

Preview of INTERGEO 2000 (Berlin) Increase of Exhibition Area by 15%

This year the INTERGEO will take place from 11 - 13 October 2000 in the exhibition centre around the old "Funkturn", the famous radio and television tower of Berlin. After last year's rise of more than 10% this year the exhibition space could be increased of 15% again.

With already 7,500 m2 (net) of exhibition space booked (previous year: 6,700 m2) an increase of 15% has already been achieved three months ahead of the event. Due to the outstanding demand for exhibition space the last remaining areas within the foyer have now been released for the exhibition. This year the number of main exhibitors will increase to 200 (previous year: 179) and the total number of exhibitors to about 300. This makes the INTERGEO the largest international event for geodesy and geoinformatics world-wide.

Geoinformatics at the Centre of Attention

The tendency of the last years also continues this year. Geo Information Systems (GIS) are at the focus of the exhibitors. Target groups from a large number of industries are being addressed, from applications for the public sector to industrial solutions. These systems

are not any more in a world of their own, an IT world for specialists only, but geo information systems are now becoming part of mainstream IT. This will add value to data within the enterprise that have a spatial component. According to a large number of experts this applies to more than 80% of all data held.

The Internet as an Engine

The Internet and increasingly more powerful computers also play an important role. For the first time integrated Internet products with an eCommerce component will be demonstrated at this year's INTERGEO. The use of GIS on the smallest of devices, palms and Psions, is another focus. These solutions are not entirely for the use of experts any more. The already well-known in-car navigation routing systems are now available to hikers and urban tourists using a standard mobile telephone. City information systems are widely based on GIS technology.

Preview of GIS 2000 (London) "Knowledge Is Power"

GIS 2000 is running from 26 - 28 September at Earls Court 2, London and promising some new features for 2000. This year's show will feature over 100 exhibitors, including leading industry names such as; Autodesk, CACI, eMapSite.com, ER Mapper, Beacon Dodsworth, Laser-Scan, Mapcentric and Ordnance Survey.

The show is a good opportunity for potential users to see geographic information systems in action and find out more about the substantial business benefits a GI system can bring to virtually any type of organisation. Running alongside the show will be the AGI Conference which features over a dozen end-user case studies including Shell International Exploration, BT, Cable & Wireless, Metropolitan Police, Oracle, Royal Mail and the US Department of Justice. The conference has been designed to meet the needs of a wide audience, including those who are new to GIS as well as those who are well-versed in the benefits of GI systems.

The conference will be accompanied by a workshop programme which aims to meet the needs of those new to GI, in local Government, technical areas or working with the Internet. The workshops will provide a valuable opportunity to hear about real experiences and discuss issues in a less formal environment.

Focus

The focus of the show features will be to educate visitors and offer advice. For those wishing to try out the latest GIS tools, The Solutions Centre is offering visitors the chance to try out a range of market segmentation products, see how to put interactive GIS maps on the web and find out the latest on intelligent addressing – in a neutral, independent environment. Those wishing to know more about what remote sensing and GPS can do for their organisation, The British National Space Centre and Remote Sensing Society are offering free consultations by recognised applications experts. They will also be offering visitors the chance to try the latest applications in the technology showcase. The Consultancy Centre will be offering visitors free advice with experts in particular sectors on call. The Centre will cater for every visitor, no matter what stage of awareness they are at. Pre-registered visitors can book a consultation in advance via the web: www.gisexpo.com or simply stop by on the day.



Convergence of Devices

Also applied geodesy, the classic area of the INTERGEO, is getting a boost. The prototypes of networked devices and GI systems, that have been announced last year, are now available. Mergers of companies are a result of this that could not have been imagined before. Information technology is thereby building bridges between organisations that before could have only been connected by complicated interfaces. The positive results of the switching off of the distortion within American GPS (Global Position System) satellites, an initiative by Bill Clinton, will be another focus. Inaccuracies of 30 to 200 metres in determining a position using GPS are a thing of the past. Today acceptable results are achievable even with devices from the lower price categories. The first mobiles and watches, which incorporate a GPS module, are already on the market.

Further information about the event is available on the Internet at www.intergeo.de and www.dvw.de ■

Business Intelligence Day

Wednesday is Business Intelligence Day at GIS 2000, and for those who want to hear and discuss how integrating GIS with enterprise-wide business intelligence can improve their business, there will be a series of free seminars dealing specifically with these. Visitors can also attend the free Management Seminars which will deal with the benefits of a GI system, whether they be new users or business managers.

To make sure that every minute of their visit is worthwhile, visitors will be able to customise the show to suit their own personal needs with an innovative new tool developed exclusively by CMP Europe. VisitWizard is a sophisticated, new web-based tool that will allow pre-registered attendees to personalise their own show programme. Visitors can book all of their appointments prior to the show on-line, streamlining their visit.

