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European Union's Horizon 2020  
research and innovation programme  
under grant agreement No 814624

# CollectionCare: Innovative and affordable service for the Preventive Conservation monitoring of individual Cultural Artefacts during display, storage, handling and transport

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## The connection between the Atmospheric Science and Cultural Heritage

The environmental parameters, such as temperature, relative humidity, light and air pollutants, are relevant in conservation of cultural artefacts because they affect the rate of physical, biological and chemical deterioration mechanisms. In the field of Preventive Conservation, the study of the dynamic interaction between microclimate and artefacts is useful to provide appropriate mitigation strategies (Fig. 1).

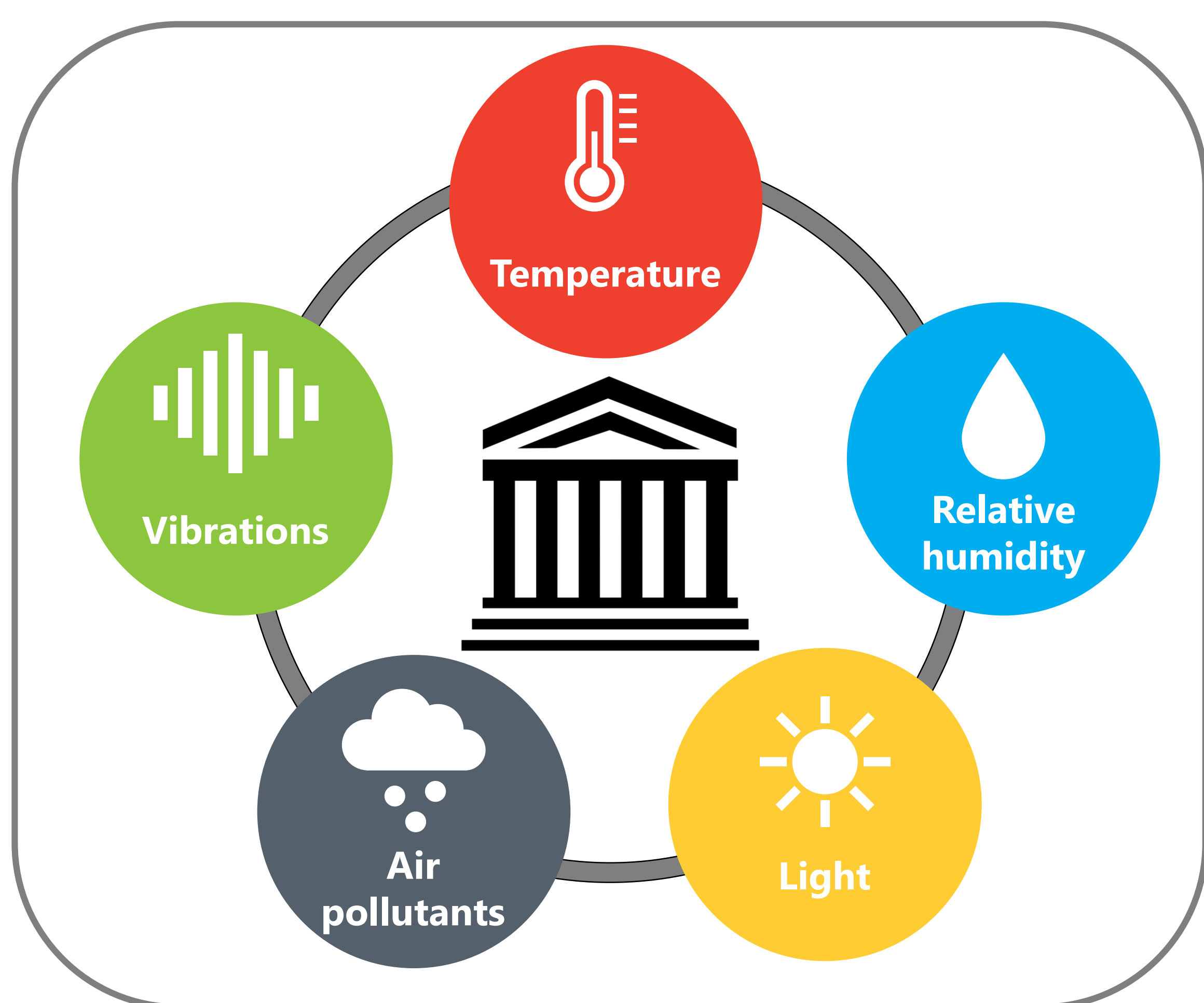


Fig. 1 – The role of the Atmospheric Sciences applied to the Preventive Conservation.

