1SC4391 – Deployment of a fog computing platform for video processing

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Department: DOMINANTE - SYSTÈMES COMMUNICANTS ET OBJETS CONNECTÉS
Language of instruction: ANGLAIS
Campus: CAMPUS DE PARIS - SACLAY
Workload (HEE): 40
On-site hours (HPE): 27,00

Description

This challenge week aims at deploying a fog computing solution for IoT. The students will deploy an experimental network connecting objects to processing nodes. Distributed Artificial Intelligence techniques will be deployed on the fog and compared to centralized solutions.

Quarter number
ST4

Syllabus
- Manipulation of the hardware and software components provided by the supervision team
- Deployment and test of a communication network between nodes.
- Creation of a distributed storage solution for information gathered from objects
- Implementation of an AI algorithm for processing the collected information
- Comparison of distributed versus centralized solutions
- Demonstration of the platform and defense before a jury

Class components (lecture, labs, etc.)
One week of practical work in project mode

Grading
Report and defense before a jury

Resources
The challenge week will be supervised by professors from CentraleSupélec and engineers from ADLINK.
The students will manipulate objects and robots equipped with Raspberries.

Learning outcomes covered on the course

This challenge week will help students acquire the following competences:

• deploy a network composed of connected objets and processing nodes ;

• implement distributed AI methods and compare them to centralized ones

• understand the interplay between processing capacity and communication bandwidth.

Description of the skills acquired at the end of the course

C1- C7.1 - C8.1 - C8.2 - C8.3