

# **User Guide**

WIMEA-ICT Weather Data Repository  
(WDR)

Version 1.0

WIMEA-ICT WDR

August 27, 2017

# Contents

<b>1</b>	<b>Introduction to the User's Guide</b>	<b>3</b>
<b>2</b>	<b>How to Log Into the WIMEA-ICT WDR System Types</b>	<b>4</b>
<b>3</b>	<b>WIMEA-ICT WDR Main Windows</b>	<b>6</b>
<b>4</b>	<b>Closing the WIMEA-ICT WDR System Types</b>	<b>7</b>
<b>5</b>	<b>WIMEA-ICT WDR SYSTEM DATA ENTRY</b>	<b>8</b>
<b>6</b>	<b>WIMEA-ICT WDR WEB SYSTEM REPORT GENERATION.</b>	<b>10</b>
<b>7</b>	<b>SETTING THE STATION INFORMATION</b>	<b>12</b>

## List of Figures

1	WIMEA-ICT WDR LogIn Page. . . . .	4
2	WIMEA-ICT WDR Web Welcome Screen. . . . .	6
3	WIMEA-ICT WDR Desktop Welcome Screen. . . . .	6
4	WIMEA-ICT WDR Web SignOut . . . . .	7
5	WIMEA-ICT WDR Mobile SignOut. . . . .	7
6	WIMEA Observation Slip Display. . . . .	8
7	WIMEA More Form Fields Display. . . . .	9
8	WIMEA-ICT WDR Metar Report Generation. . . . .	10
9	WIMEA-ICT WDR Weather Summary Report Generation. . . . .	11
10	WIMEA-ICT WDR ADD Stations. . . . .	12
11	WIMEA-ICT WDR ADD Instruments. . . . .	13
12	WIMEA-ICT WDR ADD Elements. . . . .	14

# 1 Introduction to the User's Guide

WIMEA-ICT WDR is a Weather Information Management System in East Africa which aims at improving the accuracy and reliability of the weather information by communities in the East African region through suitable use of **ICTs**.

WIMEA-ICT WDR has three (3) different Types, but with the same functionalities of the system. These System Types include WIMEA-ICT Web, WIMEA-ICT Desktop and WIMEA-ICT Mobile. The Desktop and Mobile Types of the system are majorly used for climatic form data entry into the system while the Web Type will have the majority of system functionalities ranging from data entry, to viewing of data entered in terms of reports and all administrative roles such as adding new stations, instruments, elements to the system.

WIMEA-ICT WDR stores all its data which has been input from the different types of the system in one central Web server (repository). Data submitted by a user will be transmitted to this central Web Server through Internet Connection from any of the three system Types. However the Mobile and Desktop system Types can enable users enter data even without accessible to internet and later when you are connected to the internet, the user will be able to submit the data to the central web server. Once this data has been submitted to the Central Server it will be deleted from the local storage in this case the phone or the computer. Reports generated from the data entry can be downloaded to a Personal Computer (PC) over the internet in the form of MS Excel, PDF files.

## **Purpose of this guide**

This guide describes how to use the WIMEA-ICT WDR system to enter climatic data and how you can use the system to produce informative reports and analysis of the data from the data that has been input into the system. This guide is intended for users of the system, and assumes that the system has already been set up correctly by the systems administrator of your organisation.

## **Layout of this guide**

This guide deals specifically with how you can input data and how you can produce reports from the data input in the system using one of the Types of the system. It is divided in the following sections;

- **Logging into WIMEA-ICT WDR System:** Shows how you can be able to log into the different Types of the WIMEA-ICT WDR System (Web, Desktop, and Mobile).
- **The Data-entry facility:** Describes in detail how to input data using the different system Types, including a description of all the standard data entry forms.
- **Report Generation:** Describes standard reports, which extract information from the data input. The section gives details of how to use the reports and examples of the results that they produce.
- **Administration:** Describes administration functions, such as defining (Adding) users of the System, and Adding the meta data (information about stations, elements described in the database).

