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VIRGINIA TECH TRANSPORTATION INSTITUTE

Consent to Take Part in Research Study-Compass

Title of research study: Compass (*Protocol # XXXX*)

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Key Information: The following is a short summary of this study to help you decide whether or not to be a part of this study. More detailed information is listed later on in this form.

Why am I being invited to take part in a research study?

We invite you to take part in this research study because you are a licensed driver in good health.

What should I know about a research study?

- Someone will explain this research study to you.
- Whether or not you take part is up to you.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- You can ask all the questions you want before you decide.

Why is this research being done?

The purpose of the study is to evaluate a wearable eye tracking technology during driving across a variety of real-world driving scenarios (pictured below). The results from this study will be used to inform the development of future vehicle technologies.

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Image. Tobii Pro Glasses 3.

How long will the research last and what will I need to do?

We expect that your participation in this research study to be one driving session, either at night or during the day, lasting approximately 2 to 2.5 hours. During this time, you will be asked to fill out a series of brief questionnaires and drive our instrumented vehicle on the Smart Road closed test track with an experimenter in the vehicle. The vehicle is equipped with data collection equipment which records video while you drive. We will ask you to complete a variety of in-vehicle driving tasks on the surface street. You will encounter other vehicles or objects on or near the road, similar to real-world driving scenarios. More detailed information about the study procedures can be found under ***“What happens if I say yes, I want to be in this research?”***

Is there any way being in this study could be bad for me?

This study involves normal risk of an accident associated with operating an unfamiliar vehicle with minimal traffic, during clear weather, at speeds up to 55 mph on the highway and 25 mph on the surface street, urban test course.

More detailed information about the risks of this study can be found under ***“Is there any way being in this study could be bad for me? (Detailed Risks)”***

Will being in this study help me in any way?

We cannot promise any benefits to you or others from your taking part in this research. However, a possible benefit to you is that you may find this study interesting.

What happens if I do not want to be in this research?

Participation in this research study is completely up to you. You can decide to participate or not to participate. Your alternative to participating in this research study is to not participate.

Detailed Information: The following is more detailed information about this study in addition to the information listed above.

Who can I talk to?

If you have questions, concerns, or complaints, or think the research has hurt you, talk to the principal investigator (contact information is at top of this page).

This research has been reviewed and approved by the Virginia Tech Institutional Review Board (IRB). You may communicate with them at 540-231-3732 or irb@vt.edu if:

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- You have questions about your rights as a research subject
- Your questions, concerns, or complaints are not being answered by the research team
- You cannot reach the research team
- You want to talk to someone besides the research team to provide feedback about this research

How many people will be studied?

We plan to include 256 people in this research study.

What happens if I say yes, I want to be in this research?

If you agree to participate in the research we will ask you to do the following:

- The study will consist of 1 visit lasting approximately 2 to 2.5 hours
- You will meet with a member of the research team at VTTI in Blacksburg, VA
- Read and sign this consent form if you agree to participate
- Show us your valid driver's license.
- Fill out a W-9 for payment purposes
- Complete a series of screening tests: basic hearing, visual acuity and color vision tests
- Complete a demographic questionnaire
- Be fitted with the instrumented glasses. For those in need of corrective lenses: VTTI will work to try and match their prescription using snap-on vision correctors. There are limitations on the types of prescriptions that can be reproduced. During the fitting, you must pass a vision test of 20/40 or better to move to the driving portion of the study.
- We will ask you to drive our test vehicle on the Virginia Smart Roads. The vehicle is equipped with data collection equipment including video cameras.
- We will ask you to wear eye tracking glasses during data collection to collect eye glance and head positioning data.
- We will ask you to drive on both the Surface Street Expansion which is a Smart Road course to simulate an urban environment and the Highway portion. For experimental sessions on the Surface Street Expansion the maximum allowable speed is 25 MPH, for experimental sessions on the Highway, the maximum allowable speed is 55 MPH.
- Maximum speeds are safety guidelines but you may adjust your speed (slower) to your comfort level as needed.
- We will only conduct the research during dry weather. In the event of rainy, snowy, or foggy weather we may reschedule your data collection session. If inclement weather occurs mid-study, we may end the experiment early.
- You will drive for roughly 1.5 to 2 hours on the test track
- You will be guided through driving scenarios and driving-related tasks you may come across during everyday driving, including encounters with other vehicles.
- An experimenter will be present in the back passenger seat during your drive and will have an emergency brake in case of an emergency.

