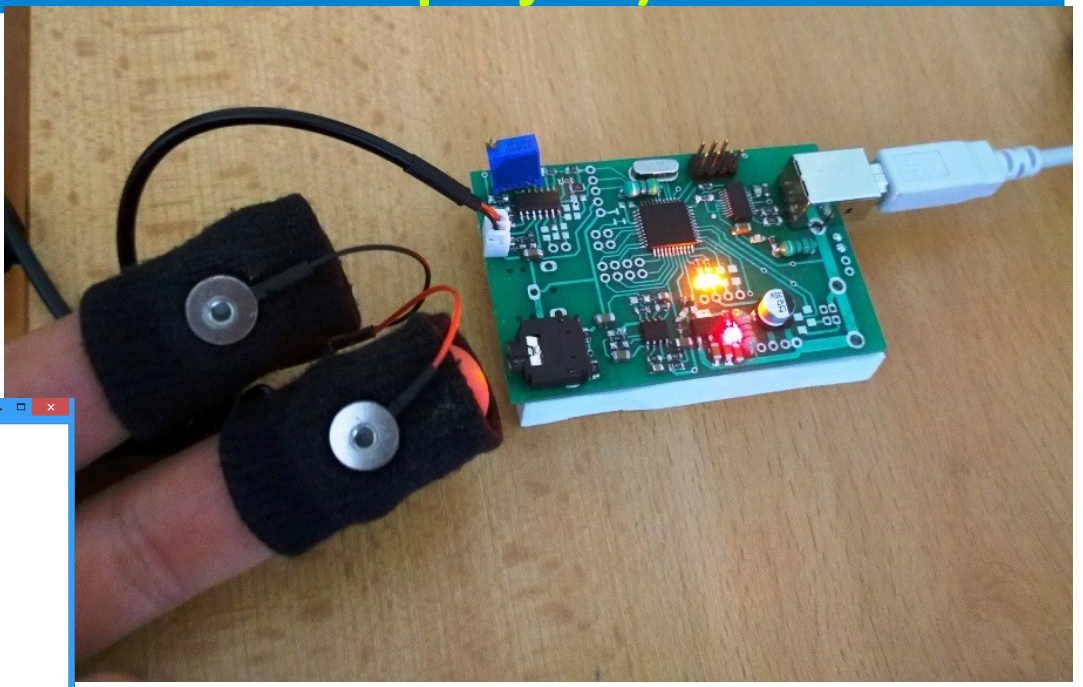
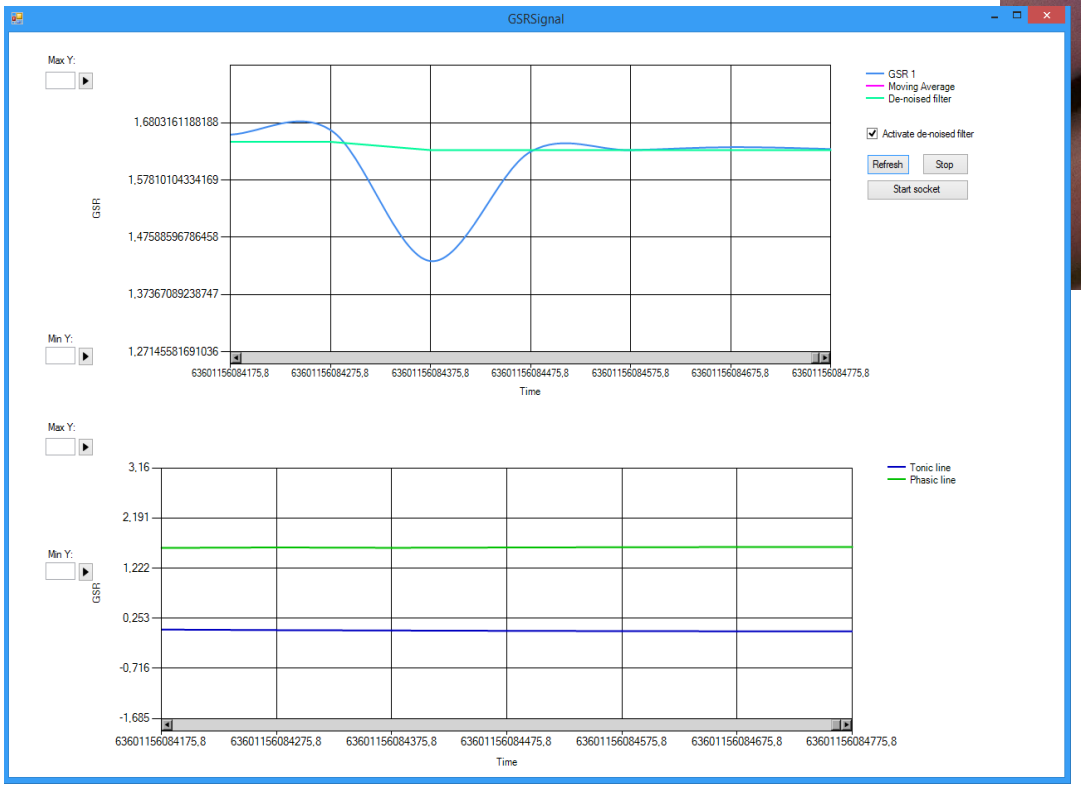
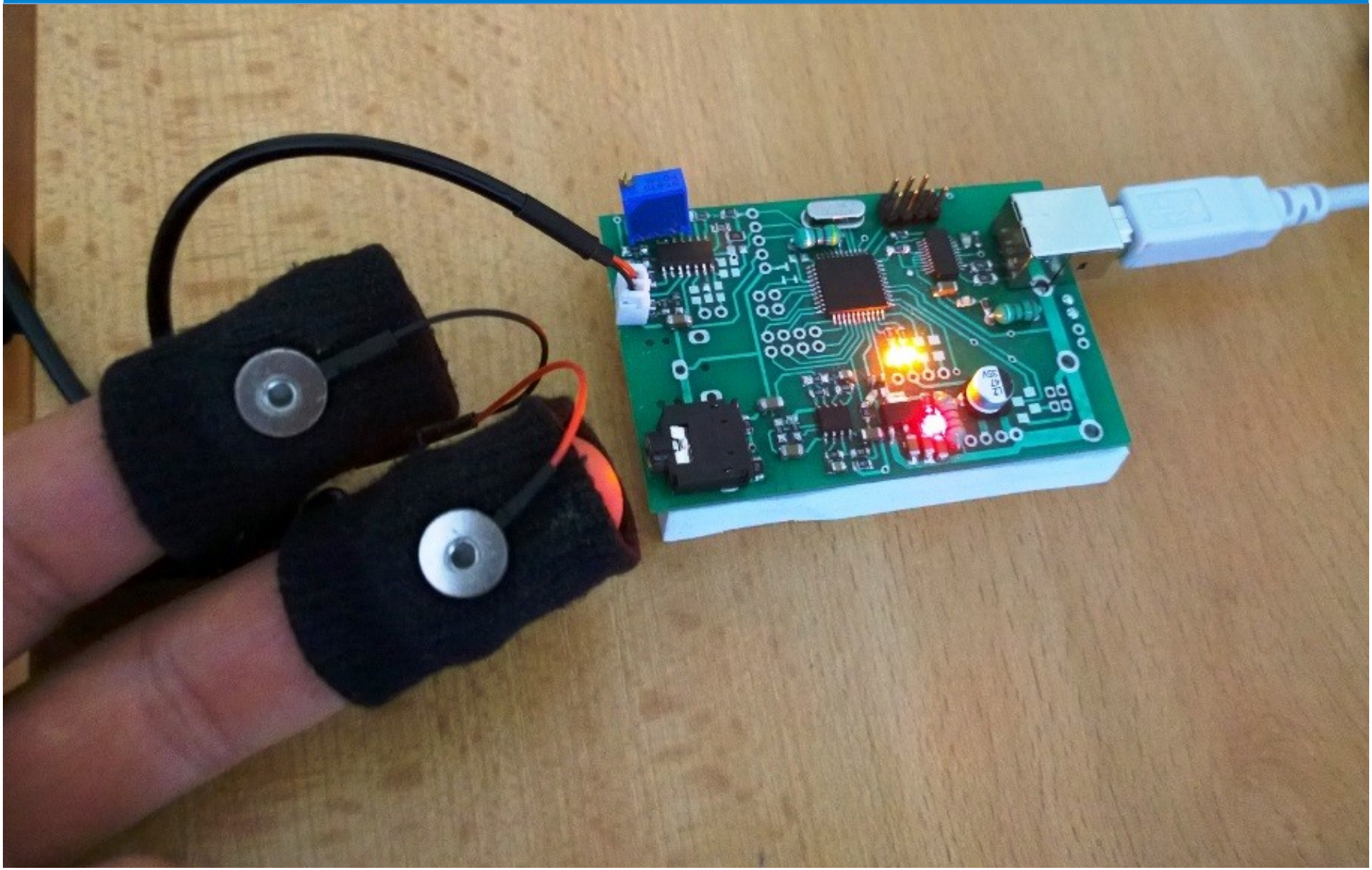
Real-Time Arousal Detection Using Galvanic Skin Response Asset usage for game adaptation of the “Rush for Gold” game (in the scope of the ADAPTIMES project)

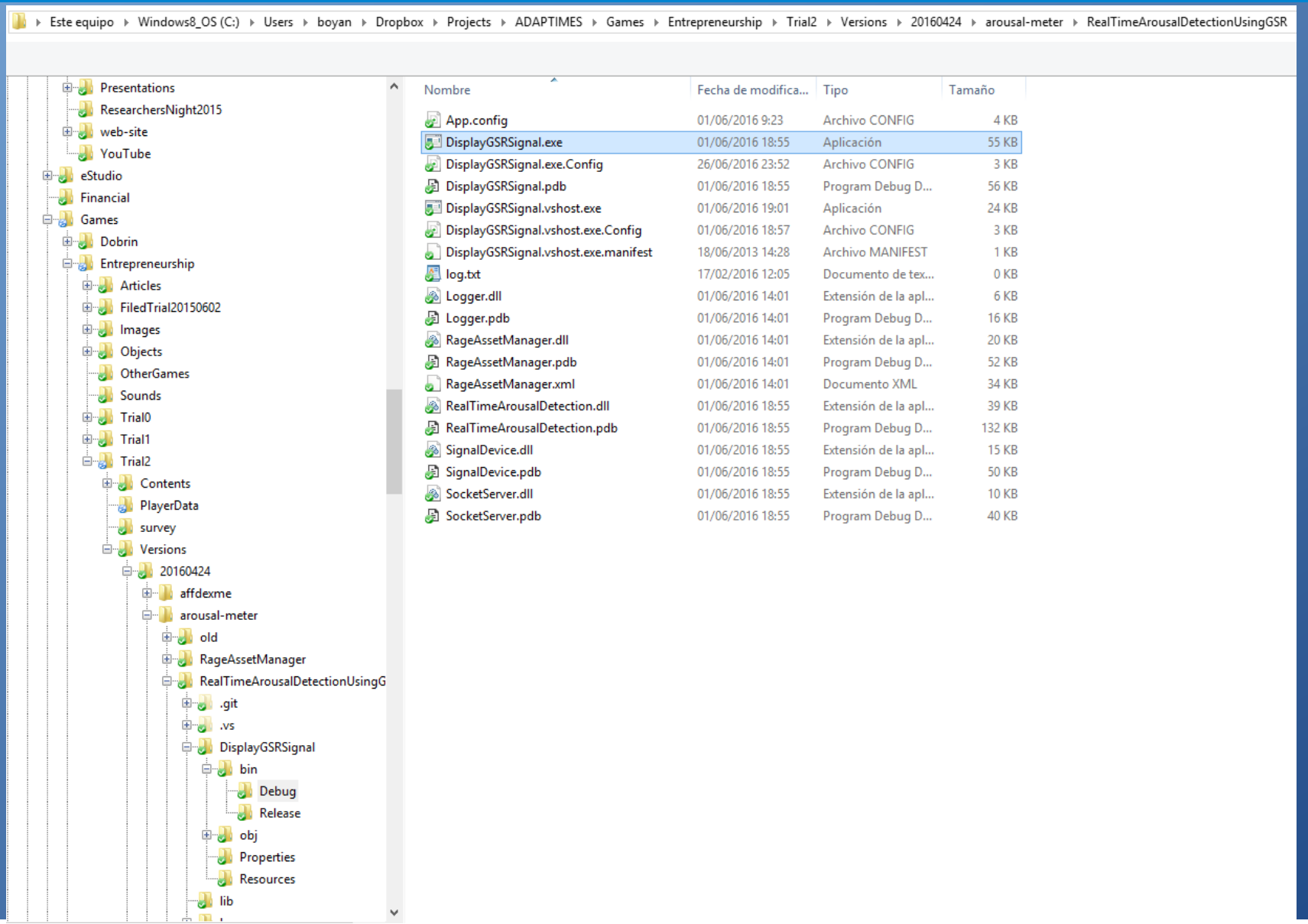




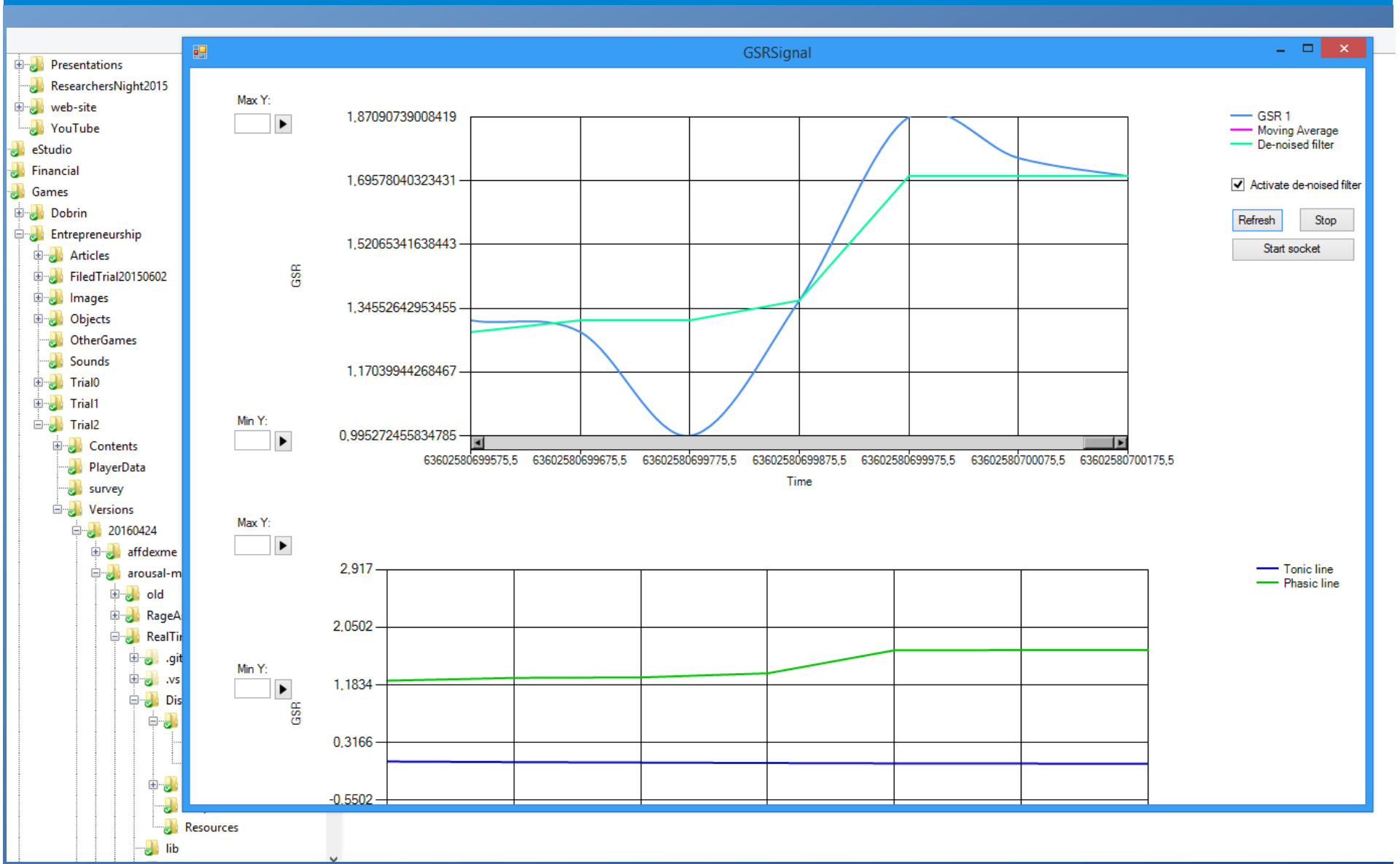
