

Android Application User Manual



DOR **Construction Site Monitoring**

Version 1.0.0

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1 Introduction

Construction Site Monitoring android application is an android based application which is used to record observation data from the field. Observer need to install this application in their android device then use it while visiting site to record various information regarding observation from the site. It provides easy interface to record observation data like location of site, audio files, image files and video files.

2 Setup (How to install?)

This application is available in <http://apps.softwel.com.np> under DOR CSM.

Click **Download App Button** to download .apk file and **install that .apk file in android device**.

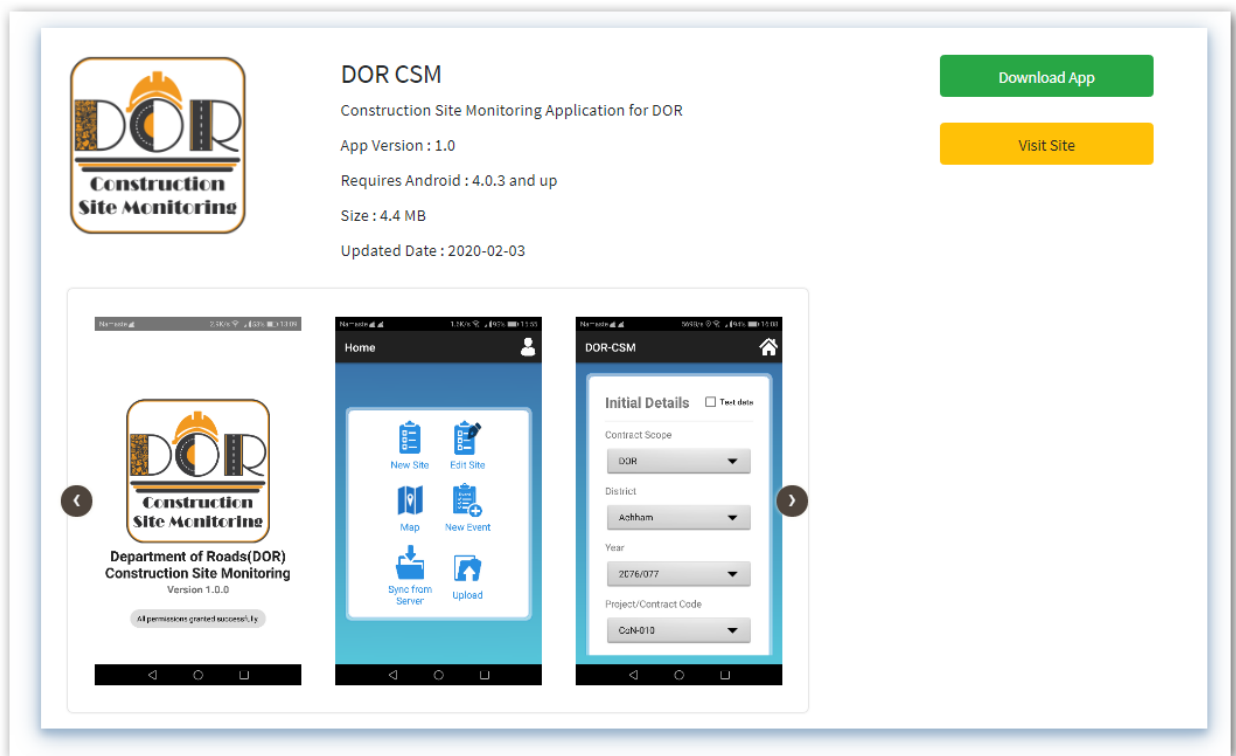


Figure 1

Once installation is done, check for  icon in device. Click on the icon for recording data.

3 Login (First Time Login might be Confusing.)

1. First of all, the account has to be set (to fill forms for New site, Edit site, Upload or Sync data from server) else error message is shown as shown in *Figure 2* below.

