**ADAS Guidelines and Requirements for Police Vehicles**

Based on the findings of the survey distributed to 66 police officers, the following list of guidelines were developed to guide future researchers, police vehicle manufacturers, and technology developers when undertaking future development of advanced driver-assistance systems (ADAS) in police vehicles.

***Guideline 1: Emphasize clarity above everything else.***

One of the largest barriers to ADAS usage for police officers was identified as a lack of understanding of the ADAS features available. About 68% of respondents affirmed that they would make greater use of ADAS if the functionality and advantages were more clearly explained. Even before explaining how to utilize ADAS features, it should be clarified how the ADAS feature being researched or designed is useful.

***Guideline 2: Improve ADAS accessibility and usability***

About 38% of police officers stated that there were situations where they preferred to have their ADAS features disabled. However, over half of the respondents identified that they were unable to easily turn on or off their ADAS features. Accessibility and usability, desired qualities according to the free response results, should be emphasized in design of ADAS to account for individual differences and preferences of police officers when using ADAS features.

***Guideline 3: Provide adaptive ADAS***

Police driving conditions including pursuit and emergency operations are different from the situations that civilian drivers are involved in. Therefore, ADAS for police vehicles should be easily adaptable to these situations or powered off effectively otherwise. Pursuits and other similar situations were the top reasons cited by police officers with regard to situations where they preferred to have their ADAS features off. Thus, when designing or researching ADAS features, adaptability to the wide variability of driving scenarios police officers face is paramount.

***Guideline 4: Focusing on perfecting a few useful ADAS features is better than having many less elaborate features.***

Police officers experience higher levels of workload than civilian drivers. The survey indicated the lack of understanding regarding ADAS as one of the primary barriers towards using ADAS features for police officers. To combat this, researchers and manufacturers should focus on ADAS features, which target the factors specified above when designing for police vehicles, with future research validating the directions chosen for designing such features. Furthermore, building the trust that compromises the main significant contributor towards officers’ intention to use ADAS requires that officers understand the nature of the features they are using. As officers already have high mental workload associated with their jobs, a few features that help them perform their duties effectively would be much easier to understand and trust than a multitude of complex features.

***Guideline 5: Building driver trust requires positive public perception of ADAS***

Driver trust was significantly correlated to intention to use ADAS. Furthermore, it was found that higher trust in ADAS is significantly correlated with the belief that ADAS improve driving safety and reduce crashes. Further research is required to understand how these findings can be translated into building a positive perception of ADAS by police officers as this study implies that doing so would increase ADAS use. Other methods of increasing police officer trust in ADAS are also worth pursuing in future research.

***Guideline 6: Design to reduce the need for ADAS training***

The results indicated that ADAS training has a significant effect on officer intention to use ADAS and perceived usefulness of ADAS. Useful as ADAS features are, the prospect of needing to undergo training to fully understand and utilize these features can be daunting to police officers already burdened with high mental workload and stressful jobs. To account for this while not sacrificing the trust gained from understanding how ADAS features work, future research should investigate ADAS features that require minimal training to understand, and manufacturers should endeavor to design intuitive ADAS that perform their duties with as little required attention or input from the driver as possible. This includes the activation and deactivation of these systems, in accordance with guideline 2. Furthermore, the training should be delivered in the form of real driving scenarios or driver simulators when possible, and should be simplistic enough to overcome the mental hurdles police officers face with when taking on additional tasks while driving.