Connected Vehicles: Virtual Traffic Lights

Neha Sharma

23rd March 2018

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London, 1869

Cleveland,1914

New York, 1918

Auckland, 1947

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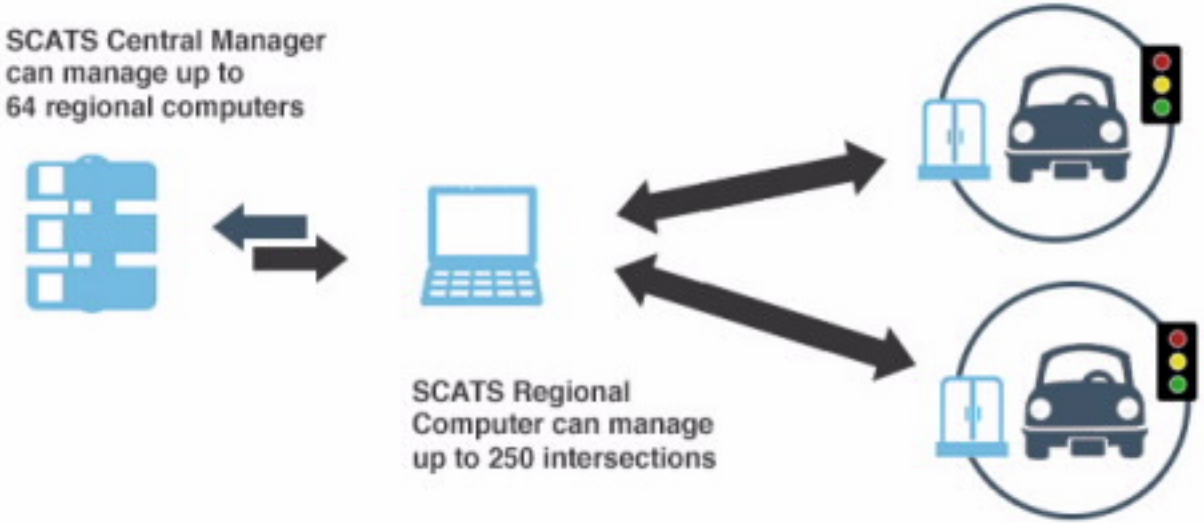
SCATS



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SCOOTS

UTOPIA

MOTION

OPAC

RHODES

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VIRTUAL TRAFFIC LIGHTS

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Giving additional life to people!

Dr. Ozan Tonguz of Carnegie Mellon University

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Connected Vehicles- V2I

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Connected Vehicles – V2I

- Speed Warnings
- Incidents / Road Works Warnings
- Audi Traffic Light Assist

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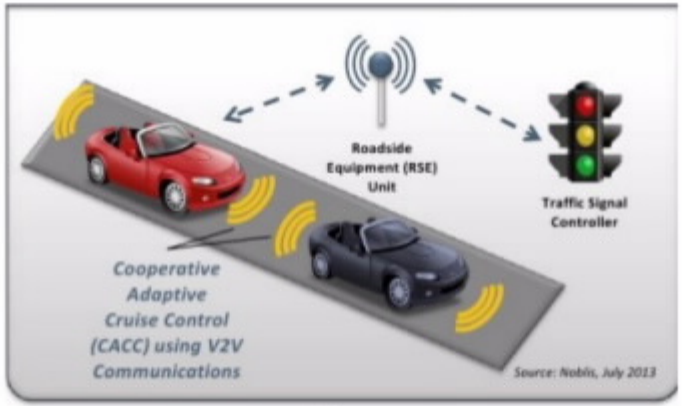
Connected Vehicles- V2I

"Killer App": Green-light optimal speed advisory



U.S. Department of Transportation

GLOSA will allow drivers to set optimal green-signal speed.

