SHORT TERM SCIENTIFIC MISSION (STSM) – SCIENTIFIC REPORT

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

Action number: CA15127
STSM title: Designing of wireless networks resilient to adverse weather conditions
STSM start and end date: 03/11/2019 to 09/11/2019
Grantee name: Dritan Nace

PURPOSE OF THE STSM/

The aim of the proposed research was preparing the lecture “Designing of wireless networks resilient to adverse weather conditions” which is part of RECODIS training school WG2 to be held in Brussels, December 10-11, 2019.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

During my stay at Warsaw University of Technology I have been preparing the lecture “Designing of wireless networks resilient to adverse weather conditions” for the training school WG2 to be held in Brussels, December 10-11, 2019. This lecture focuses on wireless communication which is sensitive to weather conditions that affect the channel. To deal with this, special network design means must be applied to avoid degradations in transmission capacity available for the users. In this lecture we will discuss a design approach adequate for an important subclass of wireless networks – FSO (free space optics) wireless metropolitan area networks. We show how to identify weather states and characterize their impact on transmission capacity of FSO links. Next, we present an optimization model that allows for cost effective dimensioning of the FSO network resilient to representative weather states. Finally, we illustrate effectiveness of our approach for a realistic example of Paris metropolitan area network.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

(max. 500 words)

The major result of the STSM consists in preparing the lecture “Designing of wireless networks resilient to adverse weather conditions” which will be delivered on the RECODIS training school WG2 to be held in Brussels, December 10-11, 2019.

FUTURE COLLABORATIONS (if applicable)

(max. 500 words)

The collaboration of Prof. Dritan Nace (the STSM applicant) with Warsaw University of Technology, and especially with Professor Michal Pioro will continue.