## 2 How to Log Into the WIMEA-ICT WDR System Types

In order to log into one of the WIMEA-ICT WDR System Types your System Administrator will use the Web WIMEA-ICT WDR system, to create user credentials (UserName, Password) that will be sent to the User's Email. The created user will use the credentials sent to his/her email to be able to log into the Web system successfully. The User will use the same log in credentials after they have also downloaded the Desktop and Mobile Types of the system from the Download Icon on the Web Type of the system and thereafter install these WIMEA-ICT System Types on the applicable platform, but put into consideration that Login credentials should be the same across all the WIMEA-ICT WDR Types of the system.

**WIMEA-ICT WDR Web Type Log In:** Here the system administrator will have to provide the IP Address (Domain) and the location on the server where the Web system will have been hosted. Then the user will be required to have internet Access to be able to enter the IP Address into a Web browser like Mozilla Firefox or Internet Explorer to be able to access the Log In Page of the WIMEA-ICT WDR Web System on a Computer.

**WIMEA-ICT WDR Desktop Type Log In:** On successful installation of the Desktop WIMEA-ICT WDR System Type on the computer, To start the program, click on the WIMEA-ICT icon on the desktop, or use one of the other Windows methods for starting a program. When the program is started a Login Page of the WIMEA-ICT WDR System is displayed.

**WIMEA-ICT WDR Mobile Type Log In:** After a successful installation of the Mobile WIMEA-ICT WDR system on the Smart mobile Phone, To start the program, click on the WIMEA-ICT icon on the phone. When the program is started the WIMEA-ICT WDR Login dialogue appears.

Figure 1 shows WIMEA-ICT WDR LogIn Page that will appear across all the different WIMEA-ICT WDR System Types.

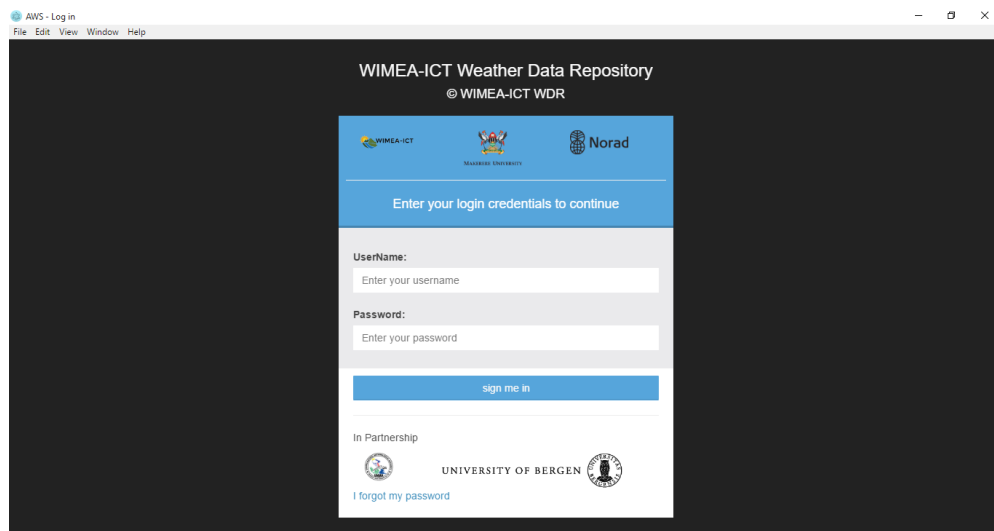


Figure 1: WIMEA-ICT WDR LogIn Page.

For both the Desktop and Mobile WIMEA-ICT WDR System Types, the first time of installation of the system a user will be required to first have internet connection to successfully log into the system, else a user will be notified of inaccessibility to Internet Connection.

If you enter an invalid Username or password, a message will inform you of this and you will be able to try again for any of the three WIMEA-ICT WDR System Types.

Once you have entered a valid UserName and password, then the WIMEA-ICT WDR main window and the Welcome message will appear.

### 3 WIMEA-ICT WDR Main Windows

When you log into the Web WIMEA-ICT WDR System, the Welcome Message is displayed first.