mentor embedded

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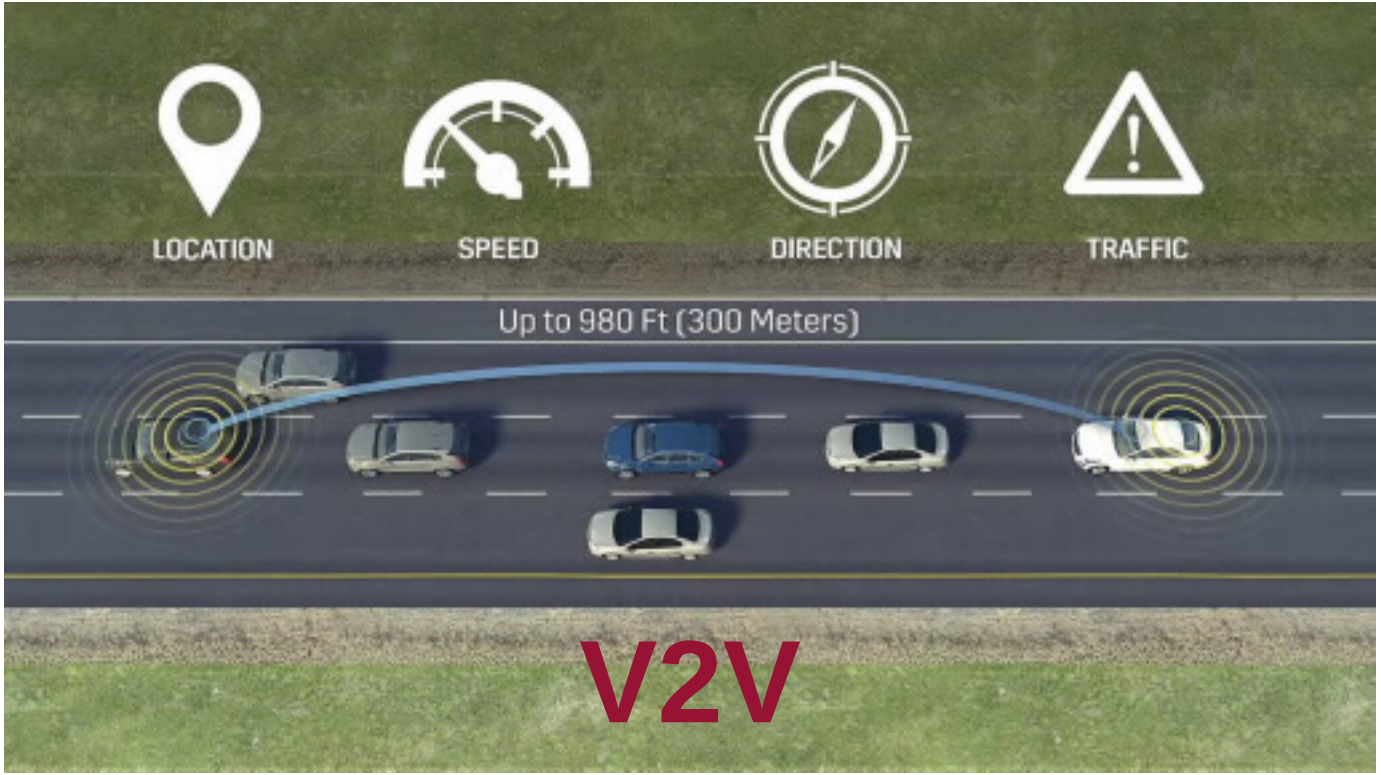
LOCATION
SPEED
DIRECTION
TRAFFIC
Up to 980 Ft (300 Meters)
V2V

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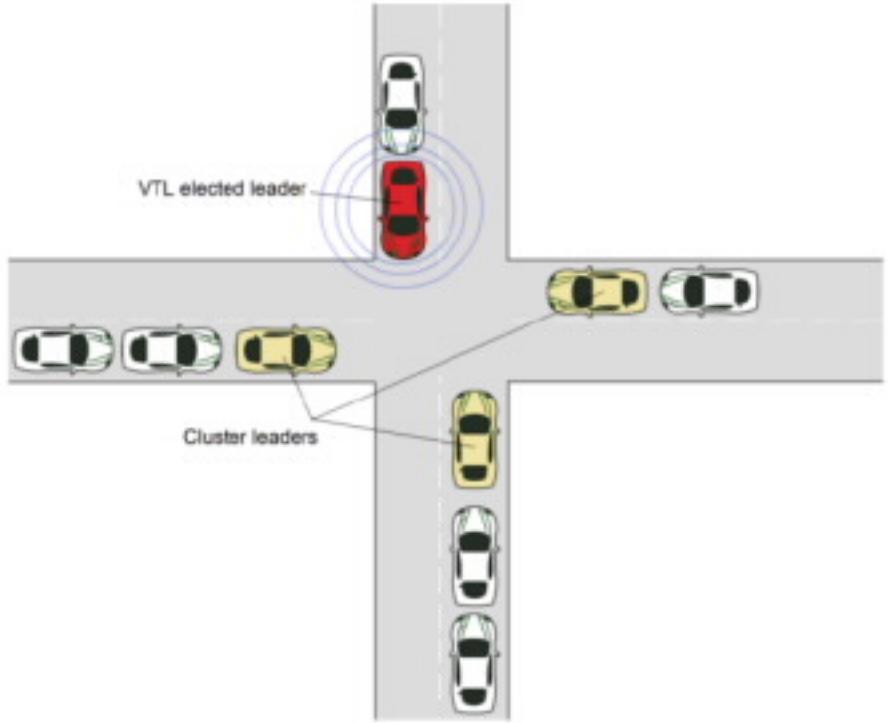
Virtual Traffic Light



