

Modeling, Simulation and Testing panel



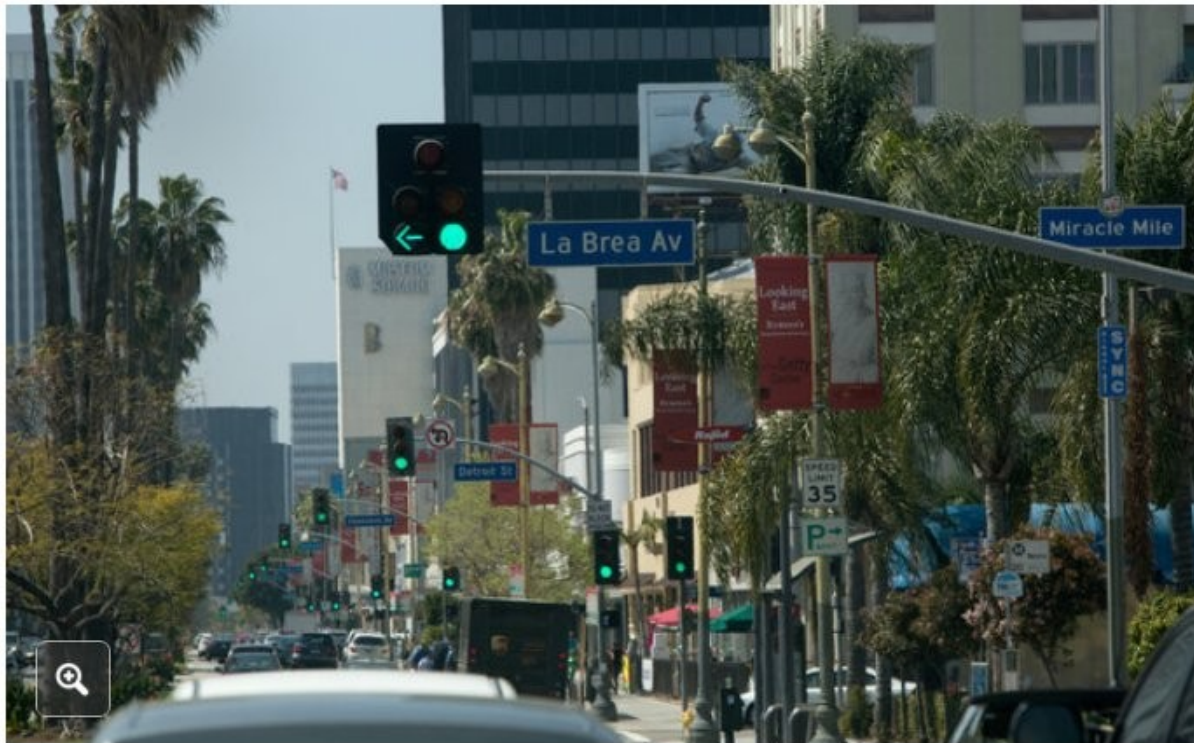
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May 25, 2015



