



ITS Canada 2018, Niagra Falls

Potentials of a Centralized Real-time Traffic Management System for CAV Applications

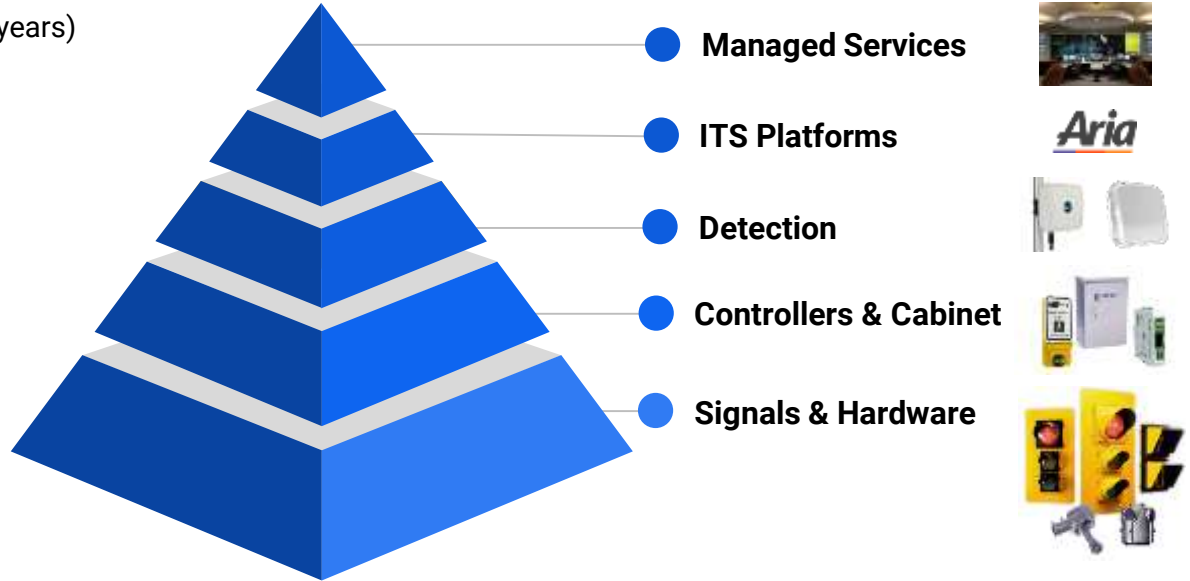


Fortran Traffic Systems Limited

