Technical Requirement Document – Comprehensive Fleet Management Solution

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1. Project Objective

Client is looking for comprehensive Fleet management Solution with below high-level Technical requirement

- An integrated offering of GPS hardware and software on monthly SAAS Model

- A fully hosted solution requiring no software installation

- Comprehensive Vehicle monitoring

- Improved Customer Service

- Enhanced Vehicle information during Journey

- Maximized Productivity

- Decreased Overtime & Delays

- Reduced Operational Costs

- Real Time Location and Status Information

- Over-the-Air-Firmware upgrade

- Auto Ignition-Cut off from backend for Severity-1(Highly Critical) Violators

- Bike Movement reports

- Violation reports and alerts

- User Friendly Dashboards

- Central Monitor Console

- History

- Alerts

- Geozone's

- Extensive On demand Reporting

2. Required Business Solutions (Key Modules & Features)

2.1. Hardware Details

Key Features required

- Position and sensor information in real-time

- Speed, Idling, acceleration and braking events

- Support for custom Geozones and Landmarks

- Odometer Calculation

- Engine Hours Calculation

- Main Battery Voltage Sensing of the Vehicle

Communication Methodologies

- Two-way communication via 4G network

- Over-the-air Programming for remote update of System Firmware (i.e. software of device installed in vehicle)

Device Attributes

- Device is GPS equipped with position accuracy of ±10 m

- Non-volatile data storage of 2 Megabytes

- Sleep mode with current draw of less than 1.5 mA

Reliable Protection

- Tamper Detection

- Transient protection on inputs

- GPS Antenna Cut and Short Detection

- Power supply surge and reverse polarity protection

* **A scalable design that has support for future requirements and upgrades such as:**

- Four digital inputs

- Two outputs

* **Temperature Monitoring (Optional- Might need in Phase 2 of project**

- Temperature monitoring at regular intervals with location and timestamp

- Measures temperature range from -55°C to +125°C (-67°F to +257°F).

- Assign temperature threshold values (high and low)

- Temperature violation alerts through email

- Detect temperature sensor disconnection

2.2. Required Software Feature Details – Web-based anytime, anywhere

2.2.1. User Friendly Dashboard

- Provides summarized fleet data in easy-to-understand charts and graphs

- The user can view reporting in the form of both graphs and data grids on full screen

- Option for viewing the top ranked data

- Option to export the summarized data along with the chart in PDF and Excel

- Option to view the full screen dashboard

- Users can view latest releases / news and fleet management tips will also be available

2.2.2. Monitor

- Acts as a web-based monitoring center with Digital Maps for the entire fleet of vehicles

- Displays the warning and critical alerts generated in the last 24 hours with status indication

- Lists the vehicles of the selected fleet with the latest position and status information

- Option to export the listed data to PDF, Word, Excel and CSV

- Full screen view to view the list of the vehicle status in the selected fleet

- User can map the position of the selected vehicles by selecting it

- Geozone can be added directly from the map with notifications

- Advanced search function to help the user to search vehicles

- User can also send commands by clicking on the vehicle

2.2.3. History

- View the entire trip of the vehicle for the specified duration on the map with current position

- Provides the information of point that is plotted in the map when the cursor is placed over it.

- Different icons will be shown in Map to indicate different status of vehicle

- Specific messages can be filtered easily using textbox preference search

- Customize the poly line style for plotting, add a custom landmark

- Lists various trip information like physical location, date and time, speed, message details, direction of travel in the grid along with the commands sent to the vehicle & its related details

- Provides additional information like sensor status, geo location, odometer reading etc.

- Option to export the listed data to PDF, Excel, Word and CSV

2.2.4. Alerts

- Provides the list of alerts generated for Threshold and temperature

- Provides an option to acknowledge or close the selected alerts. Bulk acknowledgement / close of alarms is possible

- Search for the alerts generated based on the fleet, vehicle, severity, status, duration and the user who have acknowledged and/or closed the alert.

- The list of alerts has the details like Status of Alert (Pending / Acknowledged / Closed), Vehicle Name, Date / time, Severity, Details, Physical location and Acknowledgement or Closed with related user details

2.2.5. Geozone's

- Create and manage rectangular or circular or polygon geozone using this module

- Draw the geozone based on the requirement in the map provide in this module

- Geozones can be categorized based on the user requirement

- The user can set the below options:

  - Severity levels

  - Direction for which the vehicle has to trigger the message (None / In / Out / Both)

  - List of users to whom the notification related to the geozone has to be given.

- Assignment can be done such that the vehicles will trigger a message to the list of authorized users when it enters or exits the geozone based on the settings

2.2.6. Configuration

- A user-friendly configuration panel allows you to manage your fleet based on user privileges.

  - User Management

    - Create and manage users for this application

    - User group management

    - Privilege settings for each user

o Fleet Management

- Created and manage the various fleets in the organization

- Vehicle and users to the fleet can be assigned or unassigned

o Vehicle Management

- Manage vehicle make and model

- Create and manage the various vehicles in the organization

- Setup severity for messages triggered due to the vehicle sensor alarms

- List the various outputs that can be controlled by the application for vehicles

2.2.7. Reports

- Provides various extensive reports based on the criteria specified

  o Fleet

  o Bikes

  o Duration

  o Advanced Filters based on the report types

- Below are types of reports available relevant to the report categories

  o Standard Report

    - Trip Summary – Provides the summarized information of each trip such as date and time, address of the start and end of the trip, duration, distance traveled, stop time and idling time.

    - Trip Details – Provides the details of each and every trip with the message details. It also provides a summary of the trip history at the end of each trip.

    - Alarms – Gives Threshold and speed alert generated, its status along with respective summary.

    - Geozone Activities – The user can get the detailed report of the geozone activities of the Features

    - The reports provide a summary of the data and graphical charts will be available wherever applicable

- The information shown in the report can be hidden

- The sorting of the information can be customized

- Option to export the report data to PDF and Word

- Option to schedule reports will be available

2.2.8. Preferences

- Allows the logged in user to manage his / her preferences such as:

    o Time zone – Based on the selected time zone, the date and time will be displayed in the entire application for the particular user and also to send the notifications

    o Distance Units – Select the unit (Kms / Miles) the distance and speed will be displayed in the application.

    o Default fleet – Specifies the default fleet, which will be loaded, wherever applicable when the user navigates throughout the application.

    o Screen refresh frequency – The duration set will be used in the "Monitor" page in order to perform automatic refresh and update of the vehicle information.

- Option for user to change his / her password

- A remote web-based training and setup assistance will be provided as part of the scope
- A detailed user manual will also be provided
- One-time onsite training can be provided if we have a local office, else it would be charged