Regional Technology Development Site (RTDS) Case Study

Ottawa L5 and SmartCone Technologies Inc.

Background on the Project

SmartCone Technologies has partnered with Ottawa L5, the largest secure test facility for CAVs in Canada.

SmartCone Technologies Inc. is a unique data sensory company that commercializes new Internet-of-Things (IoT) technologies powered by a wide array of sensors, cognitive edge computing, sensor fusion and artificial intelligence (AI) analytics. TheSmartCone ™ can function as a fixed or portable surveillance, situational awareness and communications system, equipped with multiple sensors and devices to monitor indoor and outdoor environments.

TheSmartCone™ is being deployed at the site for traffic flow analysis and prediction as well as high tech detection with early warning system for on-road conditions, using our modular sensor platform with edge data processing capabilities.

The Ottawa L5 site is facilitating the real-time testing of how SmartCone's smart city applications work with full-scale autonomous systems.

A Description of the Support Invest Ottawa/Ottawa L5 have provided

Based on the opening of the Ottawa L5 private testing facility in the spring of 2019, SmartCone are benefiting from being part of Ottawa's connected and autonomous vehicle ecosystem through integrated technology on site at the Ottawa L5 campus. Through interactions and collaborations with companies that use the Ottawa L5 site for their own testing or introductions made by Ottawa L5 to companies, government partners, post-secondary institutions and more, during visits and on-site demonstrations, SmartCone is evolving their relationships and technology.

TheSmartCone™ is currently installed at the Ottawa L5 private testing site. In partnership with Ottawa L5, SmartCone have also taken part in over six demos on-site through the support of Invest Ottawa to include high-profile introductions to potential partners and clients such as auto manufacturer Ford Canada or over 50 invaluable business connections with other leaders or other small and medium sized businesses. Invest Ottawa has also provided valuable mentorship in key areas for development, valuable media coverage including the Ottawa L5 launch which benefited from a global-reach and opportunities to open up new international markets for SmartCone.

Ottawa L5 provides an invaluable real-time location with infrastructure where potential customers can be toured to show them how SmartCone technology can work in real-time.

Because of the relationship, SmartCone has been able to leverage the Ottawa L5 in our bids to win contracts with municipalities including an opportunity with like the Town of Whitby. The partners are currently testing all use cases at Ottawa L5 for the project. In partnership with the Town of Whitby, Durham Region Transit, Nokia, Aurrigo and Blackberry QNX, SmartCone has

provided an autonomous electric shuttle solution on a public road shuttle route moving passengers from the Whitby GO-Train station along a two-kilometer route to downtown Whitby, ON. TheSmartCone™ will be deployed along the route interacting with the shuttle, traffic lights, pedestrians and cyclists with a primary focus on safety.

Current testing at Ottawa L5 includes:

Vehicle-to-Infrastructure

- V2-Smart Crosswalk alerting drivers and VRUs,
- V2-SmartCones including torches and possibly non-line of sight and navigating a traffic accident or temporary road closure,
- V2-traffic light (DSRC & C-V2X) with and without SmartCones (Saravi hybrid RSU and onboard units).

Vehicle-to-Vulnerable Road Users

- V2-VRUs (audible messages to VRUs on shuttle directions/ intentions (i.e. turning or going straight through an intersection),
- V2-SmartCone Torches (visual and audible torches with signage – shuttle approaching when flashing, etc.),
- V2-VRUs – shuttle turning right along a bike lane (visual and audible),
- Intelligent Traffic Signs.

Other Testing

- Shuttle Testing – HD Mapping,
- Interoperability testing – private LTE, analytics, SmartCones, torches and DRSC and Cellular units and shuttle software (wireless communications with fibre backhaul), etc.,
- Performance Testing (SmartCone with DSRC and Cellular units vs. direct connection to traffic lights, DSRC vs. Cellular (LTE), etc.,
- Cyber Security including Public Key Infrastructure (PKI),
- Nokia Scene Analytics Testing (e.g. near misses, VRUs, etc.),
- Additional Shuttle Devices,
- Winter road testing – ice & snow.

Testimonial About the Value of the Partnership,

“Having a place like the Ottawa L5 in our backyard is priceless. To be a part of such a ground-breaking and industry-leading project helps to show the versatility of our platform in a real-world environment,” says Tenille Houston, Chief Communications Officer, SmartCone. “We have received press, mentorship, and introductions with industry leaders that came to us as opposed

to having to seek them out. Our reach has expanded exponentially in such a short period of time and we are thankful for the support."

Outcomes to Date

As the ecosystem grows because of the leadership Ottawa L5 provides, outcomes to date have included strategic discussions and collaboration at Ottawa L5 with key autonomous vehicle partners. Collaborations have included:

- private sector meetings with Transport Canada, Nokia, Blackberry QNX and more have led to strategic collaborations,
- extending market-reach through meetings with companies such as Accenture to discuss working together and opening-up huge global opportunities, and
- meeting with the Government of Canada on multiple occasions at demos has led them to collaborations with one-on-one support helping us grow.

What the Future Holds

In the future, SmartCone hopes to validate new R&D solutions utilizing the Ottawa L5 as a testing grounds. Through the testing and collaborations being formed, SmartCone anticipates that the value of the data available at the Ottawa L5 site will only grow and that because of the partnership new business development opportunities will keep coming.

SmartCone also hopes that OttawaL5 will become the headquarters for their AutoGuardian by SMARTCONE division to focus solely on the transportation/smartcity space.