



## GiveMeGreen!™

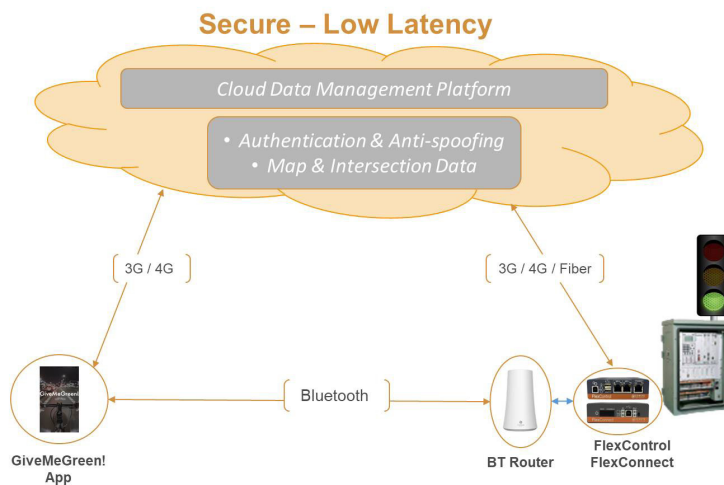
Sensys Networks' GiveMeGreen! system detects bicyclists at signalized intersections through a smartphone app. This detection initiates or extends a green signal phase for bicyclists, thereby eliminating the need to push any crossing buttons.



As the bicyclist with the GiveMeGreen! app enters a detection zone or crosses a tripwire as indicated by its GPS coordinates, a secure message is sent to the traffic controller. The traffic controller initiates/extends the green phase for the bicyclist and/or provides bicyclist presence warning signs for other vehicles. The GiveMeGreen! system can be extended to other transport modes (e.g., trucks, scooters).

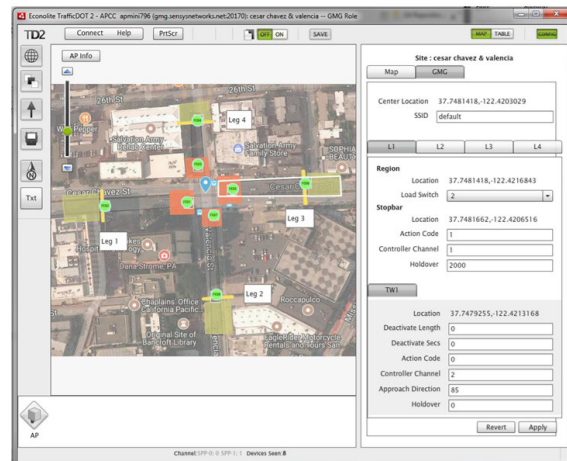
## System Architecture

The system is designed for low latency and highly secure communications between the smartphone app and the traffic signal controller supported by a cloud based data management platform.



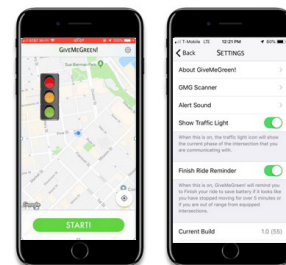
The download of map and key data by the app from the data management platform occurs over the cellular network. This data changes only periodically and is not impacted by the delays or outages of the cellular network. The more time-critical detection messages exchanged between the smartphone application and the FlexControl gateway occur over a low-latency secure Bluetooth connection. The FlexControl and FlexConnect modules interface with the traffic signal controller to relay detection events and monitor signal phase information.

The detection zones and tripwires are defined by the Sensys Networks configuration tool TrafficDOT2.



## Operation

When the app STARTS it downloads intersection maps and keys from the cloud related to its vicinity. The app uses the GPS coordinates of the smartphone to locate GiveMeGreen! equipped intersections and to signal over the Bluetooth connection when it enters a detection zone or crosses a tripwire. The app provides prompts for turn selection and visual/audible/vibration notification when the detection is acknowledged by the intersection. Other useful information (e.g., signal phase) can be optionally provided.



## Features

**Virtual Detection:** The detection zones and tripwires are configured online.

**Security:** All messages exchanged between the smartphone app and the traffic intersections are authenticated using public-key cryptography with periodically updated keys.

**Latency:** The direct Bluetooth connection ensures a low message latency.

**Range:** A detection range of up to 300 feet is supported.

**Reliability:** Functionality not impacted by delays or outages of cellular network.

## Benefits

**Mobility:** Agencies can use the bicyclist detection events to initiate or extend a green phase for the bicyclist.

**Safety:** Agencies can use the bicyclist detection events to provide bicyclist presence warnings to other vehicles.

**User Experience:** The app provides bicyclists with the prompts for turn selection and notifications for detection confirmation and signal phase.

**Security:** The system is secured against unauthorized usage and denial-of-service attacks.

**Flexibility:** The agency can easily add or modify detection zones and tripwires without road closures or new equipment.

**Expansion:** The GiveMeGreen! system can be extended to support other transport modes (e.g., trucks, scooters).

**NOTE:** An external Bluetooth Scanner device is available to extend the Bluetooth range of the smartphone.

## Specifications

### GiveMeGreen! Application

name	GiveMeGreen!
platforms	iOS, Android
download	App Store, Google Play
size	<30 MB

### FlexControl and FlexConnect Module

input voltage	<ul style="list-style-type: none"> <li>9-28 VDC: 5.5 mm x 2.1 mm barrel power connector, or</li> <li>9-28 VDC: pluggable terminal block (3 pos 5 mm) for 24-12 gage wires</li> </ul>
power consumption	less than 700 mW
dimensions	4.3" x 3.5" x 1.2" (10.9 cm x 8.8 cm x 3 cm) without mount
weight	8.5 oz (240.9 g) without mount
operating temperature	industrial -40°C to 85°C
mounting	DIN or bracket mount

### Bluetooth Router

input voltage	Power-over-Ethernet (PoE)
power consumption	less than 2.5 W
dimensions	6.1" (d) x 10.2" (h) (15.4 cm x 25.9 cm)
weight	28 oz (800 g)
environmental conditions	temp: -40°C to +65°C humidity: 0%-90% non-condensing IP rating: IP65
mounting	wall or pole mount

### Available Products

Order Codes	Description
SWL-GMG-SYS	GiveMeGreen! SNAPS System Software, per node, one-time fee
SWL-GMG-APP-BIKE	GiveMeGreen! Bike Application Software, per node, per year
BT-ROUTER	Bluetooth Router
FLEX-CTRL-M-E	FlexControl Module Enhanced
FLEX-CONN-M	FlexConnect Module

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