Logo, company name

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| **Project Name:** | Asset Monitoring |
| **Client Name:** | JDI |
| **LOB Name:** | DT | Internet of Things |

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| **JDI ECIF Intelliasset (PoC)**  **Requirement Analysis Document** |

**Revision History**

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| --- | --- | --- | --- | --- |
| **Version No.** | **Release Date** | **Author** | **Reviewed by** | **Overview of Changes** |
| 1.0 | 01-March-2023 | Nilesh N. Sawant & Dushyant Gurumukhi | Somnath Avhad |  |

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1. **Background**

JDI is interested in ‘Asset Monitoring’ solution for their service vehicles in North America.

Main use cases are as listed below –

* Asset Health & Performance Monitoring - 2 Light Commercial Vehicles (LCV) and 3 Heavy Commercial Vehicles (HCV) for JDI
* Integration with existing GeoTab and OmniTrack hardware using API’s.
* Monitoring Vehicle CAN available fault codes
* Driver Safety Monitoring – Harsh Breaking | Acceleration
* All the data will be captured from the GeoTab and OmniTrack API’s

Birlasoft will develop Asset Tracking solution based on Microsoft Azure loT stack, offers a scalable, end-to-end loT solution, designed to help JDI to optimize utilization and reduce operational costs through loT, connected systems, automation, and analytics at the edge.

1. **Scope**

This section summarizes the responsibilities and deliverables of Birlasoft in this project:

* Requirement Analysis and compiling the Business Requirement document.
* High level Design document
* The scope of PoC solution includes 5 Vehicle devices.
  + GeoTab – for 2 Light Commercial Vehicles (LCV),
  + OmniTrack – for 3 Heavy Commercial Vehicles (HCV)
* Design & Develop Asset Monitoring Application
  + Application Front End UI Development – Global or Facility level Dashboard, Drilldown to specific details
  + Develop Restful web API & Database design
  + Drill down to Asset Specific Parameters & Time Series Analysis
  + Alerts, Alarms & Notifications will be shown on the application only
* Integration with Existing Geotab and OmniTrack tracking units’ data using API
* Azure Infrastructure Deployment
* UAT | Go-Live | 1 Week Hypercare Support. A proposal for post hypercare support model will be provided separetly.

1. **User Roles**

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| --- | --- | --- |
| **SL No.** | **Role** | **Description** |
| 1 | Super Admin | This user will have access to complete application along with master data where they can add/edit/delete the information required for web application |
| 2 | HCV - Fleet managers | This user will have access to application for HCV Dashboards and Reports |
| 3 | Directors of operation | This user will have access to application for HCV & LCV Dashboards and Reports |
| 4 | Director of maintenance | This user will have access to the application by which they can view the dashboard and reports for both HCV and LCV |
| 5 | LCV - Light duty fleet managers | This user will have access to application for LCV Dashboards and Reports |

 \* **Need to decide what dashboard will be shown to which role based on API data.**

1. **Requirements**

### 4.1 Functional Requirements

* UI finalization
* Role based data visualization (Super Admin, HCV - Fleet managers, Directors of operation, Director of maintenance, LCV - Light duty fleet managers)
* Development of a Web Application containing

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| Dashboard 1 – Display All assets high level data | * Table with Unique ID, Asset information with current time and status. * No. of alarms and alerts raised over a period time. * Current near real-time location on map (if available) |

* Report Functionality (max 2-3 nos.)
* Alerts/Alarms on Web application
* Custom Masters

In the master’s, user of administrator access will be able to perform add, edit, and delete.

operations or different master data page. Following custom masters will be available in the

application,

* + User Master
  + Vehicle Master
  + Device Master
  + Driver Master
  + Role Creation and Access Management
  + Alerts Master

***\*****The master table listed above are tentatively planned but it may change at the end of*

*requirement analysis.*

* Login Page
* The user must enter the credentials to authenticate & route to application
* Change password
* The user must validate old password in-order to change to new password

