Roadside intelligent base station communication

What is an intelligent roadside unit?
Intelligent Roadside Units combine sensor fusion,V2I and wireless broadband with traffic control for V2x applications.

What is a roadside Unit (RSU) & a service provider?
As a user, it transmits and receives information from roadside units (RSUs) or base stations, and as a service provider, it can provide high-speed Internet access for passengers, execute data com- puting and processing as a computing node, and assist other wireless communications, as discussed later.

How can smart roads improve vehicle perception?
With the devel- opment of smart road, along which a large number of low-cost wireless beacons are deployed, it is imminent to use the smart road to assist vehicle perception and thus achieve the goal of immediate and accurate detection of the states of roads and traffic signal facil- ity by means of vehicle-road collaboration.

How to increase sensing robustness and sensing range of a single vehicle?
How to increase the sensing robustness and sensing range of a single vehicle is crucial to CAVs. On one hand, improving the sensing capa- bility of a single vehicle may be an alternative; on the other hand, leveraging multi-vehicle cooper- ative sensing technology can greatly improve the sensing capability.

Abstract Optimum frequency reuse patterns for roadside base station to vehicle communications in Intelligent Vehicle/Highway Systems (IVHS) are determined based on optimal delay/throughput and ...

The roadside unit (RSU), which enables vehicle-to-infrastructure communication, is essential for improving the communication performance of vehicular ad hoc networks. However, ...

This work proposes quality of service (QoS)-aware roadside base station assisted routing mechanisms to establish a routing path in IVC with the assistance of roadside base station. A link ...

A sensor data fusion module and communication technologies constitute the core of the intelligent roadside infrastructure unit. The development involves mechanical and electrical design as ...

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The marriage of sensing, analysis, control and communications offers great promise for Smart Cities through Intelligent Transportation Systems (ITS). Leading cities worldwide will employ ...

This paper proposes an efficient and low-complex channel estimation strategy for high-speed vehicular mmWave communication systems equipped with roadside IRS that can offer precise channel ...

For autonomous vehicles, it is essential to utilize vehicular wireless communications to exchange information with each other and with the roadside infrastructure to become communicating ...

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