

# STSM Report after Visiting

**Period:** 08/01/2018 to 17/01/2018

**COST Action:** IC15127

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**STSM Topic:** Selective Offloading in Mobile Edge Computing for Reliable Internet of Things

**Host:** Alexey Vinel, Halmstad University, Sweden. Email: [alexey.vinel@hh.se](mailto:alexey.vinel@hh.se)

## Purpose of the STSM

In this STSM, we mainly focused on a new Mobile Edge Computing scenario in IoT and model the computation offloading process of the mobile devices running in heterogeneous networks and in bidirectional road both in normal operation as well as in the disaster scenarios. This STSM is to further strengthen our existing collaboration and to extend our joint publication. STSM is a perfect venue for us to develop new capabilities in mobile edge computing in IoT applications for achieving the reliable services in smart urban environment.

## Description of the work carried out during the STSM

Time	Task
8-10 Jan 2018	Analyze the MEC for IoT scenario and offloading problem
11-12 Jan 2018	<ul style="list-style-type: none"><li>• develop computation offloading model for reliable IoT</li><li>• study the tradeoff between performance and resilience</li><li>• setup the experiment settings</li></ul>
13-17 Jan 2018	<ul style="list-style-type: none"><li>• Investigate the performance when the network infrastructure is failed</li><li>• give key observations to the design of reliable IoT services with mobile edge computing</li></ul>
8-17 Jan. 2018	<ul style="list-style-type: none"><li>• discussed the recent development on "mobile edge computing for IoT"</li><li>• discussed the recent development on harmonizing cloud and edge computing for IoT in case of disaster situations</li><li>• discussed EU and Nordic funding opportunities. We believed that a mobility grant called "VINNMER" in Sweden is a good chance to support international mobility to Sweden with long-term project collaboration</li></ul>

## Description of the main results obtained

**Joint Publications:** We will submit the research results to the top-journal and conferences.

**Discussion:** We have discussed extensively about the recent research issues and results at the research visit at Halmstad University, Sweden. The main topic is about mobile edge computing for IoT. We also discussed several relevant research results on normal and disaster situations by using different techniques, e.g., combining cloud and edge computing together.

## Future collaboration with the host institution

We have established strong collaboration and will continuously build closer cooperation with Halmstad University in terms of scientific research, joint publications, joint H2020 proposals applications, and joint student supervision.

## Foreseen publications/articles resulting from the STSM

We can expect IEEE top-journal papers and conference papers.

X. Lyu, H. Tian, L. Jiang, A. Vinel, S. Maharjan, S. Gjessing, and Y. Zhang, "Selective Offloading in Mobile Edge Computing for Green Internet of Things", IEEE Network Magazine, vol.32, no.1, pp.54-60, Jan/Feb. 2018.

This magazine work will be extended and submitted to IEEE Transactions. We are also working on conference papers that will be submitted to IEEE Globecom 2018.

## Confirmation by the host institution of the successful execution of the STSM

Please refer to the confirmation letter from Prof. Alexey Vinel at Halmstad University, Sweden