If you are logged in as a user with System Administrator privileges, all the command buttons and menu items will be available. However, if you have logged in as another type of user, you will only be allowed to perform the functions relevant to that user, and some of the menu items will not appear in your view. As Shown in Figure 2

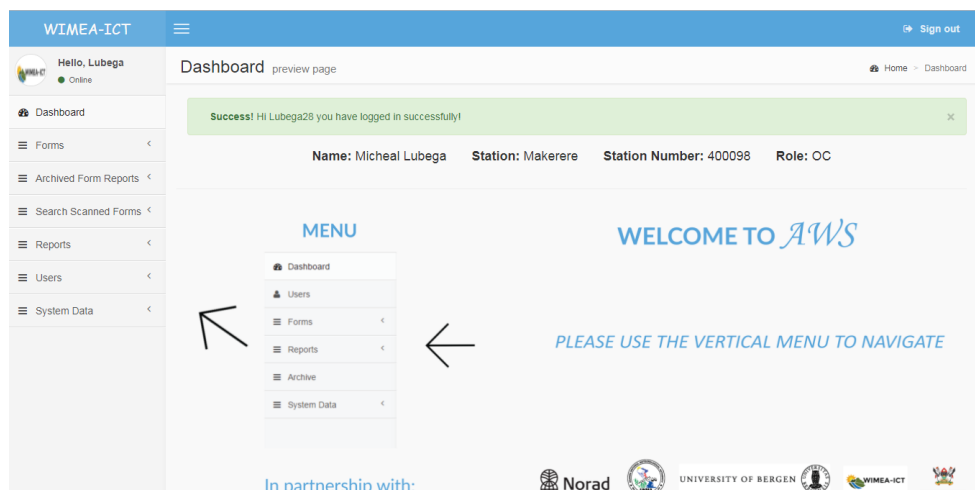


Figure 2: WIMEA-ICT WDR Web Welcome Screen.

For the Mobile and Desktop Types only data Entry Form Options will be available to the user.

Figure 3: WIMEA-ICT WDR Desktop Welcome Screen.

## 4 Closing the WIMEA-ICT WDR System Types

To log out of the WIMEA-ICT WDR system, you can then select the Sign Out Arrow that is located in above the main WIMEA Web System as Shown in Figure 4

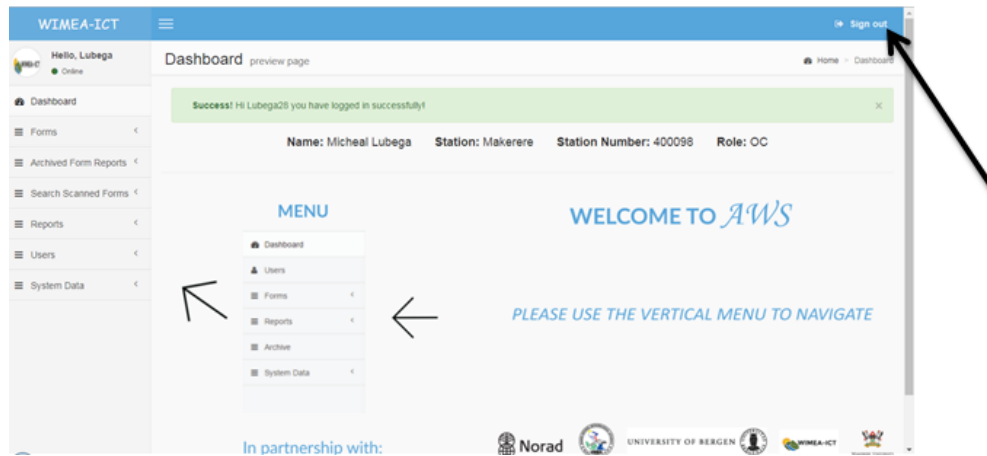


Figure 4: WIMEA-ICT WDR Web SignOut .

