Question 1

Pas encore

What are the main motivations, raised by the authors, to apply the SDN paradigm to Wireless sensor networks ?

Main motivations are:

WSN has some 'specific' characteristics and limitations. They are,

- Characteristics - Low data transfer rate, latency, packet loss, low processing power
- Limitations – lossy links**, limited power supply**/processing power/Memory

Therefore, deploying large scale networks and managing it can be challenge.

- But, the SDN approach provides a unified view of managing a large network. Which means, in the case of WSN, if SDN approach is followed, due to the advantages of SDN's 'unified view', the whole WSN network topology can be controlled and managed from a controller.
- Which means that, the control plane and data plane are decoupled. The control plane tasks are performed by the centralised SDN controller only (SD6WSN) and not at each individual WSN nodes. Therefore, WSN nodes needn't be heavy.
- Which means, using SDN's flow-based forwarding approach, the WSN's different characteristics and limitations can be more flexibly handled/managed by creating 'flow-tables' with appropriate network management actions. Especially, the limitations such as computation complexity, power/memory consumption are addressed well.
- Thus, with SDN, it's possible to build specific networking applications on the basis of WSN topology and use them for WSN network management and thus the limitations can be solved.
- In an SDN based SD6WSNP architecture, it is made possible to 'centralize' the following important tasks:
  - Learn the WSN topology, monitor changes in the topology, and link quality with neighbour nodes and accordingly update the topology at a centralised server
  - Also, make use of the higher layer protocols (CoAP) and their messages, for installation of entries in the 'flow table' to program data plane forwarding