Step 1: Starting the GSR measuring device



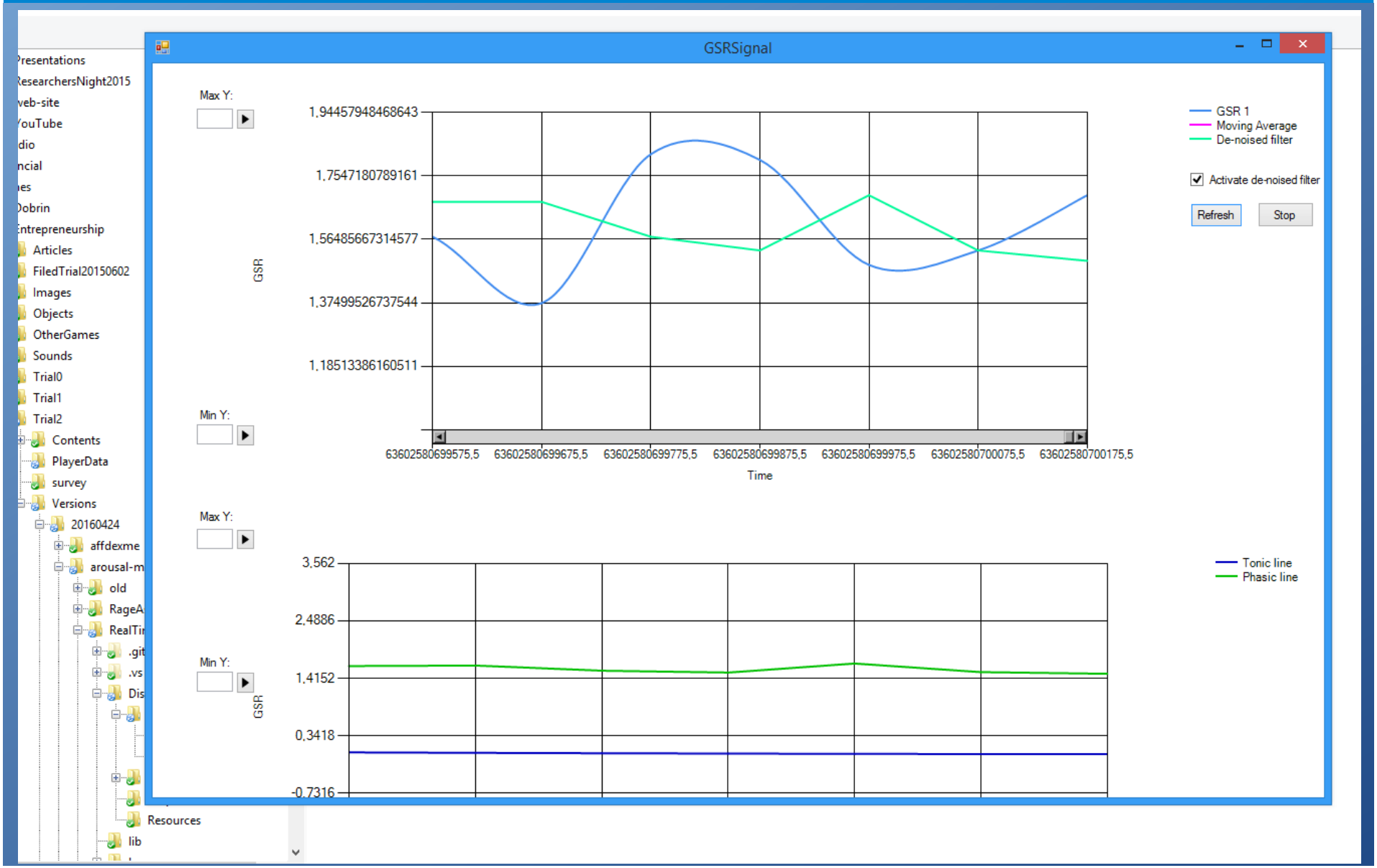
Step 2: Starting the GSR asset



Step 3: Starting the GSR signal visualization



Step 4: Starting the socket for asset integration



Socket communication

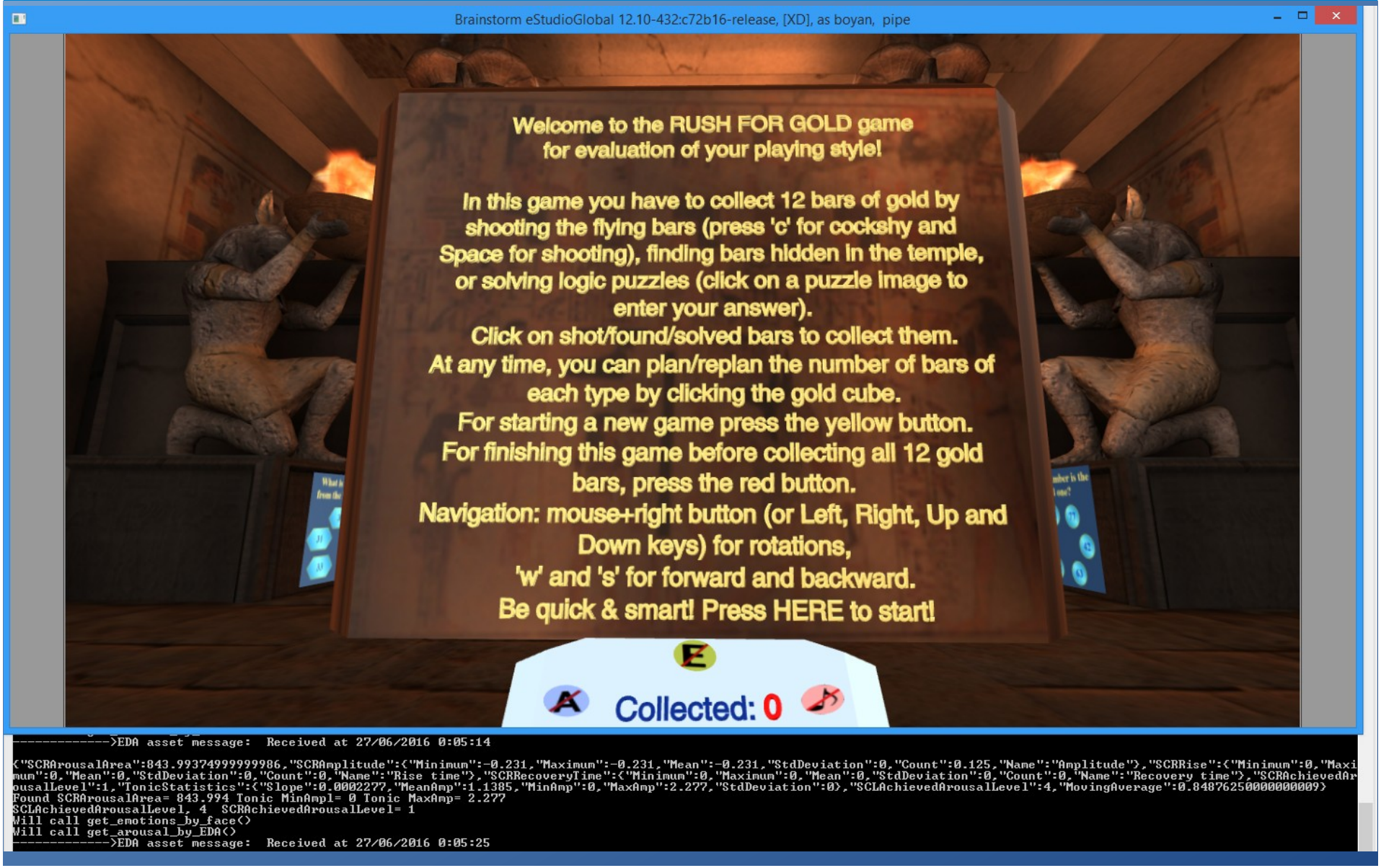
The measured and calculated from the asset emotional arousal status of the current gamer/user can be access