

5G and beyond

Composante
Sciences Fondamentales et Appliquées

Présentation

Objectifs

The aim of this module is to study 5G technologies and Network

architecture in order to optimize the following items to guarantee the

Quality of Services/Experience:

- Peak data rate (Gbit/s);
- User experienced data rate (Mbit/s);
- Spectrum efficiency (bit/Hz);
- Device mobility (km/h);
- Latency (ms);
- Connection density (number of connected/accessible objects per km²);
- Network's energy efficiency;
- Area traffic capacity (Mbit/s/m²).

Heures d'enseignement

5G and beyond TD 30h

Pré-requis nécessaires

Digital communication

Programme détaillé

5G technologies: (Wireless channel concept) "millimetre" wave

frequencies, Massive MIMO, Full Duplex transmission, NOMA Multiplexing

(Non Orthogonal Multiple Access), New high spectral efficiency

modulation concepts

5G Network architecture skills: Software-defined networking (SDN) and

network functions virtualisation (NFV)