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**Course:**  
Concepts of Information System  
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### Problem → Causes → Solution

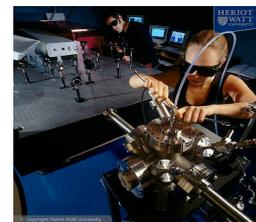
**Problem**  
The number of accidents in Doha have drastically increased over the years. In 2001 there were 57,951 car accidents while in 2006 the figured almost doubled to 106,436.



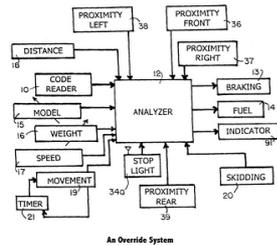
**Causes**  
Reckless Driving  
Speeding  
Underage/unauthorized Driving  
Bad Car maintenance  
Poor Knowledge of driving morals, ethics and regulations  
No Consideration to Traffic Laws



**Solution**  
Statistics show that speeding is the major cause of car accidents. A car may be driven by several drivers and, therefore, the behavior may change from one driver to another. We therefore suggest a solution that targets the car itself by installing an override system that we name the "Ex-Speed System" in it.

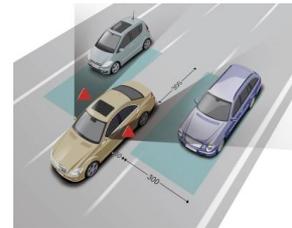


### The Ex-Speed System Description



The main application of this system is an Over-Ride System that will restrict drivers from speeding above the legal speed limit so that the driver and the cars in his surroundings are safe. Our solution consists of a built-in system to all vehicles, which is basically a combination of a GPS System working hand-in-hand with Cruise Control Features and Built-in cameras which are mounted on the body of the car. This is done through the following steps:

1. The GPS system stores the road speed limit and detects the car speed.
2. The Built-in cameras detect the position of nearby cars.
3. The Cruise Control ability will change the speed as needed.
4. A database system that keep the speed limits in the GPS updated.
5. An override application that will integrate the three components.



The Built-in Cameras

### The System Parts

#### Car Navigation-GPS (Garmin)

A GPS unit (GPS System) consists of a space segment, a control segment, and a user segment. The space segment is a constellation of 24 satellites orbiting the earth twice every 24 hours, at approximately 10,900 nautical miles above the earth's surface. The control segment is a series of monitoring stations located at different sites on earth to update the system. The user segment is a receiver that receives radio waves from the satellites to determine how far away it is from each satellite.



#### Built-in Cameras

The built in cameras will be mounted on both sides of the front car grill They will be able to detect other vehicles in the surrounding The cameras have to be at least of 5 mega pixels quality to be able to capture and identify photos while the car is in moving. It will also be able to move around 120 degrees and have a stabilizer in case of off-road driving or bad roads and road bumps.



#### Cruise Control

The cruise control features include the sensors and the capability to set the speed of the car at a certain point. It also contains this very useful feature which is automated, which is if there is a fast car behind or a slow car in front of the vehicle then the car will slow down or speed up according to the situation. This is done through the cruise control feature that sets the speed. The sensors on the side of the car are helpful gadgets that automatically make the needed space between the particular car and other vehicles that surrounds it. The laser sensors measure the distance between the bumpers of the car and other cars.



### Future Plans



State of Qatar  
Ministry of Interior

- Developing the Override System
- Working the Ministry of Interior
- Testing the System
- Implementing the System with Feedback



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