



Title: Automotive Forensics - Can You Trust Your Car?

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Abstract:

The issue

We tend to have good memories of our exploits and adventures in our car, as our car became a close companion in our daily life. However, have you thought about what your car knows about you, perhaps even secrets or, information that you wouldn't want the world to see. That information could even be used against you, or you might have to use for court evidence.

What's the problem?

Do you realise, your modern car has 50 or more computers inside, each holding information about the device its controlling?

But that is not all there is. Similar to an aircraft's *black box* flight recorder, your car has the equivalent, an *Event Data Recorder* (EDR), which holds lots of information about your car for a short time, typically a few seconds before and after a crash has been detected. Every time you sit in the car, the computers start to record what you are doing. As we move to more autonomous travel, the more data we will need. Some cars will have a *Data Storage System for Automated Driving*, to collect further information to be able to identify who had control over the car at a certain point in time. Regulations on EDR give you an idea of what information is stored in the EDR alone [1], with all the other onboard computers holding additional information.

The challenges

With all that data stored inside your car, you might want to have control and transparency over who is able to access what information stored in your car. You might want to access the data to give evidence in court. Criminal investigations are now heavily helped by forensic searches inside the car. For example, they can trace when someone has been driving, if someone sat in the seats, which doors have been opened, or even the location where etc. But also insurance companies can answer: Have you been driving? How are you driving?

At the University of Hertfordshire we focus on solutions that keep your data safe and secure, stop people without authorisation using it against you, and maintain the integrity of forensic data.

References:

- [1] UNECE WP.29. Proposal for a new UN Regulation on Event Data Recorder, Jan. 2021. ECE/TRANS/WP.29/2020/123/Rev.1.

Session/Topic Name: Digital Forensics