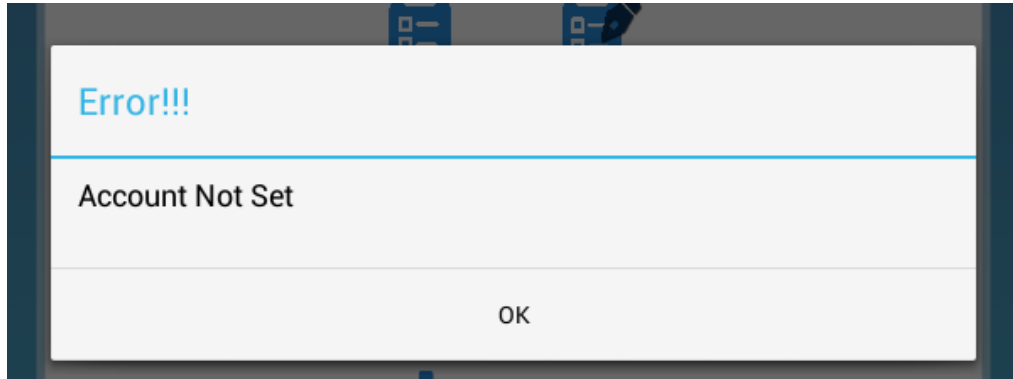


Figure 2: Error message for Account not set

2. To set account press on  icon at top right corner of app as shown in *Figure 3*

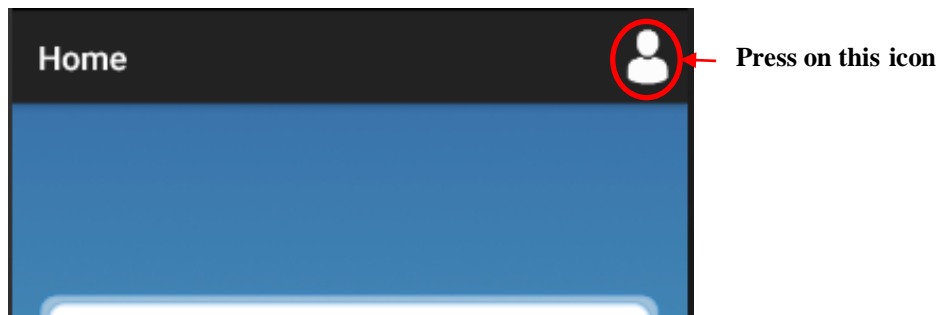


Figure 3: Set account icon

3. After pressing the Toolbar menu the following screen appears shown in *Figure 4*.

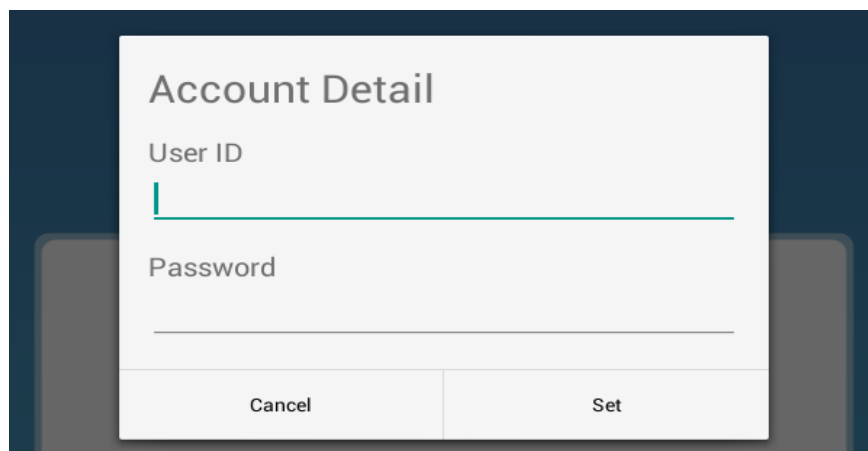


Figure 4: Set Account form

User ID: Type username provided by admin.

Password: Type password.

Set: Press Set to Login.

On successful login Home page is opened.

4 Home Screen

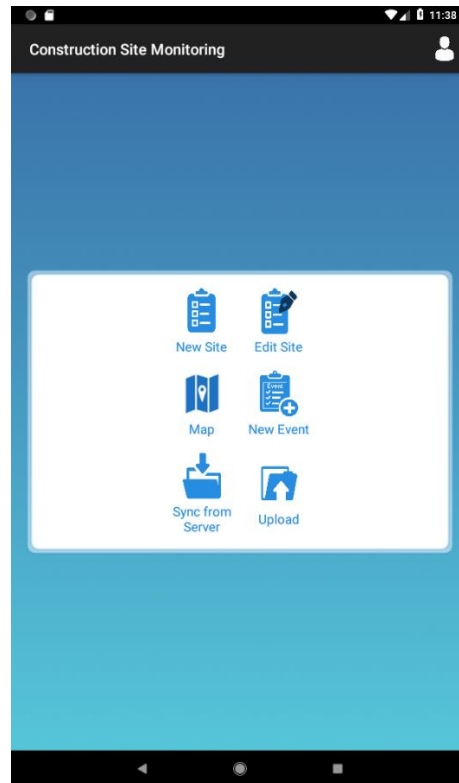


Figure 5: Main Screen

Above picture shows the main screen of the application. New site observations can be taken, edited, viewed in map and can also be uploaded from this page. New Events can be added.

