Project: i-Treasures
Capturing the Intangible Cultural Heritage and Learning the Rare Know-How of Living Human Treasures
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Cultural expression is not limited in architecture, monuments or collection of objects. It also includes fragile intangible live expressions, which involve knowledge and skills. Such expressions constitute our Intangible Cultural Heritage (ICH) and can be human gestures, the colour of our voice or facial expressions while they are controlled by the intelligence of the human creativeness depicted in music, dance, singing, theatre, human skills and craftsmanship. ICH is at the same time traditional, contemporary and living, because it is not only referred to inherited knowledge but also to the renewal of contemporary, rural or urban, cultural expressions. It refers to the past, to the present, and, certainly to the future. The Convention of the Safeguarding of ICH of UNESCO (2003) sets the intangible cultural sources as a basic factor for the local cultural identity as well as it constitutes an eternal guaranty for sustainable development. ICH is manifested inter alia in the following domains: (a) oral traditions and expressions, including language as a vehicle of the ICH; (b) performing arts; (c) social practices, rituals and festive events; (d) knowledge and practices concerning nature and the universe; (e) traditional craftsmanship.

The proposed project is a multidisciplinary research relying on the development of both novel methodologies and new technological paradigms for capturing ICH, either traditional or contemporary and proposing a novel strategic framework for the safeguarding and transmission of ICH. One of the main axes of the proposal is the development of an appropriate technology based on multisensory technology (e.g. 2D/3D sensors, ultrasound sensors, microphones, EEG, etc.) for the creation of cultural content that has never been analyzed, studied or recorded before and NOT for digitalization of existing content. The main objective of the proposed research project is to focus on the study of ICH domains for which human body motion is extremely important: a) the performing arts and b) the traditional craftsmanship. Its basic goal is the scientific research and the technological development for the analysis, modelling, recognition, renewal and transmission of both contemporary and traditional cultural knowhow. Four specific cases will be studied in detail: a) contemporary music composition; b) rare traditional songs; c) rare dance interactions and d) traditional craftsmanship.

The contribution of the project to the revelation of these intangible hidden treasures and the generation of a completely novel set of features corresponding to different forms of ICH or even different styles of the same ICH form is just the starting point of our research effort. The next steps concern the semantic analysis and the presentation of the content in order to build a platform for knowledge exchange between researchers and for the transmission of rare knowhow from experts to new learners. Initially, the hand gestures, the emotional status (emotional perception through electroencephalography and facial expressions) and/or the voice articulatory gestures (tongue and lips) of expert performers will be analysed and modelled through pattern recognition and data fusion techniques. High-level semantics will be extracted and used to identify and validate possible implicit (or hidden) patterns between different interpretation styles in performing arts, while sensorimotor learning will provide new learners...
with a synthesized sonic and optical feedback derived by the comparison of his/her performance
with that of an expert.

Since rare intangible cultural content and knowledge constitute local cultural resources, the
project can directly contribute to the development of a systemic methodology for the
preservation, renewal and transmission of this knowledge to the next generations through the
concept of prototype Territorial Schools. These schools should be created through combined
actions that could be based on the active participation of local agents (teachers, cultural local
organisations, music academies, historic schools etc.) acting as a means for stimulating creative
economy and promoting local cultural tourism.