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The Role of Communications in the Future of Urban Mobility

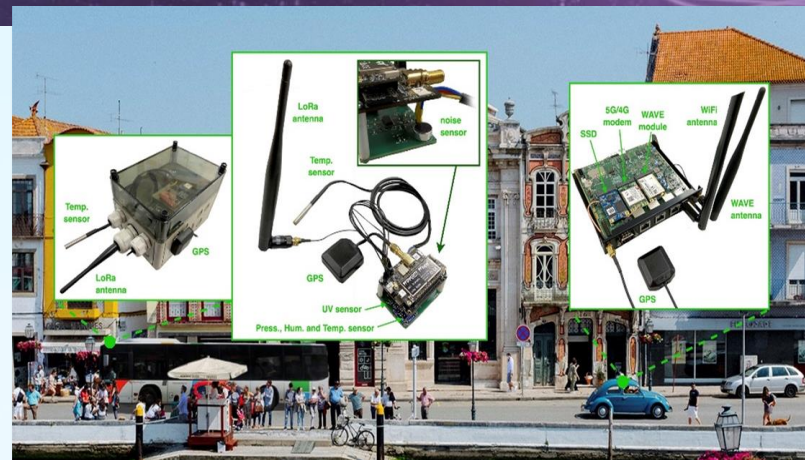
Future Trends



City Infrastructure

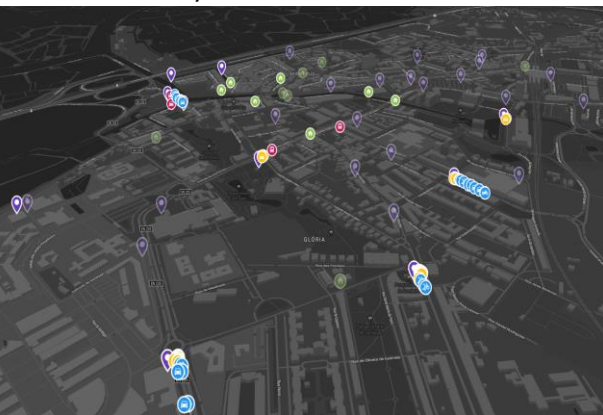


Smart Lamp Post (ITS-G5, C-V2X, 5G, Wi-Fi, LoRa)+mmWave+ sensors



Environment sensing, and OBU's installed on vehicles

<https://new.aveiro-living-lab.it.pt/realtime>
Free Technological Zone (ZLT-Aveiro)



