

## Workshop “IoT platforms for indoor air quality study”

**Location: Université Sorbonne Paris Nord (USPN), Villetaneuse,  
France  
22 and 23 May 2023**

### Organizers:

**Gladys Diaz – L2TI (USPN-France) & Salvador Ruiz Correa – YPYCyT (Mexico)**

### PROGRAM

**Day 1 - Monday, May 22, 2023**

**Room: Copernicus (Galileo Institute)**

**8h30 – Registration and coffee**

**9h00 – Welcome and structuring of the workshop**

**9h20 - 11h Presentation of partner institutions and collaboration opportunities**

- **Part I - Presentation of partner institutions**
  - You-i Lab IPICYT
  - División de Biología Molecular IPICYT
  - División de Control y Sistemas Dinámicos IPICYT
  - Laboratoire L2TI - Equipe Réseaux USPN
  - Laboratoire LIPN - USPN
  - Departamento de informática de INSUBRIA
  - Laboratoires ITIS: ERTIS group and MORSE Lab (UMA)
  - Université de Guadalajara - CUCEI - CUCEA
  - Département de statistiques de l'UDCLV

#### Coffee break

**11h30 - 12h15 Part II - MUFRAMEX and other funding opportunities**

- European or International Scientific Networking Program 2023 (open)-  
<https://www.muframex.fr/appe-programme-mrsei-2023/>
- ECOS NORD program (open in october 2023)  
<https://www.univ-paris13.fr/ecos-nord/>
- COST program (open until october 2023) : <https://www.cost.eu>

#### Lunch Break

**14h - 15h30 Experience sharing: design and implementation of IoT Platforms**

Presentations on IoT platforms: in France and Mexico

- SenSky Project. Salvador Ruiz - IPICYT
- CO2 Project. Ruben Lopez Revilla - IPICYT
- BQR-LoRa @UP13 Project. Gladys Diaz - L2TI

#### Coffee break

**16h00 - 18h30 IoT technology and applications**

- Internet of Things: current and future security and privacy challenges. Alessandra Rizzardi - INSUBRIA
- A scalable and secure architecture for blockchain-based micro-payments. Trombetta Alberto - INSUBRIA

- Towards Formal Verification of Business Processes in the Blockchain. Kais Klai - LIPN
- Deterministics Communications over 5G - Validation with Victoria Network at UMA. Delia Rico & Francisco Luque- ITIS/MORSE Lab
- Privacy-aware passive sniffing: from packet collection to bounded trajectories. Nadjib Achir - INRIA-Saclay

### 18h45 - 20h00 Cocktail Reception

## DAY 2 - Tuesday, May 23, 2023

Room: EULER (Galileo Institute)

### 9h - 12h Data analysis

Session dedicated to the analysis of data, concerning the tools for analysis and the pollution measurements already collected.

### 9h - 10h30 Analysis tools

- Machine Learning and Data streams with KAFKA-ML. Cristian Martin - UMA
- Aether: open source 5G Connected Edge platform for enabling critical enterprise IoT application – Abdulhalim Dandoush – UDST, ESME & L2TI
- Optimizing energy and communication resources for IoT: A case study at USPN. Khaled Boussetta, Janeth Aguilar and Gladys Diaz - L2TI
- From sensors to time series forecasting: a whole prediction framework. Louis Closson – LIG

### Coffee break

### 11h00 - 12h30 Air Quality and Health Monitoring

Presentation of current projects:

- Centinela de la salud - IPICYT
- Centinela del aire - IPICYT
- The Air Quality Station Project. Didier Dozen – LIG

### Lunch Break

### 14h00 - 18h00 Plenary session

**Implementation of Collaborative Networks:** IoT platform design, data collection and analysis and applications for social good in France and Mexico.

### 14h00 - 15h30 Some Air Quality Task Force Initiatives

- Centre d'initiative pour la vie et santé mobile. Salvador Ruiz - IPICYT
- Smart Cities Team. Víctor Manuel Larios Rosillo – CUCEA (UdG)
- Monitoring Air pollution (CO<sub>2</sub>) through IoT and nanomaterials - Antonio Casillas Zamora – CUCEI (UdG)

### Coffee break

### 16h00 - 18h00 Working Session: Developing a plan for joint collaboration

- Discussion of themes and possible collaborative projects
- Task allocation and schedule of activities for the following year.
- Programming participants for the Workshop in Mexico (2024).

### 19h30 - 21h30 GALA DINER