****

Participant Information Sheet

Before deciding to take part in this study, please read the following information about the experiment.

**Background to this experiment**

## This study aims to understand pedestrians’ crossing behaviour and self-reported intuitiveness ratings for nine different Augmented Reality (AR) interfaces for pedestrian-vehicle interaction. The experiment will be performed using the Highly Immersive Kinematic Experimental Research (HIKER) pedestrian lab. After you have read this briefing sheet, the researcher will be available to explain each part of the study to you, and you are free to ask any questions. The experiment will include a road crossing task that will be performed in the HIKER environment. Following the crossing task, you will be asked some questions about the interface.

## The Pedestrian Simulator

The University of Leeds HIKER pedestrian lab (see Figure), is a controlled and safe environment in which to study pedestrians’ crossing behaviour. You will be required to wear a pair of glasses which will track your position whilst in the HIKER space (9 metres long and 4 metres wide). **To prevent you from walking into the HIKER walls, if you get close to a wall you will see a blue net mesh and hear a warning sound, indicating that you should stop walking**. This will be explained further in the practice trials.

Staff responsible for the experiment will be present in the HIKER facility at all times while you are there, to ensure that everything is working correctly and safely, and to answer any questions you may have. Please note that a small number of people may initially feel “odd” or “unsteady”, and for a small percentage of people, these feelings do not subside, and they may feel a little unwell. This usually manifests itself in the form of a feeling of motion sickness. **If you do feel unwell or nauseous, please do not be embarrassed to withdraw from the study. Simply inform the researcher that you are not feeling well and we will stop the experiment immediately.** The researcher will take you back to the briefing area. *You will still be compensated for your time.*

**The Practice sessions**

Before starting the actual tasks of the experiment, you will first complete a practice session, designed to allow you to become familiar with the equipment, virtual environment, and the respective experimental task. The practice sessions will end whenever you have fully understood the experiment and have familiarised yourself with the respective task.

**Instructions**

We will first ask you for some demographic information about yourself. You will then perform a set of road crossing trials, presented in 10 blocks, where your task is to decide whether or not (and when) it is safe to cross the road in front of a car approaching from the right. In each block, you will be presented with one of nine AR interfaces or a non-AR baseline condition. The AR interface provides you with information about whether the approaching car will stop or not. The AR interface (a green or red message presented in the environment or on the approaching vehicle) always provides valid information, i.e., there are no trials in which the AR malfunctions or provides incorrect advice.

*At the start of each trial, you are requested to stand on a demarcated spot (a blue cross), which will be shown to you by the experimenter. Each trial starts with the appearance of a big cyan circle on the virtual world, on your left, to your right, or in front of you. Please look into the circle by turning your head, and not your full body. Keep looking into the circle until it disappears. If you violate this instruction, a beeping sound is produced. Each trial starts once the circle disappears. You are then free to look around in the environment, and look for the approaching vehicle. For each trial, your task is to cross the road when and if you feel comfortable to do so. If you have crossed the road, you need to return to the blue cross. When the trial ends, you will need to provide your resonse to a question, which appears on the virtual world, ahead of you.*

Following each block, there will be a 2-minute break, where you will be interviewed about the prior AR interface.

**Experiment duration and payment**

The total duration of the experiment will be approximately 90-100 minutes, including the completion of questionnaires. For your kind participation in this study you will receive a £15 Amazon voucher as a token of our appreciation.

**Ethics, safety and confidentiality**

It is important for you to appreciate that we are ***not*** looking at your individual performance or judging your abilities. We are solely interested in the behaviour of a group to draw collective conclusions. Please note that this study is subject to the strict ethical guidelines and the requirements of The General Data Protection Regulations (GDPR). We would like to point out in particular:

* Your crossing behaviour (e.g. gap acceptance, decision to cross, initiation time, crossing time, safety margin), behaviour observation responses, head orientation, and gaze are recorded for research purposes in this study.
* Videos of your participation in the HIKER may be recorded for this study. These videos are necessary for research and presentation purposes. You will not be identifiable in presentations.
* At no time now, nor in the future, will any information you provide be published that allows you as an individual to be identified and all data are used for research purposes only.
* You are free to withdraw from this study at any time before or during the experiment, without needing to give a reason for doing so. After completing the experiment, it is no longer possible to withdraw participation, because at this point the link between personal information and collected data will have been broken, so we will not know which data belongs to which participant.

If you would like more information or have any questions or concerns about the study, please contact:

***Prof. Natasha Merat at the Institute for Transport Studies:*** N.Merat@its.leeds.ac.uk

***Wilbert Tabone, PhD student at the Institute for Transport Studies:*** tswt@leeds.ac.uk

Thank you for taking the time to read this information sheet.