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HIGHLY AUTOMATED DRIVING – HOW WE GET THERE

Reflections and challenges



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FUTURE NETWORKED CAR SYMPOSIUM



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THE CHALLENGE

Driver out of the loop
(no engineer supervising)



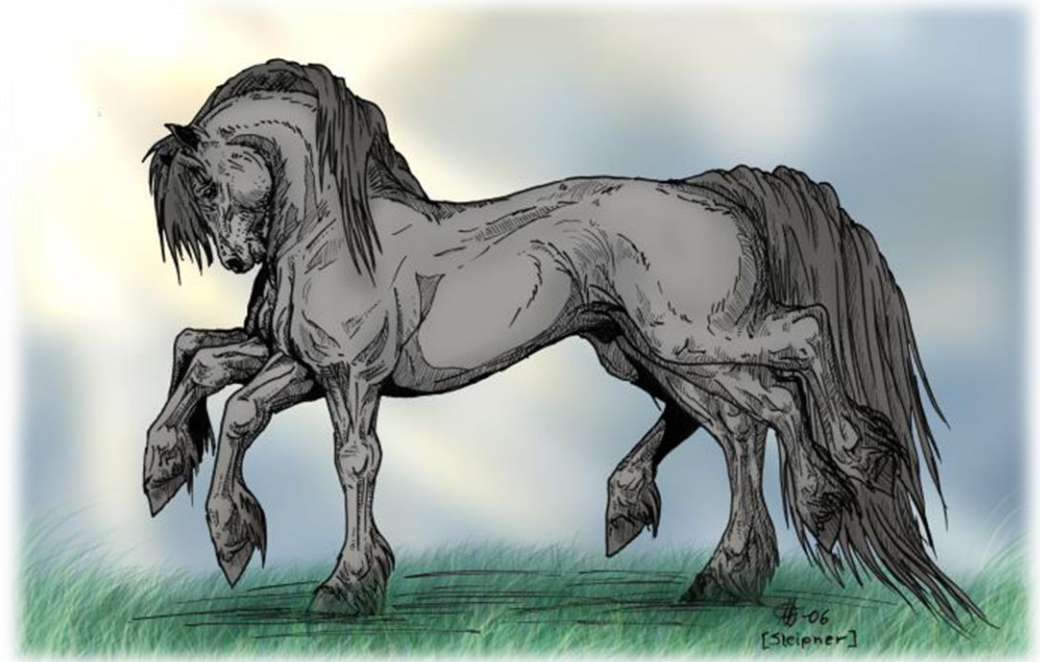
AD vehicles must be able to handle **all situations**
(and **prove** that it can!)

This puts unique requirements on the vehicle,
its **software**, sensors, actuators and electrical architecture.

