

# **IoT-based sensors for the real-time monitoring of pollution in surface water bodies.**

## **Report of Contributions**

Contribution ID: 1

Type: **not specified**

# Welcome/opening

*Monday, 19 February 2024 08:00 (30 minutes)*

**Session Classification:** Introduction

Contribution ID: 2

Type: **not specified**

# Introduction to IoT technology

*Monday, 19 February 2024 08:30 (30 minutes)*

**Session Classification:** Introduction

Contribution ID: 3

Type: **not specified**

# Introduction to IoT Communications

*Monday, 19 February 2024 09:00 (30 minutes)*

**Session Classification:** Introduction

Contribution ID: 4

Type: **not specified**

## Introduction to renewable Energy

*Monday, 19 February 2024 10:30 (1 hour)*

**Session Classification:** Introduction

Contribution ID: 5

Type: **not specified**

# Introduction to Solar Energy technology

*Monday, 19 February 2024 11:30 (1 hour)*

**Session Classification:** Introduction

Contribution ID: 6

Type: **not specified**

## Calculating energy sizing for Solar panel installations

*Monday, 19 February 2024 13:30 (30 minutes)*

**Session Classification:** Introduction

Contribution ID: 7

Type: **not specified**

## **Surface water pollution IoT kit: components & energy profiles**

*Monday, 19 February 2024 14:00 (1 hour)*

**Session Classification:** Introduction



Contribution ID: 8

Type: **not specified**

# Introduction to micro-controllers and their programming

*Monday, 19 February 2024 15:30 (30 minutes)*

**Session Classification:** Introduction

Contribution ID: 9

Type: **not specified**

# Installing the Arduino IDE

*Monday, 19 February 2024 16:00 (30 minutes)*

**Session Classification:** Introduction

Contribution ID: **10**

Type: **not specified**

## Creating your first Arduino programme

*Monday, 19 February 2024 16:30 (30 minutes)*

**Session Classification:** Introduction

Contribution ID: 12

Type: **not specified**

## Planning a site survey for IoT sensors

*Tuesday, 20 February 2024 08:00 (30 minutes)*

**Session Classification:** Site Survey

Contribution ID: **13**

Type: **not specified**

## Survey visit to SITE/river

*Tuesday, 20 February 2024 08:30 (1 hour)*

**Session Classification:** Site Survey

Contribution ID: 14

Type: **not specified**

## **Presentation and discussion of survey report**

*Tuesday, 20 February 2024 10:30 (1 hour)*

**Session Classification:** Site Survey

Contribution ID: 15

Type: **not specified**

## Preparatory activity for installation:

*Tuesday, 20 February 2024 11:30 (1 hour)*

**Session Classification:** Site Survey

Contribution ID: **16**

Type: **not specified**

## Building final mounting kits

*Tuesday, 20 February 2024 13:30 (30 minutes)*

**Session Classification:** Site Survey



Contribution ID: 17

Type: **not specified**

## Testing: (kits & wiring)

*Tuesday, 20 February 2024 14:00 (30 minutes)*

**Session Classification:** Site Survey

Contribution ID: **18**

Type: **not specified**

## Calibration of sensors

*Tuesday, 20 February 2024 14:30 (30 minutes)*

**Session Classification:** Site Survey

Contribution ID: **19**

Type: **not specified**

## **Security of sensors: Waterproofing, safety & physical security**

*Tuesday, 20 February 2024 15:30 (45 minutes)*

**Session Classification:** Site Survey

Contribution ID: **20**

Type: **not specified**

## Re-calibration procedures and schedules

*Tuesday, 20 February 2024 16:15 (45 minutes)*

**Session Classification:** Site Survey

Contribution ID: **21**

Type: **not specified**

## **Introduction to LoRA technology and gateway**

*Wednesday, 21 February 2024 08:00 (45 minutes)*

**Session Classification:** Installations

Contribution ID: 22

Type: **not specified**

## Configuration of LoRa gateway device

*Wednesday, 21 February 2024 08:45 (45 minutes)*

**Session Classification:** Installations

Contribution ID: 23

Type: **not specified**

## Installation of gateway and connection to NgREN

*Wednesday, 21 February 2024 10:30 (1 hour)*

**Session Classification:** Installations

Contribution ID: 24

Type: **not specified**

## Initial power on and testing of gateway

*Wednesday, 21 February 2024 11:30 (1 hour)*

**Session Classification:** Installations



Contribution ID: 25

Type: **not specified**

## **Installation of Solar and Surface Water pollution kits on-site**

*Wednesday, 21 February 2024 13:30 (1h 30m)*

**Session Classification:** Installations

Contribution ID: 26

Type: **not specified**

**Power-on**

*Wednesday, 21 February 2024 15:30 (30 minutes)*

**Session Classification:** Installations

Contribution ID: 27

Type: **not specified**

## Calibration check

*Wednesday, 21 February 2024 16:00 (30 minutes)*

**Session Classification:** Installations

Contribution ID: **28**

Type: **not specified**

## Connectivity test to deployed Gateway

*Wednesday, 21 February 2024 16:30 (30 minutes)*

**Session Classification:** Installations

Contribution ID: 29

Type: **not specified**

**Lunch**

*Thursday, 22 February 2024 12:30 (1 hour)*

Contribution ID: 30

Type: **not specified**

## **Introduction to IoT data collection framework (MQTT & data pipe-lines)**

*Thursday, 22 February 2024 08:00 (45 minutes)*

**Session Classification:** Data Collection

Contribution ID: **31**

Type: **not specified**

## Introduction to Data Analysis

*Thursday, 22 February 2024 08:45 (45 minutes)*

**Session Classification:** Data Collection

Contribution ID: **32**

Type: **not specified**

# Introduction to Data presentation and visualization

*Thursday, 22 February 2024 10:30 (1h 30m)*

**Session Classification:** Data Collection



Contribution ID: 33

Type: **not specified**

## Accessing data from deployed sensors via MQTT

*Thursday, 22 February 2024 13:30 (1h 30m)*

**Session Classification:** Data Collection

Contribution ID: 34

Type: **not specified**

## Introduction to Basic Data analysis

*Thursday, 22 February 2024 15:30 (45 minutes)*

**Session Classification:** Data Collection

Contribution ID: 35

Type: **not specified**

## Performing basic data analysis on collected data

*Thursday, 22 February 2024 16:15 (45 minutes)*

**Session Classification:** Data Collection

Contribution ID: 36

Type: **not specified**

## **Sustainability, future and maintenance plans**

*Friday, 23 February 2024 08:00 (1 hour)*

**Session Classification:** Closing

Contribution ID: 37

Type: **not specified**

## Wrap up talks

*Friday, 23 February 2024 09:00 (30 minutes)*

**Session Classification:** Closing

Contribution ID: **38**

Type: **not specified**

## Feedback Session

*Friday, 23 February 2024 10:30 (1h 30m)*

**Session Classification:** Closing

Contribution ID: 39

Type: **not specified**

# Closing

*Friday, 23 February 2024 12:00 (30 minutes)*

**Session Classification:** Closing

Contribution ID: 40

Type: **not specified**

# Departure

*Friday, 23 February 2024 13:30 (1h 30m)*

**Session Classification:** Closing