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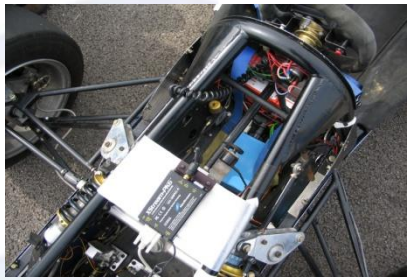
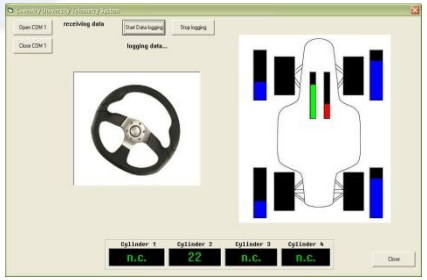
- An **automotive telemetry** system has been designed in order to monitor parameters of a car and driver performance during the racing competition.
- The telemetry allows one to monitor car position on a road using **GPS** (Global Positioning System) via satellites.
- An **Inertial Navigation System (INS)** based on an accelerometer and solid-state gyroscope is used in order to improve the performance of car navigation.
- The telemetry allows **monitoring medical conditions of a driver** (heart-bit rate, body temperature and blood pressure) in the real-time via the Internet.



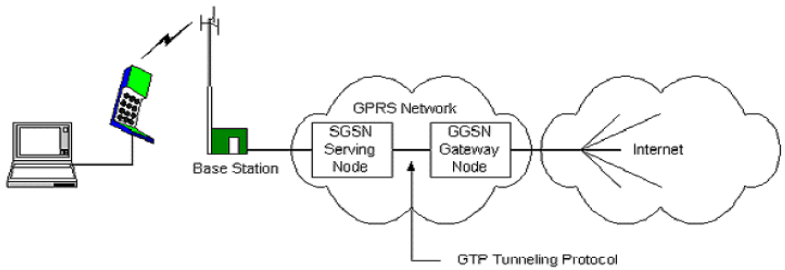


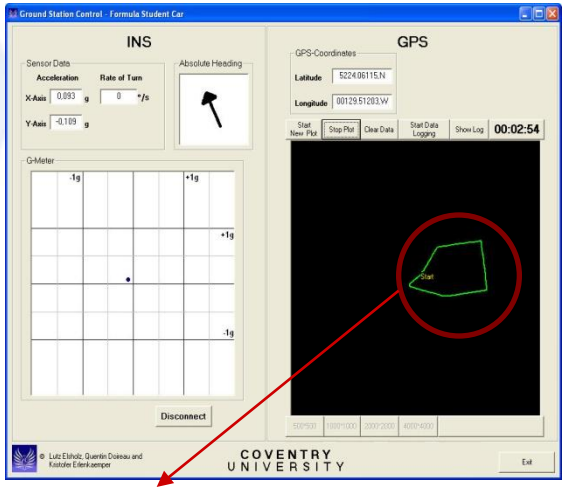
Intelligent Transport Systems

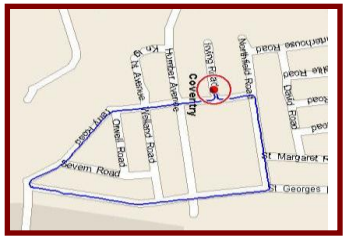
The following sensors are connected to the telemetry system:

- 4 linear potentiometers to measure suspension movement;
- 4 thermocouples to measure the exhaust temperature of each cylinder;
- 3 rotary potentiometers to measure steering wheel-, brake pedal and throttle position.

***Controller Area Network* (CAN-bus)** has been designed for the car in order to reduce the number of wires and overall weight, and to improve the reliability of the data acquisition system.







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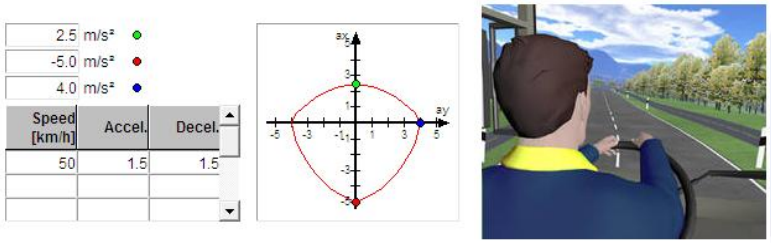
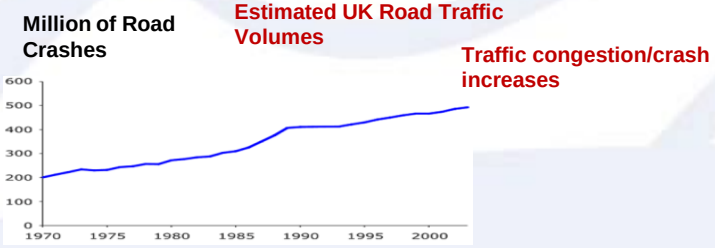
Road User Behaviour Scenario



Overview

As the world's population grows, traffic safety is becoming a mounting challenge for many cities and towns across the world.



Virtual test driving of vehicles:

- Simulation Behavior is like a real-live test;
- Modification of car parameters(engine, tyres, etc.);
- Design of road, traffic, a virtual driver and pedestrians.

Aim:

To investigate the potential factors that affect traffic safety on the road traffic / pedestrians situations.

Study Objective

To research and evaluate the potential failure of traffic accidents based on the main factors that affect traffic safety on the road/highway situations.

To use an advanced 3D tool packages to create the real time situations and analyze the best solution in order to reduce road accidents such as crash.

Specific Traffic Safety System benefits include:

- Better safety;
- A positive economic impact by decreasing traffic accident;
- Reduction of numbers of serious injuries and traffic fatal or critical accidents.