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The use of precision positioning to create safer transportation systems

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This study investigates the feasibility of augmenting GPS with alternative technologies for Precision Positioning Safety (PPS). The study looks at GPS along with the enhancements and amendments that apply to satellite based solutions. The study also looks at medium to short-range wireless solutions such as cellular, Wi-Fi, Dedicated Short-Range Communications (5.9 GHZ DSRC) and similar solutions. Since the study is focused on solutions pertaining to vehicular and transportation environments, we look at embedding positioning elements in the road such as Magnetic Guidance Systems or RFID. We also avoid solutions based on computer vision and image understanding as it is widely known to be more of academic research than applied solution. In this study we present the drawbacks of every proposed system, we define situation where every particular system underperforms and elaborate the downfalls pertaining to inherent characteristics of the proposed technology. Though, the report remains focused on the characteristics of each technology rather than how it works. This study includes market review and pays close attention to the impact of market capital on the evolution and potential of every technology. While we presume that the advantages of PPS are obvious, we felt it is important to highlight some of the potential use of PPS. The objective of this study goes beyond feasibility study to focus on the need to develop proof of concept, prototype demos and operational field testing. Those kinds of views will become clear by the end of the report.

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