New Site: Press on “**New Site**” button to enter the data for new site. For further details see section [New Site](#).

Note: Before filling the observations and events press “**Sync from Server**” button to get all the data required for the app else error message is shown as in *Figure 6 below*.

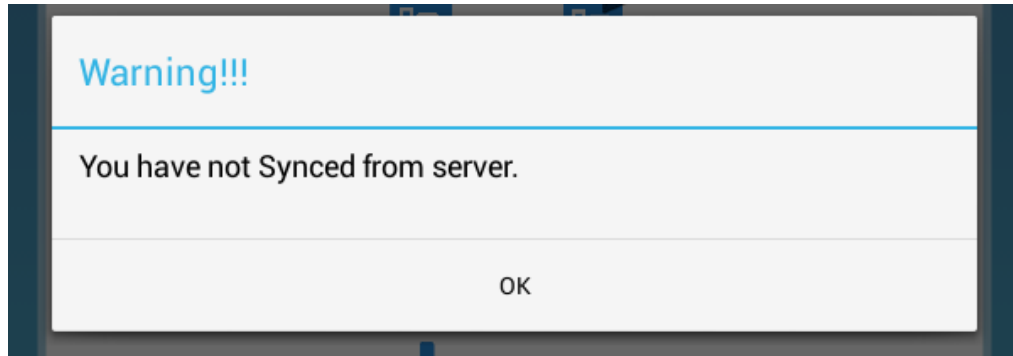


Figure 6: Warning message to sync data from server

Edit Site: Press on “Edit Site” button to edit site observations. This shows the dialog with the list of reports saved. For further details see section Edit Site.

Map: Press “Map” button to view your current location on the map.

New Event: Press “New Event” button to enter event data.

Sync from Server: Press to get latest updates from server to this app.

Upload: To upload the reports taken press “Upload” button. This shows the dialog with the list of uploaded and not uploaded reports. For further details see section Upload Reports.

5 New Site (How to start with new Site?)

When **New Site** button of the main screen is pressed the page is navigated to the initial details page.

5.1 Initial details

The screenshot shows the 'Initial Details' page for a site in the P1-PIIMS-CSM app. The page is titled 'Initial Details' and contains the following fields:

- Test data:** A checkbox labeled 'Test data' is located at the top right of the form.
- District:** A dropdown menu with a 'Select' button.
- Contract Scope:** A dropdown menu with a 'Select' button.
- Year:** A dropdown menu with a 'Select' button.
- Project/Contract Code:** A dropdown menu.
- Contract Name:** A dropdown menu.
- Description:** A text input field.
- Date of Observation:** A text input field showing '2019-12-20 12:19'.
- SAVE:** A blue button at the bottom center of the form.

Annotations with red arrows point to the following elements:

- A home icon in the top right corner of the app bar, with the text: "Navigate to Home of the app."
- The 'Test data' checkbox, with the text: "If the observation is being taken for testing, it should be checked"
- The 'SAVE' button, with the text: "Press Save after all the fields are filled properly"

Figure 7: Initial Details page for Site

District: Choose district from the list.

Contract Scope: Choose Contract Scope from the list

Year: Choose the year from the dropdown considering the current fiscal year.

Project/Contract Code: Choose the Project/Contract Code from the list, it will set the **Contract Name** and **Description** corresponding to the **Contract Code**. (Or, alternately you can choose the **Contract Name** which sets the corresponding **Contract Code** and **Description** for the **Contract Name** chosen).

Date of Observation: This field is automatically filled with current date and time fetched from your current location (through GPS) when observation is taken.

Note: Location should be ON in the device.

All the fields in this form are mandatory.

Fill the form completely and press “**Save**” button.

You will be directed to [Observation List](#) page after pressing “**Save**” button.