For the WIMEA-ICT WDR Mobile System Type the LogOut is found at the bottom the page with different data entry forms As Shown in Figure 5

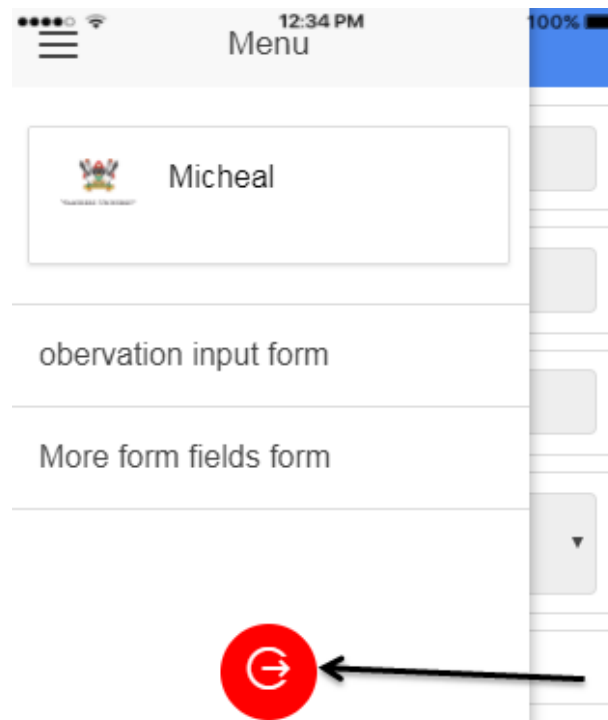


Figure 5: WIMEA-ICT WDR Mobile SignOut.



## 5 WIMEA-ICT WDR SYSTEM DATA ENTRY

The Data Entry facility enables users to input the data via the keyboard into the different WIMEA-ICT WDR System Types. To begin Data Entry you navigate to the left side click on the FORMS tab that will display the available data entry form input. Click on any of the data entry forms of your choice to begin data input. All of the data entry forms share a similar layout across the different WIMEA-ICT WDR System Types, making them easy to understand and use. Each data entry form is broken up into the following sections:

**General Information:** At the right or top of the form you will find boxes with auto filled information for the Station Name and Station Number. The period of data entry (date) will be input by the user. These are mostly the Header fields.

**Value Boxes:** In the center of the form are the value boxes. This is where a user will enter all the data. These are called the Data fields.

### DATA ENTRY FORMS.

**Observation Slip Form:** This form is for recording daily weather records per hour or both per hour or half past the hour throughout the day or night of a day. User will be expected to enter data for each day. As Shown in the Figure 6

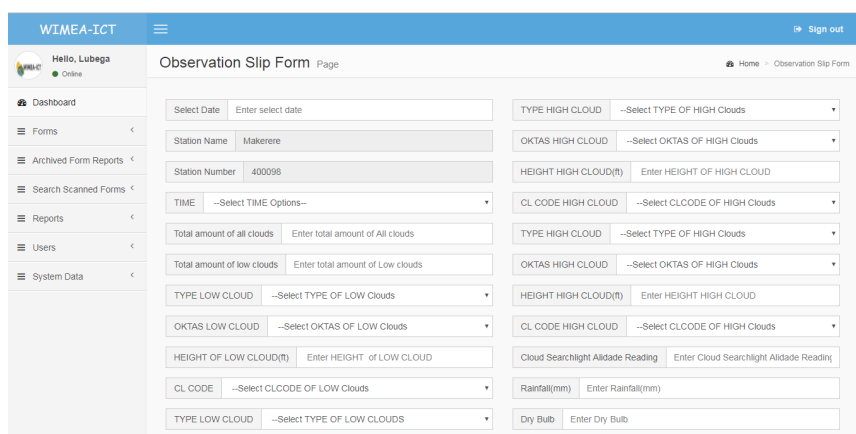


Figure 6: WIMEA Observation Slip Display.

1. To begin Observation Slip data entry records, select the date in the under the "Select the date".
2. The "Station Name" and "Station number" will be automatically computed for the user once they log into the system.
3. Enter the rest of the Data Value Fields as required.
4. To save your record click the "Submit" button.