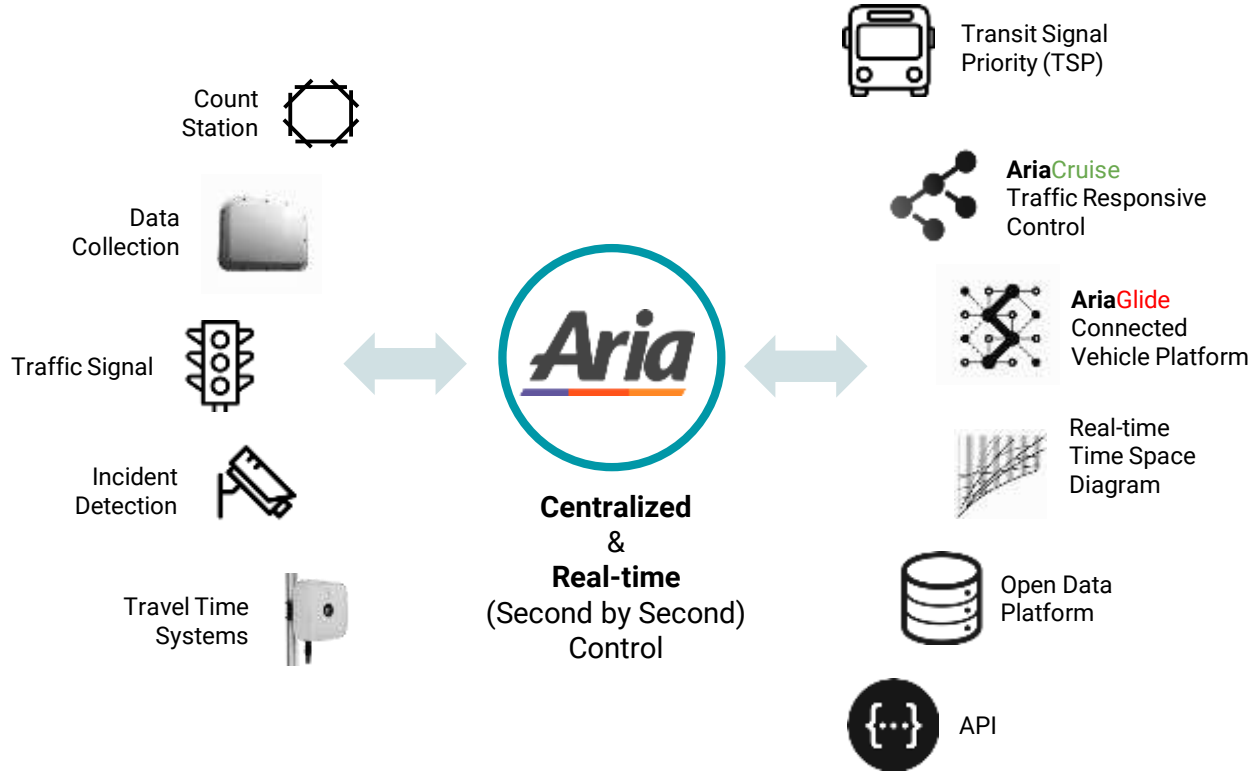
06.18.2018

Company Background

- Parent company is Guild Electric (60+ years)
- Founded 1979 (38+ years)
- HQ Based in Toronto, ON
- Western Office in Surrey BC