5.2 Observation List (How to work with Observation data?)

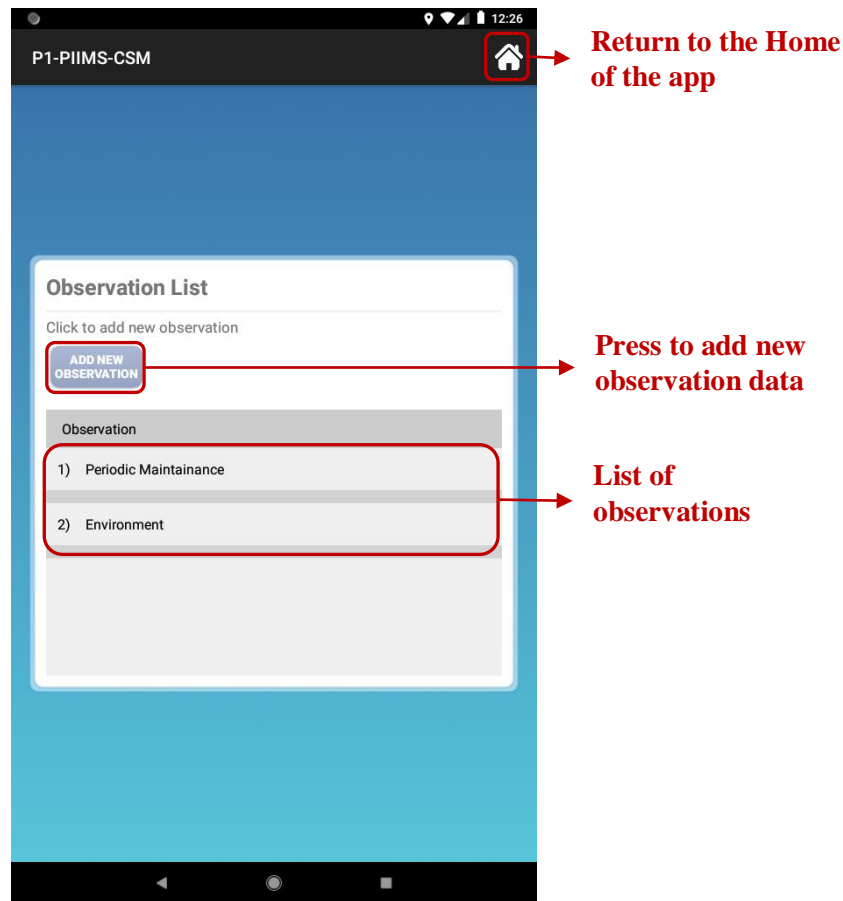


Figure 8: Observation list

This page shows the list of observation done and provides interface to add new observations.

Basically it has two main sections:

- 1. ADD NEW OBSERVATION**
- 2. OBSERVATION LIST**

5.2.1 Add New Observation (How to add new observation?)

Click “ADD NEW OBSERVATION” button to open **Observation Form** which is described below (Refer *Figure 10*). Fill the form to add new observation.

5.2.2 Observation List (How to edit or delete observation?)

The list of observations added are shown as list as shown in above *Figure 8*.

Press on the listed item to **Edit** or **Delete** the observations added. On pressing the listed item it will open a dialogue box with **Delete** and **Edit** option shown in *Figure 9* below.

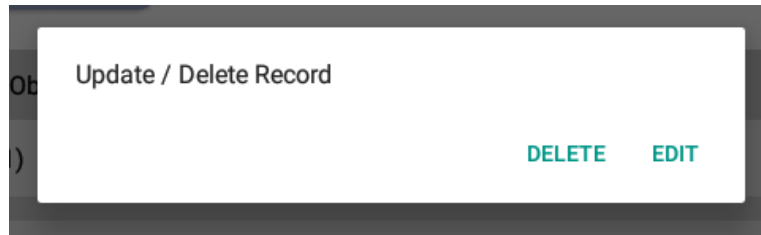



Figure 9: Dialog for deleting and editing observations

DELETE: To delete observations press Delete button. If you delete the observation all its details, photos, audio and video taken for the observation will be deleted.

EDIT: To edit observation details press Edit button, **Observation** form with the saved details will be loaded and users can edit the details if any changes required and save the changes as explained in [Observation Form](#).

Note: Press anywhere outside dialog box to close the dialog box.

To return to **Home** press the menu icon denoted by  at top right corner of screen.

5.2.3 Observation form

The screenshot shows a mobile application interface for recording observations. The form is titled "Observation" and includes the following fields and controls:

- Observation Item:** A dropdown menu currently showing "Retaining Wall" and a text input field for "Other item".
- Location:** A text input field.
- Observation Notes:** A large text area for notes.
- Observation Rating:** A dropdown menu currently showing "Excellent".
- Measurement (Quantity+Unit):** A text input for "Quantity" and a dropdown for "Box".
- POINT LOCATION:** A section with input fields for "Latitude", "Longitude", and "Elevation", each with a "0" value.
- Audio (Maximum 1):** A section with two orange circular buttons for recording and stopping audio.
- Image (Maximum 4):** A section with a "Caption" text input and a camera icon for taking a photo.
- Video (Maximum 1):** A section with a video camera icon for recording a video.
- SAVE:** A button at the bottom of the form.

