1. Project summary

The main objective of FUGA is to create novel methods and improve existing measures in order to examine how the different dimensions of Computer Game Experience can be assessed comprehensively with high temporal resolution. FUGA will employ a broad variety of innovative techniques based on (a) laboratory and mobile psychophysiological recordings (i.e., facial EMG, EEG, ECG, EDA, and respiration), (b) functional magnetic resonance imagining (fMRI), (c) eye movement recordings, (d) the so-called (online) implicit association test, and (e) tracking of behavioral indicators of emotion and motivation. An important objective of FUGA is to establish the construct validity, reliability, and predictive validity of the different Game Experience measures. A further objective is to develop a prototype of an emotionally adaptive game. The very first step is a conceptual clarification and dimensional modeling of Game Experiences, as well as the development of a theoretical framework describing the relationships between the relevant Game Experience dimensions and their potential measures. In the first set of empirical studies, the Game Experience measures will be construct validated against think-aloud and self-report methods as well as against each other. New ways to extract relevant parameters from the data will be examined and developed, and alternative data analytic techniques will be compared. This is followed by a second set of studies examining reliability of the measures. Finally, to establish the predictive validity of Game Experience measures, it will be examined how different emotional and cognitive responses or response patterns predict game play in the long run. The innovative measurement approach provided by FUGA can be applied when designing new digital games for different purposes (e.g., entertainment, education, therapy). In addition to its scientific impact, FUGA would be expected to contribute to the rise of the European computer games industry.