

My name is Michael DeKort - I am a former system engineer, engineering and program manager for Lockheed Martin. I worked in aircraft simulation, the software engineering manager for all of NORAD, the Aegis Weapon System, and on C4ISR for DHS.

Key Industry Participation

1. Member SAE On-Road Autonomous Driving Validation & Verification
2. Lead for SAE creation of Modeling and Simulation Task Force
3. Stakeholder for UL4600 - Creating AV Safety Guidelines
4. Member IEEE Artificial Intelligence & Autonomous Systems Policy Committee (AI&ASPC)
5. I have also received the IEEE Barus Ethics Award

I strongly urge the FMCSA to look passed the hype and to the aerospace, DoD and the FAA regarding proper development and testing due diligence of not only the autonomous vehicle system but the use and qualification of proper simulation. This as a tenable and safe alternative to the untenable and reckless process of public shadow and safety driving being used now by most driverless vehicle makers.

It is impossible to drive the one trillion miles or spend over \$300B to stumble and restumble on all the scenarios necessary to complete the effort. In addition, the process harms people for no reason. This occurs two ways. The first is through handover or fall back. A process that cannot be made safe for most complex scenarios, by any monitoring and notification system, because they cannot provide the time to regain proper situational awareness and do the right thing the right way, especially in time critical scenarios. The other dangerous area is training the systems to handle accident scenarios. In order do that AV makers will have to run thousands of accident scenarios thousands of times. that will cause thousands of injuries and deaths. The solution is to replace 99.9% of that public shadow and safety driving with aerospace/DoD/FAA simulation technology and systems/safety engineering practices. (Not the gaming architecture-based systems most are using now. That technology has critical real-time, model fidelity and loading/scaling issues. These will cause improperly trained systems, false confidence and real-world tragedies.)

Finally, there should be a verifiable progression for testing from simulation to test tracks to the real-world. The primary method for development and testing should be aerospace/DoD/FAA level simulation as I stated. It should be informed and validated by real world data. Should any entity request to migrate any development or testing to test tracks or the real-world there should be a verifiable need. The entities should prove they cannot use simulation to move to test tracks. And prove test tracks are not adequate to move to real-world testing. When the real-world is used the events should be controlled not unlike a movie set. There is no need to subject the general public, especially children and the elderly, to any of these activities.

Please find more in my articles here

SAE Autonomous Vehicle Engineering Magazine-End Public Shadow Driving
https://www.nxtbook.com/nxtbooks/sae/ave_201901/index.php

Common Misconceptions about Aerospace/DoD/FAA Simulation for Autonomous Vehicles
<https://medium.com/@imispgh/common-misconceptions-about-aerospace-dod-faa-simulation-for-autonomous-vehicles-2b3ad84b0aa1>

Using the Real World is better than Proper Simulation for Autonomous Vehicle Development -
NONSENSE

<https://medium.com/@imispgh/using-the-real-world-is-better-than-proper-simulation-for-autonomous-vehicle-development-nonsense-90cde4ccc0ce>

How Driverless Vehicle Makers Should Prove their Technology Works

<https://medium.com/@imispgh/how-driverless-vehicle-makers-should-prove-their-technology-works-2131f52b4c72>

The Hype of Geofencing for Autonomous Vehicles

<https://medium.com/@imispgh/the-hype-of-geofencing-for-autonomous-vehicles-bd964cb14d16>