BIBLIOTECA — Spartan STABLETIME

The software library Spartan STABLETIME is part of the elements of the SPARTA automation infrastructure project, and is based on C++ specific version for ESP8266, and requires the installation of external libraries for the microcontroller:

- WifiUdp.h
    - Credits to the collaboration team for creating the used library: https://github.com/arduino-libraries/
- NTPClient.h
    - Credits to the collaboration team for creating the used library: https://github.com/arduino-libraries/

Its function is to be the basis-time for the development of projects that requires access to local time, idealized for generating logs in automation infrastructures, with a redundancy server system, in case of NTP server connection failures or unstable connections with them.

Until the present date of 09/03/2022, it is in version 1.0, and it is in state of development by the development team responsible for the development of the IGNUM01 application layer transmission protocol, and has uses that can be related to the aforementioned software.

The composition of the main public Class englobes the following functions:

```cpp
bool begin();
// Starts TIMESTABLE_SPARTAN instances;
// Returns TRUE if successful.

void update();
// Updates the TIMESTABLE_SPARTAN instance;
// Must be placed in the main loop routine of the main code.

String GetRunningTime();
//Returns the String value of the running time of the
//Microcontroller in HH:MM:SS.
```

```
    String GetFormatedTIME();
    String GetFormatedDATE();
    // Returns the respective STRING value in configuration
    //"DD/MM/YYYY" or "HH:MM:SS — Without 'left' zero addition
    //in minor then ten values;
    //EX 10:09:05 = 10:9:5

    int GetHours();
    int GetMinute();
    int GetSeconds();
    int GetDay();
    int GetMonth();
    int GetYear();
    // Returns the INT value according to the called function.
```

Use example:

```cpp
#include "TIMESTABLE_SPARTAN.h"
#include <ESP8266WiFi.h>
#include <WiFiClient.h>
#include <ESP8266WiFiMulti.h>

TIMESTABLE_SPARTAN TIMESTABLE_SPARTAN;

int i = 0;

void setup() {

 Serial.begin(115200);
 Serial.println(" ");
 Serial.println("Starting_System...");

 WiFi.mode(WIFI_STA);
 WiFi.hostname("SPARTAN_TEST_TIMESTABLE");
 ESP8266WiFiMulti wifiMultiSSID;

 wifiMultiSSID.addAP("1st_Wifi_Network", "wifi_password");
 wifiMultiSSID.addAP("2nd_Wifi_Network", "wifi_password");
```

```
  if (wifiMultiSSID.run() == WL_CONNECTED)
    {
    Serial.print("Connected to ");
    Serial.println(WiFi.SSID());
    Serial.print("IP address: ");
    Serial.println(WiFi.localIP());

    if(TIMESTABLE_SPARTAN.begin()){

      Serial.println("Started_Succesfully!");


    }
  }
}

void loop() {
  TIMESTABLE_SPARTAN.update();

   if (i == 5000){ // merely for demonstration porpuses;
      Serial.println("\n\nSystem Time:");
      Serial.println(TIMESTABLE_SPARTAN.GetRunningTime());

      Serial.println("Current Time:");
      Serial.println(TIMESTABLE_SPARTAN.GetFormatedTIME());

      Serial.println("Current Date:");
      Serial.println(TIMESTABLE_SPARTAN.GetFormatedDATE());

   i=0;
   }
 i++;
 delay (1);


}
```

Expected result:

```
System Time:
0:50:59
Current Time:
20:49:49
Current Date:
3/9/2022
```