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Economized Sensor Data Processing with Vehicle Platooning

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Abstract : We present vehicular platooning as a special case of crowd-sensing framework where sharing sensory information among a crowd is used for their collective benefit. After offering an abstract policy that governs processes involving a vehicular platoon, we review several common scenarios and components surrounding vehicular platooning. We then present a simulated prototype that illustrates efficiency of road usage and vehicle travel time derived from platooning. We have argued that one of the paramount benefits of platooning that is overlooked elsewhere, is the substantial computational savings (i.e., economizing benefits) in acquisition and processing of sensory data among vehicles sharing the road. The most capable vehicle can share data gathered from its sensors with nearby vehicles grouped into a platoon.

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