SDP *Individual report 1*

by Georgi Koshov

During the first two weeks of the System Design Project my main contributions to the group were:

Stefan Sabev, An Nguyen and I researched the source code and evaluated the performance of projects 4, 5, 6 and 11 from 2012 and project 11 from 2011. We examined the required libraries and the overall complexity of the vision modules.

Stefan and I set up a Virtual Environment, which simplifies greatly the migration of the code, automatically deploys dependences and uses the latest version of Python (2.7), which is not yet available on the DICE machines.

I created a GUI module which dynamically modifies the barrel distortion-compensation matrices and provides a proper rectangular image from the video stream.

Highlights:

- Virtual environment will help other team-members meet dependency requirements without an effort and will greatly help future students understand and use our Vision module.

Points of improvement:

- We need to research and implement a good technology for a socket server, to be used by the called by the controller GUI.
- More work is needed on controlling the colour thresholds (particularly the yellow plate) in order to detect the direction of the robot better.
- Currently the black dot behind the T-shaped coloured marker is not used when calculating the orientation vector - we need to research a way to add it to the detected image, as it would make direction estimation more accurate.