A NEW AUTOMATIC SERVICE OF SATELLITE IMAGES DISTRIBUTION

Hsin-Yin Lin*[1], Shu-Min Hsu[1], Fuan Tsai[1]

[1] *Center for Space and Remote Sensing Research, National Central University*

Multi-temporal satellite images can provide users with long-term spatial-temporal information for diversified applications. However, in the past the utilization of satellite imagery has been restricted due to its high cost. Following the government's policy of open data in Taiwan, a new automatic service of satellite images distribution has been developed by Center for Space and Remote Sensing Research, National Central University (CSRSR, NCU) to push satellite images automatically to users based on pre-set requirements and conditions. Through the developed GRID subscription system, the most real-time SPOT image data will be delivered directly to the users every day without manual intervention. Originally, in order to efficiently search for high-quality optical satellite images, the most important factor is cloudiness. We design a GRID system with a grid size of (0.125°x 0.125°), which is about (13KM*13KM)) smaller than an original SPOT full frame (60KM*60KM), to get a more accurate cloud cover analysis of the target images. Then we establish the SPOT-6/7 satellite images database with GRID cloud cover analysis. According to the export of the SPOT-6/7 image catalog directly received every day, convert its cloud cover estimation mask gml file to the cloud cover percentage corresponding to the relevant geographical grids, and store this cloud cover percentage information in the database. The final step is to build a WEB querying and ordering system of directly receiving SPOT-6/7 satellite images with GRID cloud cover information for users to place orders online. This new system can help users search for high-quality images of the AOI more efficiently and then download valid data faster.

In the newly designed system, we provide a new subscription service of satellite images distribution. Based on the GRID ordering system, users can create projects to set the target areas, durations, viewing angles, cloud cover requirements for daily subscription. After the satellites downlink and processing, if the real time data meets the requirements of subscriber's project, the system will generate the fresh new images to Ortho products automatically and the ortho products will be synchronized to the subscriber's cloud drives, also the subscriber will be promptly notified . The newly developed automatic satellite image distribution can provide diversified users with more efficient and effective data delivery services specifically tailored to their requirements for assorted applications.

Keywords: Spatial-temporal, Open Data, Satellite Ortho products, GRID, Subscription Service