Quotation

To: Harendra Jadwani
From: Excelloite Private Limited
Date: 15/03/2025
Subject: Quotation for Software Development

Scope of Work

I understand that you need a desktop application designed to display real-time calculated readings from a data logger device, which collects data from various sensors installed in the well to monitor various environmental factors. This software will enable clients to monitor live data on a single screen during production operations. The logged data can be associated with multiple well projects undertaken by the client.

The system will consist of **two desktop applications & an admin panel**:

1. **Master Application** – Connected directly to the data logger via a wired or wireless USB device, receiving real-time data in the form of a Modbus file. This application will have full control, including configuration, data management, and administrative rights.
2. **Slave Application** – A read-only version of the software that retrieves data from the server, allowing users to monitor real-time and historical data without making changes.
3. **Admin Panel** - It will help the administrator to manage user credentials and licences.

The application will present data in multiple formats, including:
P&ID View – A visual representation of the process and instrumentation.
List View – A structured display of sensor readings for easy monitoring.
Graphical View – Real-time charts and graphs for trend analysis.

Additionally, the software will be licensed, with licenses managed through an admin panel, ensuring secure access and control. This setup guarantees efficient monitoring, data security, and seamless communication between the master and slave applications.

Screens (Desktop Application)

During the initial installation, a one-time setup process will be required, which will need an internet connection.

1. **Login Screen** - Users enter the login credentials assigned by the admin to access the software.
2. **Activation Screen** – Users must enter a license key in the format XXXX-XXXX-XXXX-XXXXX to activate the software.
3. **Setup Configuration Wizard Screen**
    a. **Data Capture for individual well production**
        i. Client Name - Text input
        ii. Client logo - File input
        iii. Field name - Text input
        iv. Well no. - Text input
        v. Well History - Text input
        vi. Well Drilled on (mm/yy) : Date input
        vii. Well completed on (mm/yy) : Date input
        viii. Work completion date : Date input
        ix. Type of formation : Textarea (100 words)
        x. Last operation performed – Textarea (200 words)
        xi. Well History – Textarea (500 words)
    b. **Well Information**
        i. Surface location : Lat / long addition option - Text input
        ii. Drilling Rig Elevation: Textarea (50 words)
        iii. Production Casing details: Textarea (100 words)
        iv. Critical depth: Textarea (100 words)
        v. Tubing details: Text input
        vi. Max. Deviation: Text input
        vii. Reservoir pressure: Text input
        viii. Reservoir temperature: Text input
        ix. Last HUD: Textarea (50 words)
        x. Perforation Interval: Textarea (100 words)
        xi. Pay zone: Text input

xii. Minimum ID: Text input
xiii. Well Status: Text input
xiv. Option to add picture of well completion details: File input
xv. Option to add well program (PDF File): File input
xvi. Option to add Design of service (PDF File): File input
xvii. Additional options to add additional relevant PDF file and naming them: File input

4. **Sensor Mapping Screen** – Installed sensors will be mapped by selecting them from the equipment list using checkboxes. Additionally, the list of manual inputs will be displayed if the corresponding sensor is selected. Below is the list of equipments

Sr. no.	Equipment	Sensors
1.	Flow head / Well Head	1 x Pressure 1 x Temperature
2.	SSV Upstream	1 x Pressure
3.	SSV Downstream	1 x Pressure
4.	Well Head Desander	1 x Pressure
5.	Sand filter	1 x Pressure for upstream 1 x Pressure for downstream 1 x DP Sensor
6.	Data header Upstream of Choke manifold	1 x Pressure 1 x Temperature
7.	Choke Manifold	1 x Pressure for upstream 1 x temperature for Upstream 1 x Pressure for Downstream 1 x temperature for Downstream
8.	Data header downstream of choke manifold	1 x Pressure 1 x Temperature
9.	Indirect Bath Header	1 x Upstream temperature 1 x Downstream temperature

10.	Steam Heat Exchanger	1 x Upstream Temperature 1 x Downstream temperature
11.	3 Phase Separator	1 x Static Pressure 1 x Static Temperature 1 x Gas Temperature 1 x Gas Pressure 2 x Differential Pressure transmitter Gas line 1 x Gas flow meter 2 x Oil Flow meter 1 x Water flow meter 1 x Oil Temperature 1 x Level sensor 3 phase 1 x Level sensor oil chamber 1 x Water cut meter oil line
12.	Surge tank	1 x pressure 1 x temperature 2 x Level sensor
13.	Knock out drum	1 x pressure 1 x temperature 2 x Level sensor
14.	Storage tank	1 x Level Sensor 1 x temperature
15.	Transfer pump Discharge	1 x Pressure Discharge
16.	Production Header	1 x Pressure 1 x Temperature
17.	3 Way Manifold	1 x Pressure 1 x Temperature
18.	5 Way Manifold	1 x Pressure 1 x Temperature

