Communication

ECTS
5 crédits

Hourly volume

Introducing

Description

Objectives

At the end of this module, the student will have understood and be able to explain (main concepts):

-the communication architectures and protocols for wireless sensors networks and Internet of Things (IoT)
-the quality of services for adaptative networks (routing layer, MAC layer, beamforming algorithms)
- the functioning of adaptative networks and adaptative communication services
-the Software Defined Radio (SDR) and cognitive radio principles (reconfigurability in mobile networks)
-the functioning and the services of 4G and 5G networks
-the overall architecture of an energy management system, capturing or not ambient energy.
-the difficulties to assure the integrity, the availability and the confidentiality of the deployed equipment on a large scale, in different environments using heterogeneous communication interfaces

The student will be able to:

-design, dimensioning and deploying a wireless sensor networks depending on the applications
- having strong knowledges about quality of service on the MAC layer and beamforming algorithms
-having strong knowledges on 4G and 5G networks and adaptative networks
-identify the information to protect in IoT with respect to the security properties
-analyse the communication interferences to characterise the weakness of the system
-propose or modify the communication architectures to take into account the security problems
-design the energy management of a connected object

Évaluation

L'évaluation des acquis d'apprentissage est réalisée en continu tout le long du semestre. En fonction des enseignements, elle peut prendre différentes formes : examen écrit, oral, compte-rendu, rapport écrit, évaluation par les pairs...

Practical info

Location(s)

Toulouse

Non-contractual information