

**National Initiatives for Open
Science in Europe –
*IoT platform***

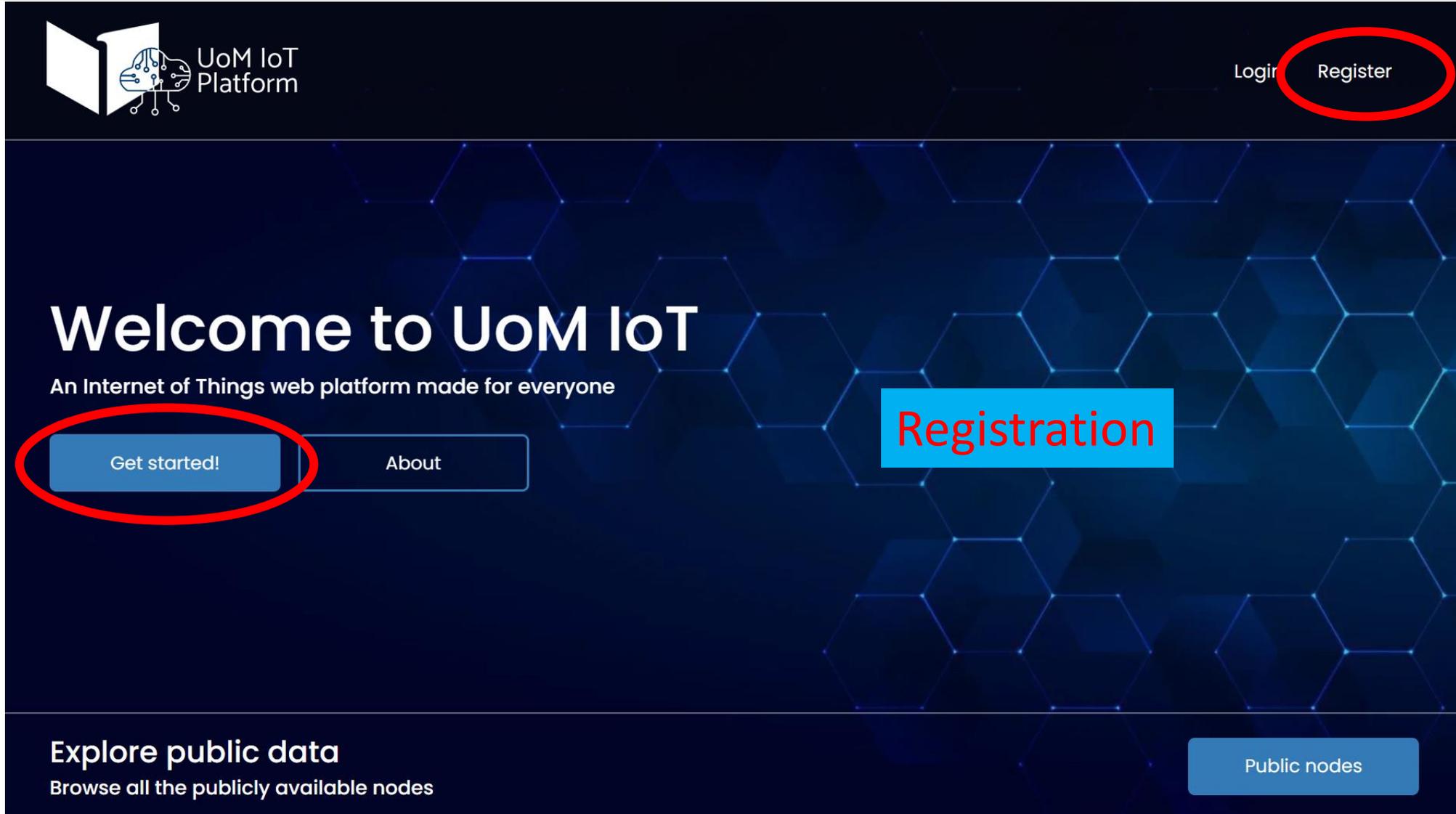
**National End-Users NI4OS-Europe
Training in Montenegro**

