

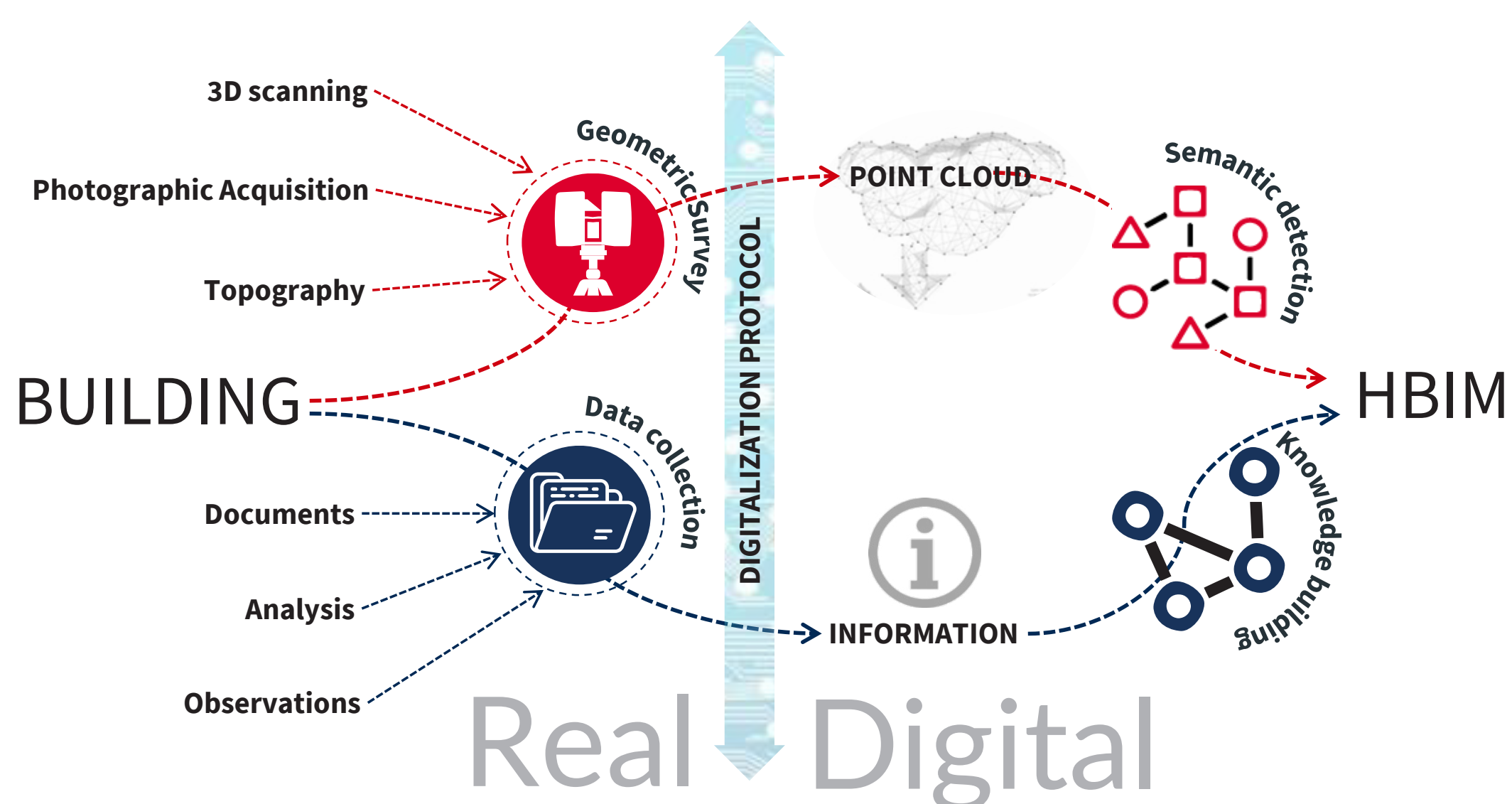


National Archaeological Museum of Naples - MANN, Italy

## Digital strategies for understanding, preserving and sharing constructive knowledge

To solve some of the aforementioned problems, this work proposes an innovative workflow to integrate technologies related to Point Clouds, Linked Data, and HBIM, to manage all the knowledge collected, used and shared for the conservation and enhancement of historical buildings in a collaborative platform, including geometric-constructive aspects from direct analysis up to intangible data from indirect sources and related to traditions and knowledge of arts and crafts.

This poster shows the results of completed projects and the strategies pursued by the work still in progress, conducted by the Built Heritage innovation Lab (BHiLab) research group of the Institute of Heritage Science (ISPC) of the National Research Council, together with other research institutions, universities and industrial partners.



