



Smart Cities

A common dilemma with revolutionary technology such as CAV and V2X is how to deploy the infrastructure necessary for it to work, before it becomes available. Cohda's Smart City Architecture solves this dilemma for cities preparing for a CAV future with a range of applications that can be deployed today, providing immediate benefits while preparing for tomorrow.

Green Wave and Signal Priority are applications that directly and measurably improve the functioning of cities, delivering efficiencies not only to heavy vehicles, public transport and emergency services, but to all road users and the environment.

Cohda's Smart City solutions make sense now, while making preparations for future needs.

Smart City Solutions

Smart City Architecture

Connected and autonomous vehicles will deliver enormous benefits to cities, but how do cities pay for the vital infrastructure CAVs need before they are even available? Cohda's range of foundation applications can be deployed today, offering significant benefits immediately.

Signal Priority and Green Wave are applications that give preference to freight vehicles, buses and emergency services, and offer heavy vehicles the opportunity to request a green light extension for up to three seconds as they approach an intersection.

Analysis shows an immediate benefit when this system is deployed along freight corridors. In trials involving three major corridors, 120 traffic signals and 115 freight vehicles, travel times were reduced by 25%. It's not about giving trucks preferential treatment – cars on these routes actually saw an even bigger improvement with travel times cut 27%.

Reducing stoppages for the heaviest and slowest vehicles on the roads reduces congestion for everyone, saving time, improving air quality and reducing fuel usage. This simple application makes our Smart City Architecture worth doing now, with the bulk of the benefits still to come as CAVs become widespread.

MK5 OBU

Cohda's fifth-generation On-Board Unit (OBU), the MK5 is a small, low-cost, rugged module that can be retrofitted to vehicles for aftermarket deployment or field trials, and can also serve as a design reference for Smart City deployments.

The MK5 exchanges data at high speeds over extended

distances, providing class-leading reaction times to potential hazards and safety-critical scenarios. In challenging outdoor conditions where no line-of-sight is available, its radio performance is unmatched.

MK5 RSU

Built with the same chipset as the MK5 OBU, the MK5 Road-Side Unit (RSU) is a rugged outdoor unit with integrated dual antennas, housed in a NEMA 4-standard weatherproof enclosure.

Designed for Smart City deployments, the MK5 RSU offers exceptional range and coverage, and a single, inexpensive, self-contained unit can cover all approaches to an intersection. It's available in mains and Power over Ethernet (PoE) variants, and is also available as a reference design for developers of Smart City infrastructure.

V2X-Locate

Typically, GNSS positioning performance degrades in areas such as urban canyons, tunnels, parking garages, and any other compromised sky views, resulting in unpredictability in determination of vehicle position. The utility of V2X-Locate is particularly evident in such GNSS challenged locations.

V2X-Locate uses ranging measurements to fixed RSU's to enable enhanced positioning accuracy. The ranges from spatially separated RSU's are fed into Cohda's enhanced V2X-Locate positioning engine to accurately position vehicles equipped with OBU's. Through the advanced processing capabilities of Cohda's software designed radio, the V2X-Locate solution is able to calculate a true line-of-sight path regardless of the existence of multipath signals, allowing the vehicle to know its position with accuracy <1m 95% of the time.

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