



WT2.6: European Centre for Soft Computing Report

Activities performed during the visit

in Wrocław, Poland

period: 06.01.2016 - 18.01.2016

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Personal Information

Mr. **Manuel Chica**, member of **European Centre for Soft Computing, Spain** visited **Wrocław University of Technology, Poland** in the period from **06.01.2016 to 18.01.2016** in order to carry out research and training activities in the field of **System Dynamics for Social Media Analysis**.

Information about Seminars

The seminar presentation was organized on **13.01.2016**

It was entitled:

Key variable detection in system dynamics framework based on multiplex (13.01.2016)

Description of scientific activities

(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)

New knowledge:

Mr. Chica has presented work on system dynamics application to network modeling. System Dynamics (SD) methodology is very useful in systems with many interrelated variables, when relevant data is not fully available, for policy testing, and for policy optimization. Moreover, it highlights critical resources and key relationships and also offers competitive gain for decision makers.

It is often difficult to identify key variables in dense or large problems modelled by SD. These key variables are those able to generate significant changes in the whole system. This descriptive information of the system is vital for modelers since they can apply strategic actions over those variables (in a direct or indirect way) and focus their what-if scenarios. The identification of these key variables is also useful for understanding the dynamics of the model and for validation purposes.

Mr. Chica presented detailed proposal inspired by social network analysis toolbox that considers structural properties of the nodes denoting in case system's variables. The approach ranks the variables according to the value of their centrality (in multiplex) and finally returns the highest ranked variables to the user as key ones

New skills:

Thanks to Mr. Chica's visit Engine Center's team had a chance to familiarize with specialized skills on system dynamics application to network analysis.



Common area of future cooperation:

It has been agreed that further collaboration within the project will be concentrated on:

- diffusion processes in complex networks
- classification in networks
- social network analysis and social media analysis

Plans for common research:

There were discussed further research activities on the topic “Key Variable detection in System Dynamics Framework based on Multiplex” during the visit.

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Plans for joint projects:

Not decided yet.

Plans for collaboration in publications preparation:

Agreed on paper submission to JCR journal.

Information referring to the intellectual property

(the generally binding law in this area in the visited country and procedures of patenting);

Not addressed.

Description of the cooperation between universities and industry

(how it is organized in partner’s organization, the sources of funding, the opinions about drawbacks and strengths of existing solution).

Not addressed.

Other activities

None





REMARK: Apart from this information also a program of the visit and the presentation in electronic version should be given to the project office (please send all of them to Urszula.Markowska-Kaczmar@pwr.wroc.pl). Please respond to the points 1-5 for outgoing visit and points 1-3 for incoming visit. Point 6 is for extra activities that are not put in points 1-5.