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- ❑ UoM IoT platform is an open web platform designed primarily for researchers interested in remote data collection, visualization and analysis, but also for end-user application developers
- ❑ UoM IoT platform stands out with its unique attractive capabilities, including:
 - ❑ integration of different open-source tools for data analysis purposes (Octave, R, Python)
 - ❑ possibility to write custom code for data analysis in web browser
 - ❑ versatility with respect to the types of supported hardware (Arduino, Raspberry Pi, Libelium Plug and Sense, mobile devices, PCs, etc.)
 - ❑ possibility to deploy the platform on the other hosts
 - ❑ customization options according to the user requirements, especially in the sense of data analysis and visualization

IoT platform address: www.iot.ucg.ac.me



The screenshot shows the homepage of the UoM IoT Platform. The background is dark blue with a hexagonal grid pattern. In the top left corner, there is a logo for 'UoM IoT Platform' featuring a stylized book and a brain with circuitry. In the top right corner, there are two links: 'Login' and 'Register', with the 'Register' link circled in red. The main heading is 'Welcome to UoM IoT' in large white text, followed by the subtitle 'An Internet of Things web platform made for everyone'. Below this, there are two buttons: 'Get started!' (circled in red) and 'About'. To the right of these buttons, the word 'Registration' is written in red text inside a light blue rectangular box. At the bottom left, there is a section titled 'Explore public data' with the text 'Browse all the publicly available nodes'. At the bottom right, there is a button labeled 'Public nodes'.



[Login](#) [Register](#)

Register

First name

Last name

User name

E-Mail Address

Password

Confirm Password

 Register

Immediately logged in and can
start with the work...

IoT platform nodes



Nodes ▾ Node Configuration ▾ Create Node

mitcho ▾

My Nodes

Insert data

Copy node

Visualization

<p>GHJ irrigation</p> <p>Description:</p> <p>Write key: ac5858d3a8098a560d33adebce9289e0</p> <p>Read key: 4c90b66f8166417545b38ea24337319f</p> <p>Group key: cfb43d8dfd0c3d7150052bf8fc37dfe2</p>	<p>Smart irrigation - TESTNI</p> <p>Description:</p> <p>Write key: 7e7cfdc9d5815cbf80e2fd3eed4d81bd</p> <p>Read key: 49ea623b8c6c9dc747503afed92639ee</p> <p>Group key: 9b40e9cf35a8b96b2493dfad9fed78be</p>	<p>Vlažnost zemljišta</p> <p>Description:</p> <p>Write key: d9ef7b49823c19261d5dcdb72bcda9a0</p> <p>Read key: a9e8e24df543c788115e516b77cb8b9f</p> <p>Group key: 50700e03e5dba5f76d18a3ede649fb8e</p>
<p>Arduino Due</p> <p>Description:</p> <p>Write key: 62620a0c20471b328a87e1010d564c4f</p>	<p>Smart metering 2021</p> <p>Description:</p> <p>Write key: 4940525a03f524334ac606ece9b8fa97</p>	<p>EXCAVATOR</p> <p>Description:</p> <p>Write key: f2f195b7f791aedbc029b8f31440dc89</p>

□ http://www.iot.ucg.ac.me/Data.php?wkey=node_write_key&field1=value&field8=value&timeSend=2016-3-11%2011:11:11

AT + CGATT = 1 //attach to GPRS service

AT + HTTPTERM //terminate the HTTP request

AT + SAPBR = 3,1,"CONTYPE","GPRS" //setting bearer parameters, connection is GPRS

AT + SAPBR = 3,1,"APN","internet" //setting the APN according to the local provider

AT + SAPBR = 3,1,"USER","telenor" //setting the USER according to the local provider