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- After completing the driving portion, you will complete a short post-drive survey.

What happens if I say yes, but I change my mind later?

You can end your participation any time, for any reason, and it will not be held against you.

If you choose to withdraw, you will be compensated for the portion of time of the study for which you participated. Furthermore, you are free not to answer any question or respond to experimental situations without penalty. If you choose to withdraw while you are operating the vehicle, please inform the experimenter of this decision and he/she will direct you to the closest place where it is safe to switch drivers. The experimenter will then exit the test track, and drive back to our main building to safely park the test vehicle

Is there any way being in this study could be bad for me? (Detailed Risks)

This study involves the risks of an accident you would normally experience while driving an unfamiliar vehicle on a test track with other traffic present at speeds of up to 55 mph during clear weather conditions.

Although the risks to pregnant women are thought to be minimal, if you are pregnant, you should discuss study participation with your physician prior to participation.

Unexpected events can happen. There are risks associated with events such as equipment failure, wild animals entering the road, and weather changes. If at any point in the session the experimenter believes that continuing the session would endanger you or the equipment, he/she will stop the testing.

We have taken some steps to reduce the risks associated with this study:

1. An experimenter will be present in the vehicle at all times to provide instructions and answer questions. We ask that you drive as you would normally drive.
2. An experimenter will be with you at all times to monitor your driving. You may decide not to participate or stop further participation at any time. The experimenter will ask you to stop if he/she feels the risks are too great to continue.
3. A secondary brake is installed in the back seat and experimenters are trained on its use to avoid or mitigate collisions when appropriate.
4. The experiment will be conducted on the Virginia Smart Roads Surface Street Expansion and Highway, limiting exposure to other traffic.
5. You will be required to adhere to the 55 mph speed limit on the highway and 25 mph on the surface street but may drive slower based on your comfort level.
6. You are required to wear a seat belt restraint system while in the passenger vehicle.
7. There will be other vehicles on and near the roadway that are part of the research study to mimic traffic and driving scenarios you may encounter during everyday driving. Drivers

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of vehicles maneuvering near you on the road are trained for safe interactions and avoidance maneuvers, should the need arise.

8. The vehicle is equipped with a driver's side and passenger side airbag, curtain airbags, supplemental restraint system, fire extinguisher, and first aid kit.
9. The experimenter will have a mobile phone in case of an emergency.
10. A pre-trip inspection has been performed on all vehicles in this study prior to your test session.
11. Be aware that equipment failure, changes in the test track, stray or wild animals entering the road, and weather changes may require you to respond accordingly.
12. If an on-road or in-vehicle experimenter sees an animal in or near the roadway, they will relay this information to the other experimenters so they will know to use caution, or to delay a lap if necessary. On-road experimenters are tasked with scanning the test track for any animals prior to each participant session and alerting the in-vehicle experimenters and Smart Road Control Tower if any animals are seen in the area. Additionally, the in-vehicle experimenter will also watch for animals near the roadway during the participant's drive and will alert the participant if they see any animals.
13. You have been screened for any medical condition that would put you at a greater risk, including but not restricted to history of neck/spine injury, balance disorders, lingering effects of head injuries or a stroke, heart conditions, and recent history of seizures or lapses of consciousness.
14. In the event of a medical emergency, or at your request, VTTI staff will arrange medical transportation to a nearby hospital emergency room. You may elect to undergo examination by medical personnel in the emergency room.
15. Only researchers involved in the study will be allowed on the test course when the study is in session. This includes the experimenter and drivers for other vehicles. All on-road researchers will be equipped with a radio for a constant communication line between researchers and Smart Road control room.
16. The experimenter will be in radio contact with the control room for the duration of the experiment as well as all other on-road experimenters.
17. All data collection equipment is mounted such that, to the greatest extent possible, it does not pose a hazard to you in any foreseeable case.
18. Data is encrypted at the time of collection and then transferred securely and stored directly on a secure database at the VTTI.
19. The study will not be conducted during rain, snow, dense fog, or wet roads. This includes any weather that results in the use of the windshield wipers, icy road surfaces, and reduced visibility due to fog. If adverse weather begins during the test route, you will be instructed to pull over to a safe location, and the study will be paused until the adverse weather has dissipated. If it appears unlikely that weather will improve, the study session will end early, and you may be rescheduled or cancelled depending the timepoint in the study you are stopped.
20. While the risks of driving scenarios in this study are thought to be no more than those encountered in everyday driving, if you are pregnant, you should discuss this study with your physician before deciding whether to participate.
21. The eye tracking technology (instrumented eyeglasses) will be cleaned and disinfected between participants.