For more information on GIS 2000 or to register for a free ticket, please visit www.gisexpo.com ■

Review of ESRI's 20th Annual User Conference "The World A Living System"

Jack Dangermond, president of ESRI, set the tone of the company's Twentieth Annual User Conference, set in San Diego, California, when he spoke of his changing perception of the world in his opening address to a hall packed with conference registrants. "I now see the world as a living system," he announced. "Because of an increasing global population and leap-frogging technological advancements, the human impact on the natural world continues to grow on an almost daily basis," Dangermond continued.

Dangermond sees our global society as also evolving. Business has helped build global economies, while advances in information technology and the use of the Internet have enabled almost immediate access to information in far-flung corners of the world. "Being location-based by nature, geographic information system (GIS) technology has the potential to be the primary organizing factor in an increasingly complex and interrelated world," he added.

Announcing the Geography Network

When speaking of the newly announced Geography Network during his address, Dangermond stated, "This is the most exciting thing that we have ever done!" The Geography Network was described as a collaborative, multi-participant system for publishing, sharing, and using geographic information on the Internet. "It is a new platform for GIS," continued Dangermond. "It offers new ways to cooperate in the development and sharing of information, provides a portal for spatial data cataloging, and connects users with the data they need."

ArcGIS Unveiled

The review of current and future product offerings is always a major aspect of the ESRI User Conference and this year was a crowd pleaser. ArcGIS, the major announcement at this year's conference, promises to set a new standard in GIS software. It is comprised of a family of products sharing a common architecture that include a variety of client and server software. Clients include ArcInfo 8.1, ArcInfo Editor, and ArcView GIS 8.1. These products will have the same user interface and will share parts of the same applications, the same development environment, data models, and extensions such as Spatial Analyst and 3D Analyst. By sharing common tools, interfaces, programming environments, and more, a user who learns one system can, in effect, use any of the other client systems. The two GIS servers in ArcGIS are ArcIMS and ArcSDE. Both are open, multi-user focused, scalable, and are the basic technologies that provide geographic information services, a new platform of GIS

for users. ArcSDE will provide an open gateway to databases, data model support, long-transaction support, standards-focused architecture, and an open API to the data. ArcIMS integrates a new, more Java-oriented, server-centric technology that is easy-to-use and comes with templates and extensions supporting dynamic mapping and data streaming services. Presentations and demos of the latest versions of current products included ArcPad, ArcView Business Analyst, ArcLogistics Route, and ArcFM. Dangermond emphasized that ESRI would continue to support its existing product range as well as develop migration technology and applications for the ArcGIS platform.

Hammer Award Winners

During the opening session, the National Partnership for Reinventing Government (NPR) presented ESRI and six teams from the National Spatial Data Infrastructure (NSDI) Community Demonstration Project with Hammer Awards. The NPR is an interagency task force established in 1993 by Vice President Gore to find ways to make government work better, cost less and get results Americans care about. The Hammer award got its name from the hammers that once cost

the government \$400 because of cumbersome purchasing procedures. "Innovative communities—like those recognized today—are showing how this kind of mapping can help solve their toughest problems. Today's maps can represent every dimension of a community—its area, its resources, its infrastructure, the quality of the air and water—all the things that make a community livable. Maps can capture information that helps communities plan and helps them protect the safety of each citizen," said Vice President Al Gore in a communiqué to the prizewinners.

A Concluding Snapshot View

More than 750 moderated paper sessions, technical workshops, and special interest group meetings were conducted during the 5-day conference with topics ranging from "Terrain Analysis" to "Making e-Gov a Reality." Special exhibits included the Defense Showcase, the Public Safety and Law Enforcement Showcase, and the GIS Education Fair. This year's map poster contest attracted several hundred entries from countries around the world. Summarizes conference attendee Jeffrey Reese, "The (ESRI) user conference allows users of GIS to go back to their daily jobs with renewed vigor and new ideas. We can more effectively do our jobs and help to make our communities a better place to live."

Jim Baumann (jbaumann@wsri.com) based in Redlands, California, USA, writes about international GIS-related topics for ESRI. ■



Mr. Jack Dangermond

Review of ASPRS 2000 "Slow Pace for High Resolution Satellite Imagery"

For the first year of the new Millennium, the ASPRS Annual Conference returned to its home base, Washington, D.C., with the week-long (Monday to Friday) meeting being held at the Omni Shoreham Hotel between 22nd and 25th May. It started with the now familiar mixture of workshops (12) and user group meetings (10) held over the first two days. This was followed over the remaining three days by an intensive schedule of concurrent lectures, fora, special sessions and poster presentations, together with a large Technical Exhibition. In addition, there were a number of half-day tours to government agencies - NIMA, NASA/GSFC, USGS National Center and US Army TEC - on the Wednesday and Thursday. From this, it will be obvious that drastic choices had to be made by all of the 2,300 participants as to what to attend. Inevitably clashes occurred in such a tightly scheduled programme - though this is not a criticism of the organisers.