## More Form Fields Form:

This form is for recording weather records that will be mainly not apply to some weather stations. As Shown in the Figure 7

The screenshot displays the 'Observation Slip Form' within the WIMEA-ICT system. The interface includes a sidebar with navigation options: Dashboard, Forms, Archived Form Reports, Search Scanned Forms, Reports, Users, and System Data. The main form area is titled 'Observation Slip Form Page' and contains various input fields and dropdown menus for recording weather data. Fields include 'Select Date', 'Station Name' (pre-filled with 'Makerere'), 'Station Number' (pre-filled with '400096'), 'TIME', 'Total amount of all clouds', 'Total amount of low clouds', 'TYPE LOW CLOUD', 'OKTAS LOW CLOUD', 'HEIGHT OF LOW CLOUD(ft)', 'CL CODE', and 'TYPE LOW CLOUD'. High cloud data is recorded in two sections, each with fields for 'TYPE HIGH CLOUD', 'OKTAS HIGH CLOUD', 'HEIGHT HIGH CLOUD(ft)', 'CL CODE HIGH CLOUD', and 'TYPE HIGH CLOUD'. Additional fields for 'Cloud Searchlight Alidade Reading', 'Rainfall(mm)', and 'Dry Bulb' are also present.

Figure 7: WIMEA More Form Fields Display.

1. To begin Observation Slip data entry records, select the date in the under the "Select the date".
2. The "Station Name"" and "Station number"" will be automatically computed for the user once they log into the system.
3. Enter the rest of the Data Value Fields as required.
4. To save your record click the "Submit"" button.

## 6 WIMEA-ICT WDR WEB SYSTEM REPORT GENERATION.

The WIMEA-ICT WDR Web System Type will be the only one that will enable the capability of generating reports from the data that has been input using any of the WIMEA-ICT WDR System types. Reports will be generated from the Observation Slip Data input and the General Data Input Form.

This will generate reports according to the data that has been input by the observers. These Reports will be viewed by Officer-In-Charge(OC) and any other user roles that are higher than the OC role. This can be found under the "Reports" tab when one has logged into the WIMEA-ICT WDR Web system. Below is the flow of how we can generate some reports using the system.

**METAR REPORT:** Metar Report will pick all its data from the Observation Slip Form Data that was input Hourly or Half past the Hour at the Station. Below is a flow of how it will be displayed. After one has clicked on "Reports" and Selected Metar Report

1. To generate a Metar report click on the drop down menu arrow located near the "Station name" text field and select the appropriate station.
2. The "Station number" will be automatically computed for the user once they select the Station Name. Of which these will also be got from the Database.
3. Enter the day of the month by selecting from the pop-up Calendar that will appear once you click inside the "Select Date" text field.
4. To display the Metar Report data you click the "Generate Report" button. This will display the Metar Report as shown in Figure 8

STATION \_\_\_\_\_ Makerere \_\_\_\_\_

STATION NUMBER \_\_\_\_\_ 400098 \_\_\_\_\_

DAY \_\_\_\_\_ Wednesday \_\_\_\_\_

DATE \_\_\_\_\_ 2017-06-14 \_\_\_\_\_

METAR SPECI	CCCC	YYGGgg	Ddfff/ f/f	WW or COVAK	WW	NCChhhNCCChhh N CChhh	TT/ TT	QNH (hpa)	QNH (in)	QFE (hpa)	QFE (in)	RE W1W1
METAR	HUKA	140500Z	00000KT	3000	HZ	SCT019 FEW020CB SCT900	22 50.5	1016.6	30	878.1		
METAR	HUKA	140600Z	18003KT	3000		SCT020 FEW021CB	24 51	878.4	26	1016.9		
METAR	HUKA	140700Z	18003KT	4000		SCT021 FEW022CB SCT100	26 53.6	1017.5	30	878.9		
METAR	HUKA	140800Z	18003KT	5000		SCT022 FEW023CB SCT110	27 54	1017.5	30	878.9		
METAR	HUKA	140900Z	16004KT	9000		SCT022 FEW023CB	27 50.7	1017.0	30	878.4		
METAR	HUKA	141000Z	18004KT	9999		BKN022 FEW023CB	26 51.2	1016.3	30	877.8		
METAR	HUKA	141100Z	18004KT	9999		BKN022 FEW023CB	26 51.2	1015.8	30	877.4		
METAR	HUKA	141200Z	16003KT	9999		BKN022 FEW023CB BKN110	26 51.8	1015.8	30	877.4		
METAR	HUKA	141300Z	18005KT	9999		SCT022 FEW024CB	26 53	1015.0	30	876.7		
METAR	HUKA	141400Z	14004KT	9999		SCT021 FEW023CB	25 52.9	1014.7	30	876.5		
METAR	HUKA	141500Z	18004KT	9999		SCT021 FEW023CB SCT110	25 52.3	1014.4	30	876.2		

Print info on this page

Export to excel

Export to csv

Close report

Figure 8: WIMEA-ICT WDR Metar Report Generation.

