Faculty of Environment

& Technology

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UWE REC REF No: FET.18.11.022

12th December 2018

Dito Eka Cahya

Bristol Robotics Laboratory  
University of the West of England

T Block  
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Dear Dito

**Application title: Error Situation Recognition in Human Robot Interaction Based on Multimodal Human Feedback**

Your ethics application was considered by the Faculty Research Ethics Committee and reviewed by at least two of its members. Based on the information provided, your application has been given ethical approval to proceed subject to satisfying the following conditions:

1. While generating public datasets is important and academically useful, the implications of this to participants are not clearly described. For example, images from the dataset might be (and are often are) used in other academic papers from other authors. Please make this very clear to participants, and make clear too what the repercussions of agreeing to be part of a public dataset are.

The usage of the public datasets and the implications to the participants have been made clearer to the participant in the information sheet and the consent form.

1. It is also not clear if the personality profile is going to be made public. There are quite significant ethical issues regarding this, especially if this is linked to the video and audio clips which would remove anonymity. Please clarify.

The personality data of the participant will be stored securely and will only be used solely for this research. It will not be made public. The only data that will be publicised is the audio-video data of the user study.

1. In the application it is stated that there is no intention for there to be any contact between the participant and the robot; and some information is given on the safety features of the robot. However, a concern with this project is to do with the physical safety of the participant during the interaction with the robot. Other than saying no contact is planned, no details are given of the physical nature of the interaction. Please clarify. For example, would the participant be located in such a position that it would be possible, perhaps in an error condition, for the robot to physically strike the participant? If the answer is yes, then a risk assessment should be done on the robot before it is used, endorsed by a line manager, and forwarded to the FREC

The details of the interaction have been described in point 1 to 12 in the research methodology section of the application form. The robot used in this user study is the ABB Yumi robot which conforms with the ISO/TS 15066:2016 standard regarding human-robot collaboration. That standard mainly regulates the safety of humans who interact with the robot. For example, the robot has a very low torque, soft materials, and high sensitivity, so that if it touches a human hand during its movement, it will stop immediately without hurting the human’s hand (this is a built-in feature, not programmed). On top of that, we put another safety precaution by positioning the robot and the human far enough so that the human body is out of reach of the robot’s arms. As the answer to your question, there will be no risk for the robot to strike the participant even in an error condition.

1. In the Consent Form:
2. Please make clear that participation is purely voluntary.

The statement about voluntary participation has been added to the Consent Form

1. Please comply with the latest guidance that tick boxes should not be used.

Tick boxes have been removed from the Consent Form and have been replaced with Yes/No answer

1. Please provide a place for the researcher to sign and date, as well as the participant.

A section for the researcher to sign and date has been added

1. Please exclude the text below the sign and date section, given that the form will be retained by the researcher rather than the participant.

The text below the sign and date section has been removed from the document

1. In the Information Sheet, contact details should only be given for 1 person so the participant would know who to contact if they have questions.

There is only one contact person in the information sheet now, which is my contact.

1. It is usual for consent forms and information sheets to have version numbers and dates, for audit purposes. Please provide.

Version numbers and dates have been added in the footer section and on the file name of both documents.

1. You must not proceed with your research until you have responded to these conditions and have received full unconditional approval from the committee.

Please also note that any information sheets and consent forms should have the UWE logo. Further guidance about the UWE logo is available at: <https://intranet.uwe.ac.uk/tasks-guides/Guide/writing-and-creating-documents-in-the-uwe-bristol-brand>

The information sheet and the consent form contain the UWE logo in the header section, along with the BRL logo and the UOB logo.

Yours sincerely

Alistair Clark

Dr Alistair Clark

Chair, Faculty Research Ethics Committee

c.c. Manuel Giuliani