To: MaRBLe steering committee

Subject: MaRBLe scholarship application

Dear members of the MaRBLe steering committee,

For my MaRBLe bachelor thesis at the Department of Knowledge Engineering I’m involved in a project that is cooperation between the MUMC+ Department of Pathology and CERN, Deparment of Medical Physics, Geneva and I’m being supervised from the Department of Knowledge Engineering.

The aim for my thesis is the analysis of collected patient data using methods that have not been used or applied in a big sense so far. Main disease that is analyzed using this data set is atherosclerosis.

A range of computationally intensive methods are being used such as the Network Simplex method, Weighted Gene Co-Expression Network Analysis, Clustering techniques , Regression models (Logistic, Multivariate and Cox`s Regression analysis), Control theory and Reverse Network Engineering.

One of the lead researchers in this project, Dr. Marco Manca, is based at CERN. The research would greatly benefit from a visit to CERN during the thesis period, because it will allow for better knowledge and experience transfer between me and Dr. Marco Manca and his team. Mr. Manca already has experience and has done some research work in this field and similar topics. Discussions with him and his team will lead to possible creation of better techniques and methods and better use of the ones mentioned above. Also, it will allow for possible usage of some high-tech, advanced computing located at CERN. The following learning objectives are expected to be met: By the end of this visit, I will have better insight into the methodology used by experts for analysis of the patient data.

The program of the visit is: This visit will begin end of May and will last for 7-10 days. During this time period, main focus will be on discussion of work done so far and possible short-time, as well as long-term enhancements to the research.

The budget of €1000 will be used to accommodate a stay in Geneva that is as long as possible. Expected is that the travel costs will amount to €200 and with alternative lodging the remaining €800 will cover living expenses for a 10 day stay.

This application is endorsed by Prof. Dr. Ir. Eric Biessens, Dept. Pathology, Dr. Joël Karel, Dr. Evgueni Smirnov and Dr. Zita Soons, Dept. Knowledge Engineering.

If you require any further information, I’ll gladly be of your assistance.

Best regards,

Taghi Alyev, Bachelor student Knowledge Engineering