

# Work Track Mobile Application

## Requirement Understanding Document

**Client: Quadgen wireless solutions**

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## **1. Introduction**

This document outlines the business and functional requirements for the customization of the Work track App as discussed with the client. It is based on the Excel file shared by the client titled "**Requirements for O & M ver1.xlsx**". The purpose of this document is to confirm mutual understanding of the scope and requirements before development begins.

## **2. Objective**

The main goal is to provide field engineers and FRT (Field Response Teams) a structured and simple interface to log their daily activities, monitor work types, capture photos, track location, and ensure maintenance and fault tracking are transparent and well-recorded.

## **3. Type of Activities**

The app will include the following activities:

- FRT Daily Activity – Preventive Maintenance
- Corrective Maintenance
- Change Request
- GP Live Check
- Patroller Task & Observations

Each activity includes both form fields and their expected behaviour, as well as reporting implications.

## 4. Functional Requirements

### 4.1 Punchin

| Field Name             | Description                         | Data Type     | Behavior/Validation   | Remarks   |
|------------------------|-------------------------------------|---------------|---|---|
| Photo with GIO Tag     | Capture user image with geolocation | Image         | Mandatory on Punchin, location required                     | Clarify GIO Tag definition                                  |
| District               | Operational area                    | Dropdown/Text | Mandatory   | List or free entry?   |
| Cluster/Base Location  | Assigned base                       | Text          | User will enter the <b>Cluster / Base Location</b> directly |   |
| Date                   | Date of punch-in                    | Date          | Auto-set to current date                                    | Can be edited?  |
| Engineer Name/FRT Team | Name of engineer or team            | Dropdown      | Pulled from user profile                                    |   |
| FRT Team Start Reading | Odometer at start                   | Number        | Numeric only  | Unit: km?   |
| Type of Activity       | Type of work for the day            | Dropdown      | Single select   | Confirm values are fixed: PM, CM, GP Survey, CR, Patrolling |
| End Reading at Base    | Final odometer                      | Number        | Numeric only  | End of day only?  |
| Total KM Travelled     | Calculated distance                 | Number (Calc) | Auto = End - Start  | Read-only   |

## 4.2 FRT Daily Activity – Preventive Maintenance

| Field Name                 | Description          | Data Type | Behavior           | Remarks                |
|----------------------------|----------------------|-----------|--------------------|------------------------|
| Mandal Name                | Sub-district         | Text      | Mandatory          | Dropdown or free text? |
| Location                   | Site                 | Text      | Mandatory          |                        |
| Ring Name                  | Fiber ring name      | Text      | Mandatory          |                        |
| No of GPs                  | Number of Panchayats | Number    | Integer only       |                        |
| OTDR Testing From Location | Starting node        | Text      | Mandatory          |                        |
| OTDR Testing To Location   | End node             | Text      | Mandatory          |                        |
| Fibre No (1–24)            | Fiber ID             | Dropdown  | Fixed options 1–24 | Multiple rows?         |
| Distance                   | Length of fiber      | Decimal   | Numeric            | Unit?                  |
| Cumulative Loss            | Signal loss          | Decimal   | Numeric            | Unit = dB?             |
| GP Span Name               | Group of sites       | Text      |                    |                        |

### 4.3 Corrective Maintenance

| Field Name                      | Description                     | Data Type                           | Validation                         | Remarks   |
|---------------------------------|---------------------------------|-------------------------------------|------------------------------------|---|
| Present Location and Time       | Current location                | Auto-capture                        | GPS + timestamp                    | Mandatory                                       |
| Offline Mandal Location         | Location when offline           | Text + GPS                          | If offline, allow text             |   |
| TT No                           | Ticket number                   | Alphanumeric                        | Unique                             |   |
| <b>OTDR</b>                     |                                 |                                     |                                    |   |
| Distance From POP               | Distance from Point of Presence | Number                              | Required                           | Unit: km  |
| Cut Location Identification     | Geotagged evidence of cut       | Time with GEO TAG - Multiple Photos | Mandatory                          | Auto-tagged location required                   |
| GP Name                         | GP where issue occurred         | Text                                | Mandatory                          | Consistency needed with master data             |
| Reason for Damage               | Explanation of fault            | Text                                | Required                           | Drop-down + Text can be considered              |
| Restoration Possible as per SLA | SLA Compliance Status           | Yes/No                              | Required                           | SLA = Service Level Agreement                   |
| If No, Reason                   | Explanation for SLA failure     | Text                                | Conditional                        | Required if restoration not possible as per SLA |
| TTR Close                       | Time when restoration was done  | Time with GEO TAG                   | Mandatory                          | Must include timestamp and location info        |
| <b>OTDR Test</b>                |                                 |                                     |                                    |   |
| From Location (Mandal/GP)       | OTDR test starting point        | Text                                | Mandatory                          | Should match GP database                        |
| To Location (Mandal/GP)         | OTDR test endpoint              | Text                                | Mandatory                          | Should match GP database                        |
| Fibre No                        | Fiber ID involved in test       | Dropdown (F1–F24)                   | Selectable from fixed list         | Confirm support for multiple entries per task   |
| Distance                        | Cable length under test         | Decimal Number                      | Must accept positive numeric input | Unit to be confirmed (meters/km)                |
| Cumulative Loss                 | Signal loss over distance       | Decimal Number                      | Numeric input, decimals allowed    | Unit = dB                                       |
| <b>Total Material Consumed</b>  |                                 |                                     |                                    |   |

