***Project proposal***

I’ m working on a thesis project that involves the automation of the electrical system and in particular a renewable plant such as a wind farm or a PV plant. A part of the output of my work will be a series of documents where I show the results of some simulations done using the control system that I have designed. In particular I have to prove that the performances that I get are compliant with what the grid code requires. The grid code is usually described by a document where all the necessary tests are enlisted. These tests that evaluate the performances of my control system are always the same depending on the power of the plant that I’m trying to control.

The documents that are produced have always the same structure as we have said before the test to be performed are always the same. The usual workflow to be followed when producing a report of such a type is the following one: I run the simulations and I usually get some numerical values and some plot that I save and I export to the word environment to create the report. This step takes usually quite a long time. If for some reason a parameter changes I have to substitute all the plots and all the numerical values that I have in my report as a result of this parameter variation.

The goal of this software is to automatize the report creation starting from an excel file or a Simulink file. In the case of an excel file I will extract the information from excel cells and also the plots from the excel file, while in the case of the Simulink file the code will have to start the simulation and the extract the plot and the numerical values from the Simulink file itself.

The software that I’m using for the thesis is called Powerfactory and is specially designed for the modelling, simulation and control of electrical systems. It provides an interface to interact with python code and so it would be interesting to extend the usage of this software also to PowerFactory even if it is of course less used than other more widespread softwares such as excel and Simulink.

To summarize we want to use python code to create a software to automatize the creation of standard reports that contain both text and images. To do so instead of the image or the text in the report we will have a tag that will connect the word report to the corresponding excel/Simulink/powerfactory file. It will be basically a tool to save time and to automatize a very repetitive task.

**EVENT MANAGEMENT: EMACO**(Event Management Authenticator & Co)

This project aims to deal with public event management. A user could access to this software, managing its subscription and other services of booking to a generic public event. An example of public event could be a recent event called [Mu.D](https://www.milanouniversitydistrict.org/) (Milan University District) which took place several weeks ago. The event

There exist two kinds of users which are the event planner (or admin) and the visitor. Each user has a username and a password to log into EMACO. Initially, the user has to subscribe to EMACO giving his/her personal data such as: name, surname, nationality, date of birth (and consequently age), job (or student), place of birth.

On the one hand, the visitor can book service throughout the whole event which is mainly composed of conferences, food tuck area, ex specifying exhibitions. On the other hand, the planner could upload or modify services regarding the booking

all details of it, such as title of the conference, place, date, hour, number of occupants (if he wants to invite a friend).

An event is composed by conference, food service and . A conference could be booked by a generic user as specified before. Furthermore, the food service area is composed by a truck which has a menu containing all the details of food: types of food, beverage, costs and tables. The last ones can be also booked specifying the number of occupants and everything that can be ordered by the available menu.