AT + SAPBR = 3,1,"PWD","gprs" //setting the PWD according to the local provider

AT + SAPBR = 1,1 //open bearer

AT + SAPBR = 2,1 //query if the connection is setup properly

AT + HTTPINIT //initialize the HTTP service

AT + HTTPPARA = "CID",1 //set bearer profile identifier

□ http://www.iot.ucg.ac.me/Data.php?wkey=node_write_key&field1=value&field8=value&timeSend=2016-3-11%2011:11:11

```
void send_to_cloud(int field, float value) {  
    char aux_str [200];  
    sprintf(aux_str, "AT+HTTTPARA=\"URL\",  
                \"www.iot.ucg.ac.me/Data?api_key=%s&field%d=%f\",  
                api_key, field, value);  
    Serial1.println(aux_str); //send command string to the modem  
    Serial1.println("AT+HTTPACTION=0"); //submit the request  
}
```

IoT platform visualization

Data Visualisation

Data Analysis

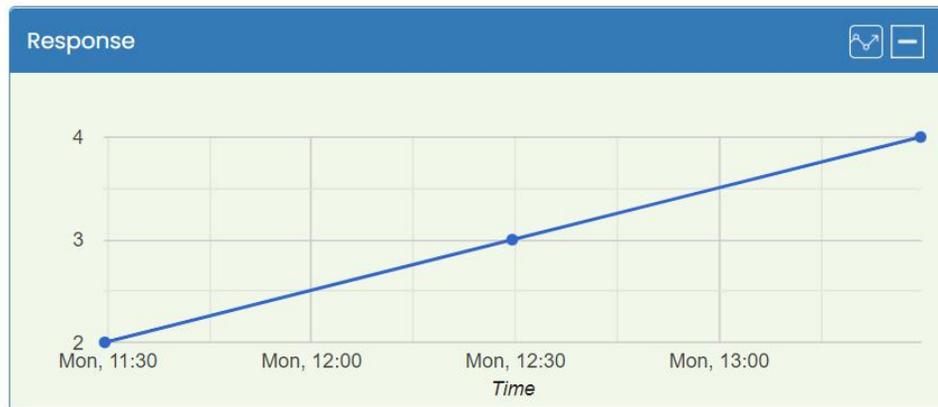
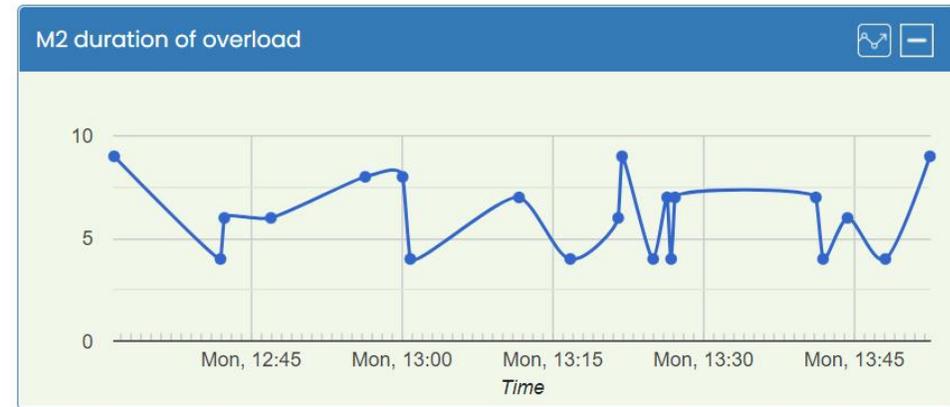
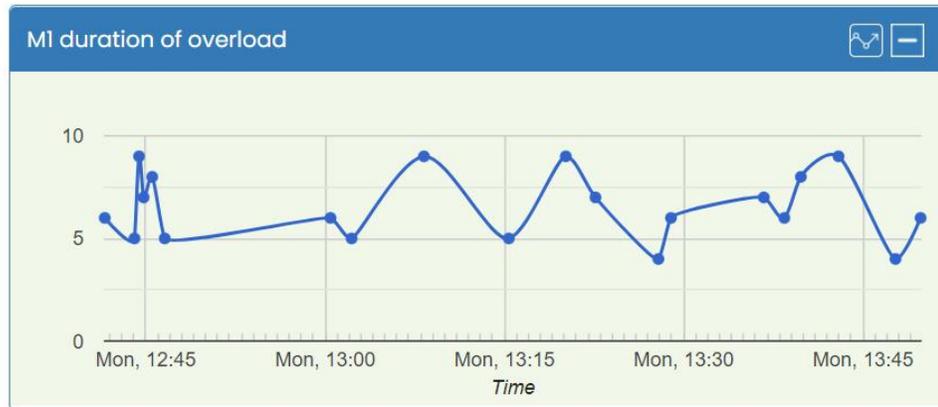
Remote Control

