



INTRODUCTION

An **automotive navigation system** is part of the automobile controls or a third party add-on used to find direction in an automobile. It typically uses a satellite navigation device to get its position data which is then correlated to a position on a road. When directions are needed routing can be calculated. On the fly traffic information can be used to adjust the route. Dead reckoning using distance data from sensors attached to the drivetrain, a gyroscope and an accelerometer can be used for greater reliability, as GPS signal loss and/or multipath can occur due to urban canyons or tunnels.

Mathematically, automotive navigation is based on the shortest path problem, within graph theory, which examines how to identify the path that best meets some criteria (shortest, cheapest, fastest, etc.) between two points in a large network. Automotive navigation systems are a crucial for the development of self-driving cars.

NAVIGATION SYSTEM

Some may think that owning a separate GPS unit is overkill. After all, most smartphones are now equipped with GPS navigation. But getting a dedicated navigation system for your car is always a good thing as they have far more superior designs than the ones installed on your phone. Smartphones might have taken over the world today, but there are still some things you might be looking for in a navigation system that you can't get out of a smartphone, no matter how "smart" it is.

A lot of people have benefited from car navigation systems, and its major benefits include promoting safe and relaxed driving. The GPS data provided by these systems may also be used to determine the device's real-time location as well as driver reports to keep you updated on their activity. These are all presented on the device's companion app that is accessible via mobile phone or computer.

The mapping software used by a GPS navigation tracker is also efficient and comprehensive. It gives accurate directions, and the quality is better than that of a free app on your smartphone. There might have been instances when you have relied on the free GPS navigation on your phone and found it completely unreliable. For instance, the phone alerts loudly, "You have arrived at your destination," only for you to look at your surroundings and find out that you actually have not. Then you get frustrated, and then you panic because you have no idea what to do now and how to get to your destination. With a dedicated navigation system, you won't experience such an inconvenience.



NAVIGATION SYSTEM



A GPS navigation device also offers another advantage besides giving accurate directions. In the event that the unthinkable happens and your car gets stolen, you can use the device installed on your car to quickly track down where it is. And in the case of a stolen vehicle, anyone knows that any minute counts. If you take too long, then your car may have been disassembled for parts by that time. You might not want to believe it, but it is a possibility.