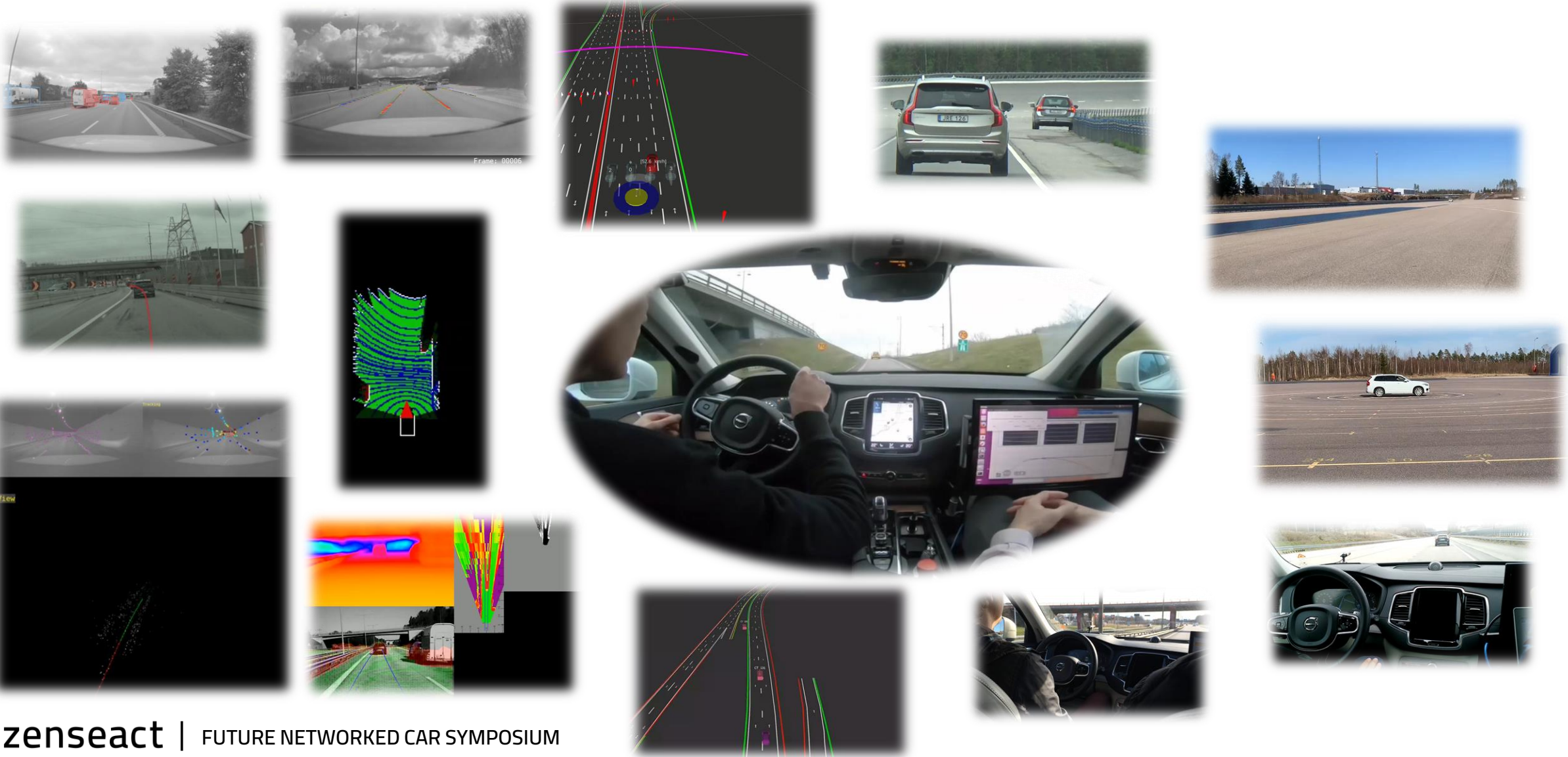
High impact on vehicle architecture

AD Vehicles require:

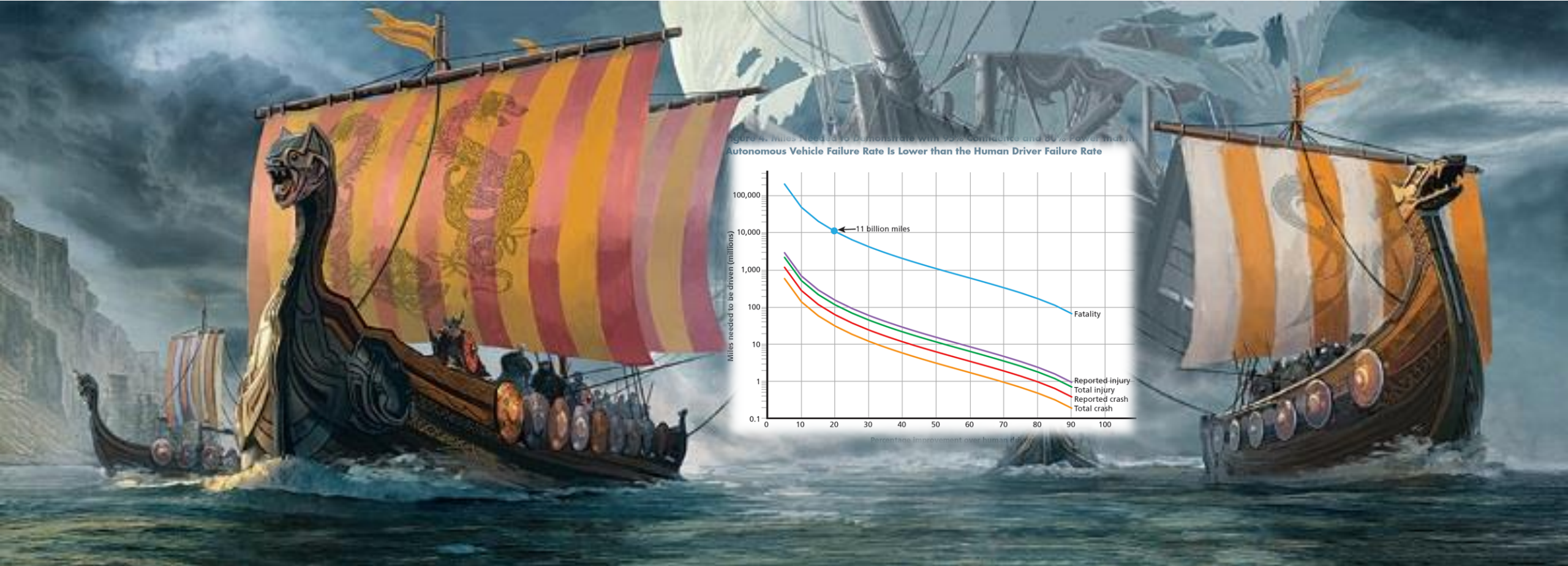
- ✓ Redundant sensing
- ✓ Redundant high-end control units
- ✓ Redundant brake system
- ✓ Redundant steering
- ✓ Redundant signaling paths
- ✓ Clustered power distribution
- ✓ Safety critical HMI



