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Planes, Trains, Automobiles....and Plasma Silicon enabled Small Cells

Could these all be part of a multi-hop HetNet?

The growth of demand for data shows no sign of levelling out. When Ultra Reliable Low Latency Communication (URLLC) services become available it's reasonable to assume UHD video on demand services, video games and other data hungry applications will use them and users will come to expect widespread availability on their mobile devices.

This will include the time we spend working or relaxing on planes, trains and in automobiles. Planes will need to be connected air to ground or to satellite backhaul, trains to track-side base stations and Connected and Autonomous Vehicles (CAV's) will need high levels of reliable low latency communications, as well as radar and other sensors. CAV's will need to communicate with each other, and to the network constantly and reliably. CAV passengers will want high quality, low latency, high bandwidth services to make use of their travel time.

CAV's will be Small Cells on wheels acting as relays and clusters in a multi-hop HetNet with street furniture mounted small cells. They will increase the density of available cells for users improving throughput and service availability. Connectivity will extend beyond smart cities with cells mounted on motorway signage and gantries.

The challenge is interference mitigation. There is a need for fast steering beams, from compact low profile structures that switch in nanoseconds from Omni "sniff mode" to a deliver a pencil beam where it is needed and track the user until the next hand over. Plasma Silicon offers the solution. Compact, no moving parts, wide field of view, fast acting, long range beam forming and steering antennas. This is not new to Plasma Antennas, we have been building rolling meshes for defence applications for over a decade.

We are also working on scanning radar the transport industry. All of the properties that make Plasma Silicon valuable to telecommunications apply to scanning radar; low power consumption, low cost, compact size, no moving parts, long range, wide field of view. Plasma Antennas are working with BBIG (Blue Bird Innovation Group) to bring to Plasma Silicon technology in to the transport sector as it progresses through the advancing levels of driver assistance to reach full autonomy.



Images Courtesy of BBIG: Note the utility long distance collection and delivery AV (bottom left) has glass panels mimicking windows because research shows the public are unsettled by vehicles with no windows.

Interested? If you'd like to learn more about Plasma Antennas and our ground-breaking technology get in touch, e.mail info@plasmaantennas.com