

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 - IPICYT (Mexico)

PROGRAM

Day 1 - Monday, May 22, 2023

Room: EULER (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 - Équipe Réseaux - USPN
- Laboratoire LIPN - USPN
- TRiBE Team INRIA -Saclay
- Departamento de informática - INSUBRIA
- Laboratoires ITIS: ERTIS group and Victoria Network - UMA
- Université de Guadalajara : CUCEI & CUCEA
- Département de statistiques - UDCLV
- Laboratoire d'Informatique de Grenoble - UGA
- Kauno kolegija Higher Education Institution, Faculty of technology, Department of Informatics - KAUNAS
- Tampere University of Applied Sciences - TAMK

Coffee break

11h30 - 12h15 Part II - MUFRA MEX and other funding opportunities

- European or International Scientific Networking Program 2023 (open): <https://www.muframex.fr/appel-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>

PhD - Master: Poster Session in collaboration with Master EUR

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, Khaled Boussetta - L2TI

Coffee break

16h00 - 18h30 IoT technology and applications

- Privacy-aware passive sniffing: from packet collection to bounded trajectories. Fernando Molano Ortiz, Nadjib Achir (USPN-INRIA), and Aline Carneiro Viana, Researchers at INRIA Saclay

- 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/ Victoria Network - UMA

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 - ITIS/ERTIS- 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 - USPN
- From sensors to time series forecasting: a whole prediction framework. Louis Closson - LIG - UGA

Coffee break

11h00 - 12h30 Air Quality and Health Monitoring

Presentation of current projects:

- Centinela de la salud - Salvador Ruiz - IPICYT
- Centinela del aire - Ruben Lopez Revilla - IPICYT
- The Air Quality Station Project. Didier Donsez & Marie-Laure Aix- LIG - UGA
 - Low-cost sensors for particulate matter measurement. Marie-Laure Aix- LIG - UGA

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

- Life Initiative Center and Mobile Health. Salvador Ruiz - IPICYT
- Center for Innovation in Smart Cities. Rocio Maciel Arellano, Víctor Manuel Larios Rosillo - CUCEA - UdG
- Monitoring Air pollution (CO₂) through IoT and nanomaterials - Antonio Casillas Zamora - CUCEI - UdG
- Statistical methods for distributional data applied to green museum - Rosanna Verde, Antonio Balzanella, Bruno Carbonaro et Ferdinando Grillo - UDLCV

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