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Vehicle Separation System

If you've ever been involved with vehicle separation testing you might have experienced problems when trying to interpret the large amounts of data generated. It's all very well having a mass of information on various distances, angles, and speeds, but interpreting this information usefully is often difficult. As development of ADAS (Advanced Driver Assistance Systems) becomes more commonplace, the methods used to develop vehicle separation systems become more advanced, leading to a need for methods that can manipulate data usably and intuitively.

Responding to this, Racelogic have developed simple to use, dedicated vehicle separation functionality for its industry proven VBOX 3, which affords ADAS developers the capability to verify the accuracy of their systems effectively. Real-time vehicle separation data can be viewed in the local vehicle whilst being logged for analysis; and can also be transmitted via CAN for use by third-party systems.

This feature enables the information to be seen in a more meaningful way, and by connecting a Video VBOX to the system it is even possible to observe vehicle and driver behaviour integrated with the data in a real environment. Using the CAN output, the vehicle separation data can be graphically overlaid over video, in real-time. The actions of driver, vehicles, and external environment can be monitored alongside GPS information which is invaluable in test analysis.

We are often asked how the GPS data can be accurate enough to reliably report the (usually small) distance between two cars. The answer is, by using local position corrections transmitted over radio from a locally placed BaseStation, VBOX 3 modules are accurate to just ±2cm. This is possible because in addition to receiving frequencies from American GPS, the Racelogic system picks up Russian GLONASS satellites, which are numerous and very reliable. It is the amalgamation of these two groups of satellites that helps to increase positional accuracy.

With all the data stored on CF card it can then be analysed afterwards using the included software, or alternatively with a laptop in the vehicle. The software calculates vehicle separation data by taking two serial streams; one from a VBOX in the local vehicle, and the other from a VBOX connected via telemetry in the remote vehicle. The channels, such as range, separation angle, and relative speed, can then be displayed in live windows.

The beauty of using VIDEO VBOX in Vehicle Separation testing, and indeed any vehicle testing, is in its ability to integrate seamlessly with this CAN data. Using a .dbc file enables the selected channels to be displayed graphically in real time, overlaid on the video. This intuitive way of viewing complex data enables you to recognize immediately the relationship between different variables, facilitating more effective testing. Racelogic can supply the graphic overlay as seen in the screenshots, although

every scene is fully customizable using the included software, meaning that you can include any parameter you like.