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What happens to the information collected for the research?

We will make every effort to limit the use and disclosure of your personal information, including research study records. Only people who have a need to review this information will be allowed to review study records. However, we cannot promise complete confidentiality. Organizations that may inspect and copy your information include the Human Research Protection Program, and other authorized representatives of Virginia Tech.

Authorized project personnel will have access to the study data that personally identifies you or that could be used to personally identify you. VTTI staff may use data for future research projects. Any future research project accessing data that could identify you would require approval by the VT IRB.

The data being collected in this experiment includes:

1. Personal information, including Social Security Number. This is personally identifiable information. This is required for payment purposes and is not for use in any analysis, nor will it be reported in any way.
2. Video recordings collected during the experiment. These recordings will include your face. This data is personally identifiable because you could be recognized; video data will not be linked to your name.
3. Eye tracking data including eye-glance and head positioning. In addition to a mobile form, the glasses provide high-definition camera footage, speedometer data, gps data, and four eye-tracking sensors per eye.
3. Driving measures, such as following distance, GPS data, lane keeping, and vehicle speed: These are collected by recording instruments in the vehicle. This data will not be personally identifiable.
5. Subjective responses to questionnaires: You will be asked to complete a demographic questionnaire, driver behavior questionnaire, risk propensity questionnaire, and post-drive survey. This data will not be personally identifiable.

VTTI research staff or the study sponsor may present video files in conference presentations or technical briefings. Whenever possible, those portions of video displaying your image will be de-identified with video editing software prior to being shown. VTTI may share de-identified data and de-identified portions of the video with the research sponsor.

If identifiers are removed from your private information or samples that are collected during this research, that information or those samples could be used for future research studies or distributed to another investigator for future research studies without your additional informed consent.

Data that could identify you (primarily video data) will be stored indefinitely in VTTI's secure database, accessible only to VTTI researchers.

Can I be removed from the research without my OK?

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It is possible that a situation may occur that requires the research team to end the data collection session early. Examples include an error with the data collection equipment, a malfunction of the study vehicle, or inclement weather. If the study ends early for any reason, you will be compensated for the time that you did participate in the study.

What else do I need to know?

If you agree to take part in this research study, you will be compensated up to \$87.50 upon completion. If you decide to withdraw from the study or the study ends early for any reason, you will be compensated at the rate of \$35 per hour rounded up to the nearest half hour. All participants will receive a minimum of \$30 if dismissed early.

All payments, whether for the full amount or a partial amount, will be issued using a MasterCard. Please allow up to 1 full business day for activation of the card. Once activated, this card cannot be used past its expiration date. The issuing bank will begin deducting a monthly service fee of \$4.50 after three months of inactivity.

Expected participation time will be one visit lasting approximately 2 to 2.5 hours each.

If these payments are in excess of \$600.00 dollars in any one calendar year, then by law, Virginia Tech is required to file Form 1099 with the IRS. For any amount less than \$600.00, it is up to you as the participant to report any additional income as Virginia Tech will not file Form 1099 with the IRS.

We do not plan to share your individual results with you.

In the event of an accident or injury in a vehicle owned or leased by Virginia Tech, the vehicle liability coverage for property damage and personal injury is provided. The total policy amount per occurrence is \$2,000,000. This coverage (unless the other party was at fault, which would mean all expenses would go to the insurer of the other party's vehicle) would apply in case of an accident for all volunteers and would cover medical expenses up to the policy limit. For example, if you were injured in a vehicle owned or leased by Virginia Tech, the cost of transportation to the hospital emergency room would be covered by this policy.

Participants in a study are considered volunteers, regardless of whether they receive payment for their participation. Under Commonwealth of Virginia law, worker's compensation does not apply to volunteers; therefore, if not in the vehicle, the participants are responsible for their own medical insurance for bodily injury. Appropriate health insurance is strongly recommended to cover these types of expenses. For example, if you were injured outside of the vehicle owned or leased by Virginia Tech, the cost of transportation to the hospital emergency room would be covered by your insurance.

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Signatures

Your signature documents your permission to take part in this research. We will provide you with a signed copy of this form for your records.

Signature of subject

Date

Printed name of subject

Signature of person obtaining consent

Date

Printed name of person obtaining consent