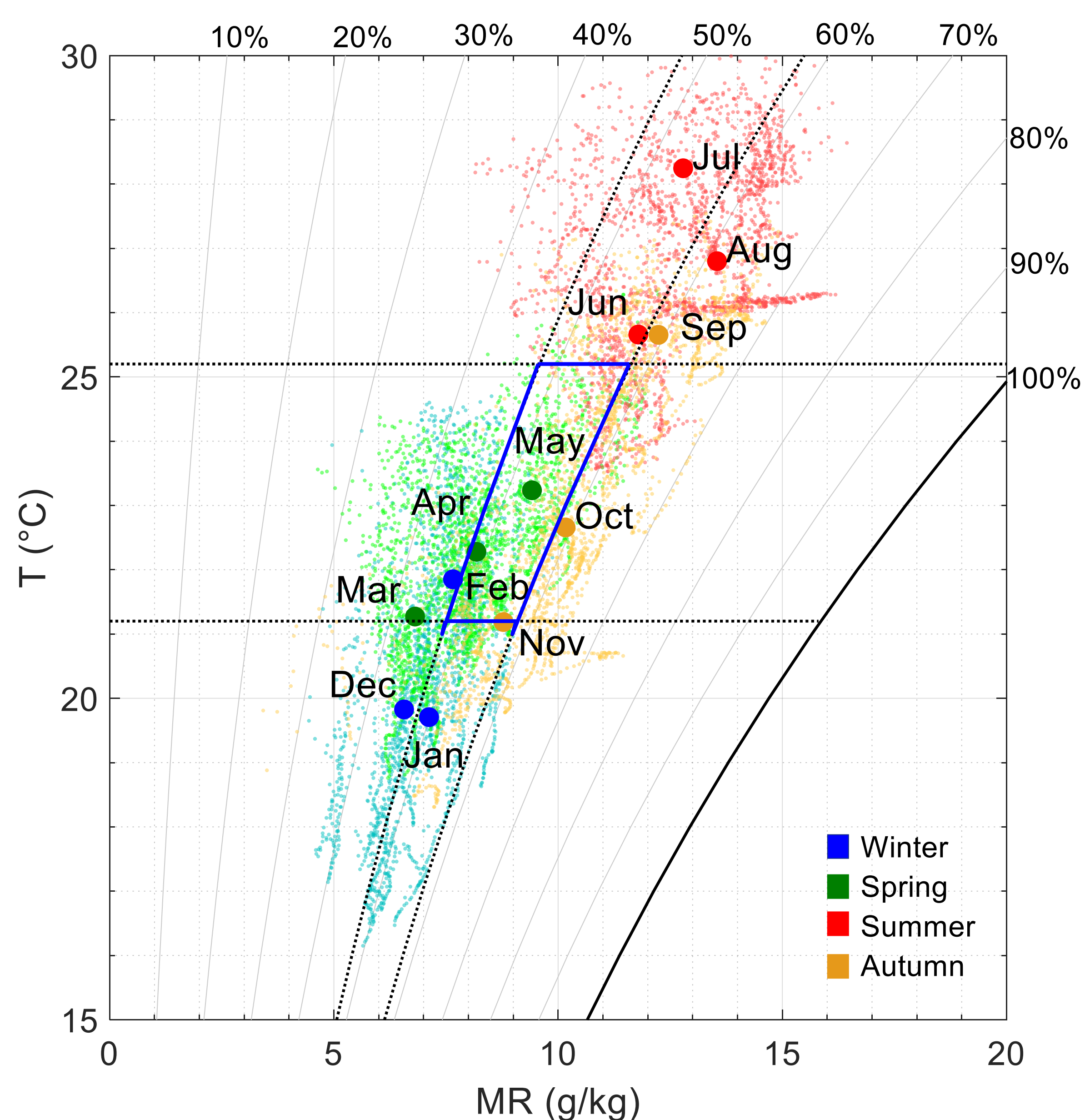


Fig. 3 – The use of the psychrometric chart to explore thermohygrometric conditions within a museum. Blue lines are safe conservation bands.

## The European project: CollectionCare

CollectionCare project (2019-2022), a consortium of 18 partners from 9 countries, coordinated by UPV, aims to develop an innovative decision support system for the Preventive Conservation in small-medium sized museums.

CollectionCare integrates IoT monitoring of the environmental conditions integrated with multi-scale modelling for the different artefact materials (Fig. 2).

