



# DSRC Equipped Portable Changeable Message Sign (20140050, Dr. Imran Hayee)

**IP Status:** Issued US Patent; **Application #:** 14/593,179

## Highway Safety Improved with DSRC

Dedicated short-range communications (DSRC) systems have been recently developed that allow for vehicle-to-vehicle (V2V) communication as well as vehicle-to-infrastructure (V2I) communication. Various safety techniques are being developed for DSRC-equipped vehicles, but despite an anticipated standardization of DSRC in U.S. automobiles, use is not widespread. DSRC as it stands today has the capability to improve safety on the roads, but these benefits are only available to car owners without onboard DSRC.

## Portable CMS Allows for Widespread DSRC Benefits

A portable changeable message sign (CMS) equipped with V2I DSRC capability has been developed. The CMS is brought to an area of dangerous congestion and placed roadside upstream from the End Location of Congestion (ELoC). The CMS periodically selects vehicles approaching the area of congestion and monitors the time of travel (TT), ELoC, and Start Location of Congestion (SLoC) via an ad-hoc V2V DSRC network of congestion-bound vehicles. This information is broadcast via the CMS display to cars without DSRC capabilities. By promoting safety amongst road users without DSRC, this technology is ideal for DSRC manufacturers and stakeholders in anticipation of the standardization of DSRC inclusion in U.S. road vehicles.

## BENEFITS AND FEATURES OF DSRC PORTABLE CHANGEABLE MESSAGE SIGN:

- Provides safety benefits of DSRC to non-users
- Serves as promotion of DSRC V2V inclusion in automobiles
- Monitors length of congestion stretch and travel time

**Phase of Development** Successfully developed and demonstrated in a controlled environment.

## Researchers

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