NMBP-33-2018: Innovative and affordable solutions for the preventive conservation of cultural heritage (IA)

Specific Challenge: Preventive conservation (PC) prevents damage or reduces the potential for damage of cultural heritage (CH) artefacts. In the long term, it is more cost efficient than remedial conservation, which can be orders of magnitude more expensive than appropriate PC measures. In particular small and medium sized museums struggle to fulfil international recommendations for PC and to implement necessary technologies, e.g. for environmental control and monitoring, mainly because of lack of budget and/or expertise.

Scope: The proposed solution should include the following three main elements:

- One or more innovative low-cost tools/solution for PC of movable CH artefacts (in storage and/or on display) should be developed;
- The solution(s) should include monitoring of individual or groups of similar artefact types to allow continuous remote data acquisition for key-parameters and/or conservation status of artefacts;
- Multi-scale modelling (i.e. linking different types of models such as electronic, atomistic, etc.) should be an integral part of the activities and should at least allow predictions about the CH degradation based on the monitoring data. Building on on-going efforts is encouraged.

The majority of resources should be spent on the development of actual tools/solutions rather than new models. Proposals should present clearly measurable objectives. Convergent contributions from SSH disciplines should be considered at least for the CH targeting criteria. Standardisation and/or the production of (certified) reference tools and/or pre-normative research should be an integral part of the proposal.

In line with the strategy for EU international cooperation in research and innovation (COM(2012)497), international cooperation is strongly encouraged, in particular with relevant international organisations (e.g. ICOM).

Proposals submitted under this topic should include actions designed to facilitate cooperation with other projects; to enhance user involvement; and to ensure the accessibility and reusability of data produced in the course of the project.

Activities are expected to start at TRL 5 and achieve TRL 7 at the end of the project.

The Commission considers that proposals requesting a contribution from the EU between EUR 4 and 6 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

- Practical and affordable tools/solutions in terms of cost and/or complexity of operation. A cost reduction of at least 50% is expected as compared to existing solutions;
- Improved compliance with PC recommendations, without a negative impact on the budget presently available for PC, in particular for end-users such as small and medium sized museums;
- Improved CH degradation predictions and modelling-based decision-making with regard to the choice between preventive and remedial conservation measures;
- Clear prospect for quantified socio-economic gains from the proposed solutions (e.g. the creation of new services) also beyond their application for CH;
- Effective market uptake across Europe of the proposed solutions within five years after the end of the project;
- Contribution to sustainable open repositories of simulation/experimental/measurement data;
- Contribution to an increased citizens' awareness of PC of tangible CH.

Relevant indicators and metrics, with baseline values, should be clearly stated in the proposal.

Type of Action: Innovation action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

3.5. ENERGY-EFFICIENT BUILDINGS (EEB)

To deliver on the Paris agreement (COP21), the updated Europe 2020 targets and the Energy Union policies including the SET-Plan, significant reductions in CO_2 and greenhouse gas emissions are needed in a short time span. The construction sector has a crucial impact on energy consumption and carbon emissions in the European Union: buildings account for 40% of the total energy consumption and are responsible for 36% of greenhouse gas emissions in Europe. The challenge in 2018-2020 is therefore to develop further, demonstrate and validate key breakthrough technologies for energy-efficient buildings and districts, in line with the Communication on Accelerating Clean Energy Innovation.[24] European added value will result from the impact, on decarbonising the EU building stock and developing affordable and integrated energy storage solutions. Implementation of the activities under EeB should comply with EU, national, regional and local regulations and legislation, in particular regarding health, safety and environmental impact.

Proposals are invited against the following topic(s):

[24] COM(2016) 763 final