<div align="center">**User Study Procedure Protocol**</div>

1 Welcome the user and tell her the purpose of the study.

- we want to test the physical limitations of our 2D touch prototype

- how reliable is our prototype in different conditions (curvature, underlying softness and overlying materials with different frictions

- the user has to perform different gestures in each condition several times

2 Introduce the user to the prototype.

- show the user the set of gestures and demonstrate some of them showing the user the result on the screen

- let the user try some of the gestures on the flat surface and show him the results.

- ask the user about his/her first impression, make notes

- prepare the first condition of the user study

3 Performing the User Study

- (Curvature) 3 x (Softness) 3 x (Material) 3 x (gestures) 8 x (repetition) 3 = 648 trials

- after a condition has been set up the user performs all 16 gestures counterbalanced while being video-recorded

- the output is hidden from the user, only we observe it, screen is captured

- we can provide some tips when we discover that too less pressure is applied or the gesture is performed too fast

- the preparation for each condition gives the user time to relax

- take notes if a gesture was performed and recognized, performed right but somehow not correctly recognized by the recognizer or not performed correctly. (by observing the input from the sensor)

- ask the participant how easy the gesture was to perform using a 7 item likert-scale

- before every condition ask the user if she needs some more rest

4   After the User Study

- ask: the participant how he/she feels especially in the dominant index finger

- ask: can you imagine to use this technology on daily basis

- ask: thoughts about our prototype

- thank the user for participation