

**Task Group Name / Title: Rock-Art Science Task Group**

Task Group Chair: Daniel ARSENAULT

Organization: Institut du Patrimoine Culturel de l'UQAM, Montréal (Québec), Canada

Information User representative: 1) Prof. Margarita Diaz-Andreu, 2) Dr Serge Lemaître, 3) André Bergeron

Organization: 1) University of Durham, Durham (G.-B.) 2) Université Libre de Belgique, Bruxelles (Belgium), 3) Centre de conservation du Québec, Québec (Canada)

Information Provider representative: Dr Alan Watchman.

Organization: Australian National University, Canberra (Australia)

(Note: the Information User and Provider identified above must be involved in defining this task group's activities / deliverables)

**Project Outline:**

(a few paragraphs should suffice to briefly summarize the specific gap / need that is being addressed by your task group. Be sufficiently descriptive to avoid misunderstanding / questions).

This project represents a thorough scientific initiative for developing a pluridisciplinary task group whose mandate will be a better and more rigorous analyses of rock-art sites in several countries, including Australia, Canada, Great-Britain, New Zealand, and Syria. Each of these countries has yielded a significant amount of rock-art sites, both petroglyph (rock engravings) and pictograph (rock paintings) sites. A multiple questioning approach underlies and orients this new project. How old are these rock-art sites and with which cultural traditions can they be associated? What were the techniques (including the materials, tools and know-how) used to produce such images? Where do these types of sites occur and to what kind of environmental context are they linked? What are the weathering processes which put these sites at risk of disappearing? It is to these questions, notably, that the members of this Task Group will attempt to provide answers and develop solutions. The expected results is the setting up of a new scientific protocol for documenting, dating and preserving rock-art components. This state-of-the-art protocol should be applied thereafter in different parts of the world where rock-art sites can be seen, what can be their environmental conditions. Moreover it is expected that such a protocol could help heritage managers in their monitoring of their rock-art sites, helping them to better preserve these permanent archaeological remains and natural structures in the long term.

As a testimony of human past as well as a crucial piece of heritage, rock-art sites represent one of the most impressive, permanent but also an endangered and non-renewable cultural resource in many countries around the world. The rock-art sites under analyses by our team in several countries are not located in grotto or caverns, but exposed to the air on cliff sides and rock outcrops. From an archaeological point of view, archaeologists have been recording and analysing the content of those open-air sites for decades, searching several clues helping them to interpret the graphic contents of those rock-arts, but it was almost impossible for these researchers to study them properly due to a lack of conclusive methodological tools and approaches. For instance, many sites have remained undated, but a few, rendering their archaeological interpretations more hazardous or speculative; furthermore, many questions regarding the way paintings and engravings were made have remained unanswered. From a conservation perspective, other issues have to be considered, since different weathering processes have been observed on and around those rock outcrops where ancient images have been applied. Some of these effects are due to chemical or mechanical weathering factors which have been active for thousands of years, whereas others have been caused by human agents in more recent times.

Fortunately, new scientific methods, taken from the earth-sciences field (and other applied-science domains) have been developed recently which can help to get better insights into some underestimated aspects such the radiodating of those ancient images or their chemical and physical components. Moreover these new methods have helped to better document (thanks, for example to the 3-D laser scanning and other enhancing-image devices) and evaluate the actual state of conservation of those sites as well as to increase our knowledge of the various factors that put these sites at risk of disappearing more rapidly. Therefore it is obvious that scientific and responsible ways of dealing with, and resolving, such problems are also to be developed within an « holistic » approach for rock-art researchers. This is why this task group on Rock-Art science within recorDIM represents the best opportunity for us for identifying specific issues and confronting ideas and current methods so as to reach strong proposals and solutions. The final result of this endeavour will be a feasible scientific protocol which can be applied worldwide where open-air rock-art sites are located.

**Purpose and objectives:**

Our intention is to « fill the gap » within the domain of rock-art research, conservation and management on an international level, and sharing and promoting its scientific endeavours and results worldwide. Taking specific rock-art sites in different environmental contexts located in several countries (those where our team members work) as testing ground, we will pursue the following objectives :

- Increasing our knowledge of the components used for producing the pigments needed for paintings.
- Reconstructing the « chaîne opératoire » (the different steps surrounding the making of those rock-art images).
- Applying new techniques for better recording the visible constituent elements of those sites (including at the microscopic scale), such as the 3-D laser scanning or the cross-polarizing light photography. • To collect samples of organic material (ex. lichens) and inorganic material (ex. ochre pigment, amorphous silicious deposits, rock fragments) if the structural conditions of the rock face

- Dating the rock-art with new scientific methods such as AMS-dating.
- protocol involving data providers and users alike in rock-art research.
- Reassessing the current methods for preserving those sites in the long term, using a more systematic diagnosis of actual conservation conditions, taking into account surrounding environmental factors active at various scales.
- Preparing strong field-guides of future sites for archaeologists and conservation specialists alike adapted to their specific environments.

To propose to management specialists of rock-art sites non-degenerative measures of preservation which should allow a slowdown of the processes of degradation that were observed on sites under analyses, and furnish a better protection for the site. Such measures will be enclosed in a monitoring program of rock-art sites so as to ensure their long-term conservation.

... Continued RecorDIM Rock-Art Science Task Group

**Deliverables:**

(as the RecorDIM Initiative is 'results driven', briefly describe the tangible outputs expected from your task group)

We intend to present the details and results of our new scientific protocol for analysing and preserving rock-art sites through meetings, conferences, round tables, but also scientific peer-review-journals. Indeed, from the beginning we wish to maintain on the recorDIM web site the outline of this scientific protocol,

At the end of the project we will to publish a guide describing step-by-step the state-of-the-art

**Framework of Task Groups**

(indicate under which Framework sub-heading should be inserted the title of your task group (see 'Framework of Task Groups' provided in appendix D). If your task group addresses more than one gap / need, then it is possible that the Task Group Title be inserted under more than one sub-heading)

- Category: More than one category are concerned with our project, but we can retain best practices for rock-art researchers and managers.
  - o level of application: national and international
    - conservation expertise: Archaeology

**Project Resources**

(describe resources that are required / that have been secured to undertake this task, and deliver the results described in this proposal)

- **Person-days: To be discussed with Robin Letellier**
  - o Budget: To be discusses with Robin Letellier

**Other Task Group members** (from Partner and other organizations)

(note: the list of RecorDIM Partners is provided hereafter as a reminder that specialists from these organizations could be interested in / invaluable to your Task Group, should your proposal be of interest to the organization(s) you request assistance from. You may suggest names from different Partner Organizations)

**(Identify the organization(s) and / or name of specialist(s) you would appreciate participating to your Task Group activities)**

- ICOMOS .....
- CIPA .....
- GCI .....
- HCD of PWGSC .....
- English Heritage .....
- WMF .....
- .....
- Potential Partners:
  - o Malta Centre for Restoration .....
  - o INTACH (India) .....
  - o Lemaire Centre .....
  - o Other(s) .....
- Other organizations :
  - o ICCROM .....
  - o UNESCO .....
  - o ICOM .....
  - o Other(s) .....

**Milestones:**

- Starting date: March 15th 2004
- Mid-project review date (by RecorDIM Liaison Officers): March 15th 2005
- Completion date: March 15th 2006