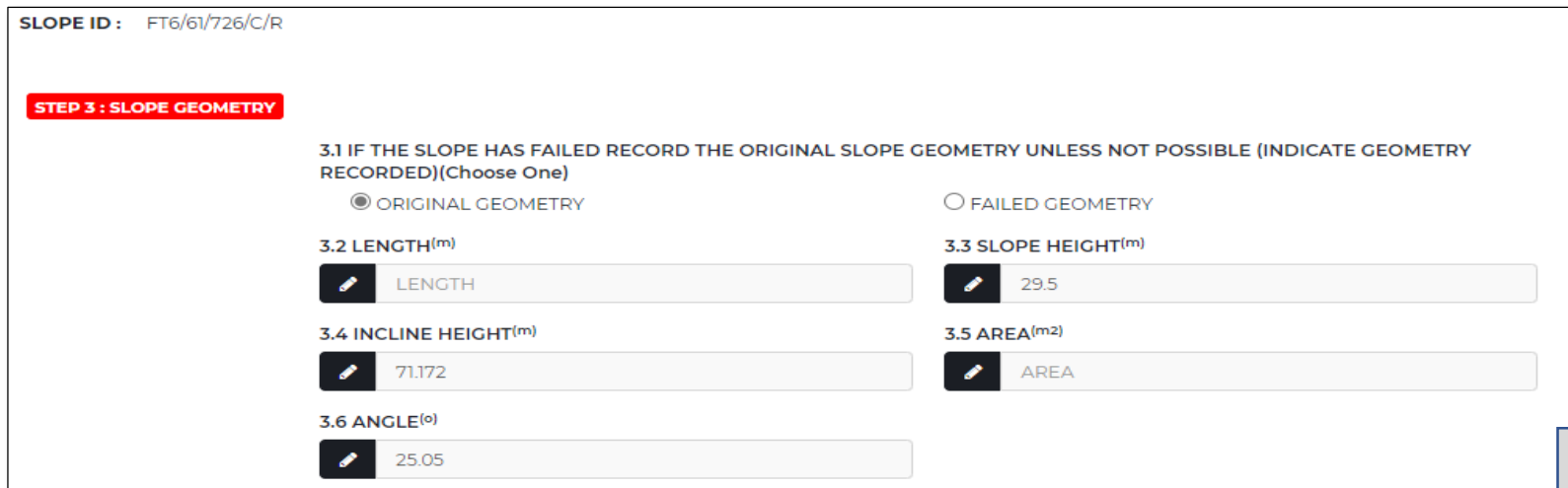
Slope Proforma



The 'SLOPE PRIMARY INFORMATION' form includes search filters for State, District, and Section, a 'Search' button, and a 'Show 15 slope' dropdown. Below is a table listing five slope entries with details on ID, State, District, Route, Section No, Slope ID, Slope Category, Hazard Level, Risk Level, Slope Condition, and Action.

ID	State	District	Route	Section No	Slope ID	Slope Category	Hazard Level	Risk Level	Slope Condition	Action
1	PULAU PINANG	TIMUR LAUT	FT6	61	FT6/61/726/C/R	CUT	Very Low	-	DEVELOPED	  
2	PULAU PINANG	TIMUR LAUT	FT6	61	FT6/61/96/E/L	EMBANKMENT	Very Low	-	DEVELOPED	  
3	PULAU PINANG	TIMUR LAUT	FT6	61	FT6/61/667/C/R	CUT	Very Low	-	DEVELOPED	  
4	PULAU PINANG	TIMUR LAUT	FT6	59	FT6/59/380/C/R	CUT	Very Low	-	DEVELOPED	  
5	PULAU PINANG	TIMUR LAUT	FT6	56	FT6/56/233/C/R	CUT	Very Low	-	DEVELOPED	  

Slope Proforma listing



The 'SLOPE ID : FT6/61/726/C/R' detail form shows 'STEP 3 : SLOPE GEOMETRY'. It includes instructions for recording original slope geometry and two radio button options: 'ORIGINAL GEOMETRY' (selected) and 'FAILED GEOMETRY'. Below are input fields for Length (71.172m), Incline Height (25.05m), Slope Height (29.5m), and Area (AREA).

