**Consent to Participate in Research**

**For**

**Analysis of Vehicle Networks**

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1. **INTRODUCTION**

Important functions of passenger vehicles such as acceleration, braking, air conditioning, and safety features are controlled by electronic network technology. This study is designed to observe vehicle networks controlling various makes and models. For each trial, a licensed and insured driver will safely operate their vehicle through up to four situations. These situations are turning on and off the vehicle, adjusting vehicle features such as windows and locks, driving in a parking lot, and driving along a roughly two mile course.

1. **PURPOSE**

The purpose of this study is to collect a database of vehicle network behavior and corresponding operator inputs. The data collected will be grouped by make, model, model year, and trim line of vehicles. The researcher will connect a device to your vehicle to record data.. No data will be sent to your vehicle and your vehicle will not be modified by the researcher. As a licensed, insured, and authorized driver of the vehicle, you will be asked to operate the vehicle. Your vehicle data will be added to a database. This database of vehicle networks will support three research goals.

• Determine whether vehicle networks are unique.

• Determine whether network behavior is different when parked versus moving.

• Determine whether network behavior is different for different drivers.

1. **PROCEDURES**

If you decide to take part in this study, the investigator will ride as a passenger in the vehicle. They will ask you to do the following:

* Provide proof of a current driver’s license, vehicle insurance, and state registration.
* Connect a ‘Vehicle Spy’ network monitoring device to your vehicle. This device will record the network controlling parts of your vehicle.
* Turn on and turn off your vehicle twice.
* Turn on your vehicle and drive for approximately 20 seconds in a parking area.
* While parked, roll up and down the driver’s side window then lock and unlock the doors.
* Turn on your vehicle and drive for approximately 10 minutes in ‘city driving’ conditions.

1. **POTENTIAL RISKS and/or DISCOMFORTS**

Below is a summary of possible risks with the research procedures and taking part in the study:

* 1. Driving: Driving motor vehicles carries the risk of collision and mechanical failures.
  2. Identifiable Information: The vehicle’s Vehicle Identification Number (VIN) may be collected if it is passed as a message on your vehicle’s network. Researchers will make every effort to identify and remove VINs from the data. However, it’s possible that these precautions may not remove every instance of the vehicle’s VIN in the data. The data set will not be publicly released.
  3. Traffic-related investigations: A traffic accident or traffic violation could occur while your vehicle data is recorded. Your vehicle data includes braking, wheel speed, and acceleration information. It is possible that the researchers may be legally compelled to disclose your driving data as part of a criminal or civil investigation. An electronic copy of the raw data can be provided to you via e-mail if this occurs. The researchers cannot decode or interpret the raw data for you. The researchers cannot reformat or organize the vehicle data from the original data record for you.

**Incidental Findings:**

The OBD-II port is a diagnostic tool used to read signals about mechanical problems. The data collection tool is not configured to detect these diagnostic signals. Our researchers are not trained to notice such problems, and would not be able to provide this information to participants.

1. **PREGNANCY RISKS**

Women who are pregnant or believe they are pregnant will be excluded from this study. This exclusion is done for the safety of the mother and child.

1. **BENEFITS**

If you agree to take part in this research study, there may be no direct benefit to you. The results of this study may indirectly help you by creating better cyber defenses for passenger vehicles in the future.

1. **COSTS**

Driving your vehicle during this study will consume fuel and may cause normal wear and tear. As a participant, you understand that you will not be compensated for fuel, maintenance, damages, or injuries to you or others which might occur while driving your vehicle during this experiment.

1. **ALTERNATIVES TO PARTICIPATION**

Your alternative is to choose not to participate in this research study. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. You must notify one of the investigators of this study to discontinue.

1. **YOUR PARTICIPATION IS VOLUNTARY**

The decision to participate in this research is voluntary on your part. No one may coerce or intimidate you into participating in this program. Participate only if you want to. Dr. Scott Graham, or an associate, should adequately answer all questions you have about this study, your participation and the procedures involved. If you have any further questions, Dr. Graham can be reached at (937) 255-3636 ext. 4581. Dr. Graham or an associate will be available to answer any questions concerning procedures throughout this study. You may withdraw from this research study at any time without penalty.