by a socket client. For this purpose following messages are expected:

- EOCP - this is the message for end of calibration period. After this message the calibration settings (CalibrationMinArousalArea, CalibrationMaxArousalArea, CalibrationMinTonicAmplitude and CalibrationMaxTonicAmplitude) are calculated (for tha last time window) and saved.
- GET_EDA - when the asset receives "GET_EDA" it returns a json object with information for the emotional arousal level of the gamer/user (in the last time window);
- EOM - this is the command for end of measurement for the current gamer/user. After this message the statistical values for the SCR and SCL arousal (*MinAbsoluteArousalArea, MinAverageArousalArea, MaxAbsoluteArousalArea, MaxAverageArousalArea, MinAbsoluteTonicAmplitude, MinAverageTonicAmplitude, MaxAbsoluteTonicAmplitude, MaxAverageTonicAmplitude* and *NumberParticipants*) are updated.

Example of a JSON object returned by the asset in socket communications


```
{
  "SCRArousalArea":770.88437500000009,
  "SCRAmplitude":{
    "Minimum":0.0010000000000001119,
    "Maximum":1.283,
    "Mean":0.428,
    "StdDeviation":0.604576435752062,
    "Count":0.375,
    "Name":"Amplitude"
  },
  "SCRRise":{
    "Minimum":50,
    "Maximum":5300,
    "Mean":1350,
    "StdDeviation":6.25,
    "Count":0.5,
    "Name":"Rise time"
  },
  "SCRRecoveryTime":{
    "Minimum":25,
    "Maximum":25,
    "Mean":18.75,
    "StdDeviation":0,
    "Count":0.5,
    "Name":"Recovery time"
  },
  "SCRAchievedArousalLevel":2,
  "TonicStatistics":{
    "Slope":0,
    "MeanAmp":0,
    "MinAmp":0,
    "MaxAmp":2.266,
    "StdDeviation":1.133
  },
  "SCLAchievedArousalLevel":1,
  "MovingAverage: 0.76491874999999976
}
```

Step 5: Starting the Rush for Gold action game



Step 6: Playing the Rush for Gold game with lower SCR arousal

Step 7: Playing the Rush for Gold game with higher SCR arousal