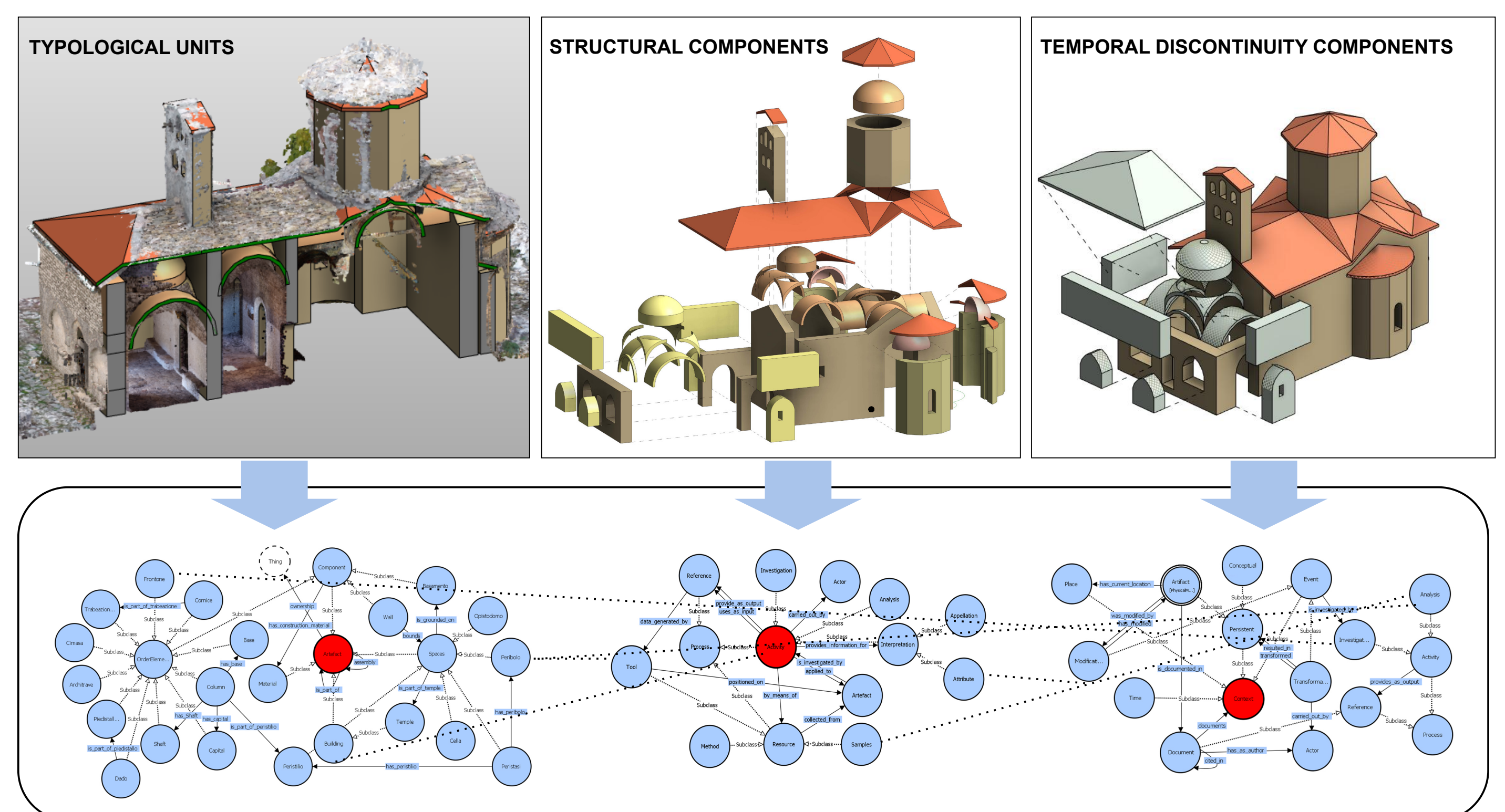
Digital approach methodology for built heritage modeling

## Introduction

Built heritage, in addition to being an element of cultural identity, is to be regarded as a source of inspiration and creativity for present and future generations. It is an ever-evolving repository of knowledge about culture and society, which, due to its importance and uniqueness, must be preserved.

Historical buildings are the expression of the traditions and techniques of people and societies that made them and thus must be studied and documented to prevent loss or damage, also ensuring that any restoration, maintenance, and reuse activities are undertaken consciously. To date, existing digital methods are not always appropriate for the built heritage sector. At the same time, older domain experts and physical textual archives collected a large amount of unique knowledge which is only partially transferred to digital resources. Examples are historical construction techniques, terminology for damage pathologies and heritage elements, etc. Transferring this knowledge into new applications and open data spaces could prevent its loss and improve its sharing.

In recent years, the digitalisation of existing knowledge has been widely debated; there are currently many digital resources available to improve modeling capabilities and solve complex problems in well-defined subject areas of analysis, conservation and restoration. Therefore, this research faces the scattering of a wide variety of digital data, that is distributed in numerous independent archives and possesses a great heterogeneity in the type of media and formats used.



Monastery of St. Mary in Goranxi, Albania

## Conclusions

The adoption of this workflow, and the models based on it, would support the ideal collaborative space for the management of open built heritage data, in the framework of the European Open Science Cloud (EOSC); thus, they can take on a richer meaning and value, becoming an integral part of an information network that enables their correlation with different disciplines.

This will enable interdisciplinary exchange and interoperability, as well as promote a culture of data sharing on the permanence and mutations of architectural typologies built over the centuries in Europe, helping to foster a deeper engagement of heritage in modern society.

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Royal Site of Carditello, Italy