Complete redesign of software – pixels to torque

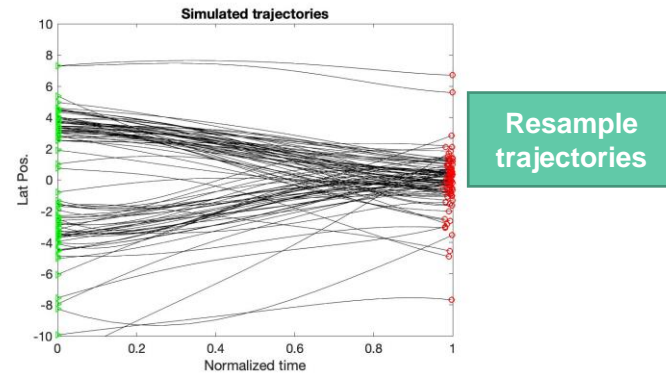
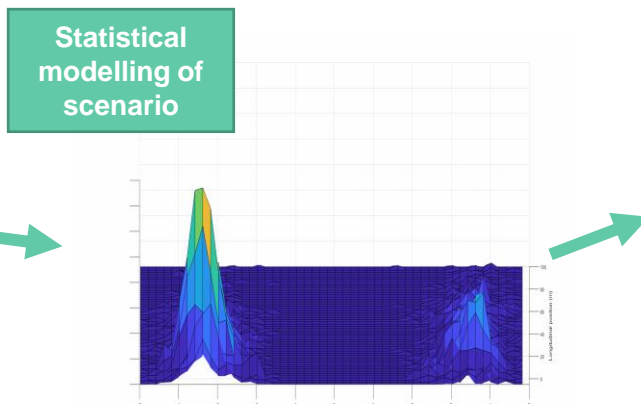
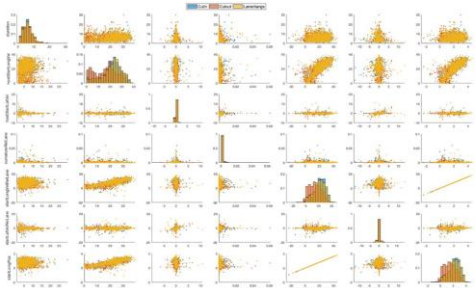
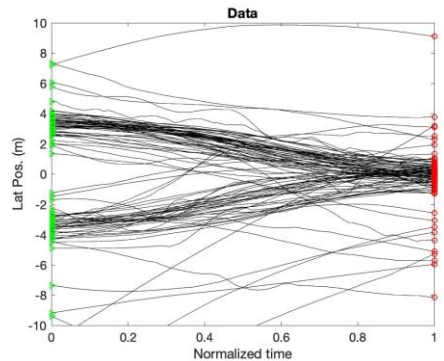
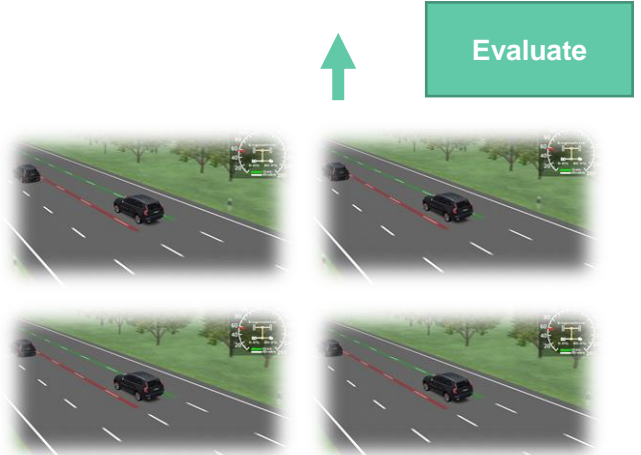
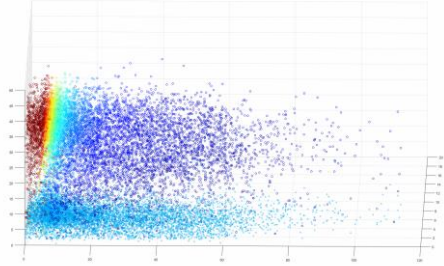
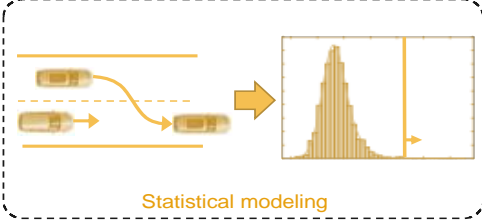


How to verify?