Whole-system optimizations are newly possible

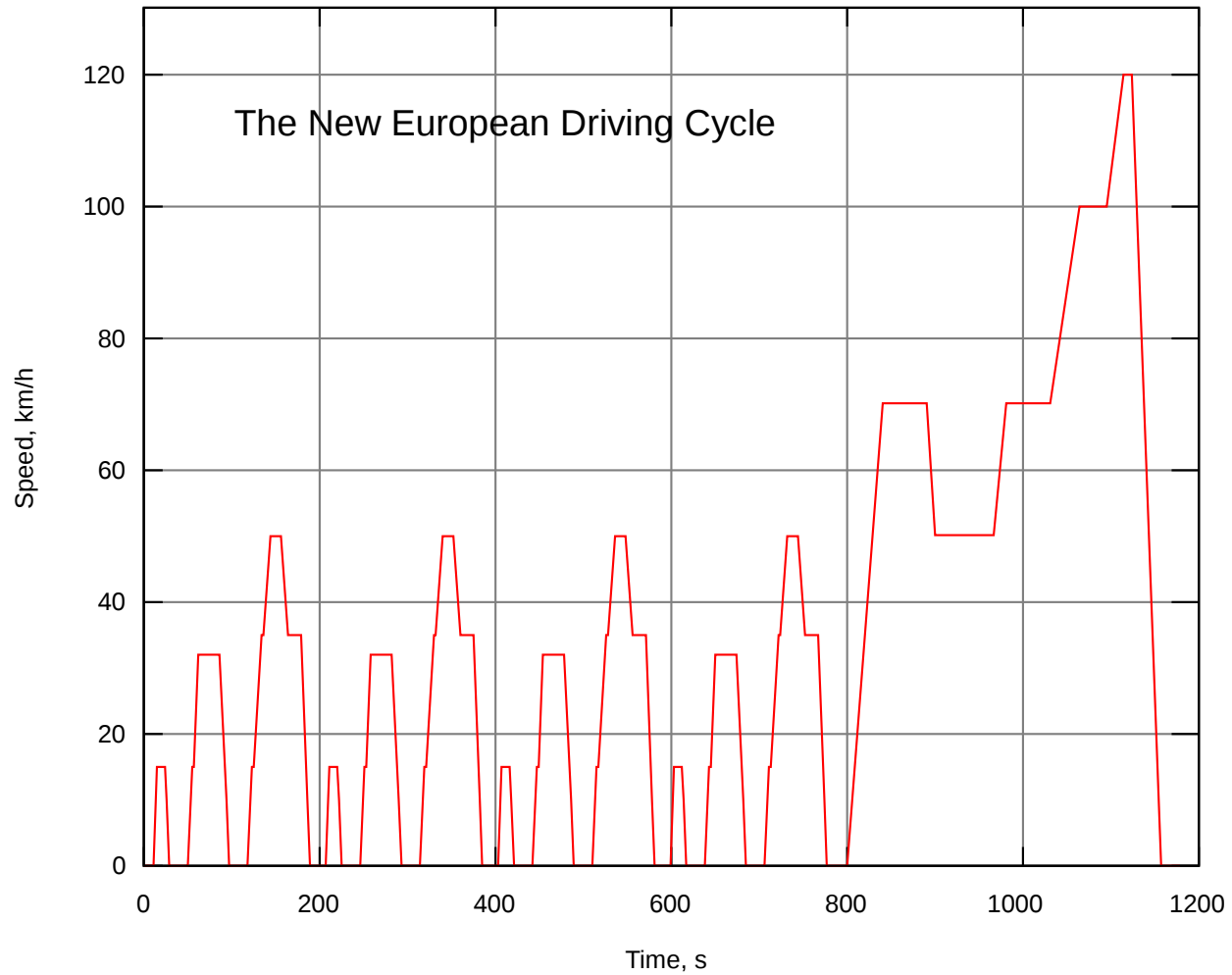
To Fight Gridlock, Los Angeles Synchronizes Every Red Light

By IAN LOVETT APRIL 1, 2013



Los Angeles has synchronized all of its 4,500 traffic lights in an attempt to keep vehicles moving.
Monica Almeida/The New York Times

A little-recognized triumph for sophisticated in-car systems



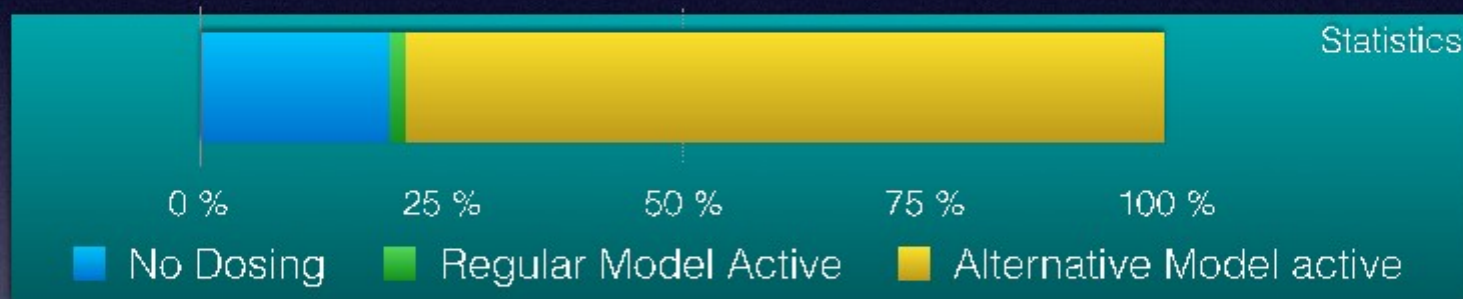
By Orzetto - English language Wikipedia, CC-BY-SA

“The exhaust emissions scandal ('Dieselgate')” by Felix Domke at CCC32

How VW's cheat worked

Model Selection Tweaks

- Can this be true? This sounds fishy.
- Luckily, the ECU counts how often it is in each state, and saves that to EEPROM:



- Average AdBlue consumption is well below expectations as well. Alternative model tends to under-dose to avoid NH_3 slip (and, as a side effect, reduce AdBlue consumption)
- Averaged consumption on my car, as calculated by ECU, is $\sim 0.6\text{l}/1000\text{km}$. Expected for full efficiency would be around $2.5\text{l}/1000\text{km}$.
- Ok, this is fishy. Let's investigate. (And how can the Regular Model still be selected sometimes?)

“Human in the loop” will take on new significance



**HARMAN Demonstrates Industry's First
Pupil-Based Driver Monitoring System at
CES 2016**

Themes of the panel discussion

- Improved, connected GIS
- Improved understanding of driver behavior
- Better whole-systems approaches to simulation