

## Comment from Seth Chalmers, PE

Approach A-B-C - Normal, Test mode and External Control (comment related to Questions 13, 15, 16, 25 and 26):

I read the Texas Department of Transportation's letter dated July 29, 2019 offering their comments to 2019-0036. I thought their comments were well very thoughtful and insightful.

Texas DOT comments got me to thinking regarding approaches.

I believe NHTSA needs to consider developing three new standards. One standard would be for the vehicle data boxes output port ("black box") and another would be for a input/output port that can access the ADS systems and controls with a plug in system of some sort.

The black box standard would be to enable a uniform method and manner for down loading vehicle data after a crash by law enforcement. Reports are these data port vary between vehicle manufacturers.

The second port would allow a plug in controller that could then fully utilize what ever ADS systems the vehicle has and allow those to be used to maintain, test and drive the vehicle. This system would also be configured to allow law enforcement investigator to go into the systems at the crash scene to verify the status of those systems as they related to what was recorded in the black box. The future when ADS achieve levels 4 and 5 this plug in port could allow these systems to be overridden to allow manual control. Perhaps each vehicle would be equipped with an emergency plug in controller.

The third standard would be to develop a new approach to the crash report that would be able to include all of this information some way. I am sure the Telsa and Uber crashes have provided you all some insight into this.