Sony manufactures audio, video, communications, and information technology products for the global consumer and professional markets. With its music, pictures, games and online businesses Sony is uniquely positioned to become a leading personal broadband network company in the 21st century. Sony's European electronics operations cover a full range of activities from R&D, design, engineering and manufacturing to marketing, sales and service.

Our **Stuttgart Technology Center** (STC) is where innovations and future generations of products are being developed to meet the requirements and needs of the worldwide markets and customers.

In our STC **European Technology Center** (EuTEC) our engineers are providing advanced European Audio and Video Technology for worldwide and European specific CE devices. The R&D is ranging from architecture and algorithm to software and standardization in the areas of optical technology (illumination and projection systems), digital transmission technology (digital radio and TV, near field communication and power-line communication), TV picture improvement (HDTV and MPEG on flat-screen displays) as well as standardization (DRM & Media Standards, DVB, NFC, PLC).

We are offering a
### Research Internship on Brain Computer Interface (BCI)

EEG-based Brain Computer Interface (BCI) refers to a noninvasive communication interface connecting the human brain to a computer using electroencephalography (EEG). BCI applications aim to process the brain electromagnetic activity to obtain features which can be translated into computer commands or used to describe brain states. Machine learning and signal processing technics are generally applied to obtain relevant information from the EEG signal.

EEG-based BCI technologies provide opportunities to access brain related information in real time which could not be otherwise acquired such as user's brain workload, alertness or emotional state. Evaluating emotional state using BCI has the potential to open a wide range opportunities to improve systems where the application or provided service could be adapted to the user's current emotion. It can also be used to evaluate user unconscious emotional response to a stimulus.

The successful candidate will study the feasibility of emotion recognition from low cost and "user-friendly" EEG devices. The main work will consist in developing algorithms to extract information related to emotional state from EEG data based on state-of-the-art approaches published in the literature. The work will span all parts of the research including literature review, data collection, implementation and quantitative experiments.

We are looking for a dedicated student with engineering or signal processing background. Our ideal candidate is familiar with Matlab and signal processing technics. Some knowledge in biomedical data analysis or neurology is a plus. If you are interested in research, you find the topic interesting and you would like to actively participate in the team oriented, dynamic environment of an international company, please send a CV including your grades and your availability to the address below. The duration of the internship is 6 months and would ideally start in November 2012. A compensation of 1000 Euro per month is paid.

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