5. You can export this report to Excel by clicking the "Export To Excel", "Export To CSV" or "Export To PDF" button.

## WEATHER MONTHLY SUMMARY REPORT (FORM 10).

Weather Monthly Summary Report will be able to display the monthly weather records input for each month. Below is a flow of how it will be displayed. After one has clicked on "Reports" and Selected Weather Summary Report

1. To generate a Weather Summary Report click on the drop down menu arrow located near the "Station name" text field and select the appropriate station.
2. The "Station number" will be automatically computed for the user once they select the Station Name. Of which these will also be got from the Database.
3. Enter the month by selecting from the pop-up MONTHS that will appear once you click inside the "Select Month" text field.
4. Enter the year by selecting from the pop-up YEARS that will appear once you click inside the "Select Year" text field.
5. To display the Weather Summary Report data you click the "Generate Report" button. This will display the Weather Summary Report as shown in Figure 9

UGANDA NATIONAL METEOROLOGY AUTHORITY																							
FORM 10 (REV 2003) (WEATHER SUMMARY FORM)				STATION NO. 400098										REG NO. 30									
STATION Makerere				MONTH June										YEAR 2017									
Reading of selected parameters																							
Date	MAX °C	MIN °C	SUNSHINE	0600Z										1200Z									
				DB	WB	DP	VP	RH	CLP	GPM	WIND DIR	FF	DB	WB	DP	VP	RH	CLP	GPM	WIND DIR	FF		
1	27.7	19.2		22.5	21.4	20.85		92.67	881.7		000	00											
2	26.5	18.8		22.5	20.8	19.95		88.67	880.9		110	02	26.8	21.2	18.4		68.66	877.0		270	02		
3	28.8			21.5	20.2	19.55		90.93	881.6		000	00	26.5	21.5	19		71.7	879.2		180	02		
4	28.6	18.4		20.8	19.8	19.3		92.79	880.0		000	00	26.5	21.2	18.55		70	878.1		230	02		
5	28.8	19.5		22.5	21.0	20.25		90	880.0		000	00	26.2	22.0	19.9		75.95	878.1		180	05		
6	28.6	19.8		22.4	20.8	20		89.29	880.2		000	00	26.4	20.2	17.1		64.77	877.7		110	04		
7	28.2	20.0		22.4	20.5	19.55		87.28	879.6		290	02	27.4	22.0	19.3		70.44	877.7		270	05		
8	28.8	2319.3		21.5	20.5	20		93.02	879.7		000	00											
9	29.4	19.0		21.0	19.8	19.2		91.43	880.1		000	00	27.0	21.6	18.9		70	878.1		160	06		
10	29.2	18.0		22.5	21.2	20.55		91.33	879.5		250	02	27.4	21.0	17.8		64.96	877.8		160	06		
11	28.6	19.5		22.0	20.0	19		86.36	878.5		000	00	27.0	21.5	18.75		69.44	876.9		180	05		
12	28.0	20.0		23.6	21.0	19.7		83.47	878.1		160	03	26.8	21.2	18.4		68.66	877.0		270	02		

Figure 9: WIMEA-ICT WDR Weather Summary Report Generation.

6. You can export this report to Excel by clicking the "Export To Excel", "Export To CSV" or "Export To PDF" button.

## 7 SETTING THE STATION INFORMATION

By using the WIMEA-ICT WDR Web System a user will be able to add station information to the system such as Station Details, Instruments details that are attached to the Station then the Elements details that the Instrument measures.

Log into the WIMEA-ICT WDR Web System under the "System Data" Tab on the Left of the WIMEA-ICT WDR Welome Window. Select whether you want to add a Station or Instrument or Elements Data.