Aria Transportation Management System



Aria Transportation Management System



Intellight



Peek

NTCIP-Compliant
Controllers
Support



McCain



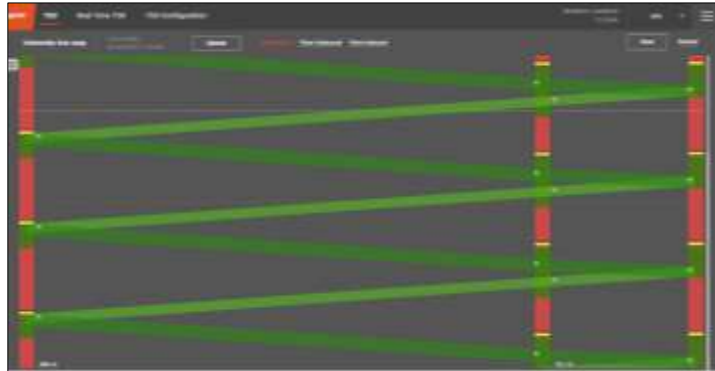
Econolite



Real-time Monitor



Real-time Maps

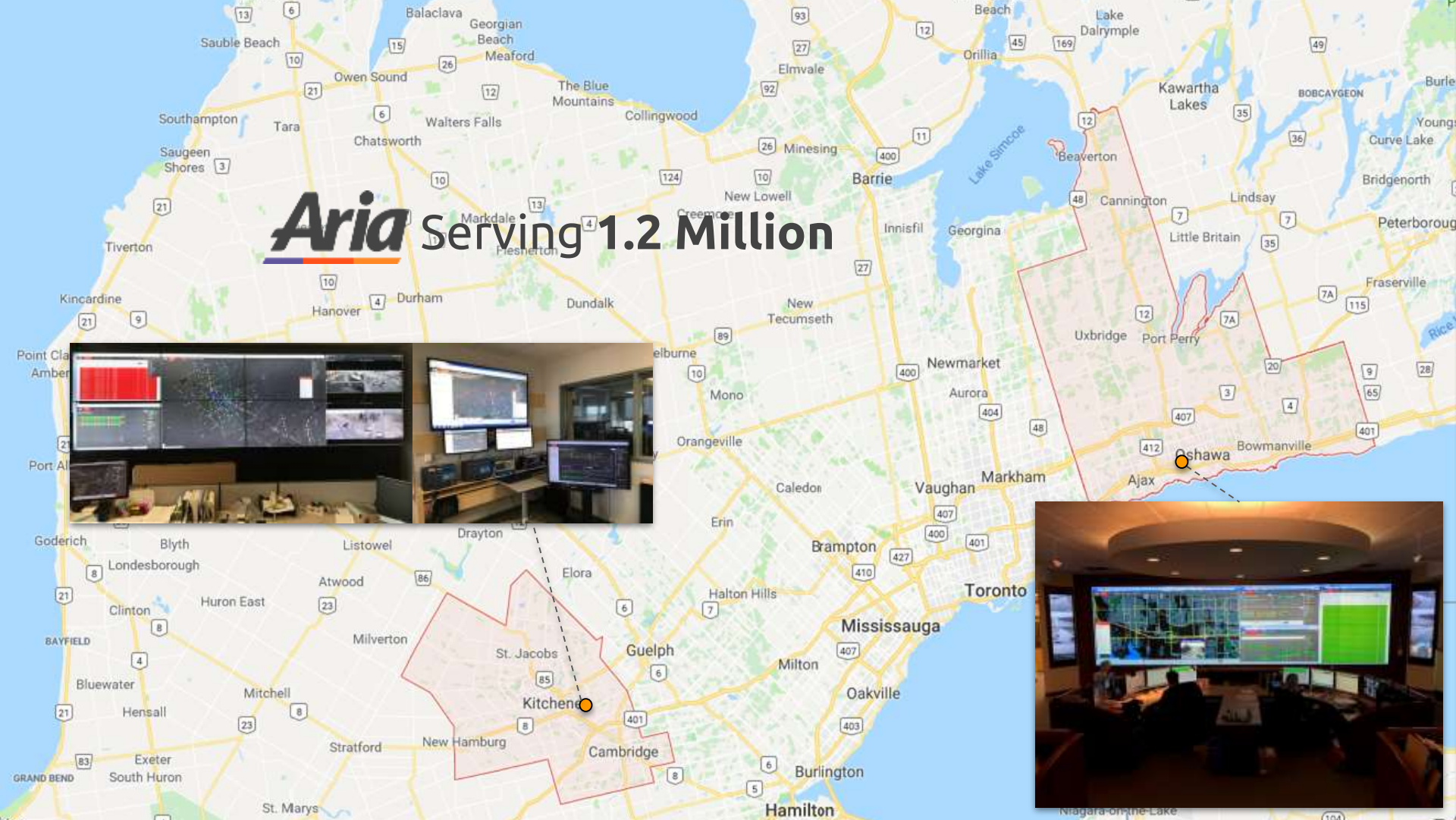


Real-time Time Space Diagram (TSD)