Red arrows point from text annotations to specific UI elements:

- "Returns to Observation list page and if not saved all media and filled data is discarded" points to a back arrow icon in the top right corner.
- "Caption box for image to be taken" points to the "Caption" text input field.
- "Record audio" points to the first orange circular button in the Audio section.
- "Stop recording" points to the second orange circular button in the Audio section.
- "Take image" points to the camera icon in the Image section.
- "Record Video" points to the video camera icon in the Video section.
- "Save Observation data" points to the "SAVE" button.

Figure 10: Observation form

Figure 10 depicts the complete **Observation** form.

Observation Item: Choose Observation Item from the list.

Note: If “**Other**” is selected from the list then type the title for Observation item on “**Other Item**” field otherwise leave as it is.

Location: Type location of the observation.

Observation Notes: Type notes regarding observation or can be recorded as audio file using **record audio** option.

Observation Rating: Select rating from the list.

Measurement (Quantity + Unit): Type quantity in the **Quantity** field and select its **unit** from the list adjacent to it.

Point Location Button: Press on “Point Location” button. It will show a dialog box as shown in *Figure 11* below. **Check if location feature of device is ON.** Wait for the *GPS* to get the location. After *Latitude* and *Longitude* is displayed press “**Set**” to set the location. The dialog box is closed and the **Latitude, Longitude** and **Elevation** field are filled.

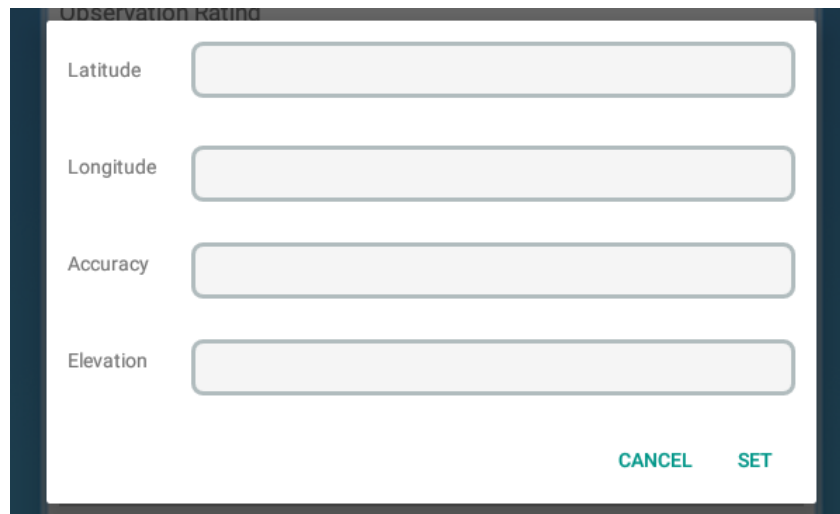


The image shows a dialog box titled "Observation Rating" with a dark blue border. Inside, there are four input fields stacked vertically, each with a label to its left: "Latitude", "Longitude", "Accuracy", and "Elevation". At the bottom right of the dialog, there are two buttons: "CANCEL" and "SET".


Figure 11: Location setting dialog

Audio: Press the  **Record** button on Audio to start recording and press  **Stop** button to end the recording.

On recording completion, the audio file is listed.

Delete Audio: Press the list to delete the file if needed.


Note: Only 1 audio file can be recorded.

Image: Press on  (**Camera**) icon to take image. To include description to an image, type the description in Caption box before taking an image.

The images are listed.

Delete Image: Press the image to delete it.

Note: Only 4 image file can be captured.

Video: Press on  (Video) icon to take video. For further details see section Video Recording.

Note: Only 1 video can be captured with size not exceeding 5MB or length 1 minute.

Save Button: Fill the form completely and press “Save” button.

The page is navigated to the **Observation List** where you can add more observations if required otherwise press **Home** button to return to the **main screen** page.

6 Edit Site (Working with the saved Site records.)

Press on the **Edit Site** of **Home** page to edit the reports. A dialog with two tabs viz. **NOT UPLOADED** and **UPLOADED** appears as shown below in *Figure 12*. The report with its **Contract Code, Date and Time** when it was created is shown in list.

