**Setup instructions**

Additional libraries must be installed:

- ESP8266 Influxdb by Tobias Schürg, Vlasta Hajek (Available in Library Manager)
  tobiasschuerg/InfluxDB-Client-for-Arduino: Simple library for sending measurements to an InfluxDB with a single network request. Supports ESP8266 and ESP32. (github.com)

- UniversalTelegramBot by Brian Lough (Available in Library Manager)
  witnessmenow/Universal-Arduino-Telegram-Bot: Use Telegram on your Arduino (ESP8266 or Wifi-101 boards) (github.com)
- TelegramBot also requires ArduinoJSON by Benoit Blanchon (Available in Library Manager)s
  bblanchon/ArduinoJson: JSON library for Arduino and embedded C++. Simple and efficient. (github.com)

- elapsedMillis by Paul Stoffregen (Available in Library Manager)
  Home · pfeerick/elapsedMillis Wiki (github.com)

- ESPAsyncWebSrv by dvarrel (Available in Library Manager)
  dvarrel/ESPAsyncWebSrv: Async Web Server for ESP8266 and ESP32 (github.com)

- ESPAsyncTCP by dvarrel (Available in Library Manager)
  dvarrel/ESPAsyncTCP: Async TCP Library for ESP8266 (github.com)

- ThingPulse MiniGrafx Library
  ThingPulse/minigrafx: ESP8266 graphics library (github.com)

- For AZ-Touch ESP instructions see:
  Wandgehäuse mit Touch für ESP32 & ESP8266 - Zihatec GmbH (hwhardsoft.de)

**Setup:**

**In weather_station.ino:**
Insert your SSID and WIFI password in line 13 & 14 to connect to your WIFI. If you want to change the AALeC webserver SSID and Password, you can do that in line 17 & 18. However, they don't have to be changed that the application works.

```
1  #include <ESP8266WiFi.h>
2  #include <WiFiClientSecure.h>
3  #include <UniversalTelegramBot.h>
4  #include "ESPAsyncWebServer.h"
5  #include <AALeC.h>
6  #include <Ticker.h>
7  #include <elapsedMillis.h>
8
9  elapsedMillis timeElapsedSinceLastDBWrite;
10 elapsedMillis timeElapsedSinceLastTelegramMessage;
11
12 //insert WIFI credentials here
13 const char* ssid = "Insert your SSID here";
14 const char* password = "Insert your Wifi password here";
15
16 //here the AALeC webserver credentials can be set
17 const char* ssidAP = "ESP8266-Access-Point";
18 const char* passwordAP = "123456789";
```

If you change the webserver SSID and password in weather_station.ino, you have to change it in the weather_station_display.ino at line 16 & 17 too! If not the display cannot connect to the AALeC webserver.

```
1  #include <ESP8266WiFi.h>
2  #include <ESP8266HTTPClient.h>
3  #include <WiFiClient.h>
4  #include "ArialRounded.h"
5  #include "settings.h"
6  #include <XPT2046_Touchscreen.h>
7  #include "TouchControllerWS.h"
8  #include <JsonListener.h>
9  #include <MiniGrafx.h>
10 #include <ILI9341_SPI.h>
11 #include <simpleDSTadjust.h>
12 #include <ESP8266WiFiMulti.h>
13
14 ESP8266WiFiMulti WiFiMulti;
15
16 const char* ssidAP = "ESP8266-Access-Point";
17 const char* passwordAP = "123456789";
18
```

First start the AALeC and then the AZ-Touch ESP, if not it can result in performance issues because the AZ-Touch ESP can have problems connecting to the AALeC server!

Change the CHAT_ID to your own telegram chat ID. To get your chat ID search for “myidbot” on Telegram and send “/getid”. The bot will return your own chat ID. If you don’t change it the bot will send an “unauthorized user” message back. This is implemented to prevent spamming on the bot which can result in crashing the AALeC because of too much load to process.

```
19
20  int temp = 0;
21  int hum=0;
22
23  String res="";
24  String resultArray[2];
25  AsyncWebServer server(80);
26
27  // Initialize Telegram BOT
28  #define BOTtoken "6047172975:AAFIUrXCEhCx9hAh-3Aq9iRyZvMHa-GYVRg"
29  //Use @myidbot (IDBot) on Telegram to find out your Chat ID
30  #define CHAT_ID "Your Telegram ID"
31
```

In Telegram search for: “@tibs_weather_station_bot“ and click on it. When the AALeC is running the user can send the “/start” command in the chat to start the bot application.

The Influx Server and the saved data can be accessed over:

- https://eu-central-1-1.aws.cloud2.influxdata.com
- (patrickmueller96@outlook.com, faVQCr9V@$85!Zu3Vf)