By Prof. Gordon Petrie

Clash with CADD/GIS

What was far less understandable however was the fact that the ASPRS meeting clashed badly with the CADD/GIS Technology Symposium & Exposition being held in St.Louis over the same period. This latter meeting is held on a triennial basis and is organised by the military and civilian defence community concerned with mapping and GIS. Since this Symposium had over 150 presentations, 19 workshops and over 100 exhibition booths, this meant that many people had to choose between the two meetings. Indeed it attracted 1,100 participants. Furthermore, quite a number of the larger American private sector mapping companies who are substantial contractors to the defence community did not show up at the ASPRS Conference, preferring to take



The ImageStation 2000 DPW introduced at the Conference by Z/I Imaging. This redesigned and upgraded version of the ImageStation series features a special support table with electrically adjustable height control of the digitizing and monitor surfaces. The PC with its twin 866 MHz Intel Pentium III processors and its storage drives and electronics is accommodated in a special rack enclosure located underneath the table. (Courtesy Z/I Imaging)

ORBIMAGE announced that it had experienced difficulties with the gyros of its OrbView-3 satellite as revealed through its ground testing procedures. As a result, the launch of the satellite has been postponed for a further year till May 2001.

booths and concentrate on the St.Louis meeting - while others were badly stretched between the two.

Educational Sessions

With the 10 simultaneous sessions at the ASPRS Conference - each with three or four lectures within an individual 1 hour

the results being achieved with the new integrated DGPS/INS systems; the results obtained through the use of rational functions; the calibration of the new digital imaging sensors; etc. were all covered by several good to excellent papers. Where the organisers failed badly was in the sessions concerned with digital photogrammetric systems. These were held in a small room - correctly named the Cabinet Room - which certainly felt like a cabinet given its small size and the crush of bodies standing or crouched in every possible space between the seats and against the walls all around the room. Even then, fewer than half of the

intending participants could be accommodated - your reviewer being one of those who could not gain entry to two of the sessions. By contrast, several of the remote sensing sessions were placed in large rooms with 150 seats and had audiences of between 10 and 20 persons. How such a drastic misjudgement could take place defies understanding - the sessions on digital photogrammetric systems have always been among the most popular at recent ASPRS Annual Conferences.

Technical Exhibition

The Technical Exhibition was mounted in the large underground car park located in the basement of the hotel. At first sight, this looked to be a stark and very unappealing venue for the event. However, once it had been carpeted and all the stands had been erected and occupied, it turned out to be quite a reasonable site for what was a very interesting exhibition.

Airborne Imaging

On the imaging front, the two major suppliers - LH Systems and Z/I Imaging - were both holding their fire and will introduce their new airborne digital imagers at the ISPRS Congress in July. However the well known Z/I RMK-TOP metric camera was shown, as was the Japanese HIEI SE-IIa camera from Osaka Optical in Japan utilizing 5 inch wide film. Besides which, Rollei showed its Rolleimetric 6008 metric film camera and its new d7/d30

small format (1.4 megapixel) metric digital cameras. Also there was lots of activity on the part of the suppliers of photographic materials and processing systems. Thus Kodak and Agfa both had large stands; Kreonite and Colex showed their film and paper print processors; Egoltronics and Electronic Photo Controls both showed their electronic dodging printers; HAS Images and Precision Photo both advertised their processing and reproduction services; while Cymbolic Sciences showed their wide-format photographic and inkjet plotters. New to most people was the UltraScan film scanner from Vexcel Imaging Austria which is set to compete with the existing Vexcel Imaging (US), Wehrli RasterMaster, LH Systems and Z/I Imaging devices. Obviously film-based imagers and the resulting products based on the use of photographic materials are very far from dead!

