

Twining Activities Report

1. *Personal Information:*

Mr./Ms. **Anna Buttaboni, Politecnico di Milano**, faculty member of **Politecnico di Milano, Department of Electronics and Information, Milan, Italy** visited

(name of sending institution, country)

in the period from **23.02.2015** to **06.03.2015** in **Wrocław University of Technology**

(name of the visited institution, country)

order to carry out research and training activities in the field of **computer network optimization**.

(give the area)

2. *Information about Seminar*

The seminar presentation was organized on **25.02.2014**

the date

It was entitled:

Virtual PON assignment to support Fixed and Mobile services in a convergent metro-access infrastructure

3. *Description of scientific activity in details*

(Please describe value added to the ENGINE project i.e. new knowledge, new skills with respect to the objectives of the project, the assigned common area of future cooperation with the partner, plans for common research, projects, publications and how it could be used in the scope of ENGINE)

During stay of Anna Buttaboni in Wrocław, we discussed potential research cooperation in the following fields

- optimization of optical network,
- optimization of backhauling infrastructure of Fixed Mobile Converged (FMC) access-aggregation networks,
- Virtual PONs (VPONs),
- energy consumption in optical networks.

Moreover, we started to work with Anna Buttaboni and my PhD student Wojciech Kmiecik on a research paper related to optimization of virtual PON assignment for fixed-mobile convergent access-aggregation networks. In more detail, after some discussion we formulated several new optimization problems that incorporates additional constraints following from adding to the model transmission adapted to energy consumption, i.e., shorter transmission can reduce the energy transmission. Moreover, issues of statistical multiplexing in optical transmission were considered. We plan to continue this cooperation in near future to write a journal paper on this topic.

On 24.02.2015, Anna Buttaboni together with prof. Arun Sen (Visiting Professor employed in WT4.5 of ENGINE project) participated in seminars of my PhD students Róża Goścień, Michał Aibin, Damian Bulira and Wojciech Kmiecik presenting the recent results related to their PhD thesis.

On 02.03.2015, Anna Buttaboni participated in a seminar of prof. Arun Sen (Visiting Professor employed in WT4.5 of ENGINE project) on the topic „UAV path planning and airborne networks”.

4. *Information referring to the intellectual property:* the generally binding law in this area in the visited country and procedures of patenting;
5. *Description of the procedure of cooperation between universities and SME in visited country:* how it is organized, the sources of funding, the opinions about drawbacks and strengths of existing solution.
6. Please send this report , a program of the visit and the seminar presentation in electronic version to Scientific Coordinator halina.kwasnicka@pwr.wroc.pl, and to the Project Office engine@pwr.wroc.pl

In this report please respond to the points 1-5 for outgoing visit and points 1-3 for incoming visit.