Radars

Video Cameras

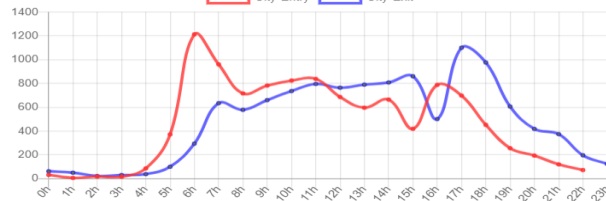
P3 - Ponte Dobadoura

Light

11-10-2021 ~ 12-10-2021

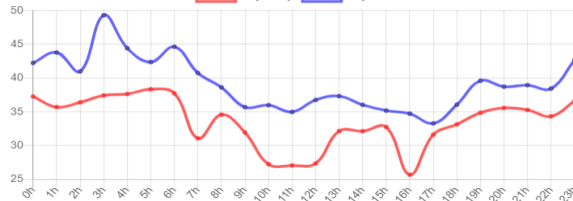
Average number of light vehicles

City Entry City Exit



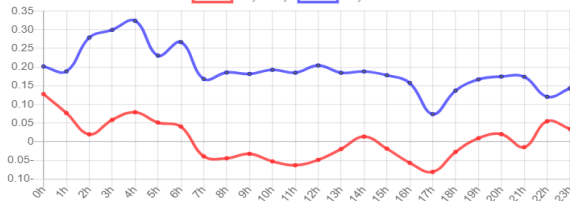
Average speed of light vehicles

City Entry City Exit



Average acceleration of light vehicles

City Entry City Exit