### 4.2 Non-Functional Requirements

* It is tentatively decided that the dashboard will be auto refreshed on certain interval *(actual time will be decided at the solution design phase)*
* Data frequency will depend upon data available through the API

1. **Data Flow diagram**

Diagram

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1. **Indicative Screen Designs**

Please find below the indicative screens that are developed to provide a high-level idea about the UI of the Web Application. The original Web application interface could be different from these screens

### 6.1 Login Screen

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| --- | --- |
| Login Page | Details in the image are indicative and is subject to change. |
| Accessed by | Super Admin, HCV - Fleet managers, Directors of operation, Director of maintenance, LCV - Light duty fleet managers |
| Description | Login web page will help the user to login to the application. Only authorised and active user will be able to login via Login page. Validation, authentication will be provided as per details present in the database. User will also be provided “Forgot password” option to reset the password. |

### 6.2 Asset Dashboard

|  |  |
| --- | --- |
| Asset Dashboard | Details in the image are indicative and is subject to change. |
| Accessed by | Super Admin, HCV - Fleet managers, Directors of operation, Director of maintenance, LCV - Light duty fleet managers |
| Description | Asset dashboard will help the user to have a detailed view of an Asset. User will be provided option with selecting different asset. Data will be populated as per the selection and near real-time data will be displayed.  Below asset details will be provided:  Classification of vehicle  Vehicle location tracking with map overlay  Vehicle utilization – Mileage travel day / month  Vehicle CAN data monitoring  **Profatibility**  Fuel Consumption  Geo location based details |

### 6.3 Admin Module

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| --- | --- |
| Admin Module |  |
| Accessed by | Super Admin |
| Description | Admin module will help the user to add, delete and update the master data of the application such as:   * + User Master   + Vehicle Master   + Device Master   + Driver Master   + Role Creation and Access Management   + Alerts Master |

1. **Indicative High level Solution Overview**

Diagram

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1. **Indicative Azure BOM**

|  |  |  |  |
| --- | --- | --- | --- |
| Service category | Service type | Region | Description |
| Compute | App Service | Central US | Basic Tier; 1 B3 (4 Core(s), 7 GB RAM, 10 GB Storage) x 730 Hours; Linux OS; 0 SNI SSL Connections; 0 IP SSL Connections |
| Storage | Storage Accounts | Central US | Block Blob Storage, General Purpose V2, Flat Namespace, LRS Redundancy, Hot Access Tier, 1,000 GB Capacity - Pay as you go, 10 x 10,000 Write operations, 10 x 10,000 List and Create Container Operations, 10 x 10,000 Read operations, 1 x 10,000 Other operations. 1,000 GB Data Retrieval, 1,000 GB Data Write |
| Compute | Azure Functions | North Central US | Consumption tier, Pay as you go, 1536 MB memory, 1,000 milliseconds execution time, 1,000 executions/mo |
| Databases | Azure SQL Database | Central US | Elastic Pool, DTU Purchase Model, Standard Tier, 50 eDTUs: 50 GB included storage per pool, 100 DBs per pool, 1 Pool(s) x 730 Hours, 0 GB Backup Storage, RA-GRS GB Storage, 0 x 5 GB Long Term Retention |
| Analytics | Azure Managed Grafana | East US | 730 Hours, zone redundancy not added, 10 active users |

***\* Note – This is Standard BoM, and it may change after Requirement Analysis***

1. **Discoveries**

* Birlasoft team will work with JDI technical team to finalize the required parameters available in the GeoTab and OmiTrack API’s

1. **Dependencies**

* JDI team needs to ensure the API readiness which will be consumed by the web application.
* The JDI team needs to provide the existing images – if required
* JDI team needs to provide new and updated styling guidelines (if any) to be followed for the development of the Web application.
* JDI will provide all API details and documentation for integration.

1. **Concurrence**

* Alerts and Alarms will be provided at periodic intervals on web application dashboards.
* Birlasoft requires JDI’s Azure portal high level access to deploy code, change configurations etc. (IaaS, PaaS)
* JDI needs to provide the specifications. Documentations, credentials of the APIs