

# Soutenance d'Habilitation à Diriger des Recherches (HDR)

## Saadi BOUDJIT

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Amphi Euler

### Wireless multi-hop ad hoc networks: From WBANs to Large Scale Topologies

devant un jury composé de

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**Abstract:** A Mobile Ad hoc Network (MANET) is a collection of devices/nodes or terminals with wireless communications and networking capabilities that communicate with each other over wireless links and without the aid of any centralized administrator. It is an independent system of mobile nodes that may operate in isolation, or may have gateways to interfere with a fixed network. In an ad hoc network each node functions as both a host and a router. Hence, packets to be exchanged between two nodes that are not in direct range with each other are relayed by intermediate nodes. In this context and during the last ten years, we were interested in designing efficient data dissemination techniques and quality of service schemes while targeting some major applications of wireless ad hoc networks. We focused our works on three important applications of wireless ad hoc networks, the wireless body sensor networks WBANs, the large-scale wireless sensor networks LSWSNs, and the vehicular networks (classical Vehicular Ad hoc Networks VANETs and Unmanned Aerial Vehicles UAVs or Drones). My presentation will summarize the main research activities we carried out within these applications of wireless ad hoc networks, and highlights our main contributions in each of them within supervised and already defended PhD thesis.

**Keywords:** Ad hoc networks, QoS, WBANs, WSNs, VANETs, UAVs.