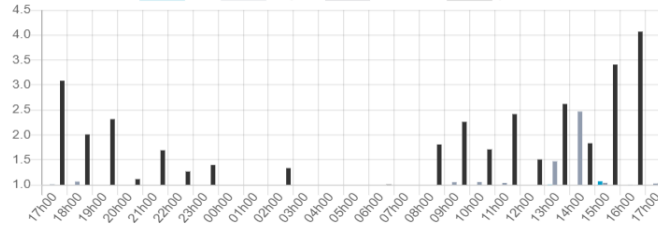


P1 - IT

11-10-2021 17:46:07 ~ 12-10-2021 17:46:07

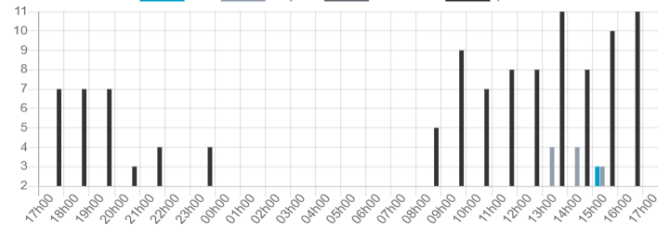
Average Instantaneous Count

car bicycle motorbike person

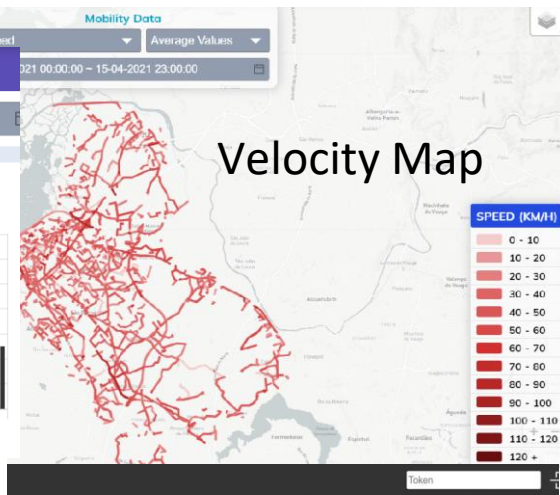


Maximum Instantaneous Count

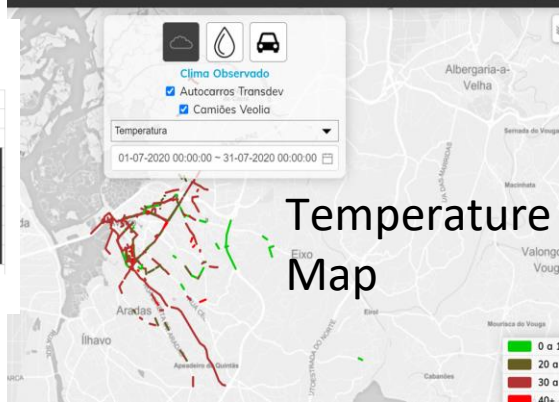
car bicycle motorbike person



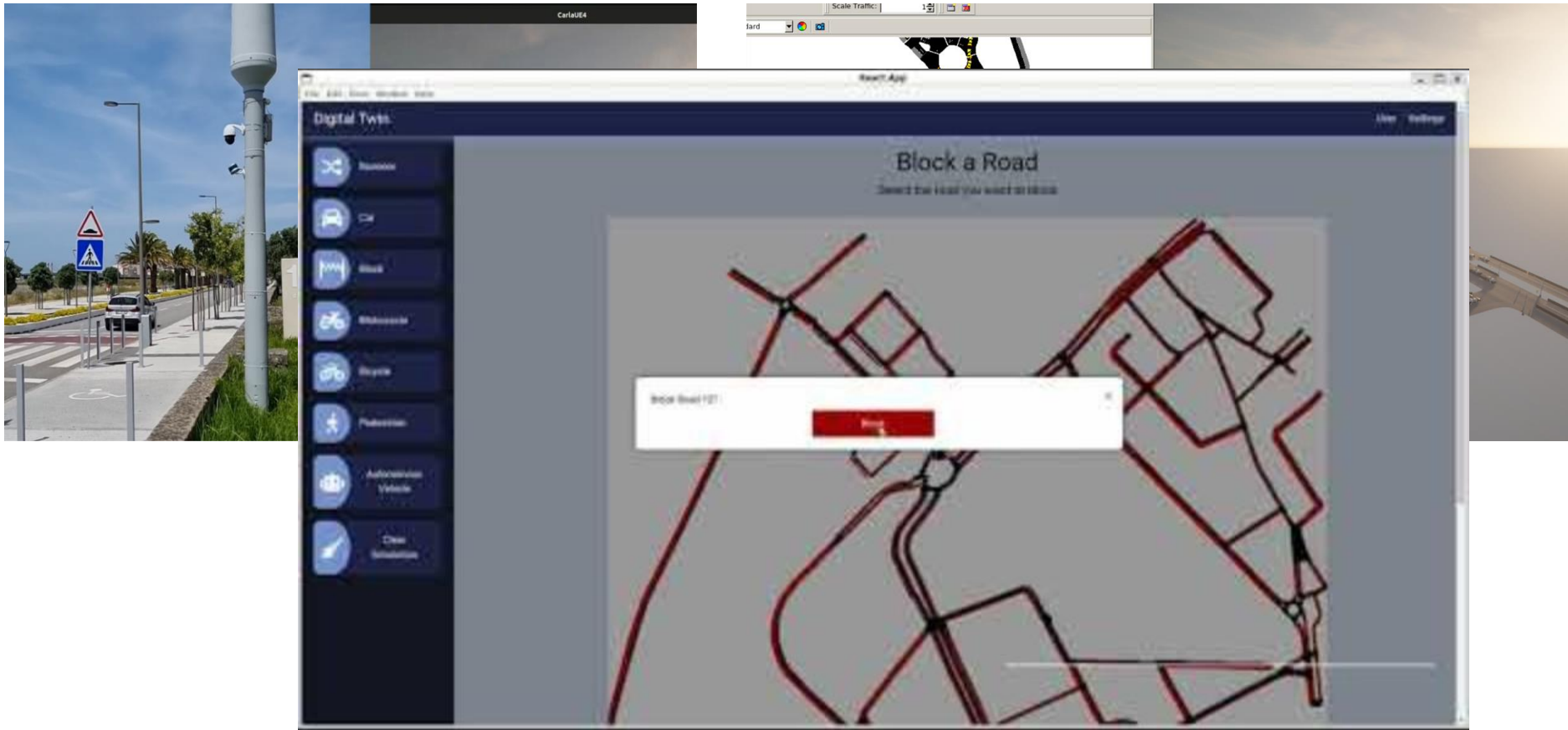
Velocity Map