Data export

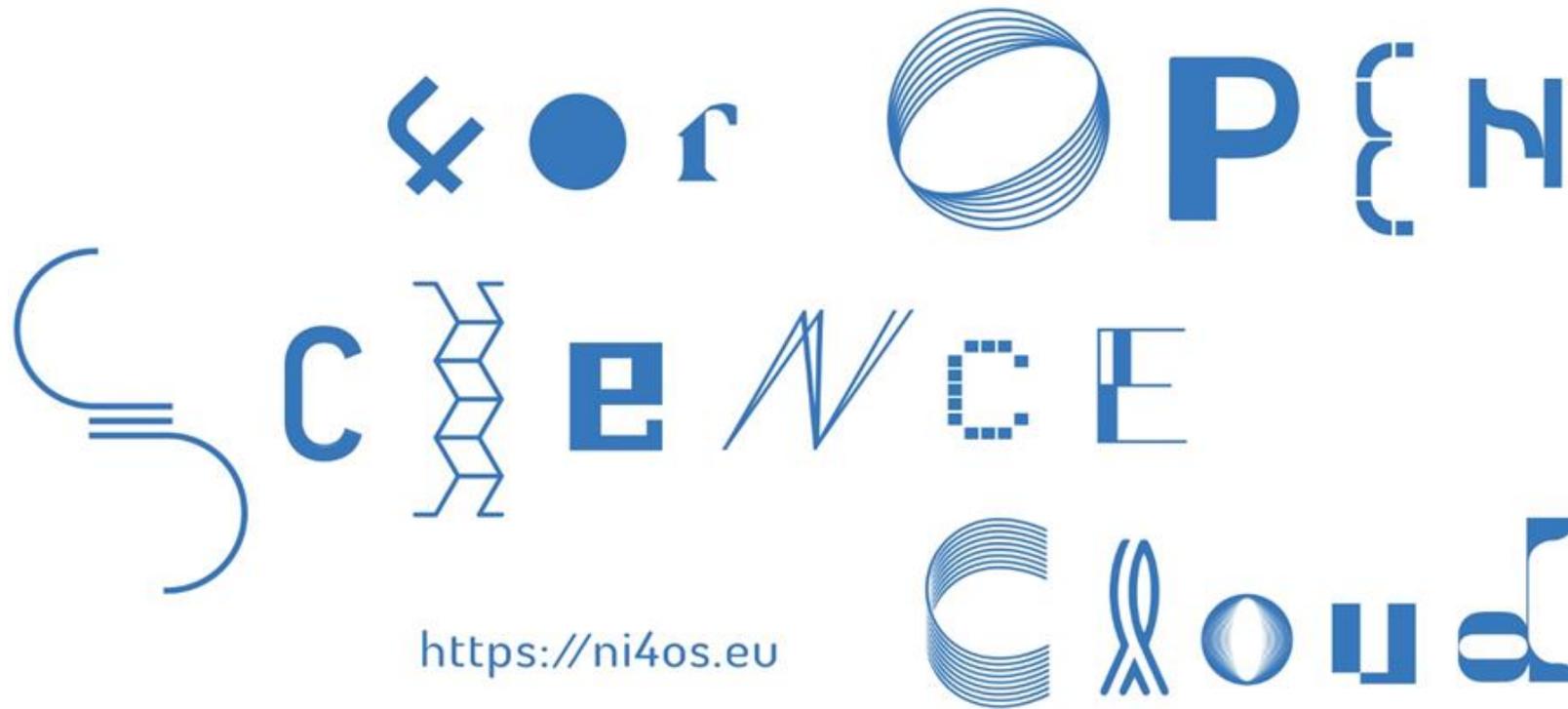
API JSON CSV/XLS

EXCAVATOR

Favorite:



Thanks!



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