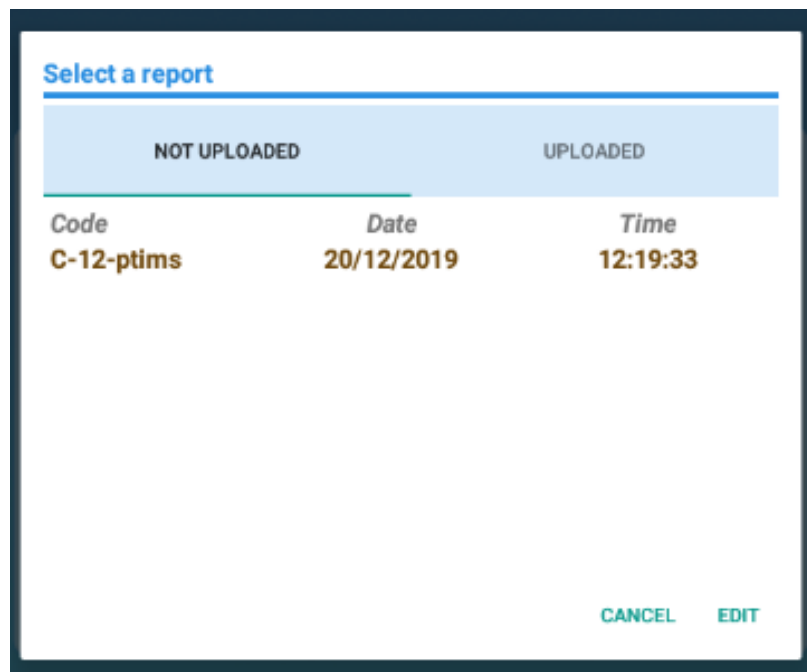


Figure 12: Edit Dialog Box

6.1 Uploaded and not uploaded (How to view uploaded and not uploaded records)

Press on **NOT UPLOADED** tab to see list of not uploaded records and press on **UPLOADED** tab to see list of uploaded records.

6.2 Edit Records (How to edit records?)

Select Record: Press on the desired record.

Edit: Press Edit button once the record is selected. Now the saved details will be loaded on the initial details form. Press **CONTINUE** button to open the list of observation. The process is similar to the process explained in [New Site](#).

Note: If no record is selected an alert dialog appears as in *Figure 13* shown below:

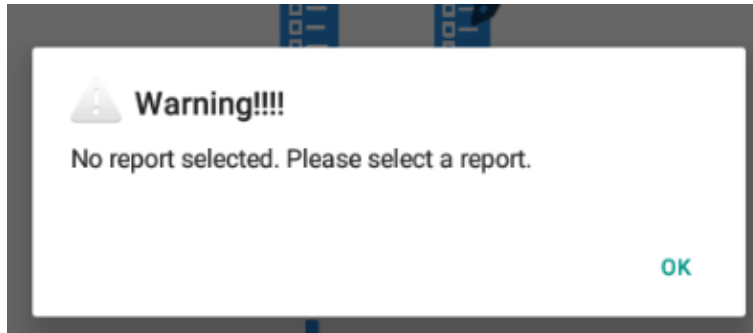


Figure 13: Select report warning message in alert dialog

7 Map (Let's see our site in Map.)

Press on Map to view the observation location in map.

Note: Press device back button to get back to home screen.

8 New Event (How to add New Events?)

When **New Event** button of the main screen is pressed the page is navigated to the initial details page.

8.1 Initial Details

The screenshot shows the 'Initial Details' page for an event. The page title is 'P1-PIIMS-CSM'. The form includes the following fields:

- District:** A dropdown menu with 'Select' as the current value.
- Contract Scope:** A dropdown menu with 'Select' as the current value.
- Year:** A dropdown menu with 'Select' as the current value.
- Project/Contract Code:** A dropdown menu with a downward arrow.
- Contract Name:** A dropdown menu with a downward arrow.
- Description:** A text input field.
- Date of Observation:** A date and time input field showing '2019-12-20 12:19'.

Annotations on the screenshot:

- A red circle around the home icon in the top right corner, with an arrow pointing to the text: "Navigates to Home of the app."
- A red box around the 'Test data' checkbox, with an arrow pointing to the text: "If the observation is being taken for testing, it should be checked"
- A red box around the 'SAVE' button, with an arrow pointing to the text: "Press Save after all the fields are filled properly"

Figure 14: Initial Details page for Event

All the fields in this form are mandatory.

District: Choose District from the list.

Contract Scope: Choose Contract Scope from the list

Year: Choose fiscal year from the list.

Project/Contract Code: Choose the Project/Contract Code from the list, this sets the **Contract Name** and **Description** corresponding to the **Contract Code**. (Or, alternately you can choose the **Contract Name** which sets the corresponding **Contract Code** and **Description** for the **Contract Name** chosen).

Date of Observation: The date is the current date and time fetched from your current location (through GPS) when observation is taken.

Note: Location feature of device should be ON.

Save: Fill the form completely and press “**Save**” button.

After saving if the data is saved successfully the page navigates to Event form. See section [Event form](#).

