

SP3010 Signal Priority System

White Paper
Summer 2008

Overview

System Description

The Spot Devices SP3010 Signal Priority System is a complete system that integrates stand-alone Spot Devices technology, including the configurable Road Spot In-Road Warning Lights (IRWLs), into an overarching communication and control network. This network, via GPS and cellular communications, tracks and communicates the locations of modem-equipped vehicles and integrates this information into the traffic control system. With the SP3010 system, traffic lights, Road Spots, stop bars, and audible announcement devices can all be preconfigured to respond automatically to the movements of the modem-equipped vehicles. The SP3010 system also provides live maps showing vehicle location and system activation data to customers via the Internet.

Example

In the simple example shown in Figure 1, the system, which constantly monitors the location of the modem-equipped vehicle, is configured to generate a 'stimulus event' when the vehicle enters a predetermined area, called a geofence. This stimulus event initiates a configurable response throughout the system, in this case activating an audible announcement at a bus stop and signaling the traffic controller. This paper outlines the mechanism by which this communication and control occurs.

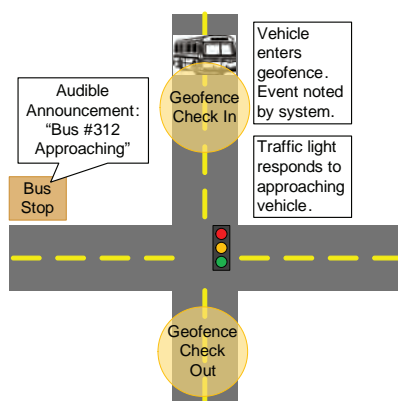


Figure 1: SP3010 Example Application

System Components

SS3000 Secure Server Complex

The Spot Devices SS3000 Secure Server Complex is the 'brain' of the system. It receives information from the other system components, processes it, then sends information and commands back to those system components.

Physically, the SS3000 is a complex of computer servers, located in a secure center maintained and operated by Spot Devices.

Vehicle Modems

Each vehicle tracked by the SP3010 system is equipped with a modem. This modem receives signals from the GPS satellite network and relays them to the SS3000 via the cellular network. Thus, the system constantly tracks the location of each of its vehicles.

SC320 Series Standard Controllers

The Spot Devices SC320 series controllers are located on site, providing control to Road Spots and other traffic management devices. These controllers are equipped with modems similar to the vehicle modems. Via these modems, the SC320 controllers receive stimulus event signals and Road Spot configuration information from the SS3000 and send device activation data and self-maintenance alerts back to the SS3000.

SC320 Series Preemptor Controller

The SC320 Series Preemptor Controller is an SC320 controller that has been modified to send stimulus event notifications to industry-standard traffic controllers. For example, in the system shown in Figure 1, the SC320 Preemptor communicates the information that the bus is approaching to the traffic light controller.

SIMA Customer Web Interface

The Spot Infrastructure Management Application (SIMA) web application provides an interface for customers to draw data from and send instructions to the SP3010 system. Through the application, customers can view real-time maps of vehicle locations, access system statistics, and send configuration changes to the SS3000. The SS3000 can also be configured to send automatic e-mail alerts.

Spot
DEVICES

1455 Kleppe Lane
Sparks, NV 89431
888.520.0008 Toll Free
888.520.0007 Fax
www.spotdevices.com

Arrive Safely

SP3010 Signal Priority System

White Paper
Summer 2008

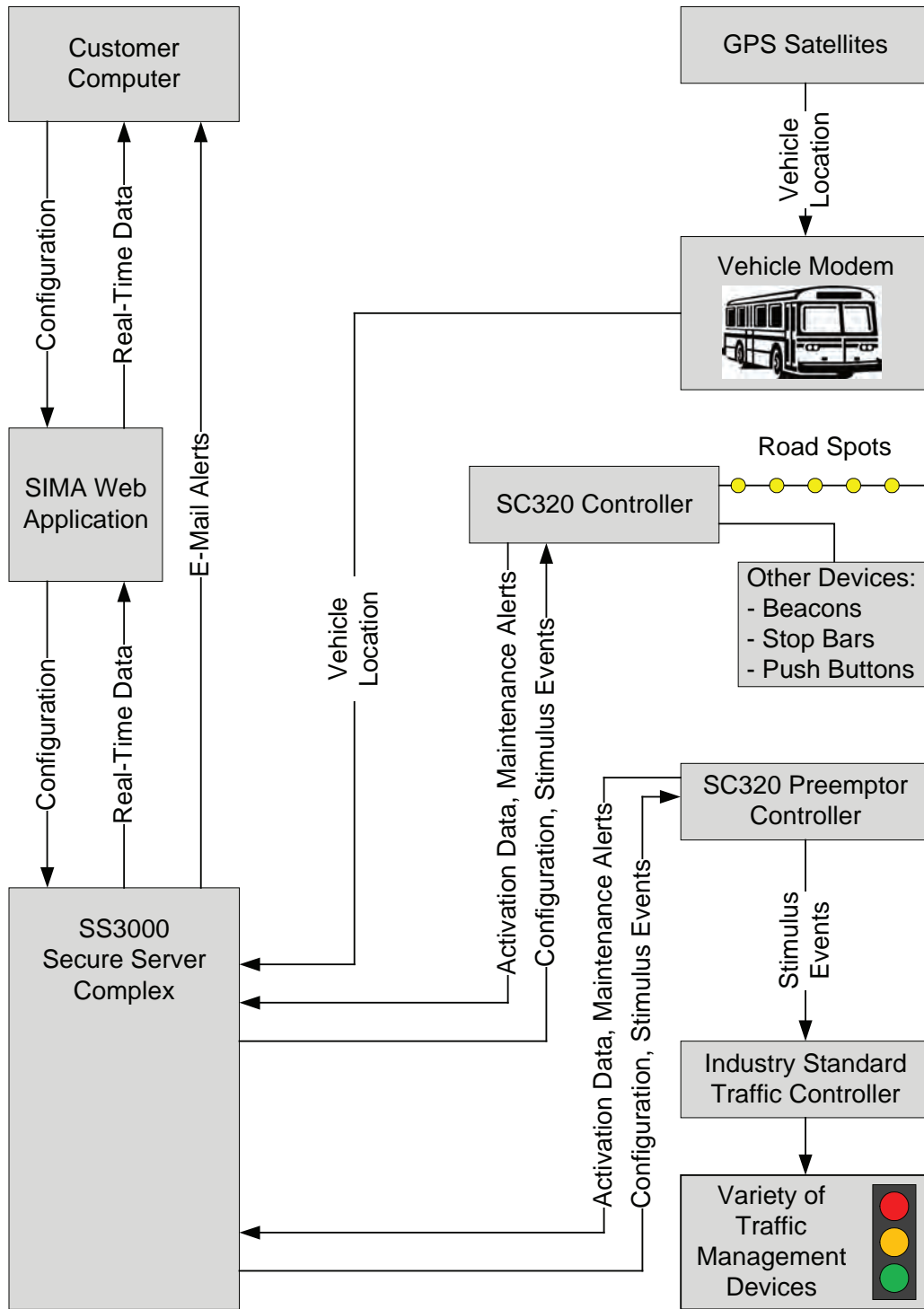


Figure 2: System Communication Overview



1455 Kleppe Lane
Sparks, NV 89431
888.520.0008 Toll Free
888.520.0007 Fax
www.spotdevices.com

Arrive Safely