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PERCEIVE

**Perceptive Enhanced Realities of Colored collections
through AI and Virtual Experiences**

PERCEIVE Call for Datasets

Date of publication: 20/09/2024

Deadline: 20/10/2024

Aim: This call for collaboration invites researchers and institutions to contribute datasets to enhance the application of Artificial Intelligence tools and services for better analysis, restoration, and understanding of cultural heritage artifacts.

Eligibility conditions:

- Participants will have access to PERCEIVE mockups or similar representative datasets.
- Data collected from PERCEIVE's mockups will be shared with collaborators for mutual benefit.
- The guarantee of joint publications whenever their results are used in the context of Perceive
- Shared access to specific lab equipment for a specific length of time from PERCEIVE partners collaborating.
- The datasets must follow the FAIR guidelines to support semantic, linkable, shareable, machine-readable, and to ensure their long-term persistence, preservation, and exploration.
- Applicants can be PERCEIVE partners or PERCEIVE associated members applying together with a partner or anyone completely outside the consortium.

How to apply:

Contact saptarshi.neil.sinha@igd.fraunhofer.de and l.martel@imki.tech

Web: [Perceive website](#)

E-mail: info@perceive-horizon.eu

About

The PERCEIVE project, funded under the [HORIZON-CL2-2021-HERITAGE-01-04 program](#), is dedicated to preserving and enhancing the colours of cultural heritage through advanced digital technologies and artificial intelligence. This call specifically aims to acquire targeted data sets that will help us in enhanced restoration of the cultural heritage objects and improve the current results generated by AI methods.

Collaboration Focus

- **Material/Appearance capture from Mockups:**

PERCEIVE partners have mockups of textiles (size 1.5 x 1.5 cm), and pigments painted on paros marbles (width: 5 x 5 cm and height: 3 cm). The collaboration will be about obtaining accurate SVBRDF measurements of these mockups along with detailed shading model description used to capture them. The corresponding BRDF textures (material assets) should have adequate resolution (min: 1024 x 1024).

- **Capturing aligned XRF and Hyperspectral data on mockups of pigments:**

PERCEIVE partners need to create ‘quantized’ gradual pigment mixtures of 2 pigments (6 areas per pigment pair, 2 for the pure pigments and 5 for specific mixture percentages). These pigments pairs need to be for pigments ideally present in the Cezanne and Munch paintings.

Mix (%) Table	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
Pigment 1	100%	80%	60%	40%	20%	0%
Pigment 2	0%	20%	40%	60%	80%	100%

Table 1. Example of a pigment mixture slide which will be measured both with xrf and hyperspectral imagery.

The setup must guarantee that the XRF maps and the hyperspectral images will be aligned at the “pixel” level so that an accurate combination of XRF and hyperspectral image information can be performed. This way we will be able to have ground truth data to test the mixing performance of the algorithms we generate in the consortium.

- **Capturing Microfading data of mockups:**

- PERCEIVE partners seek spectral and color microfading data and/or traditional fading data (in an aging chamber) for fresh pigment mockups of ultramarine

blues, red lakes, cobalt blues and cardboard to render the aging of all pigments in *The Scream*.

- Furthermore, PERCEIVE partners also seek specialized expertise to create watercolor mockups of original paintings and to assess the lightfastness of these mockups using an appropriate measurement setup. This data is to be used in two watercolor paintings within Perceive (Cezanne's *Road in Provence* and Munch's lithography of *The Scream*). The pigments used in Cezanne's watercolours are Emerald green, Cobalt blue, Viridian, Red lake, Iron oxide. The pigments use in *The Scream* watercolor lithography are Vermilion, Prussian Blue, Cadmium Yellow.

Contribution Benefits

In the PERCEIVE project, we are developing tools and services that support the restoration and preservation of cultural heritage. By contributing data, you will play a crucial role in enhancing the accuracy and effectiveness of these tools. As a token of appreciation, we will offer you free access to test PERCEIVE tools, allowing you to benefit from the latest advancements and solutions that PERCEIVE provides.

PERCEIVE Call schedule

20/09/2024	PERCEIVE Call is open
20/10/2024	Evaluation check by boards members
21/10/2024	Evaluation and selection by project scientific board (PSB)
24/10/2024	Final communication to the applicants