8.2 Event Form (How Event Form looks like?)

The screenshot shows the 'Events Recording' form in the P1-PIIMS-CSM app. The form is titled 'Events Recording' and has a sub-header 'COORDINATE OF OBSERVATION'. It contains several input fields and buttons:

- Latitude/Longitude:** Two input fields, both containing '0'.
- Elevation:** One input field containing '0'.
- Event:** A dropdown menu labeled 'Select An Event'.
- Other item:** A text input field.
- Observations:** A text input field.
- Remarks:** A text input field.
- Message Priority:** Two radio buttons labeled 'Normal' and 'Urgent'.
- Image (Maximum 4):** A section with a caption input field and a camera icon.
- Video (Maximum 1):** A section with a video recording icon.
- SAVE:** A button at the bottom of the form.

Red arrows point to the following elements with labels:

- Home icon: Navigates to Home of the app
- Caption input field: Caption box for image to be taken
- Camera icon: Take image
- Video icon: Record Video
- SAVE button: Save Observation data

Figure 15: Event form

8.2.1 Event Form Fields

COORDINATE OF OBSERVATION: Press on “COORDINATE OF OBSERVATION” button then a dialog box appears as shown in *Figure 11*. Wait for the *GPS* to get the location. After *Latitude*, *Longitude* and *Elevation* is displayed press “**Set**” to set the location.


Event: Choose an **Event** from the list.

If there is no matching event available on the list select “**Other**” from the list then type the title for **Event** on **Other Item** field.

Observations: Type the Observations for event.

Remarks: Type the remarks of event.

Message Priority: Select the message priority either **Normal** or **Urgent**.

Image: Press on  (**Camera**) icon to take image if any. To include description to an image, type the description in Caption box before taking an image.

The captured images are listed.

Delete Image: Press the image to delete.

Note: Maximum 4 images are allowed.

Video: Press on  (**Video**) icon to take video. For further details see section 9.Video Recording.

The captured video is listed.

Delete Video: Press the video to delete.

Note: Maximum 1 video is allowed with size not exceeding 5Mb or length 1 minute.

Save Button: Press “SAVE” button to save the changes made.

8.2.2 Cancelling Event Record **(How do I Cancel Event data?)**

If you want to **cancel the record** just press  at top right corner of the screen, an alert dialog appears as below and if you press **OK** button the whole report will be discarded along with initial details and the media files.

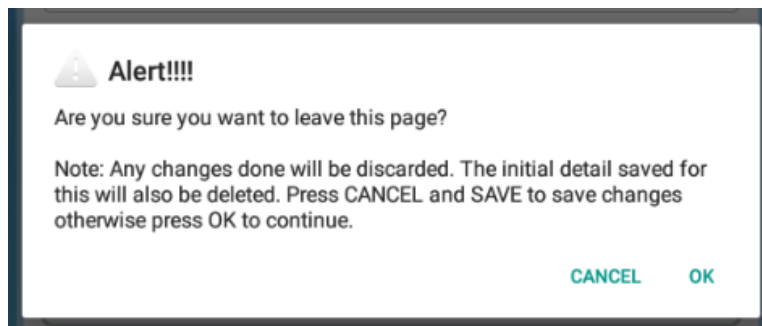




Figure 16: Alert dialog to discarding the report

Note: Event Records cannot be edited later.

9 Video Recording (Video Recording might be little complex.)

1. Pressing on  (Video) icon we can take video (on both **Observation** form and **Event** form). The *Figure 6.1* shows the Video Recording page.
2. Type on the Description text box to give the video a short description.
3. Press “**REC**” button to start video recording.
4. To save the recorded video press “**STOP**” button. This navigates the screen to the respective forms.
5. The maximum time limit for video recording is 1 minute and maximum file size is 5MB. If this limit is reached a message pops up at the bottom of the screen. Again press “**STOP**” button to save the recorded video.
6. If you press  icon, if the recording is already started the video will be saved and returns to the respective form. And if recording not yet started it navigates to the respective forms.

