SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

The STSM applicant submits this report for approval to the STSM coordinator

Action number: CA15127

STSM title: Wireless Mesh Communication Networks for monitoring and supervision in large-scale natural disasters scenarios

STSM start and end date: 09/09/2018 to 15/09/2018
Grantee name: Arie Reichman

PURPOSE OF THE STSM

The goal of this STSM is to coordinate activities, research and paper work on Wireless Communication Mesh Networks for monitoring and supervision in Large-scale natural disasters applications. The aim is to look for selected use-cases, to develop specific scenarios and optimize performance in the sense of throughput and reliability. The aim is to work on the definition of use-case scenarios and suitable architectures for large-scale natural disasters scenarios (WG1). We wish to optimize the performances in the sense of capacity and reliability in cases were failures occurs in the network such as collapse of nodes or links.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

1. Definition of case studies and the set-up of use-cases used for further customization of IoT scenarios.
2. Discussion on architectures to fit these scenarios. Definition of specifications and criteria of evaluations and measures for comparison.
3. Planning cooperative paper or a book chapter for new RECODIS book.
4. Meeting with industrial company BEIA for cooperation in a common program
5. Discussion on two papers of the research team of Ciprian Dobre at University Politehnica of Bucharest Bucharest, Romania
    a. *Social Prediction-Based Opportunistic Routing*
    b. *How many people are needed for a crowdsensing campaign?*
6. Discussion on a papers of the research team of Arie Reichman
    a. *Resource Allocation in OFDMA Wireless Mesh Networks, Journal of Ambient Wireless Communications and Smart Environments, River Publishers*
7. *Possible work on joint and future collaborative research proposals and setting up a product combining the expertise of partners.*

DESCRIPTION OF THE MAIN RESULTS OBTAINED

1. Definition of emergency scenarios base of an addition of a wireless communication mesh system based on WiFi or other similar systems.
2. Identification of architectures meet these scenarios and criteria of evaluations.
3. Specification of the and optimization of algorithms of resource allocation, synchronization, routing.
4. Report with the main results

FUTURE COLLABORATIONS (if applicable)

A joint publication at an international conference and at a journal

Book chapter that shows the most important results.

Industrial cooperation of Ayecka Communication Systems, Universita Politehnica Bucuresti and BEIA.