|                           |                              |                   |                         |  |
|---------------------------|------------------------------|-------------------|-------------------------|--|
| Tension Clamps            | Quantity used                | Number            | Numeric field, $\geq 0$ | Conditional field if clamps were used              |
| Suspension Clamps         | Quantity used                | Number            | Numeric field, $\geq 0$ | As above   |
| Loop Stand                | Quantity used                | Number            | Numeric only            | Optional field depending on observation            |
| New Poles                 | Quantity installed           | Number            | Numeric only            | May trigger additional task in patroller form      |
| Joint Enclosures Utilised | Quantity used                | Number            | Numeric field           | Count per incident                                 |
| OFC Used (in KM)          | Fiber cable consumed         | Number            | Decimal number allowed  | Clarify if multiple cable types tracked separately |
| TT Closed                 | Task status closed?          | Yes/No            | Toggle/select option    | Final completion flag for activity                 |
| TT Closed Time            | Final confirmation timestamp | Time with GEO TAG | Auto or manual entry    | GeoTag required on image upload or device log      |

#### 4.4 Change Request

| Field Name                | Description               | Data Type | Notes                           |
|---------------------------|---------------------------|-----------|---------------------------------|
| Mandal Name               | Area of change            | Text      |                                 |
| Ring Name                 | Fiber ring                | Text      |                                 |
| GP Span Name              | Group of sites            | Text      | Confirm difference from GP Name |
| Change Request No         | Unique ID                 | Text      | Manual or system-generated?     |
| Reason for Activity       | Why this change is needed | Text      |                                 |
| Material Consumed – OFC   | Fiber used                | Number    | Unit: meters?                   |
| Material Consumed – Poles | Poles used                | Number    | Count only                      |

#### 4.5 GP Live Check

| Field Name                | Description  | Datatype         | Remarks   |
|---------------------------|--|------------------|---|
| Mandal                    | Mandal (region) of the GP being checked                                      | Text (string)    | As above.   |
| Ring Name                 | Name of the fiber ring at this GP  | Text (string)    | As above.   |
| GP Name                   | Name of the specific GP (site) being checked                                 | Text (string)    | Should match naming in other modules.                             |
| FDMS Issue                | Whether there is an FDMS (Fiber Distribution Management System) issue        | Boolean (Yes/No) | Specify what FDMS stands for or involves.                         |
| Termination Issue         | Whether there is any termination issue                                       | Boolean (Yes/No) | Clarify what constitutes a “termination issue.”                   |
| Re-Location               | Whether any re-location of equipment is needed                               | Boolean (Yes/No) | Clarify if this means physical relocation of fiber/joints.        |
| Fibre Issue               | Whether any fiber issue is present   | Boolean (Yes/No) | If “Yes”, user should provide details (see next field).           |
| If yes (detail)           | Description of the issue if <i>any</i> of the above passive checks are “Yes” | Text (string)    | Explain how this is triggered (e.g., show when any above is Yes). |
| Rack Installed            | Whether the network rack is correctly installed at this GP                   | Boolean (Yes/No) |   |
| Router Issue              | Whether there is any issue with the router                                   | Boolean (Yes/No) |   |
| SFP Module                | Whether the SFP (optic transceiver) module is in good condition              | Boolean (Yes/No) |   |
| UPS Issue                 | Confirms whether the (UPS) at the GP site is functioning correctly or not    | Boolean (Yes/No) |   |
| MCB Issue                 | Identifies if the MCB is tripping, faulty, or non-functional.                | Boolean (Yes/No) |   |
| SFP Module                | Whether the SFP (optic transceiver) module is in good condition              | Boolean (Yes/No) |   |
| Trough Raw Power - Router | Indicates if the router is powered directly from raw                         | Boolean (Yes/No) |   |



|                                       |  |                  |  |
|---------------------------------------|--|------------------|--|
|                                       | power (unregulated),<br>bypassing UPS/stabilizer   |                  |  |
| APSFL<br>Power<br>Meter<br>Connection | Checks whether the APSFL-supplied power meter is properly connected and active at the site | Boolean (Yes/No) |  |

