Distortion Correction on Deformable Displays

Experiment #___

I INTRODUCTION

When you push or pull into a deformable display, the image moves around and the original aspect is changed – in the following, this will be called distortion. This is a problem because it affects the level of immersion when interacting, making you aware that you are using a cloth(or some other deformable material) as a display. The **distortion correction** is the main focus of this experiment.

Before we start, it is important to mention that, during the experiment, you are going to interact with a deformable display using a few different gestures. As you can see, the display is nothing more than a cloth, that can be deformed, on which images are projected. In this study, we consider the following gestures:
   • push deformation using **one finger**
   • push deformation by using **two hands**
   • pull deformation with **two hands**

II TASKS

You will be performing a few tasks with some of the different gestures mentioned above. There will be 5 scenarios, in which you will be presented with two methods of displaying an image – **Method A** and **Method B**. You can switch between these methods, while you are interacting, by clicking on either button A or B on the mouse attached to the display.

T**he main purpose of this experiment is to compare methods A and B.** Details will be presented to you before each scenario. It is important to mention, that you are expected to think aloud, while you are going through the scenarios(you will be guided through this process). Further, after each scenario, you will receive a short questionnaire, regarding what you have observed.

An important point is that you have to **look straight(perpendicular) towards the area where you are interacting** (the area that is deformed). You will need to move your head around to adjust your viewpoint in order to ensure this(depending on where the area lies on the screen).

Before proceeding it is important to note that you may see some shimmering (parts of the image move around slightly) and/or dark spots if you push too far into the display. These issues are known and are NOT the focus of this user study. You can specify how this affected your experience, but remember that this is NOT the focus of this experiment.

Finally, three scenarios will only require you to use the *one finger gesture*, while the other two will require *two-hand gestures*.

WE CAN START, WHEN YOU ARE READY!