SLOPE ID : FT6/61/726/C/R

STEP 3 : SLOPE GEOMETRY

3.1 IF THE SLOPE HAS FAILED RECORD THE ORIGINAL SLOPE GEOMETRY UNLESS NOT POSSIBLE (INDICATE GEOMETRY RECORDED)(Choose One)

☒ ORIGINAL GEOMETRY ☐ FAILED GEOMETRY

3.2 LENGTH(m)

3.3 SLOPE HEIGHT(m)

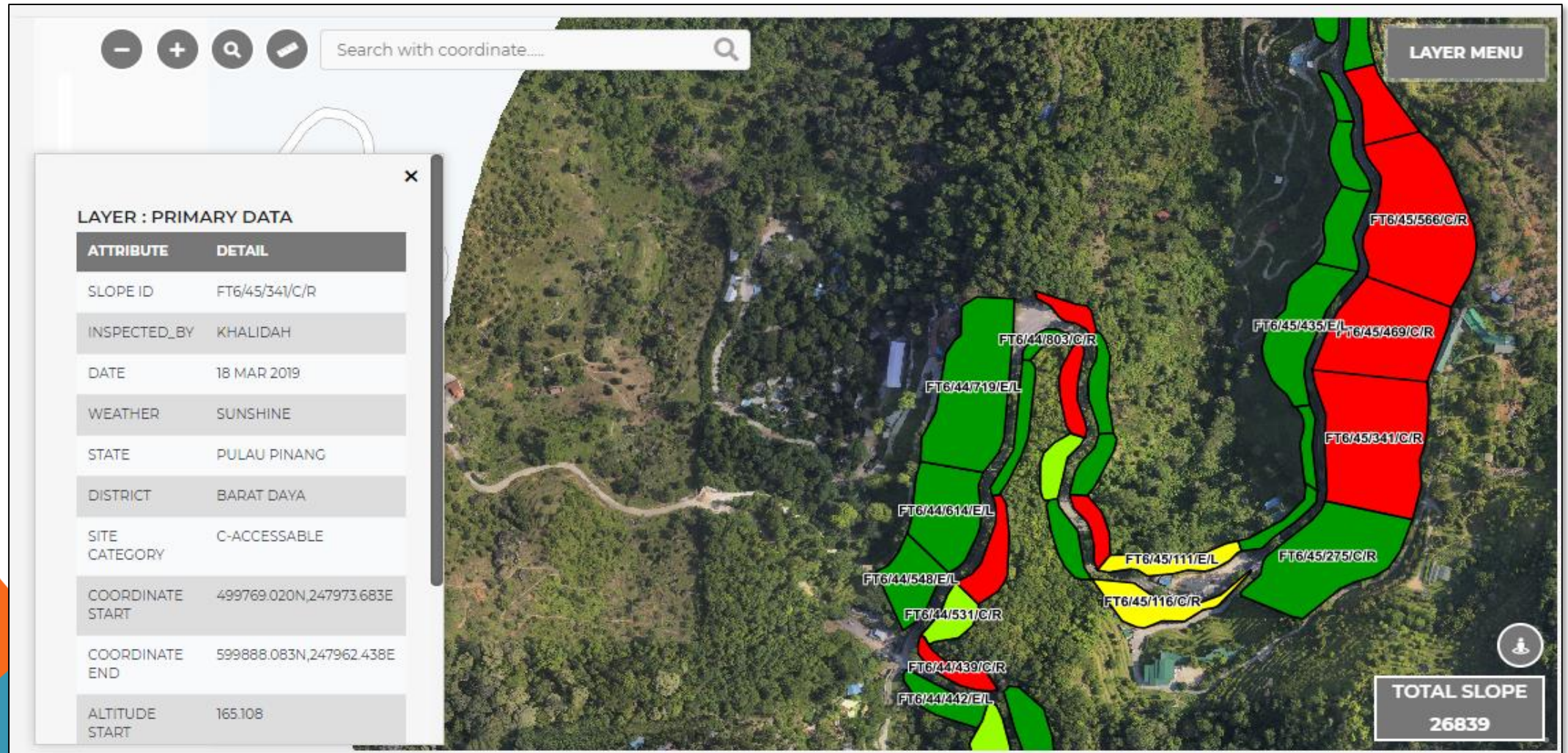
3.4 INCLINE HEIGHT(m)

