



## **AUTONOMY - Auction Based AI-Assisted Multi-Modal Traffic Management for Seamless Mobility**

Scientific Responsible  
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AUTONOMY proposes an auction-based traffic management paradigm enabled by vehicular communication to more fairly and efficiently allocate roadway space, perceiving drivers as rational, self-interested economic agents bidding for roadway use. In particular, the project seeks to develop auction-based traffic management schemes for mixed settings of legacy and connected and autonomous vehicle traffic, namely signalized intersection control, uninterrupted flow conditions and autonomous intersection management, thus covering a wide range of potential applications in urban traffic management. The project will leverage second-price auctions, heuristic optimization methods and reinforcement learning to develop new algorithmic frameworks for intersection control and cooperative traffic management. The impacts (including efficiency, equity, sustainability, safety) of the proposed schemes will be subsequently evaluated through different types of applications and scenarios, exploiting open-source traffic simulation platforms for traffic management. Research outcomes will then serve as the basis for scale-up impact assessment and knowledge transfer, through multiple dissemination and stakeholder outreach channels, also resulting in a set of recommendations and readily available tools.