**EXECUTIVE SUMMARY**

This report presents details of the project for a teleoperated robot trying to score in opponent’s goal and defend its own meanwhile. Remotely controlled robots are widely used in many aspects of our life. Main idea behind this project reflects a real-world problem in occasions where the user has no view of the robot. Therefore, a two-way communication with the robot and user’s computer should be established. Reliability and efficiency of this communication is vital since intervening a distant robot which can be unreachable at that instant, by the user can be challenging.

This design will be accomplished by building an efficient communication, a robust mechanical design and reliable electronic system. We aim to achieve satisfactory performance in speed and accuracy. Our final product is to detect the ball on the field, shoot the ball towards the opponent’s goal, defend its goal and stay in its half field doing so. Several solution methods are sufficiently described in the following sections of this report.

Our company is composed of five shareholders with different specialization fields and backgrounds. Therefore, each team member came up with a solution from a different point of view. We merged these perspectives in order to construct solution approaches at this point of our design process.

Even though our base knowledge is similar, each team member chose to study in different fields. Therefore, at certain levels of the design process and solution offering, each member has a different idea and experience. Ms. Arabacı is more experienced in controller design and system modelling which will help her to guide and inform the team, Ms. Coşkun and Mr. Göksu will lead the team with their mechanic & analog design and integration skills. Mr. Beyenir’s skills & background in image processing will help us in programming stage and last but not least Mr. Elik will take an active role in building a durable and stable communication system.

Final product will be delivered in best way with a cost of 200$, at the end of 7 months by PITECH engineers. Once the customer purchases the final product, they will own the final action robot consisting of mechanical subsystems, camera, sensors and drivers. In addition to these, a user manual, a warranty document, required software tools, four batteries, two battery chargers, three game field walls, two balls (one is extra) and a dummy robot are also provided.