Project Summary

Tangible cultural assets are generally located in large open-air sites or situated in a closed and controlled space, like for instance museums, private collections or restoration workshops. However, valuable heritage objects undergo a number of different external stresses which are crucial to be addressed. Variations of the local environment, such as changes in urban pollutants, temperature, humidity, etc., can cause relevant alteration of the state of conservation of heritage objects.

The principal challenge for TANGIBLE is to identify and understand the different types of external causes that affect movable and tangible cultural heritage and need to be controlled in order to succeed in its safe conservation, preservation and sustainable management. Such identification leads to the inspection of the impact of environmental changes on the actual status of preservation. All these effects to tangible cultural assets necessitate improved methods, technologies and tools for their quantification in order to achieve more accurate risk assessment, diagnosis, documentation, monitoring and conservation of movable cultural assets. The high costs of maintenance of indoor and outdoor heritage directly enforce the prioritization of the monitoring and conservation policies so as to ensure a sustainable protection.

The thorough knowledge of each examined art object will also yield quicker authentication and traceability of cultural assets, improve management and also enhance the mobility of cultural collections in Europe. In order to meet these goals, advanced methods, sensors, tools and special state-of-the-art technologies are going to be used and developed by the interdisciplinary partners of the TANGIBLE project to evaluate and track the state of preservation on a wide range of cultural heritage objects in indoor and outdoor scenarios.

Therefore, the impact of environmental changes will be analyzed and proper risk parameters will be assessed in order to ensure their safe conservation and sustainable management. Contrary to other approaches, TANGIBLE is proposing the realization of a toolbox, i.e. a set of different sensors and relevant software modules to handle the monitoring, documentation and preservation of heritage objects. An advanced and hybrid multi-sensor system (based on 1D, 2D and 3D technologies) will allow end-users and heritage people to get quick, reliable, non-destructive and affordable solutions to study periodically the state of conservation of art objects. The developed system, based on the collected and processed data, will alarm whenever any diagnostic parameter is altered on any of the surveyed art objects. TANGIBLE will rely on an interdisciplinary and interna-
Tangible Technologies and Tools for the Beneficial Diagnosis and Preservation of Tangible Cultural Heritage

Coordinator
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Participants
- 3DT 3D TARGET Srl – ITALY
- CNRS French National Centre for Scientific Research - FRANCE
- FIDETIA Foundation for ICT Research and Development in Andalusia - SPAIN

Dates
01 November 2014 - 31 October 2016

Budget
Total project budget: € 417,170
Funding awarded: € 315,120.00

Subject Area(s)
3D surveying, monitoring, non-invasive, conservation, documentation, modelling, non-contact sensors

Application and impact

The results of TANGIBLE will help not only the scientific community but especially the cultural institutions and heritage market delivering affordable solutions in the fields of conservation, documentation and monitoring. The TANGIBLE output will be available both as B2G (Business to Government) service to be licensed e.g. to museums, site managers or administrators which need to perform monitoring and inspections to better analyse their heritages, as well as B2C (Business-to-Consumer) service to be licensed e.g. to private citizens or professionals for personal uses. The TANGIBLE project objective is to mobilise the project SMEs towards expanding the heritage market in the direction of continuous and persistent conservation, preservation and monitoring as well as to employ the developed methodology to push things faster and achieve better results. All countries involved in the TANGIBLE project possess many cultural heritage properties of humanity declared as such by UNESCO. However, few of them have at their disposal an advanced system, either indoors or outdoors, capable of analysing the frailty, risks or damage of the goods in a non-intrusively manner, thus leveraging new cutting-edge technologies which TANGIBLE will then provide to improve the processes of rehabilitation. The pilot and demonstration studies will be salient examples to promote the powerful toolbox, with its reliability and user-friendly access. Lastly, the tight relationship that the consortium has with its local and international partners by means of previous collaborative projects will drive the expansion of TANGIBLE throughout the countries.