

EARTH OBSERVATION SYMPOSIUM (B1)
International Cooperation in Earth Observation Missions (1)

Author: Dr. Eytan Tepper
China University of Political Science and Law, China

UNESCO - CHINA CENTER: UTILIZING EARTH OBSERVATION FOR THE CONSERVATION OF
WORLDWIDE NATURAL AND CULTURAL HERITAGE

Abstract

The international Center on Space Technologies for Natural and Cultural Heritage (HIST) was jointly established by UNESCO and the Chinese Academy of Sciences in 2011. It is the first of its kind to apply earth observation for the conservation, management and sustainable development of globally significant natural and cultural heritage, biosphere reserves and geoparks (UNESCO-designated places). Based in Beijing, it is hosted, financed, and uses the infrastructure of the Chinese Institute for Remote Sensing and Digital Earth (RADI). This includes earth observation data from Chinese satellites, its procession and distribution. RADI has three ground stations covering 70% of the Asian territory and also possesses two remote sensing aircraft with more than 10 types of advanced remote sensors, forming a new-generation, high-performance aerial remote sensing system. The objectives of HIST are to provide needing UNESCO member states access to technologies and raw and processed earth observation data they do not have; train personnel on the use and interpretation of satellite data for world heritage conservation; capacity building of policy-makers, site managers and researchers on how to apply space technologies to the conservation and management of the world heritage. The center's active projects include: serving the Angkor World Heritage site in Cambodia, including the famous Temple of Angkor Wat. In China: research on the origins of Chinese Civilization by prediction, identification and spatial analysis of relic sites by remote sensing of multiple locations; analyzing the geographical features of the Giant Panda's habitat; dynamic, multi-scale space monitoring of the Great Wall; and a first Atlas of World Heritage sites in China with maps and data from earth observation. Another project is cooperation with Italy on intelligent heritage management; the cooperation includes mutual exchanges and training in remote sensing, geophysics and diagnostic tools on cultural heritage management; case studies include: ancient Rome, Italy; Hongcun World Heritage Site and the Silk Road in China. The cooperation and operations of HIST will gradually expand to more sites in and beyond Asia. The paper will present: the history and rational of the center, its structure and resources; its activities within and outside China; the practice and rules regarding disclosure, use and distribution of the remote sensing data; the mechanisms of the UNESCO-China cooperation as a model for future cooperation between UNESCO and other countries; and the cooperation scheme of the center with Cambodia as a model for cooperation with other world heritage sites' authorities.