SSN College of Engineering, Kalavakkam – 603 110

Department of Electronics and Communication Engineering

VI ECE Section: A (2019-2020 Even Semester)

EC8611 Technical Seminar

One Page Write-up

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INDUSTRIAL AND VEHICULAR AUTOMATION

**INDUSTRIAL AUTOMATION** : “Automation is basically the delegation of human control functions to technical equipment aimed towards higher productivity, superior quality of end product, efficient usage of energy and raw materials, improved safety in working conditions etc.”

Programmable Logic Controller(PLC) is an industrial computer that monitors inputs , makes decision based on its program and controls outputs to automate a process or machine. Plc’s are small computers which control the machine. PLC’s are used to reduce human efforts, to get maximum efficiency from a machine and control them using human logic. Machine can be controlled by PLC without human efforts.

LADDER LOGIC is programming language used to develop software for PLC used in industrial applications. Its structure consists of RAILS and RUNGES. It includes switches and various symbolic circuits over which the user can code according to his logic. Some of the areas of application are manufacturing, food industry, textile industry, travel industry, aerospace and printing industry.

**VEHICULAR AUTOMATION :** Vehicular automation involves the use of Mechatronics, artificial intelligence, and multi-agent system to assist a vehicle's operator. These features and the vehicles employing them may be labeled as intelligent or smart.

An autonomous car is an autonomous vehicle capable of fulfilling the human transportation capabilities of a traditional car. As an autonomous vehicle, it is capable of sensing its environment and navigating without human input. The vehicle hardware includes RADAR, OPTICS, LIDAR, GPS, wheel speed SENSORS and PROCESSORS. The working includes sensors, electronic control unit and the actuators.

A human takes about 2 seconds to react and press the brakes whereas a computer takes only .3 seconds to compute and apply the brakes. This could prevent many road accidents and ensure smoother and tireless rides. The recent trends include GOOGLE SELF DRIVING CARS which are under development.