

## Experimental protocol

The study's objective was to elicit stress in the participants (see also D3.2). The experimental protocol included a neutral task to obtain the baseline for each individual, two short horror movies and a Mental Arithmetic (MA) task to induce stress, with resting periods between each task. The pipeline is depicted in Figure 1.

**Baseline Recording:** The participants did not have to follow any strict instructions and they moved freely in a pleasant, bright space. The baseline recording lasted for about 5 minutes.

### Stress Tasks:

- **Horror Movies:** The stressors selected are two short horror movies, namely 'Happy Birthday' and 'The Trunk' from Social House Films<sup>1</sup>. The first had a duration of 397 seconds and the second 377 seconds.
- **Mental Arithmetic Task:** The participants had to countdown in the head from 2485 in steps of 13 within five minutes and report the answer verbally. The subjects are instructed by the experimenter to restart from the beginning if a calculation error occurs.

**Rest Tasks:** The protocol included three resting periods after each stressor, namely the two horror films and the MA task. Participants were listening to calm music while wandering freely in the virtual room for about two minutes.

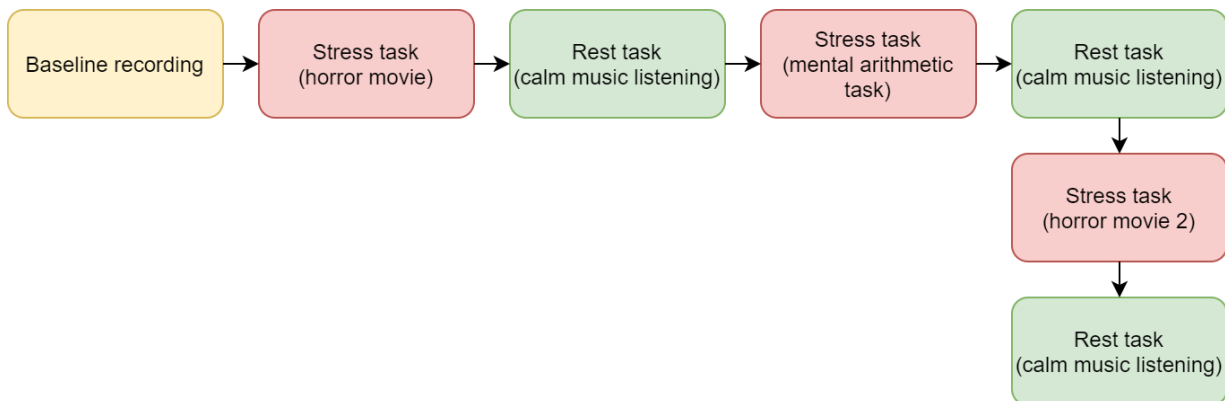


Figure 1 Experimental protocol pipeline

## Hardware

The device employed to record the physiological signals is the Shimmer3 GSR+ unit<sup>2</sup> ((Measurement Range: 22k-680k $\Omega$  (1.5-45uS) +/- 3%). 10k-4.7M $\Omega$  (.2uS – 100uS) +/- 10%). The sampling rate is at 64 Hz

and measurements are in kOhm. The two Shimmer device electrodes were placed on the index and middle fingers of the left hand.

## Participants

21 subjects (18 male and 3 female), with a mean age of  $30.4 \pm 4.62$  years participated in the study.

## User Data

Subjects were asked to assign a subjective stress evaluation (1 - 'not stressed' to 10 – 'very stressed') for perceived stress after each condition. These self-assessment scores or the context (e.g. baseline recording, stress task) can be utilized as ground truth for stress states.

## Dataset created

The created dataset includes Galvanic Skin Response (GSR) signals, timestamps for each condition and self-reports. In total, 2 CSV files are generated for each of the 21 subjects. The first is named after the subject's id (S01-S21) and it contains two columns for the GSR signal and the timestamp. In particular, each GSR sample is described by a number-timestamp indicating the task the participant performed at that time. The timestamps are explained in Table 1. The second CSV file (e.g. S01\_info) contains information about the gender and age of each participant, sensor failure issues and self-reports participants were asked to report after each task.

Timestamp	Task
-1	transition and resting periods
0	baseline
1	first horror movie
2	mental arithmetic task
3	second horror movie

*Table 1 The timestamps to tasks*

## Contact Information

If you have any further questions about the dataset please contact: mariakyrou@iti.gr

The Ethical Committee of CERTH approved the experiments.

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<sup>1</sup> <https://www.youtube.com/c/SocialHouseFilms>.

<sup>2</sup> <https://shimmersensing.com/product/shimmer3-gsr-unit/>