Temperature Map



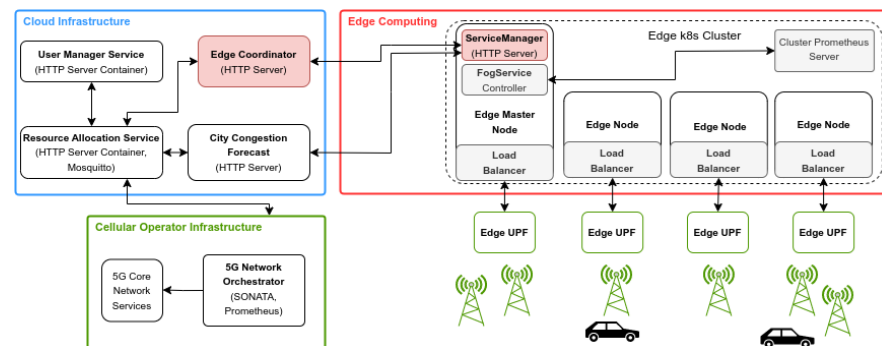
Mobility Digital Twin



Moving Services in the Edge

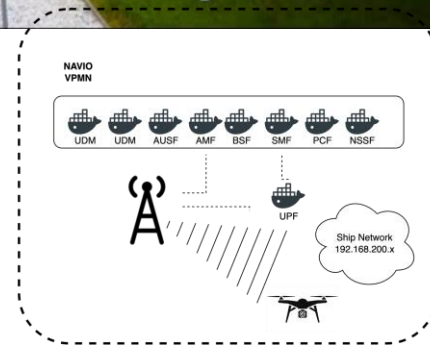


Edge Computing and 5G Network Integration

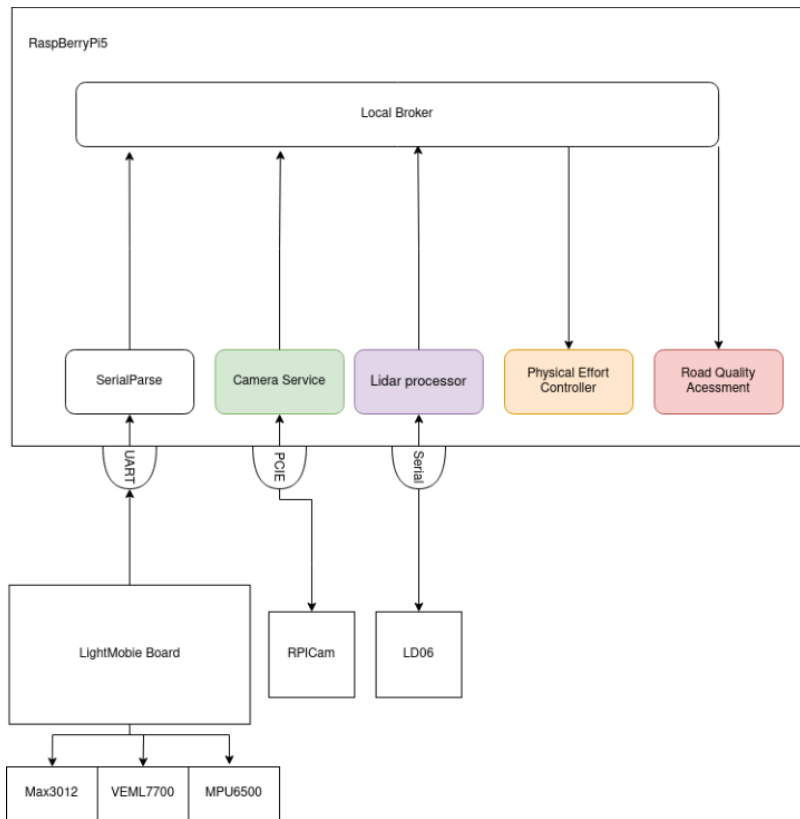


Moving Base Stations as UAVs

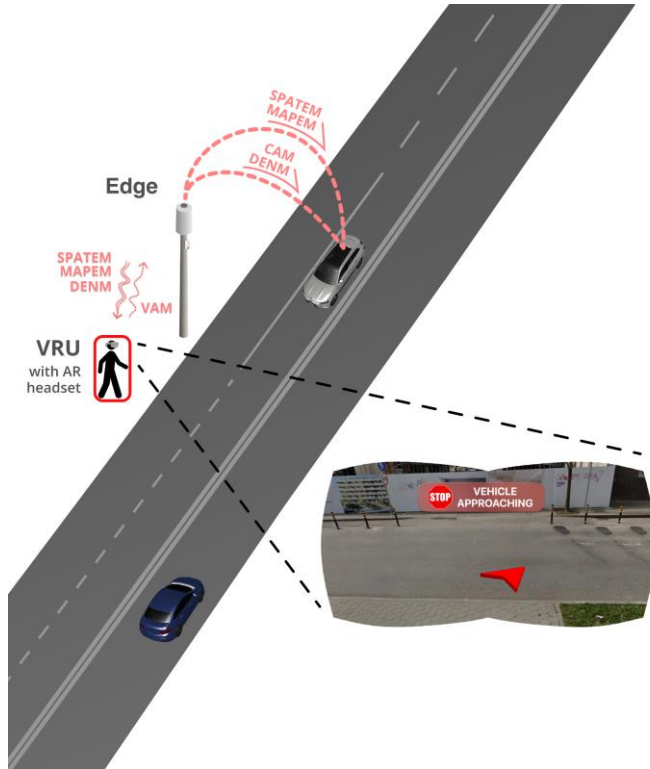
Drone-Assisted Non-Public 5G Networks using Wireless Backhaul



