

# Smartphone Instrumentation for Insurance Telematics

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Smartphone-based insurance telematics or usage based insurance is a disruptive technology which relies on insurance premiums that reflect the risk profile of the driver; measured via smartphones with appropriate installed software. In this tutorial, a survey of smartphone-based insurance telematics is presented, including definitions; Figure-of-Merits (FoMs), describing the behavior of the driver and the characteristics of the trip; and risk profiling of the driver based on different sets of FoMs. The data quality provided by the smartphone is characterized in terms of Accuracy, Integrity, Availability, and Continuity of Service. The quality of the smartphone data is further compared with the quality of data from traditional in-car mounted devices for insurance telematics, revealing the obstacles that have to be combated for a successful smartphone-based installation, which are the poor integrity and low availability. The tutorial is supported by experimental validation, statistical analysis, and experiences from a recent insurance telematics pilot run in Sweden, including some 1,000 smartphone equipped insurance customers.