AfricaConnect Meeting and Workshop on IoT-Based Acquisition of Research Data for Scientific Computing

Description:

The workshop component of this activity is designed to introduce IT staff, engineers and scientists from Research and Education Networks (RENs) in the African region to operating a network-wide service for the scientific application of Internet of Things (IoT) sensors and technology. The workshop includes hands-on sessions focused on how to build, run and maintain various parts of the service pipeline from deployment of IoT sensors and gateways to data analysis.

The high-level meeting component aims to discuss and explore broader Euro-African participation in the AfricaConnect4 (AC4) initiative, focusing on developing and enhancing regional infrastructure for data acquisition and scientific computing. This half-day meeting will focus on exploring and developing opportunities in AC4 alongside relevant European/international stakeholders as part of the planning and implementation of the AC4 project.

21 - 25 October 2024

Trieste, Italy

Deadline:
20 September 2024

TOPICS:

- Introduction to IoT: Choosing sensors, deploying sensors and gateways. Powering IoT devices (battery and solar powered solutions)
- Introduction to IoT communications network:LoRAWAN gateway deployment (including redundant internet-link+power)
- Introduction to the MQTT protocol and setup of an Open-source/Community edition of an IoT platform for automatic archival of collected data
- Basic Data Science for IoT service pipeline: Working with CSV formatted data; removal of duplication; changing data resolution/scale); visualisation and graphing; Artificial Intelligence/Machine Learningmodels; publishing and sharing data
- Addressing security related challenges (IoT sensors gateways and data access)
- High Level Meeting: AfricaConnect4 and African-wide regional infrastructure for data acqusition, scientific research and High Performance Computing (HPC) centres.

ORGANISERS:

Boubarry BOUBAKAR, WACREN - West and Central African Research and Education Network
Omo OAIYA, WACREN - West and Central African Research and Education Network
Marco ZENNARO, ICTP

ICTP LOCAL ORGANISER:

Clement ONIME, ICTP, Italy

FURTHER INFORMATION:

E-mail: smr4046@ictp.it

Web: https://indico.ictp.it/event/10787/

Female scientists are encouraged to apply.

REGISTRATION:

There is no registration fee.