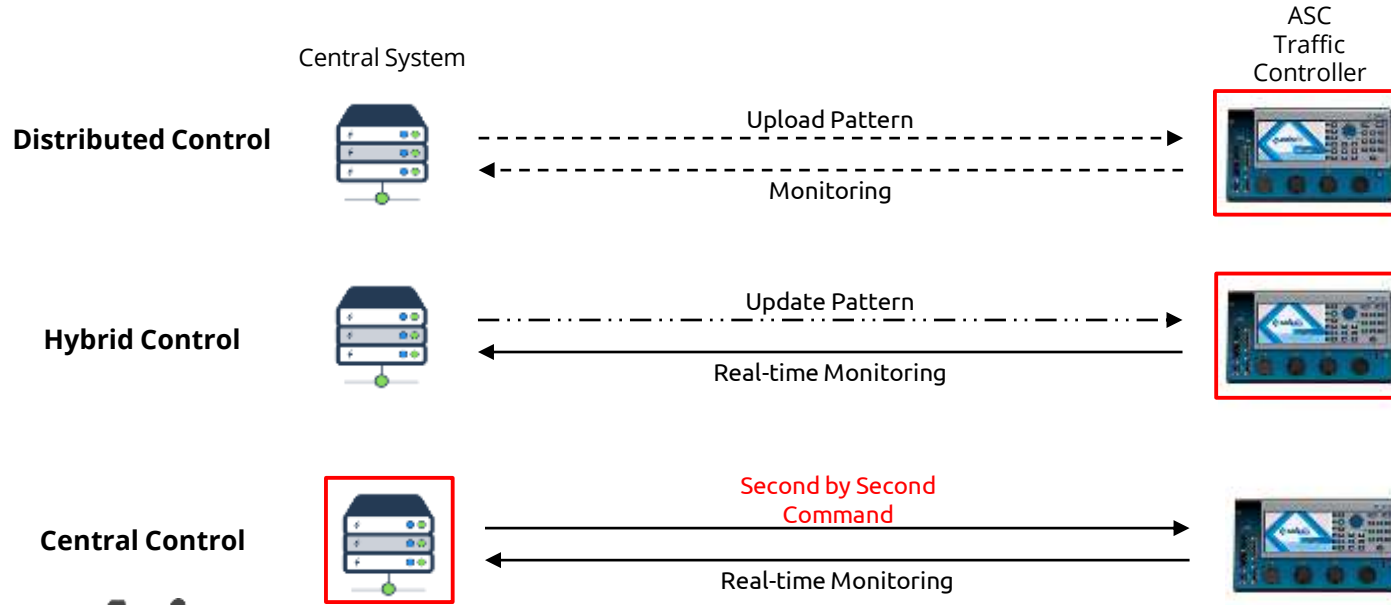


MOE Dashboard

Aria Serving 1.2 Million



Distributed vs. Central Control



Aria

AriaGlide CAV Platform

Infrastructure to Vehicle (I2V)

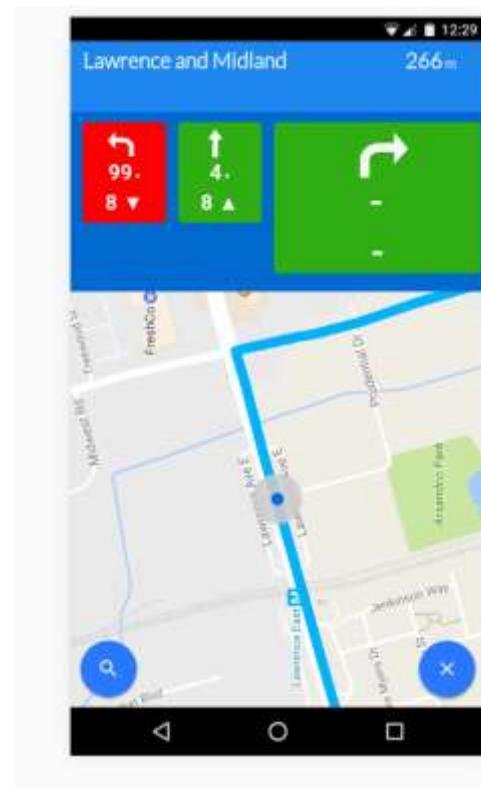
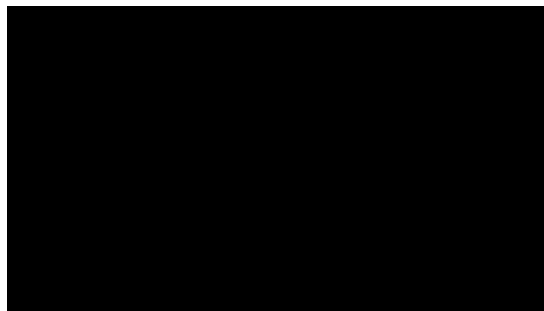
Infrastructure communicates the traffic signal timing of the approaching intersection to the vehicle.

Vehicle to Infrastructure (V2I)

Vehicles will communicate the location and speed with the Central Platform every second.