### ADD Stations.

Go ahead and click on the "Stations". This will display a form where you will be able to input Station information data. Then Click the "ADD STATION" Button as shown in Figure 10

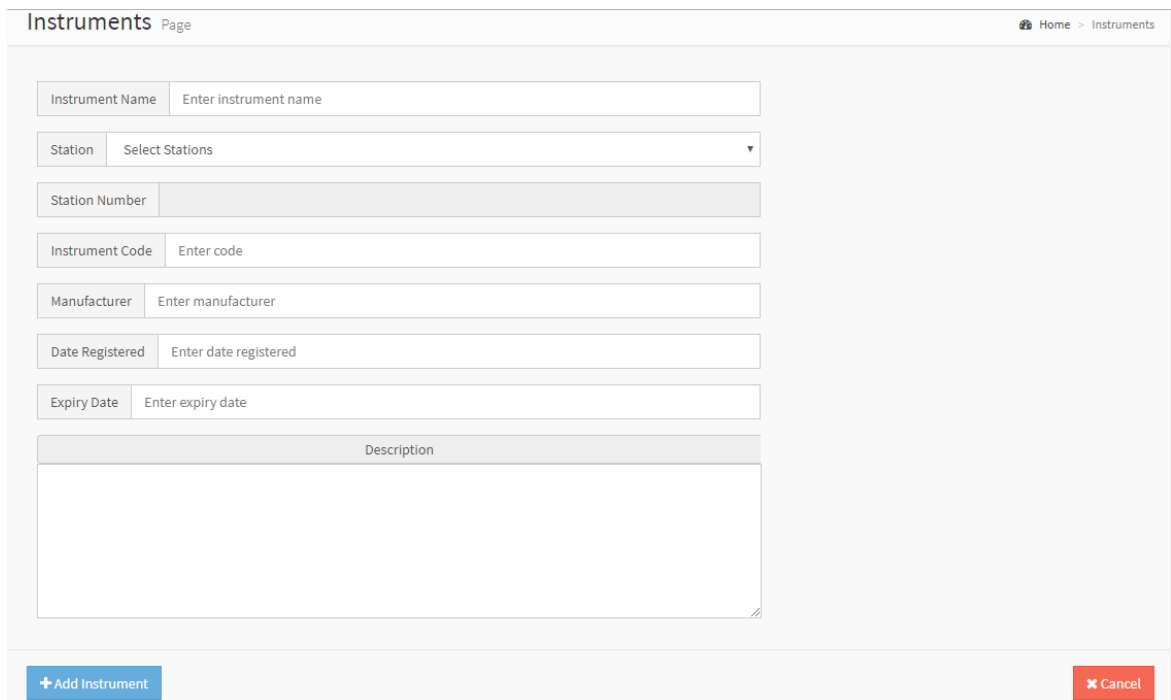
Stations Page		Home > Stations	
Station Name	Enter Station name	Status	Enter Status
Station Number	Enter station number	Latitude	Enter latitude
Location	Enter location	Longitude	Enter longitude
Country	Enter country	Altitude	Enter altitude
Region	Enter region	Opened	Enter opened date
Code	Enter code	Closed	Enter closed
City	Enter city	Type	Enter type

[+ Add Station](#) [Cancel](#)

Figure 10: WIMEA-ICT WDR ADD Stations.

## Adding of Instruments

Instruments are added to an existing Station that has been added to the System. Click on the "Instruments" link which is under the "System Data" Tab. This will display a form where you will be able to input Station Instrument information data. Then Click the "ADD NEW INSTRUMENT" Button as shown in Figure 11

