



UNIVERSITY OF
EASTERN FINLAND

Reference for Markus Stocker

To whom it may concern,

Markus Stocker, born July 26, 1979, from Ettiswil, Lucerne, Switzerland, has completed a PhD degree in Environmental Informatics (2015) and a MSc degree in Environmental Science (2017) at the University of Eastern Finland. Between September 2009 and January 2016, Markus was employed as a research assistant in national projects as follows:

- 01.09.2009 – 31.05.2010, Project TiTiMake, 40%
- 01.06.2010 – 31.12.2010, Project TiTiMake, 100%
- 01.01.2011 – 31.12.2011, Project TiTiMake, 60%
- 01.01.2012 – 31.07.2012, Project MMEA, 60%
- 01.08.2012 – 31.12.2012, Projects MMEA, SGEM, 60%
- 01.01.2013 – 31.07.2013, Projects MMEA, SGEM, FResCo, 100%
- 01.08.2013 – 31.12.2013, Projects MMEA, SGEM, FResCo, 100%
- 01.01.2014 – 31.07.2014, Projects SGEM, FResCo, 100%
- 01.08.2014 – 31.12.2014, Projects MMEA, FResCo, 100%
- 01.01.2015 – 31.07.2015, Project FResCo, 100%
- 01.08.2015 – 31.12.2015, Project FResCo, 100%
- 01.01.2016 – 31.01.2016, Project FLEXe, 100%

TiTiMake was a Tekes funded project involving Finnish universities and SMEs. It focused on modelling methods for situation awareness in intelligent transportation systems. Specific duties were the development of a system for the detection and classification of vehicles using road-pavement vibration data collected from accelerometer sensing devices as well as the formal description of classified vehicles and their properties such as driving velocity.

MMEA was a Tekes funded project involving Finnish universities, SMEs and large enterprises. It focused on measurement, monitoring and environmental efficiency assessment. Specific duties were the development of the MMEA data management platform in collaboration with Vaisala and other partners. Markus successfully transferred results from his PhD and developed three use cases, for driver situation awareness for storms, for new particle formation studies in aerosol science, and for farmer situation awareness for disease outbreak in agricultural crops.

SGEM was a Tekes funded project involving Finnish universities, SMEs and large enterprises. It focused on smart grids and energy markets. Specific duties were the development of an architecture for a system aimed at automated, near real-time, acquisition of situational knowledge from heterogeneous sensor data and the automated and formal representation of knowledge in ontology. The system architecture was discussed for two domain use cases, namely electricity usage data classification to describe use of home appliances, and detection of malfunctions in a smart grid.

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10th of October, 2017



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FResCO was an Academy of Finland funded project in collaboration with Åbo Akademi. The project focused on developing high-quality measurement infrastructure for future resilient control systems. Specific duties were to develop new use cases using the concepts and implementation developed as part of the PhD thesis, apply the concepts to environmental research infrastructures, and to finalize the thesis work. FLEXe was a CLIC Innovation funded project in collaboration with Finnish universities, SMEs and large enterprises. It focused on future flexible energy systems. Specific duty was to develop a concept for data integration in FLEXe.

During his PhD studies, Markus Stocker has shown high skills for cooperation, adaptation and learning. Specifically, he has successfully applied computational methods in the application areas listed above as well as developed new related methodology. As a hard-working researcher, he was able to work on several projects at the same time. Despite often tight schedules, he has always kept the quality of the work at high level. An example for quality work is his PhD thesis, which was graded as "accepted with distinction" meaning that it was regarded to be within the best 5% in the field.

Kuopio, October 10th, 2017

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