7% fuel economy benefit

22% fuel economy benefit for self driving cars



Glide Pilot Challenges

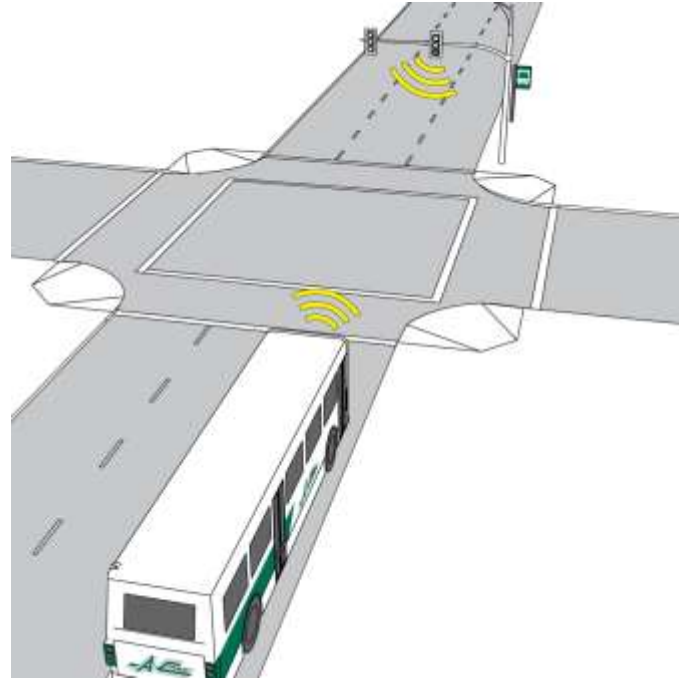


Signal Priority Benefits

Transit Signal Priority Benefits:

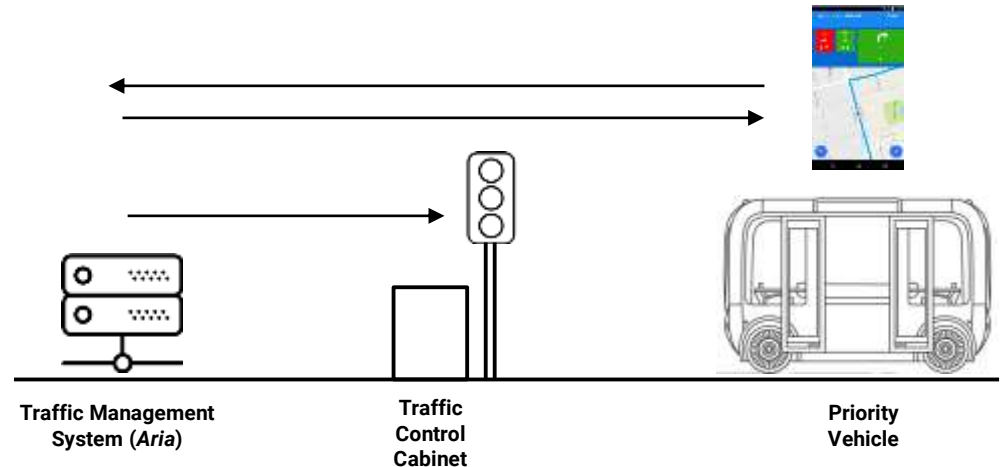
- Reduction of bus travel times (**10%-25%**)
- Increased schedule reliability
- Increase in ridership and customer satisfaction
- Reduction in operating costs
- Increased return on investment
- Lesser fuel consumption
- Lesser Greenhouse Gas Emissions
- ...

Emergency Vehicle Preemption (EVP) reduces intersection crash rates by up to **70%** and improve the emergency response times by up to **25%**.



Connected Vehicle Signal Priority

- Significant **decrease in capital** and running **maintenance** costs
- Easy **citywide expansion**
- **Holistic analytics** both on transit and intersection performance
- **Controller agnostic** solution
- Additional **mobility improvements** due to **communication of signal timing** to the driver
- **Improvement of safety**



Thank you