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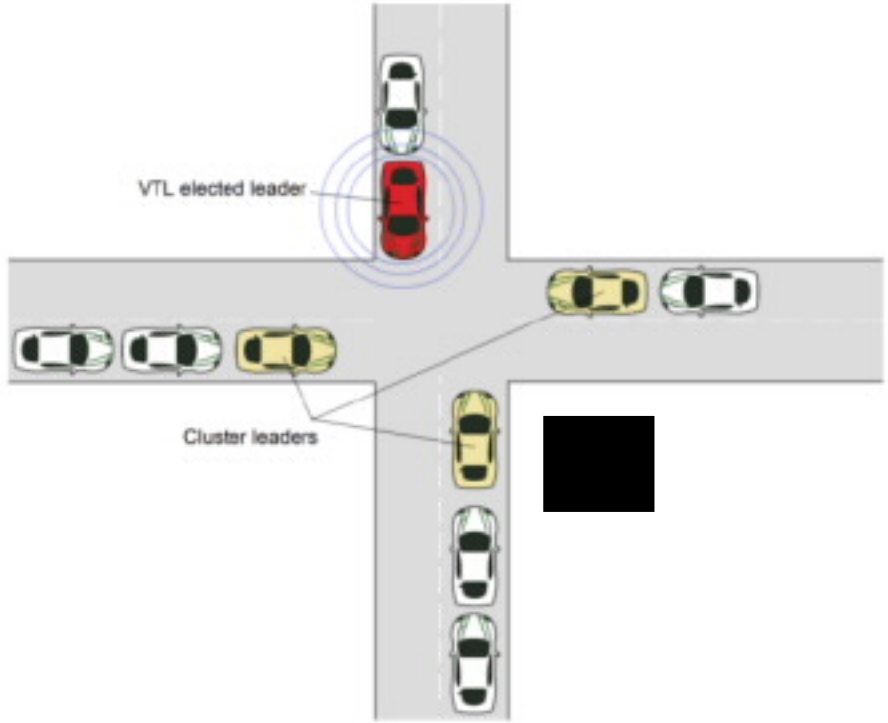
Virtual Traffic Light



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Virtual Traffic Lights

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Benefits

- Efficient use of green time
- Every conflicting node becomes signalised in presence of a connected vehicle
- Red light violation warning
- Energy efficient intersection

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Hindrance to driving?

devices by Virtual Traffic Lights. We virtually prompt the driver with information related to traffic control and evaluate the user interface system with respect to safety and user acceptance to identify possible negative effects on the primary driving task. Results are promising since the driving performance using Virtual Traffic Lights did not significantly differ from the performance using conventional devices.

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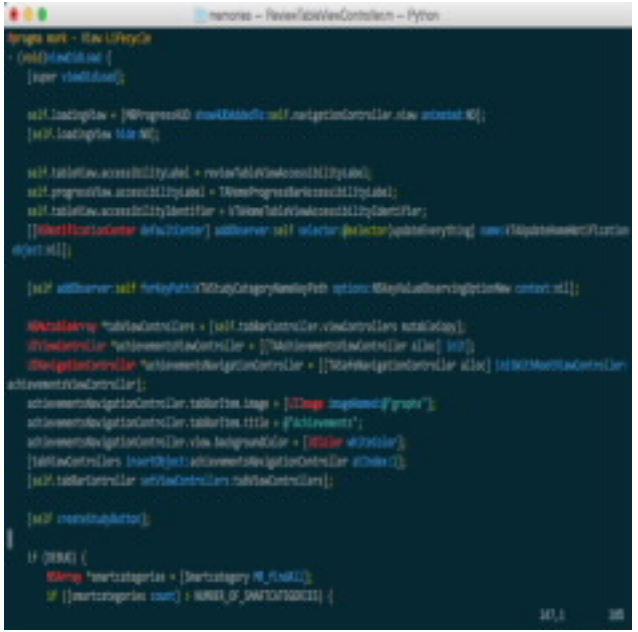
We can model them!



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And we are modelling them!

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Local Published Literature

- Virtual Traffic Lights + : A Robust, Practical and Functionally Safe Intelligent Transportation System
  - Transport Research Board
  - Functional Safety of VTL algorithms

VTL

- The proprietary technology (U.S. Patent pending) developed by VTL is proven to increase the traffic flows in urban areas by **60%** during rush hours which seems pretty significant and revolutionary.

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Pedestrians and Cyclists

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Thank you!

03/2018

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