



Seeing Machines Project 2 – Technology Evaluation

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As part of FPIInnovations' and BC Forest Safety Council's ongoing evaluation of fatigue management technology, Seeing Machines' Guardian Gen 2, an eye-tracking–based driver assistance system that monitors driver fatigue and distraction, was evaluated in Interior BC log-hauling operations, specifically with Tolko operations. Eight drivers from six log hauling fleets participated.

KEY POINTS

The key points from this study are as follows:

- The technology was found to be useful in identifying and alerting the driver during a fatigue or distraction event.
- Reduction in duration of “eyes off the road” due to drowsiness or distractions can be achieved with the use of this technology.
- The progression of the events (from yawning to drowsiness) that were observed in this study indicated that if real-time alerts were sent to the dispatcher, it could mitigate the risk if the driver does not take action.

- There were fewer distraction alerts in this study than in the previous study, which may be attributed to several variables such as: shorter study period, on duty hours, operating conditions, improvement in technology/system, etc.
- Some restricted behaviors were observed in this study, such as cell phone use while driving.
- For the drivers and fleet managers that replied to the survey, the following are some of their key points:
 - Drivers rated the technology favorably and all of them would recommend this technology.
 - 50% of drivers reported their driving habits changed as result of this technology.
 - 75% of the fleet managers were in favor of implementing this technology in their fleet.
 - Technical issues may have been a result of the software upgrade mid-project or system support, which includes software and hardware.
 - Three fleets (including drivers) requested access to the road-facing-camera recorded video footage to assist with incident investigations.

NEXT STEPS

The suggested next steps are as follows:

- Improve antenna and camera orientation and over-the-air (OTA) firmware upgrades to alleviate technical issues.
- Continue working with Seeing Machines to reduce false positives.
- Collaborate with Seeing Machines to improve system reliability, enhanced support and further system tweaking.
- Continue discussions with industry, fleet owners and drivers to determine parameters for alert settings.
- Continue to develop strategies that reduce the risk of fatigue and distraction-related incidents. This type of technology is a component of a program but is not the complete solution in managing fatigue and distraction. Some of the recommendations from Australia's fatigue management guidelines for developing and implementing a fatigue management policy in forestry (Dawson & Bowe, 2019) and from the North America Fatigue Management Program's guidelines (Thiffault, 2011) could potentially be utilized to develop best practices for fatigue management.
- Due to the short study period, it is recommended to study the effectiveness of Seeing Machines.

The full report is available on the BC Forest Safety Council website at www.bcforestsafecouncil.org/node/3192 📄