3.5 AREA(m²)

3.6 ANGLE(°)


Slope Proforma detail

ISMAS Module – Map Viewer



Interactive map viewer

ISMAS Module – Maintenance

 Maintenance

- Routine Maintenance Inspection (RMI)
- Routine Engineer Inspection (REI)
- Routine Maintenance Work (RMW)
- Incident
- Work Order (WO)

Maintenance
Submodule

ROUTINE MAINTENANCE INSPECTION

State:

Show entries Search:

No	Slope ID	District	Status	Start Date	End Date	Action
1	FT67/26/241/C/R	BALING	IN PROGRESS	29 JUNE 2020	3 JULY 2020	MAINTENANCE FORM
2	FT67/28/579/C/R	BALING	IN PROGRESS	29 JUNE 2020	3 JULY 2020	MAINTENANCE FORM
3	FT67/28/639/C/L	BALING	IN PROGRESS	29 JUNE 2020	3 JULY 2020	MAINTENANCE FORM
4	FT67/...					

Showing 1 to 4 of 4 entries

ROUTINE ENGINEER INSPECTION

State:

Show entries Search:

No	Slope ID	District	Status	Start Date	End Date	Action
1	FT67/33/775/C/R	BALING	IN PROGRESS	30 JUNE 2020	30 JUNE 2020	MAINTENANCE FORM

Showing 1 to 1 of 1 entries

ROUTINE MAINTENANCE WORK

State:

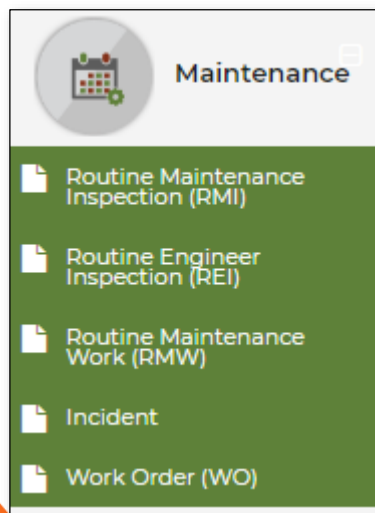
Show entries Search:

No	Slope ID	District	Status	Start Date	End Date	Action
1	FT67/26/241/C/R	BALING	IN PROGRESS	29 JUNE 2020	29 JUNE 2020	MAINTENANCE FORM

Showing 1 to 1 of 1 entries

Previous

ISMAS Module – Maintenance



Maintenance
Submodule

ISMAS

INCIDENT LIST

Show 15 entries

Search:

No	Slope ID	Incident ID	State	District	Action
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No data available in table

Showing 0 to 0 of 0 entries

WORK ORDER LIST

State

All State

Show 15 entries

Search:

ID	Nombor AK	Perihal Kerja	Nilai Kerja	Jumlah Kos	Action
1	JKR/CKC/S27/2019/032	Terramesah Wall	RM 1,247,128.00	RM 1,247,128.00	 
2	JKR/CKC/S27/2019/047	Rockfill	RM 245,000.00	RM 245,000.00	 
3	JKR/CKC/S27/2019/048	Rubble Wall with Soil Nail	RM 230,000.00	RM 230,000.00	 
4	JKR/CKC/S27/2019/092	Rockfill (slope A) + Stone Pitching (slope B)	RM 160,000.00	RM 160,000.00	 
5	JKR/CKC/B11/2020/10	Kerja Pembaikan Cerun Menggunakan Kaedah Tieback Wall di Laluan J179, Seksyen 1.30 (EL), Jalan Perani, Kota Tinggi, Johor	RM 500,000.00	RM 500,000.00	 WORK ORDER FORM



DEMO

<https://ismas.jkr.gov.my>

A decorative graphic in the bottom-left corner consisting of two overlapping triangles: an orange one on top and a blue one on the bottom. The ISMAS logo is positioned on the orange triangle.

ISMAS

IS  AS

THANK YOU

IS  AS