If significant new findings develop during the course of this research, which may relate to your decision to continue participate or may affect the risk involved, you will be informed. Additionally, the investigator or research monitor of this study may terminate your participation in this study if she feels this to be in your best interest. The research monitor for this study is Dr. Heidi Ries who can be reached at (937) 255-3636 x4544 or heidi.ries@afit.edu. If you have any questions or concerns about your participation in this study or your rights as a research subject, please contact the AFRL IRB at (937) 904-8100 or AFRL.IR.ProtocolManagement@us.af.mil.

If you are removed from the study, the study investigator will contact you to answer any questions you may have.

1. **COMPENSATION**

No compensation in any form is offered for participating in this study.

1. **RESEARCH-RELATED INJURY**

Your entitlements to medical and dental care and/or compensation in the event of injury are governed by federal laws and regulations. If you desire further information you may contact the legal office (711 HPW/JA, 986--5666 at Wright-Patterson AFB). In the event of a research related injury, you may contact the Research Monitor, Dr. Heidi Ries, of this research study at (937) 255-3636 x4544 or heidi.ries@afit.edu.

If an unanticipated event (medical misadventure) occurs during your participation in this study, you will be informed. If you are not competent at the time to understand the nature of the event, such information will be brought to the attention of medical first responders.

1. **SIGNIFICANT NEW FINDINGS**

No participant information will be recorded as part of this study. Data collected from your vehicle will not be associated with you by the researcher. The study investigator will be unable to contact you if new information becomes available that might affect your choice to stay in the study. The researcher will not accept requests to record your information in order to notify you of new findings.

1. **CONFIDENTIALITY**

Records of your participation in this study may only be disclosed according to federal law, including the Federal Privacy Act, 5 U.S.C. 552a, and its implementing regulations and the Health Insurance Portability and Accountability Act (HIPAA), and its implementing regulations, when applicable, and the Freedom of Information Act, 5 U.S.C. Sec 552, and its implementing regulations when applicable.

Electronic files contained observed data will be stored on secure department of defense computers and networks. No personally identifiable information will be collected or stored. Vehicle Identification Numbers (VIN) inadvertently collected will be deleted from data sets when found. However, there is no guarantee that all partial or complete records of VIN numbers in the data will be detected. Organizations that may look at and/or copy data generated by your vehicle for research oversight, quality assurance and data analysis include:

* the researchers named above,
* the study’s Research Monitor or Consultant,
* the AFRL Wright Site IRB,
* the Director of Defense Research and Engineering office or
* other IRB(s) involved in the review and approval of this protocol.
* Air Force Institute of Technology graduate students researching vehicle defense technology.

No specific identification records for you or your vehicle will be recorded or maintained. Only the make, model, model year, and trim line describing the vehicle will be recorded and stored. You will not be identified in any publication or in the sharing of your data about this study.

After the study is completed, the data may be placed in a central storage location. The purpose is to make study data available to other researchers. The data will be stored in a de-identified manner. These data will not include your name or other information that can identify you.

Complete confidentiality cannot be promised, in particular for military personnel, whose health or fitness for duty information may be required to be reported to appropriate medical or command authorities. If such information is to be reported, you will be informed of what is being reported and the reason for the report.

1. **STUDY PARTICIPATION AGREEMENT/CONSENT**

Taking part in this research study is completely voluntary. Your signature below shows that:

* You agree to be in this study
* The researcher has explained the study to you and you have read and understand the information you have been given
* You were given the opportunity to ask questions about the study and all of your questions have been answered to your satisfaction
* You understand that signing this consent does not take away any of your legal rights

You will be given a copy of this signed consent form for your records

**Volunteer Signature Date**

**Volunteer Name (printed)**

**Advising Investigator Signature Date**

**Investigator Name (printed)**

**Witness Signature Date**

**Witness Name (printed)**

**Privacy Act Statement**

**Authority: Researchers are authorized to collect information from research vehicles under The Privacy Act-5 USC 552a, 10 USC 55, 10 USC 8013, 32 CFR 219, 45 CFR Part 46, and EO 9397, November 1943.**

**Purpose: It is possible that latent risks or injuries inherent in this experiment will not be discovered until sometime in the future. The purpose of collecting this information is to aid researchers in locating you at a future date if further disclosures are appropriate.**

**Routine Uses: Information may be furnished to Federal, State and local agencies for any uses published by the Air Force in the Federal Register, 52 FR 16431, to include, furtherance of the research involved with this study.**

**Disclosure: Disclosure of the requested information is voluntary. No adverse action whatsoever will be taken against you, and no privilege will be denied you based on the fact you do not disclose this information. However, your participation in this study may be impacted by a refusal to provide this information.**