P 2017). however, enhancing data collection, security and

Design, Architecture

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ctl { font-family: “ Times New Roman”; font-size: 12pt; }a: link { color: rgb(0, 0, 255); }IntelligentTransportation Systems is the application of Information andCommunication Technologies (ICT) as well as advance technology indata collection, storage, navigation and advance communication systemfor delivery of modern transportation system. The application ofthese technologies in transport is to alleviate challenges associatedwith traffic congestion, security, air and noise pollution. ITSintends to integrate technologies such as sensor, ICT and conceptsto achieve traffic efficiency, improve environmental quality, saveenergy, conserve time, and enhance safety and comfort for drivers aswell passengers(IIT Madras, 2017). However, enhancing data collection, security and storage for tacklingconcerns related to transport are among the goals of ITS(EBTC, 2012). ITSs are being deployed across the continents but the approaches maydiffer from country to another.

For example, The United States ITSprogram was created by Congress in the Intermodal SurfaceTransportation Efficiency Act of 1991, and is administered by the U. S. Department of Transportation (DOT). The NationalITS Architecture programwas aimed to facilitates the ability of jurisdictions to operatecollaboratively and to harness the benefits of a regional approach totransportation challenges and provides a definitive and consistentframework to guide the planning and deployment of ITS. The

programprovides deployment support for public agencies to develop, maintain, and improve ITS at regional level (DOT, 2017).

ITS uses advancedelectronics to improve traveller safety, decrease traffic congestion, facilitate the reduction of air pollution, and optimise fuelsconsumption (IEEE, 2014). However, as described by (SheraliZeadally, 2010)Vehicle Safety Communications (VSC) (2002–2004), (VSC-2)(2006–2009) were initiated by US with the objectives to measure howvital safety issues can be improved by the use of DSRC along withpositioning systems. Determine the minimum system requirement andassociated performance parameters for vehicle safety applications inconjunction with this DSRC system. Implement deployment models forselected communications-based vehicle safety systems. The work ofVSC-2 intends to realize common vehicle safety communicationarchitecture, such as the protocols, messaging systems and interfacesnecessary to accomplish interoperability among diverse vehiclemanufacturers. The work includes verification and implementationtesting of vehicle positioning technology in conjunction with DSRCtechnology to support a variety of safety related applications.

Theseapplications include warning messages for drivers of unsafeconditions and imminent collisions as well as road status. Application supports for real-time road congestion informationsharing, weather conditions, and other potentially dangerousincidents.