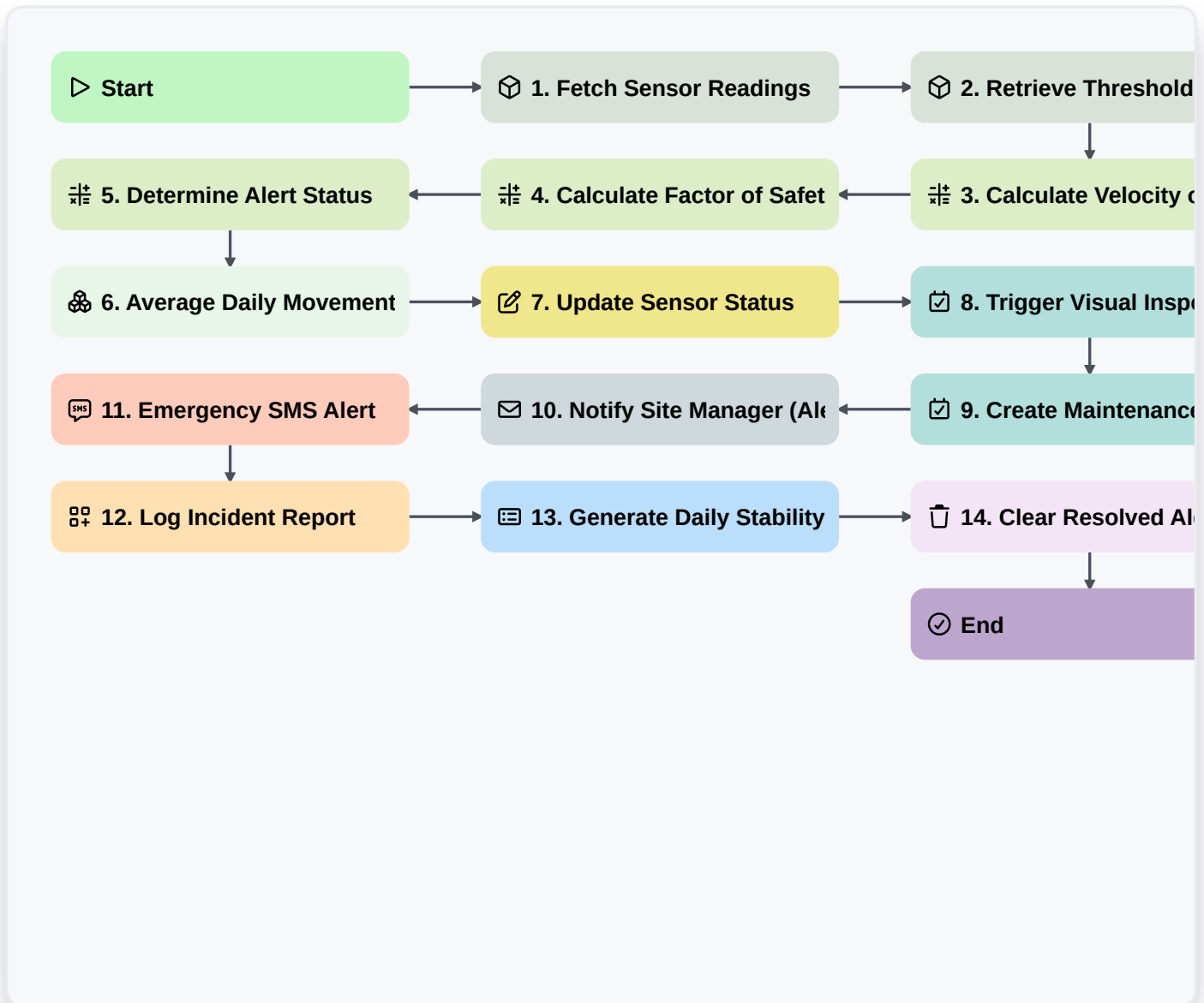


Automated Pit Slope Stability Monitoring



Start

Start of the Workflow/Process.

1. Fetch Sensor Readings

Retrieve the latest displacement and pore pressure readings from the Pit Slope Sensor data model.

2. Retrieve Threshold Limits

Fetch the predefined safety threshold values (Alert and Alarm levels) from the Site Safety Configuration model.

3. Calculate Velocity of Movement

Calculate the rate of change in displacement by comparing the current reading to the previous reading.

4. Calculate Factor of Safety (FoS)

Execute a formula using pore pressure and displacement data to estimate the current stability ratio.

5. Determine Alert Status

Compare calculated velocity and FoS against the retrieved threshold limits to determine status (Green, Yellow, Red).

6. Average Daily Movement

Calculate the average displacement across all sensors in a specific pit sector over the last 24 hours.



7. Update Sensor Status

Update the 'Last Checked' timestamp and 'Current Health' status in the Sensor data model.

8. Trigger Visual Inspection Task

Create a high-priority task for the Geotechnical Engineer if movement exceeds the 'Alert' threshold.

9. Create Maintenance Work Order

Create a task for the Maintenance Team if a sensor reports a low battery or hardware error.

10. Notify Site Manager (Alert)

Send an email notification to the Site Manager containing the summarized stability report when thresholds are breached.

11. Emergency SMS Alert

Send an urgent SMS to the Pit Supervisor and Safety Officer if the 'Alarm' (Red) threshold is triggered.

12. Log Incident Report

Create a new entry in the Incident Log data model whenever a threshold breach occurs.

13. Generate Daily Stability Report

Generate a PDF summary report of all sensor trends and stability metrics for the previous 24-hour period.

14. Clear Resolved Alerts

Delete transient alert notifications from the active 'Active Alerts' data model once the stability issue is resolved.

End

End of the Workflow/Process.