

Innovation and Practice of TD-LTE for Intelligent Transportation Systems

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Intelligent transportation systems (ITS) have become a popular research topic to meet the increased demands of transportation safety, traffic efficiency, comfort in the journey and environment protection etc. ITS applications impose higher requirements on wireless communication systems. For example, safety-related ITS services must always be low latency and entertainment-related ITS services need high transmit rate. The ITS dedicated short range communications (DSRC) technology to support the safety-related application is still under developed. Long term evolution (LTE) is the next generation mobile communication systems and TD-LTE is the Time-Division Duplex (TDD) mode of LTE. TD-LTE offers an efficient communication platform for ITS information exchange, which can meet most ITS services requirements of latency, data rate as well as communication range. With the enhancement in network architecture, the enhanced TD-LTE systems can better support safety-related ITS application. With the enhancement in access schemes, the enhanced TD-LTE can achieve higher performance for high-speed IP based ITS application in hotspots. At last, two practical application scenarios of enhanced TD-LTE systems are given.