DESIGN AND IMPLEMENTATION OF A DATA ACQUISITION SYSTEM AND STATISTICAL ANALYSIS IN AN AUTOMATED CAR WASHING STATION

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ABSTRACT

The main objectives of this project was to implement statistical approaches and to install an Automatic Number Plate Recognition (A.N.P.R.) system in an automated car wash station located in Strovolos, Nicosia, Cyprus.

The first part of the project was to study the existing system of the company under investigation.
Several control charts were developed, presented and discussed, including the following:

- The number of cars entering the station using the three years past data and the collected data during our stay in Cyprus
- The time for prewash and the total washing time
- The time for manual activities after washing the cars in all five gates
- The actual time per each activity (for cleaning the glasses, the interior, the exterior and the carpets)
- Pareto analysing for car types
- Scatter diagrams for interaction between humidity and incoming cars

This statistical analysis is expected to improve the efficiency and the output of the workers and Carecar Ltd.

The second part of the project was to study, select, order and install a License Plate Recognition system. The system was succesfully installed (with two cameras working) at a recognition rate of 95 %. The system will enable the company to know how many cars are getting to the station, the service time and the license number.

All those stored information will help the company to implement a customer oriented fidelity program in Carecar Ltd.

To our families
for providing all the support and keeping us in the right track

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