#### 4.6 Patroller Task & Observations

| Field Name                     | Description   | Datatype                 | Customization Notes                        | Remarks  |
|--------------------------------|---|--------------------------|--|--|
| Mandal Name                    | Mandal (region) where patrol is conducted                   | Text (string)            |  |  |
| Location                       | Specific location or site name for the patrol               | Text (string)            |  |  |
| Ring Name                      | Name of the fiber ring or network segment being patrolled   | Text (string)            |  |  |
| No of GPs                      | Number of GPs (sites) covered in this patrol                | Number (integer)         |  | Should this match actual sites found?                          |
| GP Span Name                   | Name of the GP span or distribution section being inspected | Text (string)            |  | Clarify definition of "GP Span" in this context.               |
| Identification of SAG Location | Whether the sheath access point (SAG) is identified         | Boolean (Yes/No) + Photo | If "Yes", require photo(s) with geo-tag.   | Verify what SAG means (Sheath Access or other); require photo? |
| Noting of Clamp Damaged        | Whether any fiber clamps are damaged or missing             | Boolean (Yes/No) + Photo | If "Yes", require photo(s) showing damage. |  |
| Tension Clamp Count            | Number of tension clamps noted (if any clamp damage)        | Number (integer)         | Visible if "Clamp Damaged" is "Yes".       |  |
| Suspension Clamp Count         | Number of suspension clamps                                 | Number (integer)         | Visible if "Clamp Damaged" is "Yes".       |  |

|                                 |  |                          |  |  |
|---------------------------------|--|--------------------------|--|--|
|                                 | noted (if any clamp damage)  |                          |  |  |
| Identification of New Pole/Bend | Whether a new pole is needed or an existing pole is bent                   | Boolean (Yes/No)         | If “Yes”, further details below.                           | Clarify this header; likely means checking pole status.        |
| Pole Damage                     | Whether a pole (new or existing) is damaged                                | Boolean (Yes/No) + Photo | Visible if “New Pole/Bend” is “Yes”.                       |  |
| Pole Bend – New Poles           | Whether any new poles are bent   | Boolean (Yes/No) + Photo | Visible if “New Pole/Bend” is “Yes”.                       |  |
| Loop Stand Issues               | Whether there are any issues with loop stands                              | Boolean (Yes/No) + Photo | If “Yes”, require photo(s).                                |  |
| Tree Cutting Activity           | Whether there is evidence of required tree cutting near fiber lines        | Boolean (Yes/No) + Photo | If “Yes”, require photo(s).                                |  |
| Joint Enclosure Status          | Whether any problems are found in joint enclosures (splicing boxes)        | Boolean (Yes/No) + Photo | If “Yes”, require photo(s).                                |  |
| Identification of Cut Location  | Whether a cut or significant damage location is identified                 | Boolean (Yes/No) + Photo | If “Yes”, require photo(s).                                |  |
| Other Activities / Observations | Any other notable issues or maintenance activities (free-form description) | Text (string) + Photo    | Free text for additional remarks; allow attached photo(s). | Clarify if multiple images allowed and context for this field. |

## 5. Clarifications Requested

### 1. Daily Login Details:

Should the following fields be filled by the user every day during punch-in?

- Photo with GEO Tag
- District
- Cluster / Base Location & date
- Engineer Name / FRT Team
- FRT Team Start Reading

### 2. Activity Selection Flow:

After selecting a *Type of Activity* (like PM, Corrective, etc.), should the related fields be shown immediately for the user to fill?

### 3. End of Day Inputs:

Should the following be filled only after the day's tasks are completed?

- End Reading at Base Location
- Total KM Travelled

### 4. Task Type Usage:

Will a user typically stick to the same task type for the whole day, or can they work on different activity types throughout the day?

### 5. Handling Interruptions:

If a new task appears while the user is working on another one, should they complete the new task first and return to the previous one afterward?

### 6. TT Number Entry:

Should the TT number be entered **while** the user is working on the task, or **after** the task is completed?

### 7. Report Generation Logic:

Should the reports reflect only the fields that were filled by the employee during form entry?

### 8. Joint Enclosure Issue Count:

How should we calculate the "No. of Locations – Joint Enclosure Issue Cleared"?

Is this based on number of photos uploaded or manual count?

### 9. Multiple Activities in One Day:

Can the same user perform and submit **more than one type of activity** in a single day?

### 10. '+Add' Button Usage:

When the user taps on '+Add', is it meant to allow:

- a) Entering multiple entries for the same field (like multiple photos or issues)?
- b) Or just for adding remarks?

### 11. End Reading & KM Entry Timing:

Should "End Reading at Base Location" and "Total KM Travelled" be entered only after all tasks for the day are finished?