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**Geo-heritage Science and Technology in Support of our  
Worldwide Cultural Heritage**

by

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**KEYWORDS.** — Modern Science and Technology; Heritage; Geomatics Supporting Heritage; Geo-sciences for Local Communities.

**SUMMARY.** — Cultural heritage sites fall into the category of tangible culture (such as buildings, monuments, landscapes, historic cities, archaeological areas, cultural landscapes, and many other forms). Cultural heritage sites provide to the people a sense of unity and belonging within a group and allows them to better understand previous generations and the history of where they come from. Cultural heritage implies a shared bond and our belonging to a community. Important is that cultural heritage sites are not just protected areas where no humans live, on the contrary, cultural heritage sites do host important populations; these sites provide jobs and most of them are extremely important for their contribution to the national economy.

The science of earth observation and remote sensing and associated technologies are now becoming supporting tools for cultural heritage sites. While satellite spaceborne sensors do provide extremely accurate digital images, today new advances in digital technologies are facilitating a large number of sensors: laser scanning, rapid prototyping, red-green-blue-depth (RGB-D) sensors, high dynamic range imaging, spherical and infrared imaging, mobile mapping systems, unmanned aircraft systems (UAS), etc. A combination of data from all these sensors enables the acquisition of 3D models, virtual reality, virtual tours, etc. This is opening a totally new dimension to archaeologists, heritage conservationists, heritage authorities and the general public. Geo-heritage is an emerging science and technology, being non-invasive, is unharmed for the heritage site. It enables to derive results that provide a better understanding of the site. Otherwise, all this would not be possible.

Main emphasis will be given to illustrate how geo-heritage is now contributing to the local populations for them to develop a local economy based on cultural heritage sites located within their community.

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