Below is the list of manual inputs to be captured when the corresponding sensor is selected.

a. Density of Gas
b. API Gravity of oil
c. Water cut in oil line
d. Choke Bean Size
e. Orifice size
f. Orifice meter line size (ID)
g. Shrinkage factor for oil calculation
h. Meter factor Water line
i. Meter factor oil line

j. Methanol injection rate and cumulative
k. Defoamer injection rate and cumulative
l. Additional chemical injection rate and cumulative
m. Sand Quantity in KG
n. Water PH
o. Water Salinity
p. BS&W
q. CO2 %
r. H2S PPM

5. **P&ID Screen** - This screen will display P&ID diagram based on the equipment and sensors selected from the previous screen.
6. **List View of Real-Time Data Screen** - The **List View** page will display real-time data received from the data logger after processing and calculations. The data will be presented based on a configurable time interval, with various functionalities to enhance monitoring and analysis. Vertical auto scrolling will be done on the page to view the latest data at the bottom.

Key Features & Functionalities:

a. Real-Time Data Display

- The page will show real-time data transmitted by the data logger.
- Data will be updated at time intervals set by the client in the settings.

b. Configurable Time Interval

- The default time interval for data updates will be **1 minute**.
- Clients can modify the interval from the settings as per their requirements.

c. Data Recording & Analysis

- The system will store recorded **date and time** for further analysis.
- Manual data entered during equipment selection will also be displayed.

d. Calculated Values for Sensors

- Displays processed data derived from real-time readings of selected sensors.

e. Unit Conversion Feature

- Clients can **change measurement units**, and values will be displayed accordingly.

f. Sequence Data Addition

- Allows clients to **add a sequence of data** as a row at a specific time.

g. Project Start/Stop Feature

- Clients can **start and stop projects**, and all recorded data within that duration will be saved.

h. Data Restoration on Restart

If the software is restarted during an active project:

- **Previously recorded data** will be reloaded.
- Upcoming data will continue streaming from the logger.
- Users can **modify cumulative values** of previous data to adjust future calculations.

i. Drag & Drop Table Headers

- Users can **rearrange columns** by dragging and dropping table headers.

j. Data Export Options

- Export table data in **CSV format** with or without data sequences.

k. Data Override Functionality

- Clients can **override existing data**, which may cause a slight lag on the **slave software**, but it is considered acceptable.

This setup ensures **efficient data monitoring, flexibility in data adjustments, and seamless project management** within the software.

7. **Graphs Screen** - This section will provide a graphical representation of the real-time data displayed in the **List View**. Users will have multiple options to customize and analyze data visually.

Key Features & Functionalities:

a. Graphical Representation of Real-Time Data

- The graph will visually display real-time data recorded in the **List View**.

b. Customizable Graph Generation

Users can generate graphs by selecting:

- **X-axis and Y-axis values**
- **Graph type** (e.g., line graph, bar chart, etc.)
- **Date and time filters** to view specific data periods
- **Choke size** for more precise analysis

c. Zoom Functionality

- Users can **zoom in** to analyze specific data points.
- **Zoom out** to view broader trends over time.
- Display annotations

This feature will allow users to efficiently monitor trends, detect patterns, and gain deeper insights into real-time sensor data.

8. **Settings Popup** - The **Settings Popup** will provide users with various configuration options to customize and manage the software's functionality. It will include the following key features:
   a. View P&ID Diagram
   - Displays the **Piping & Instrumentation Diagram (P&ID)** based on the selected equipment and sensors.

   b. Equipment & Sensor Selection and Manual Value Editing
   - Users can **select or modify equipment and sensors**.
   - Option to **edit manual input values** if applicable.

   c. Set Data Refresh Interval
   - Allows users to **define the time interval** at which real-time data is refreshed.
   - Default interval: **1 minute**, but users can modify it.

   d. License Code & Validity
   - Displays the **software license key** and its expiration date.
   - Option to **update or renew the license** if required.

   e. Software Version & Release Notes
   - Displays the **current software version**.
   - Provides a section for **release notes** detailing the latest updates and improvements.

   f. Well Configuration Templates
   - View available **well configuration templates**.
   - Option to **select and apply a template** for specific projects.

   g. View & Open Projects
   - Displays a **list of existing projects**.
   - Allows users to **open and continue working** on previously saved projects.

   h. Alarm inputs will accept the threshold values to notify user by audio and visual alarm

   i. Download Report - Generate and export reports based on selected criteria:

- Select timeline (e.g., end of well, specific period).
- Include options like sequence, list view, P&ID, graphs (selectable X/Y axis), and uploaded PDFs (all PDFs compiled into one).
- Print the report in PDF format with options to include:
    1. Well history
    2. Well information
    3. Sequence of events
    4. Reporting file
    5. Graphs (pre-saved with selection option)
    6. Attachments added to sequences
- Export Well data as CSV.