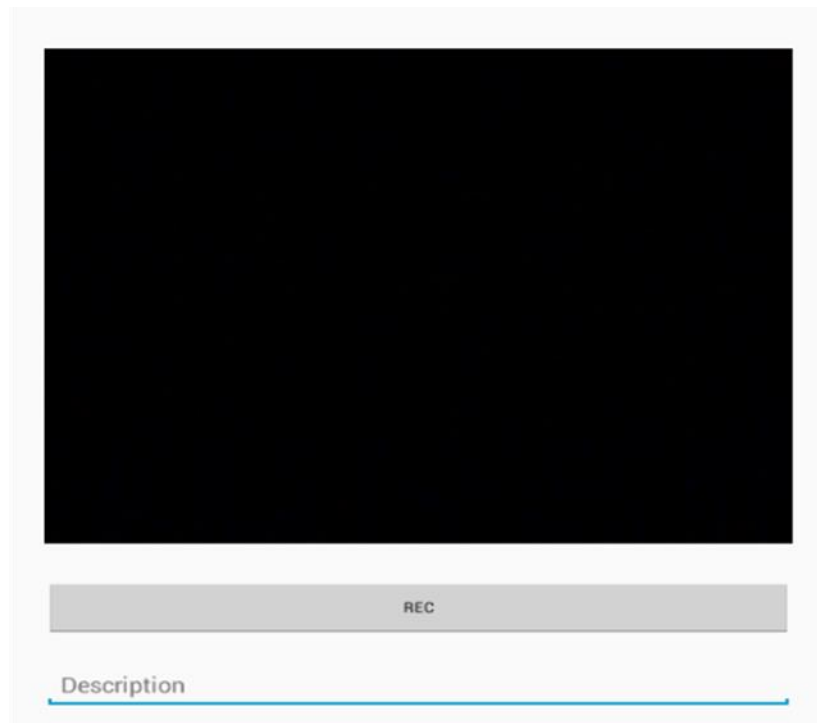


Figure 17: Record Video

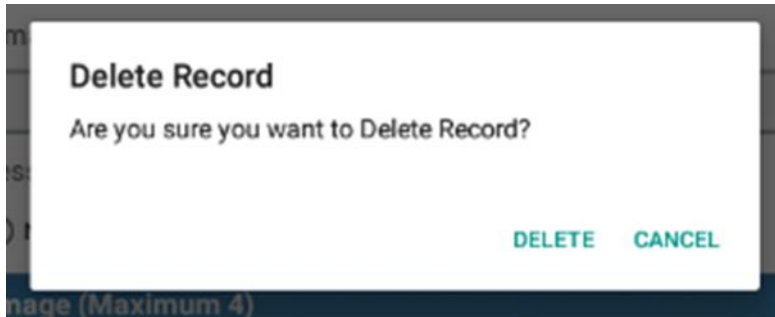


Figure 18: Delete Video Alert

10 Sync from Server (How to make my app data Updated?)

Press sync from server button of home page to get the latest data from server to the app.

Note: Check for the internet connection. It is better to do sync from server before recording site data so that the app will updated with the latest data.

11 Upload Report (How to upload my data?)



Figure 19: Upload Alert Dialog

Press “**Upload**” button of home screen to get the screen shown in *Figure 19* above.

11.1 Upload Site Records (How to upload Site Records to server?)

The “**Not Uploaded**” Tab and “**Uploaded**” Tab contains the list of reports (showing their Contract code, Date and Time of creation) that are not uploaded and already uploaded respectively.

SYNC: Select report without **green background** from either tabs to sync to server and press “**Sync**”.

11.2 Upload Event Records (How to upload Event Records to server?)

The “**Not Uploaded**” Tab and “**Uploaded**” Tab contains the list of reports (showing their Contract code, Date and Time of creation) that are not uploaded and already uploaded respectively.

SYNC: Select report with **green background** from either tabs to sync to server and press “**Sync**”.

After pressing “**Sync**” button an alert dialog appears confirming the sync process as shown below in *Figure 20*. Press “**OK**” button to continue the uploading process and press “**Cancel**” button to halt process.

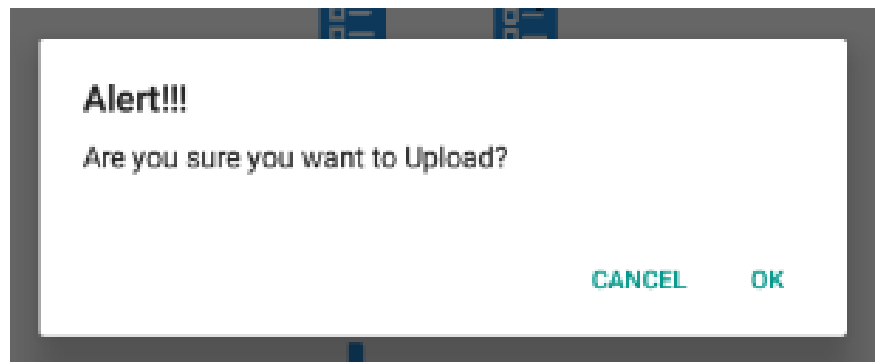


Figure 20: Confirmation Alert Dialog