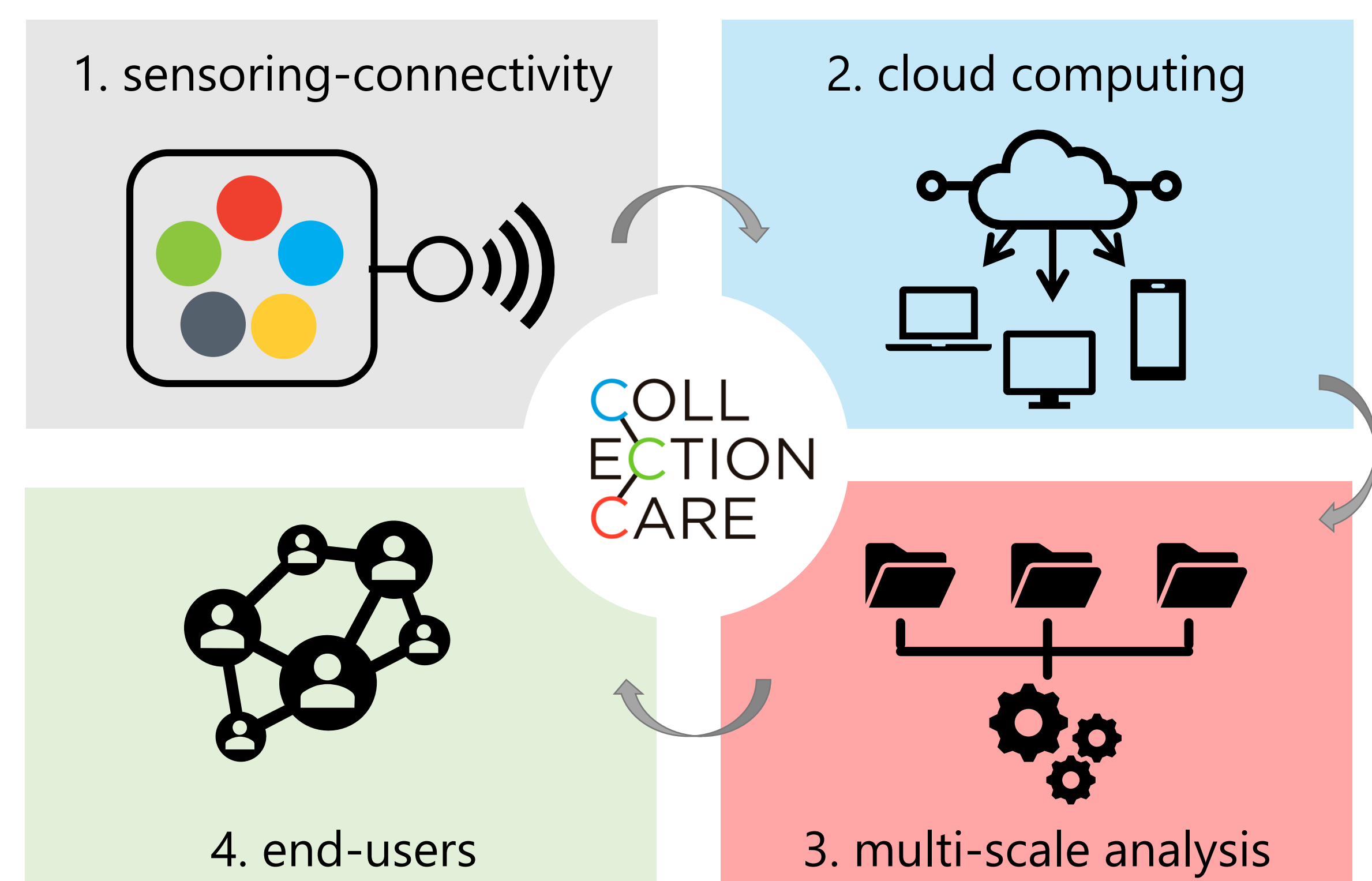


Fig. 2 – Schematic workflow of CollectionCare system process.

## The role of Sapienza Università di Roma

Sapienza Università di Roma (URO1) is involved in:

- microclimate characterization (Fig. 3) and multivariate data analysis;
- protocols' definition for the deployment of sensors to monitor environmental conditions;
- design of an advanced sensor node prototype for integrating the measurements of air pollution to temperature, relative humidity and light;
- validation of the CollectionCare sensor system in museums partners;
- training and dissemination on the correct use and configuration of CollectionCare system.



For more info:  
<https://www.collectioncare.eu/>

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