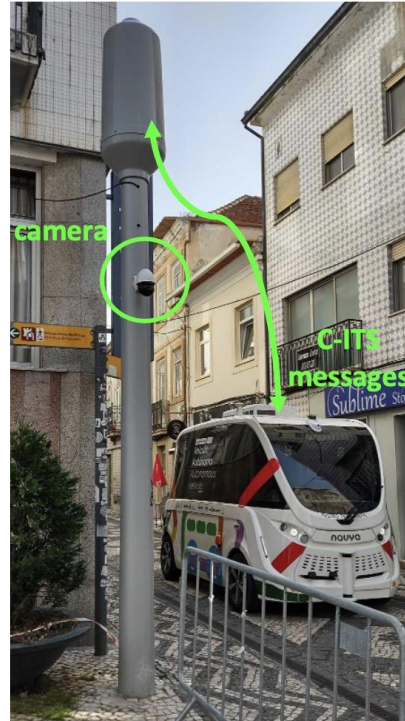
Connected Bicycles



Wireless and Augmented Reality for Safety in the Roads



Wireless Communications in Autonomous Vehicles



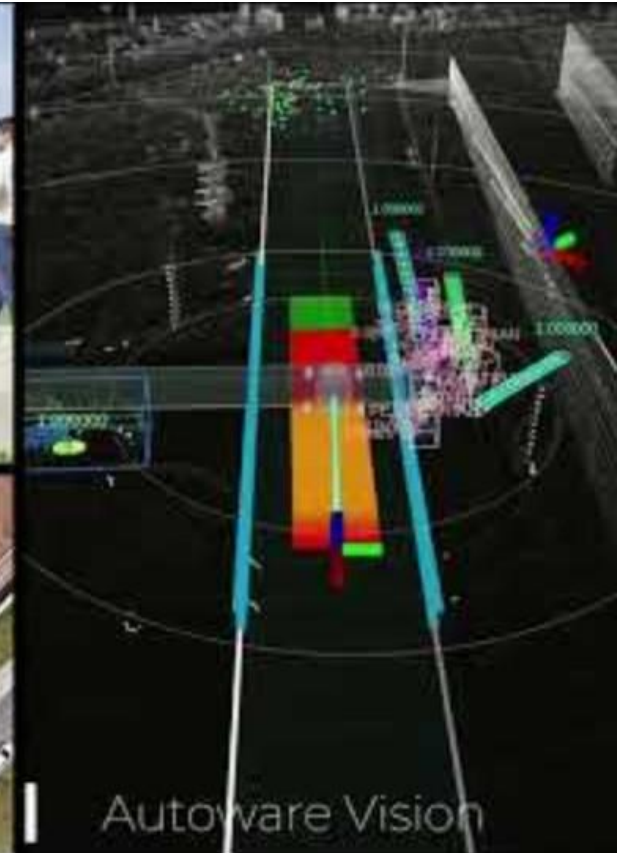
Wireless communications in self-driving and cooperative perception



Wireless communications in self-driving cooperative maneuvers



Wireless communications in self-driving and cooperative perception



Thank you!
Obrigada!

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