  This will allow the operator to customize the report by selecting relevant sections before downloading.

j. **Downhole Data Upload & Display** – CSV files containing downhole data can be uploaded, displayed in the list view, and downloaded in the report. This feature can be enabled after the job is completed, with an additional column added to align with the corresponding sensor data.

This **Settings Popup** will serve as the control center, allowing users to efficiently configure and manage key aspects of the software.

Technical Specifications

a. Data Logging & Local Storage

- The data logger will send data every 1 second.
- The software will store this data in a local SQLite database as soon as it is received.
- Potential Performance Issue: Frequent database operations (every 1 sec) may cause the software to hang.
- Recommended Interval: 5 seconds for optimal performance.

b. Data Sync to Online Server

- The logged data will be pushed to an online server database at a user-defined time interval.

c. Internet Requirement for Initial Setup

- An internet connection is required for the first-time setup to validate user credentials and activation code.

d. Internet Dependency for Real-Time Monitoring

- Both Master and Slave applications require an active internet connection to monitor real-time data.

e. Potential Data Lag in Slave Application

- The Slave application pulls data from the server based on the user-defined interval.
- This introduces a possibility of data lag, depending on the sync frequency.

f. Local Database Choice

- SQLite will be used as the local database to avoid the need for installing an external database server on the client's system.

Tech Stack

- **Desktop Application:** Electron.js
- **Local Database:** SQLite
- **Admin Panel:** Django Administrator
- **Server Backend:** Django
- **Server Database:** PostgreSQL
- **Server Hosting:** Azure/AWS VM & RDS

Server Configuration & Performance Optimization

- The server will handle continuous incoming data from the Master application every 1 minute or user defined time intervals.
- Simultaneously, it will manage continuous outgoing data for the Slave application, which pulls data based on user-defined intervals.
- Since both incoming and outgoing requests will occur frequently, server load optimization is crucial.

Option 1 (Single VM Approach - Standard Performance)

- A single high-performance VM with auto-scaling enabled.

- High read/write capacity for PostgreSQL RDS.

Option 2 (Dual VM Approach - Better Performance & Load Distribution)

- **VM 1 (Data Ingestion Server):**
  - Dedicated to receiving and storing incoming data from the Master application.
  - Optimized for high write operations.
- **VM 2 (Data Distribution Server):**
  - Dedicated to handling requests from Slave applications for real-time data.
  - Optimized for high read operations.

Recommendation: Using two separate VMs—one for data ingestion and another for data distribution—is ideal for maintaining system efficiency, reducing latency, and avoiding bottlenecks.

Inputs Needed from Client

- **Hardware Device** – A data logger device that provides continuous data flow for real-time testing and development.
- **Manual Input Mapping** – A detailed list mapping manual inputs with their corresponding sensors.
- **P&ID Diagram Template** – A predefined template for visual representation of the process and instrumentation.
- **Excel Data Template** – Sample Excel file with 5-7 rows of data covering all sensors, ideally with actual calculated values.
- **Graph Templates** – A few real-world graph examples to match expected visualization outputs.
- **Sensor Nomenclature** – A list of sensor names as they should appear in the selection list, mapped to column headers in the Excel data.
- **Calculation Formulas** – Formulas for computing values in each column within the List View.
- **Manual Input Marking** – Indication of which values in the List View require manual input.

Terms & Conditions

1. **Project Scope & Changes**
    - The project timeline and cost estimation are based on the initial requirements discussed and agreed upon.
    - Any modifications, enhancements, or additional features requested beyond the agreed scope will be considered as a change request and will be charged separately.
    - Any changes in the project scope may also impact the project timeline and delivery schedule.
2. **Payment Terms**
    - Payments must be made as per the agreed milestone structure outlined in the quotation.
    - Delays in payments may result in project hold-ups, affecting the overall delivery timeline.
    - Any additional services or scope additions requested will require separate invoicing and payment.
3. **Client Responsibilities**
    - The client must provide all necessary resources, including access to hardware devices, sample data, and any reference documents required for software development.
    - Delays in providing these resources may impact the development schedule.
    - The client is responsible for any third-party costs related to external services or APIs, if applicable.
4. **Software Delivery & Licensing**
    - The final software will be delivered along with comprehensive documentation, including a user guide and installation instructions.
    - The software will be licensed and will require an activation key for usage. The activation process will be completed during the initial setup.
    - The license terms will be defined in the agreement, and any additional licenses or modifications will be charged separately.
5. **Maintenance & Support**
    - A 45-day free maintenance period will be provided after project completion. This covers only bug fixes and does not include any new feature development.

