Honours in Imagery

Prepared University students for work in the commercial world requires access to the most up to date software and IT systems available, here Alex Koh of Geo Technologies explores the use of developing information technologies and in particular at how the data serving capabilities of Earth Resource Mapping’s ECW based Image Web Server, are set to improve the scope of learning tools available to today’s university students.

Imagery in Education

United Kingdom universities are experiencing an increase in their use of Information and Communication Technologies and of larger and more realistic data sets; in the delivery of undergraduate courses. This, in turn, leads to additional pressures on institution-wide and local area network infrastructures, as well as on the very method of course delivery. These problems manifest themselves in the form of extended downtimes resulting from insufficient student account disk capacity, slow staff and student access to data, poor portability of data between sites, difficulties in assessing digitally submitted coursework and plagiarism. In short, to an inefficient service.

The last three years have seen developments in sensor technologies, processors and software. Storage media is now outpacing the capacity for data transfer and, until July 27th 1999, when the Image Web Server was launched, file size and bandwidth were the bottlenecks.

Traditional methods of transferring data have included the use of JPEG and GIF compression but these techniques are unable to provide the detail or resolution necessary for on-line analysis or interaction with high resolution data.

GeoTechnologies, on behalf of Bath Spa University College, are in the process of evaluating the potential impacts of these changes on course delivery and are identifying new technologies that may resolve some of the problems identified. The solution must enable students and staff to access large data sets on and off-site, significantly reduce the size of raster data currently held on institutional ICT systems, be independent of the discipline area and must utilise existing software, courseware and hardware.

Earth Resource Mapping’s ECW (Enhanced Compressed)
Wavelet compression format has enabled large data sets to be efficiently utilised across the many areas within an academic environment.

ECW technology which lies at the heart of the development of the Image Web Server, enables the compression of colour raster data at ratios of up to 50:1 or more. Meanwhile the introduction of digital cameras for terrestrial and aerial photography, as well as the availability of desktop and document scanners capable of more rapid throughputs, has made the Image Web Server an appropriate tool for effective data archiving and global data dissemination at rates previously unattainable.

The use of the ECW format for the storage and distribution of raster data in conjunction with the Image Web Server will generate efficiencies and benefits for both students and institutions alike in the delivery of higher education courses. These benefits include student accessibility to large data sets both on and off campus, secure storage and distribution of data and significant improvements in the speed of data processing. Further benefits include free plugins for MS Office, ArcView, MapInfo Professional, Autocad MAP, Photoshop and ER Mapper; a free viewer is also available which can be distributed with data stored using the ECW format.

All in all the development work being carried out by Earth Resource Mapping looks set to aid the preparation of today's university students for the commercial world of tomorrow.

Figure 1: University use of Image Web Server

Figure 2: Hard at work inside the new state of the art Library at Bathspa university