

BATS: Intelligent and Sustainable Aerial Terrestrial IoT Networks

Redes Aéreo Terrestres Inteligentes e Sustentáveis de IoT

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Context and Main Goal

Adopting systems based on traditional IoT and sensor networks to vast wild areas would bring adverse and challenging conditions due to lack of power supply, dynamic and deep fading in wireless communications, and disruptive natural environments.

To overcome these limitations, an emerging technology trend consists in integrating unmanned aerial vehicles (UAVs) into terrestrial networks, leading to the proposal of an intelligent and sustainable integrated aerial-terrestrial IoT network that forms the Main Goal of the BATS project.

The integrated network is based on software-defined network (SDN) and artificial intelligence (AI) frameworks. Efficient and simultaneous power and information transfer between UAVs and ground sensors is also envisaged.

Team

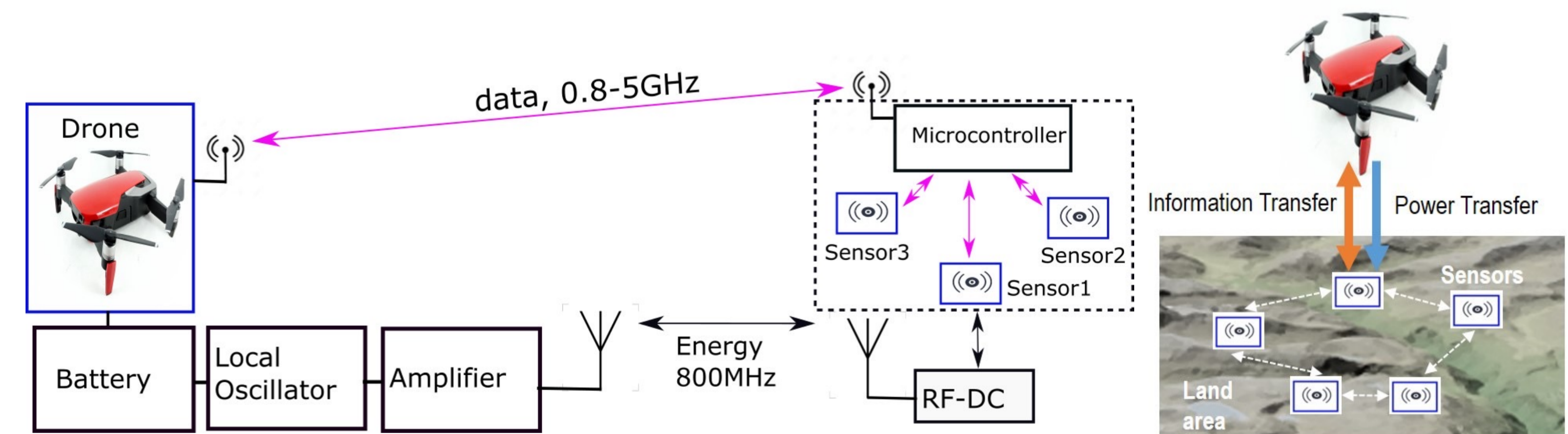
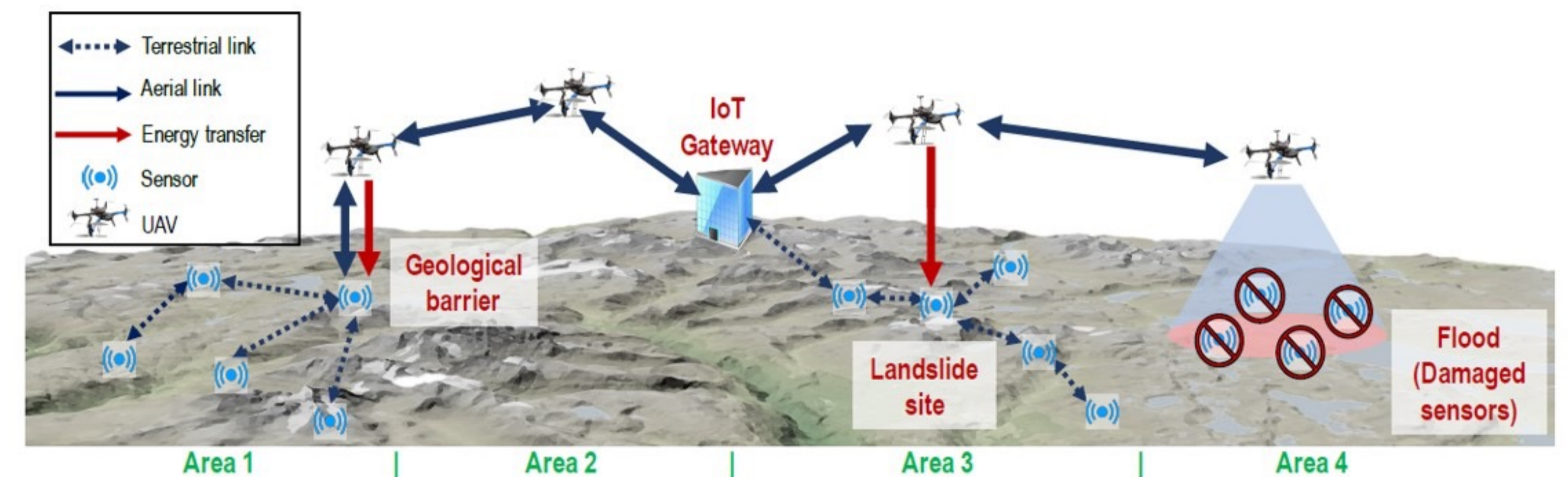
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Results

Analysis of the limitations and of the QoS requirements of IoT networks for environment monitoring; Completion of design of an integrated and agile aerial terrestrial IoT UAV network architecture based on SDN; Provisional designs and results for the proposed energy harvesting technique.





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