- After the maintenance period, any additional support or modifications will be charged based on standard support packages or hourly rates.
- The client may choose to enter into an annual maintenance contract (AMC) for continued support and updates.

6. **Server & Infrastructure Costs**
   - The client is responsible for all server and infrastructure costs, including cloud hosting, database storage, and any other required services.
   - If the software is hosted on third-party servers (AWS/Azure), all associated costs must be managed by the client.
   - The server configuration will be optimized for handling continuous data transmission, but any additional server requirements will be billed separately.
7. **Confidentiality & Data Security**
   - Both parties agree to maintain the confidentiality of any shared business information, data, or software components.
   - The software will be developed following best security practices; however, the client is responsible for ensuring compliance with their internal IT security policies.
8. **Liability & Warranty**
   - The software will be tested thoroughly before delivery, but any unforeseen issues should be reported during the maintenance period for resolution.
   - The development team is not liable for any loss of data due to client-side server failures or misconfigurations.
   - The software will be developed as per the agreed specifications, and any disputes will be addressed as per the contract terms.
9. **Termination Policy**
   - Either party may terminate the contract with a prior written notice of 15 days in case of any unforeseen circumstances.
   - Any payments made up to the termination date will be non-refundable.
   - If the client wishes to terminate the project mid-development, a payment settlement based on completed milestones will be required.
10. **Ownership & Intellectual Property Rights**
    - Upon full payment and successful project completion, the client will have ownership rights to the final software product.

- The development team retains the right to use generic components, frameworks, or reusable libraries developed during the project for future projects.
- Any proprietary code or algorithms developed specifically for the client will be assigned to the client as per the agreement.

Nos. of Resources:

- **Project Manager –** 01
- **UI/UX Developer –** 01
- **Frontend Developer –** 01
- **Backend Developer –** 01
- **Tester –** 01

Software Development Process:

- **Requirement Gathering** – Understanding client needs and project objectives.
- **SRS Approval** – Getting the Software Requirement Specification (SRS) document reviewed and approved.
- **Project Sign-Off** – Final agreement on scope, timeline, and deliverables.
- **UI/UX Design Approval** – Designing and finalizing application screens.
- **Database Schema Design** – Structuring and defining data storage.
- **Backend Development & Integration** – Server-side logic and API development.
- **Internal Testing** – Conducting in-house testing for bugs and errors.
- **User Acceptance Testing (UAT)** – Client-side testing and feedback implementation.
- **Bug Fixing & Final Enhancements** – Ensuring a stable and polished product.
- **Delivery & Deployment** – Final software handover.
- **45 Days Free Maintenance** – Post-delivery support for any issues or optimizations.

Pricing & Timeline

- **Total Cost:** ₹5,50,000 (Rupees Five Lakh Fifty Thousand Only)
- **Taxes:** As applicable (GST or any other applicable tax will be charged additionally)

Phase 1: ₹3,00,000

- Development of the Offline Master Desktop Application
- The application will be installed on a single device connected to the data logger
- Development of the Admin Panel for managing licensing and configurations

Phase 2: ₹2,50,000

- Online Sync with Server for real-time data transmission
- Development of the Slave Application to fetch and display the data

Note: *Phase 2 will commence only after receiving a green signal from the client.*

Payment Structure (Phase 1)

1.	Advance	30%	Rs. 90,000
2.	Acceptance of UI/UX	20%	Rs. 60,000
3.	Setup, Realtime Data Display & Report	25%	Rs. 75,000
4.	Final Delivery	25%	Rs, 75,000

Project Timeline

- Estimated completion: **1 to 1.5 months for phase 1 and 1 month for phase 2**
- The timeline is subject to timely provision of all necessary resources, including hardware devices, sample data, and required approvals from the client.
- Any delays in resource sharing or approvals may impact the project delivery schedule.

Approval & Acceptance

Client Approval:

- Name: _____
- Designation: _____
- Company Name: _____
- Date: _____
- Signature: _____

Service Provider Details:

- **Name:** Rohit Paul
- **Designation:** Director
- **Company Name:** Excelloite Private Limited
- **Date:** 15/03/2025
- **Signature:** Rohit Paul

Additional Notes:

- The quotation is valid for **10 days** from the date of issue.
- Any changes in scope, timeline, or requirements will require a revised quotation.
- Support and maintenance beyond the free period will be chargeable as per mutually agreed terms.