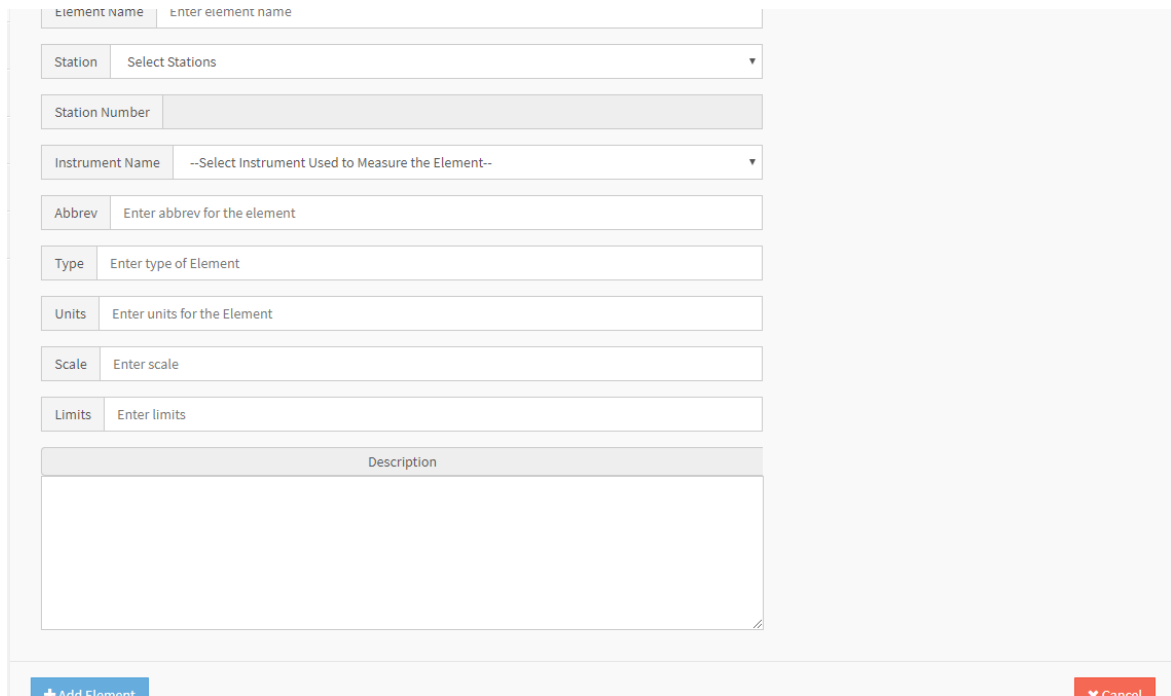


The screenshot shows a web application interface for adding instruments. The page title is "Instruments" with a subtitle "Page". In the top right corner, there is a breadcrumb trail: "Home > Instruments". The form contains several input fields: "Instrument Name" with a placeholder "Enter instrument name", "Station" with a dropdown menu showing "Select Stations", "Station Number" (disabled), "Instrument Code" with a placeholder "Enter code", "Manufacturer" with a placeholder "Enter manufacturer", "Date Registered" with a placeholder "Enter date registered", and "Expiry Date" with a placeholder "Enter expiry date". Below these is a "Description" section with a large text area. At the bottom left is a blue button labeled "+ Add Instrument", and at the bottom right is a red button labeled "X Cancel".

Figure 11: WIMEA-ICT WDR ADD Instruments.

## Adding of Elements

Elements are added to an existing Station that has been added to the System and also has Instruments that have been added to this station. Click on the "Elements" link which is under the "System Data" Tab. This will display a form where you will be able to input Station Instrument information data. Then Click the "ADD NEW ELEMENT" Button as shown in Figure 12



The screenshot displays a web-based form for adding new elements. The form is organized into several sections with labels on the left and input fields on the right. The sections include:

- Element Name:** A text input field with the placeholder "Enter element name".
- Station:** A dropdown menu with the text "Select Stations".
- Station Number:** A text input field.
- Instrument Name:** A dropdown menu with the text "--Select Instrument Used to Measure the Element--".
- Abbrev:** A text input field with the placeholder "Enter abbrev for the element".
- Type:** A text input field with the placeholder "Enter type of Element".
- Units:** A text input field with the placeholder "Enter units for the Element".
- Scale:** A text input field with the placeholder "Enter scale".
- Limits:** A text input field with the placeholder "Enter limits".
- Description:** A large text area for entering a description.

At the bottom of the form, there are two buttons: a blue button labeled "+ Add Element" and a red button labeled "Cancel".

Figure 12: WIMEA-ICT WDR ADD Elements.