Interpretation of satellite image data by using extended reality techniques and multimedia platform.

Jung-Chien Hung[1], Ke-Hsin Huang[2], Chin-Yin Chen[3], Li-Yu Chang[4], Ying-Wen Jan[5]*

[1] *clairehung@tasa.org.tw*

[2] *janiceh@tasa.org.tw*

[3] *fifi@tasa.org.tw*

[4] *davidchang@tasa.org.tw*

[5] *ywjan@tasa.org.tw*

As a space agency in Taiwan, TASA (Taiwan Space Agency) is not only dedicates to the manufacturing of earth observation satellites, but also responsible for the education and promotion of applying satellite data. However, due to the development of science and technology, the real world and the digital world are more closely connected in different platforms and user can easily enter the digital world and learn new things in an immersive environment. By taking this advantage, education and training of understanding and applying satellite image data can be organized in more interactive ways and allow user to obtain more benefit when compared to traditional lecture-based instructional approaches. In this study, we plan to come out a multimedia platform based on extended reality techniques for educating and training users to gain fundamental knowledge about the acquisition and applications of satellite data including FORMOSAT series satellite data and other open source remote sensing data. In order to deliver the multimedia platform efficiently, e-books, augmented reality and virtual reality technologies will be applied. Basically, two major topics including long-term landscape changing and environmental monitoring will be arranged in the proposed multimedia platform. In the topic of long-term landscape changing, the development progress and the surrounding influence of massive public constructions will be revealed by satellite images of various period. For the environmental monitoring topic, natural disaster events including wild fire, volcanic eruptions, and floods will be presented by the change detection with multi-temporal satellite images.

Keywords: Long-term landscape changing, Environmental monitoring, Satellite image data, Extended reality, Multimedia platform.