

24th SYMPOSIUM ON SPACE ACTIVITY AND SOCIETY (E5)
Space Technologies - Earth Applications (3)

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THE USEFULNESS OF HISTORICAL EARTH OBSERVATION SATELLITE IMAGES

Abstract

A very large number of various types of earth observation satellites had been acquiring images of the surface of the earth. At the United Nations Conference on Sustainable Development (UNCSD) held in Brazil in June 2012, a thick publication was distributed, providing details on the numerous earth observation satellite programs that would be coming into operation. Some well-known examples of the impact of earth observation satellites on society include early warning of approaching typhoons, thus saving thousands of lives; information on the state of the surface of the earth for better managements of the environments on land and at sea; Google Maps providing satellite images for easier location of places. Earth Observation Satellites can also provide reliable historical records for places undergoing drastic changes either through natural disasters or through extensive development programs. The historical records can provide baselines for studying changes taking place and guidelines on how best to plan for the future. These historical records could also help to settle potential current and future legal issues related to the land and the sea. The usefulness of historical images of earth observation satellites will be discussed taking Singapore as an example. The International Journal of Remote Sensing, on its cover page of Volume 11 No 5, had shown an earth observation satellite image of the West Coast of Singapore. This image was taken from a Marine Observation Satellite Multi-Spectral Electronic Self-Scanning Radiometer (MOS1 MESSR) Verification Program that had been carried out by the National University of Singapore. Data acquired by other satellites, particularly the Landsat satellites, before as well as after that MOS1 MESSR image, provide a record of the progress of construction work in Singapore, over a period of four decades. The early images showed Singapore before the massive construction works started. The major construction works that had been carried out include: Land reclaimed from the sea to build the current Singapore International Airport; the joining of two rivers and the construction of a dam to form a new lake on the shores of which is now located the new city financial center, as well as the new integrated resorts. Currently the land along the old railway line is being returned to nature to become a sanctuary for animals and seasonal migratory birds. A new fast train will soon be built to join Singapore to Kuala Lumpur in Malaysia.