This document describes the weather data usage, capturing and methods to update environmental weather data to be used with SCHAS application.

The main purpose of weather data is to capture the weather very close to the time and location of patient’s trajectories.

Following picture shows the sketch of the SCHAS DB; The database is stored in Postgres DB collocated with web services and map web application accessed via HTTP.



Use the following procedure to update the data in SCHAS database.

1. Obtain Environmental data from UAE weather source
2. Update the DB table “UAEStations” (This is explained later)
3. Update LOC\_Weather table

**1. Obtain Environmental data from UAE weather source.**

This is obtaining “Station\_Records excel sheet from UAE sources

**2. Update UAEStations DB table**

The data is provided in excel spread sheet. In the excel spread sheet, the “Statiosn UOM” worksheet contains the lat, lon, and a worksheet named “Humidity” contains humidity.

These three worksheets must be combined to create a CSV file to upload inot UAEstations.

**3. Update LOC\_Weather table**

The “Loc” table contains a column named “Weathercheked”. A FALASE (or null) value for a row in this column indicates that weather information is not checked for this row.   
The script should extract the information for this row; (mainly lat, lon, time, and id). This information should be correlated with weather information from UAEStations data and corresponding values must be updated into “loc\_weather” table. Upon successful update, “weather\_checked” column should be updated to “TRUE” such that this row can be excluded from future considerations.

**NOTE:** Since *Humidity* is in a different worksheet, one thing you could do is to create a temp table called *temphumidity* and upload all the humidity into this table. Later merge *temphumidity* to uaestations.

3a) correlating the weather data to location data.

It is critical to get all the UAEStations records before continuing.

In order to extract the correct weather information, first we locate a weather station that is closest to measured location.

Find a closest weather station within 50 miles and within four hours of the measured time and location. If no weather data point is available, then we ignore this record and mark it as checked.

1. Find a closest weather stations to patient’s location; if the closest distance is more than 50 miles then we ignore this record because a good weather data is unavailable for this record.   
   (NOTE: please ignore all locations that have zero.)
2. If the first step succeeds, next check if a weather information within 4 hours for the weather stations from the first step.

Please see <http://sada.geospaces.org:8888/notebooks/SCHAS/LocWeather.ipynb> to see s skeleton of the python script to update “loc\_weather” table.