

5G Automotive Realised



Paul Spence
McLaren Applied Technologies
Paul.Spence@McLaren.com
10th April 2019

McLaren
RACING

McLaren
APPLIED TECHNOLOGIES

McLaren
AUTOMOTIVE



Connected and Autonomous Vehicles



VMAD – Validation
Methods for
Automated Driving



Fully Autonomous

Safe
AVs

V2X

(everything on the road)

Remote Driving

AV Safety Paramount

- Human driving fatality rate roughly 1 per 100,000,000 miles
- Cannot depend on connectivity alone

Fully Autonomous – current development

- Little or no dependence on connectivity for safety
- Very hard to cater for every driving scenario
- Connectivity required for maps, data and updates

How can 5G help

- V2X & V2V will help human driving
- Remote driving will help AV driving only in special cases – how reliable can it be?
- Significant amount of data to offload during development
 - Continuous learning from in-use driving
- Cyber security

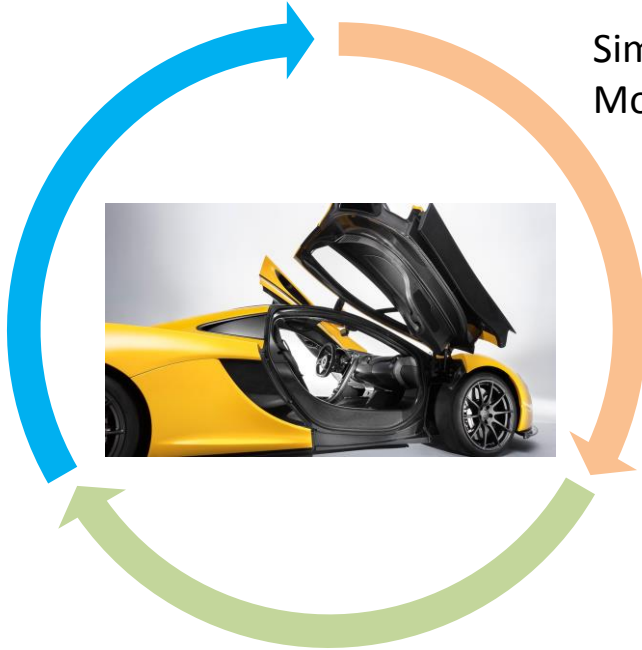
Precise positioning could make a big difference to safety

- Need to manage privacy issues

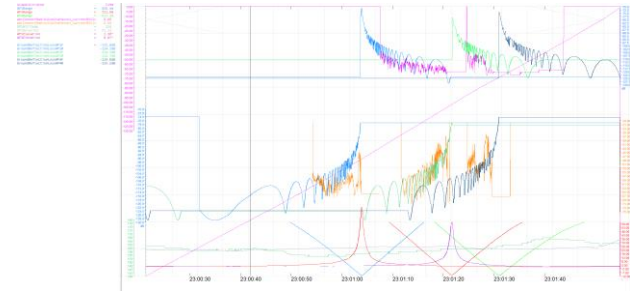
Reliability Through Simulation and Real World Testing



Refine
To improve reliability
and performance



Simulate
Model expected performance



Test
Compare with expected performance
Real data vs simulation data



McLaren 