Title: Connected Vehicle Technology Development in Singapore

Singapore has recently developed the Smart Mobility 2030 plan intended to pave the way for a more comprehensive and sustainable ITS ecosystem in Singapore in the coming years till 2030. The Smart Mobility 2030 roadmap aims to move Singapore towards a “more connected and interactive land transport community”. Accordingly the roadmap integrated inputs from experts in government and industry to identify key focus areas. These focus areas comprise making our transportation-use safer, more interactive and better-informed. The roadmap’s focus areas will form the next phase of ITS in Singapore which will require innovations in Autonomous Vehicle, Intelligent Fleet Management systems, V2I communications, Traffic Control systems, Telematics etc. As part of the roadmap, Singapore will be embarking on its next generation Electronic Road Pricing system (ERP2), targeted to be fully operational in 2020. The system will heavily rely on Global Navigation Satellite System (GNSS) and V2X communications as key enabling technologies. Although the ERP2 system will be primarily built for congestion charging, electronic parking and transport data dissemination, the platform will be designed to enable many other ITS solutions. For example, with the next generation ERP2 system, location data could be utilized for smart nation planning, crowd-sourced data could be used to improve our commuting experience, etc. With the emergence of a nationwide connected vehicle infrastructure, it is envisioned that a multitude of applications and services would start to appear. These applications and services would then need to operate seamlessly in a cooperative manner while adhering to designated service priority within the limited allocated DSRC spectrum. To prepare for the eventual roll out of ERP2 and the future services that will operate on this platform, the Telecommunication Standards Advisory Committee (TSAC) of Infocomm Development Authority of Singapore (IDA) is currently standardizing the Dedicated Short Range Communication (DSRC) spectrum and protocols for Singapore. In this presentation we will cover a brief overview of Singapore’s Smart Mobility 2030 vision, a brief overview of the connected vehicle framework (ERP2), Singapore’s DSRC standardization activities and describe an example V2I service (Intersection Safety) that can ride on the connected vehicle platform. We will also briefly share some results that we have obtained from the Intersection Safety field trials carried out in Singapore.