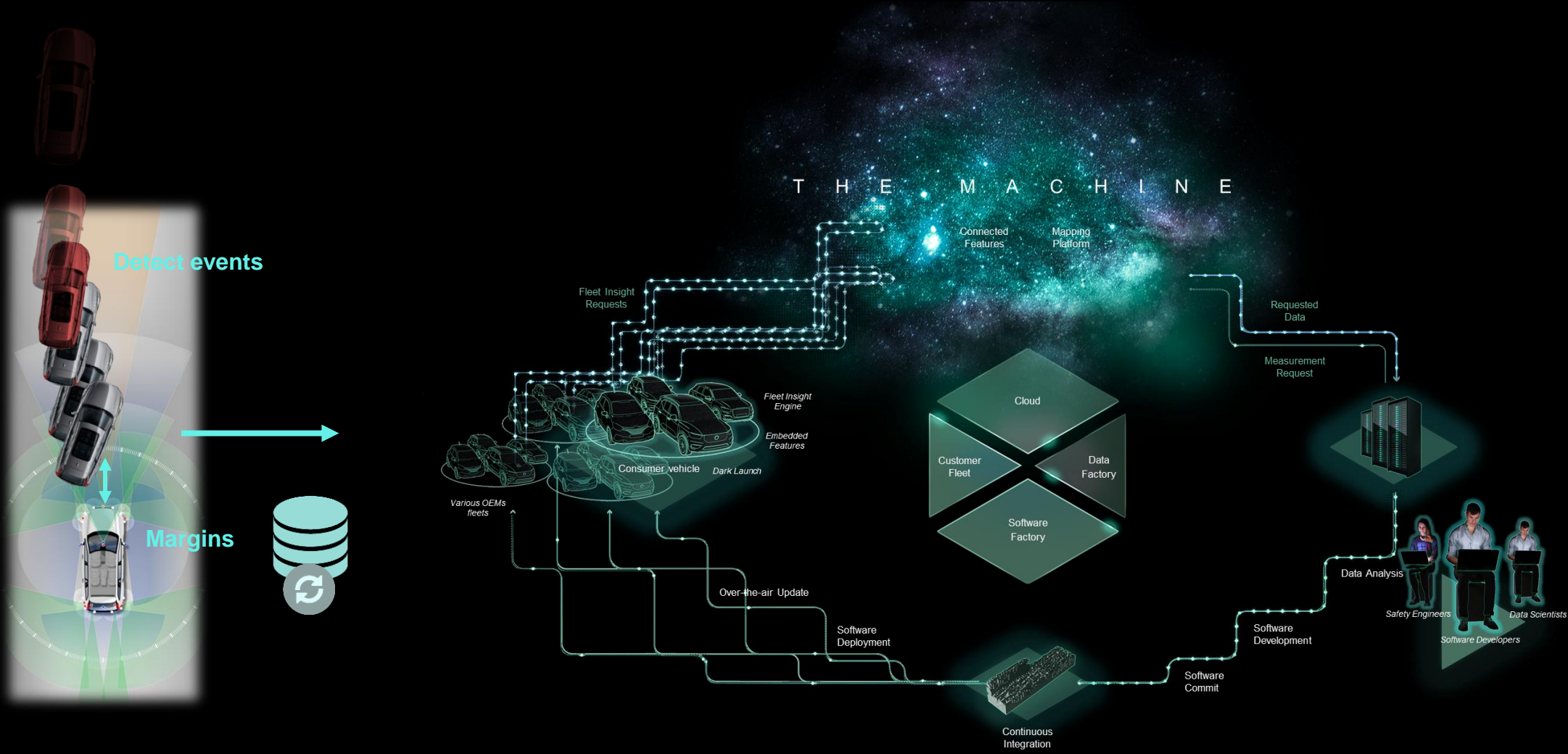


Infeasible to verify by driving billions of kilometers!

Efficient machinery required



How to scale for continuous improvement?





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Make it real.