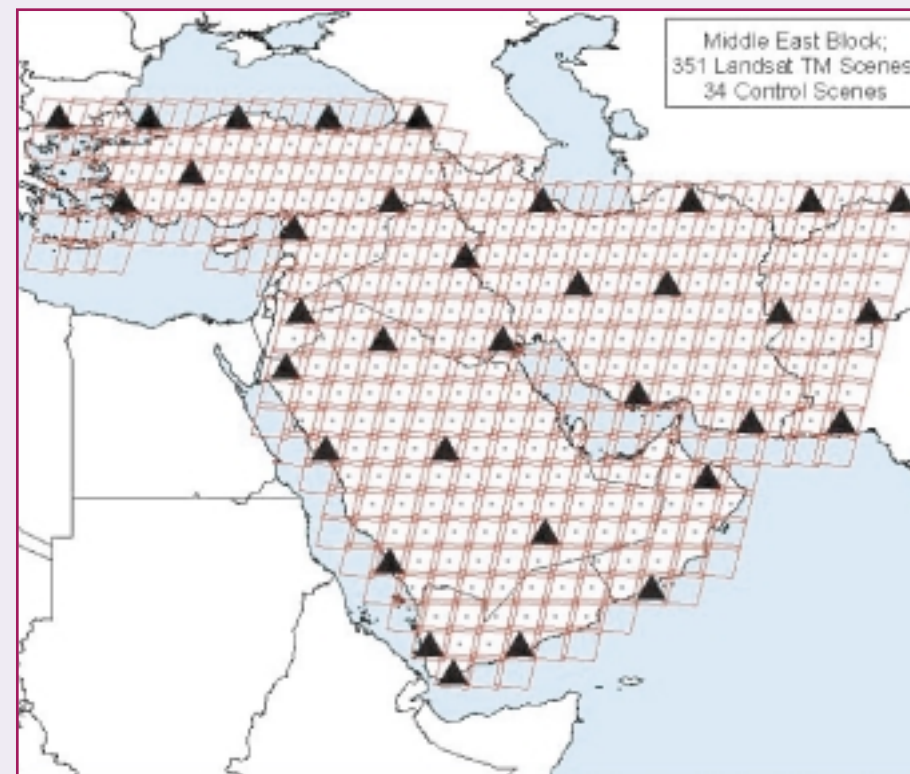
Imaging from Space

In this area, it has become obvious that the development of the so-called high-resolution satellites is still proceeding at a very slow pace - which is quite at odds with previous declarations, forecasts and expectations. Thus ORBIMAGE announced that it had experienced difficulties with the gyros of its OrbView-3 satellite as revealed through its ground testing procedures. As a result, the launch of the satellite has been postponed for a further year till May 2001. Thus it is likely that OrbView-4 with its additional hyperspectral imager will in fact be launched first - since, at

present, this is still scheduled for January 2001. In the interim, ORBIMAGE has formed an alliance with the French ISTAR company to

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bring the DLR airborne pushbroom scanner to North America to acquire additional digital data for its OrbView Cities programme. Similarly West Indian Space has experienced difficulties and delays with the first EROS satellite and the need for additional funding resulting from these delays. The launch of the EROS-A1 satellite (originally scheduled for February 2000) is now set for the 3rd quarter



The Middle East block of EarthSat's GeoCover-Ortho Project comprising 351 Landsat TM scenes fitted to 34 control scenes containing ground control points (GCPs). These were triangulated and adjusted simultaneously as a single block to provide control points for the subsequent ortho-rectification operation. (Courtesy EarthSat)

of 2000. As for Space Imaging, which actually has its second IKONOS satellite in orbit (after the loss of its first), there were some really spectacular images on display at the Exhibition. But there is talk (rumours!!) of customer resistance to the high pricing and slow delivery of the product. Seen from the purely European viewpoint, the fact that the U.K., the Scandinavian countries and most of the Iberian Peninsula are not being directly covered from the Space Imaging Europe ground receiving station in Athens doesn't seem to be optimal for data acquisition in West and North West Europe - though of course the data can be stored on-board the satellite and then transmitted down to a ground receiving station elsewhere, e.g. in the U.S.A. Still in this area of spaceborne imaging, Boeing appears to be trying to revive the Resource21 project concerned with the construction and operation of a constellation of satellites producing space image data designed specifically for precision farming applications. What has become very apparent in recent months is the great success of the imagery acquired from the new Landsat-7 satellite, including both its pan imagery with its 15m ground pixel size and its 30m ground pixel multi-spectral data. Of course, the low cost of this L-7 data has been very helpful in ensuring its widespread popularity besides the high quality of the data. This success was confirmed both through the presented papers and the imagery shown in the Exhibition.

GeoCover

A project that has attracted a lot of attention is the GeoCover project that is being undertaken by the Earth Satellite Corporation (EarthSat). Sponsored by NASA, this involves the creation of a digital image database covering the whole land mass of the Earth from Landsat TM imagery for the period around 1990 and from Landsat MSS imagery for the period 1972-79. Each of these two data sets (each comprising 7,600 scenes) will be used to create a seamless global database of multi-spectral scenes having a relatively high accuracy in terms of their geographical location. This high positional accuracy is being achieved through the simultaneous adjustment of blocks of 300 to 400 scenes based on ground control and DEMs supplied by the U.S. government. The final rectified scenes and mosaics are being made available under the title GeoCover-Ortho. A parallel effort by EarthSat to provide a complementary global land cover analysis of all the TM scenes from 1990 - called GeoCover LC - is also underway as a purely private venture. The first 1,200 scenes of the GeoCover LC product covering the Middle East and North & East Africa are now available from EarthSat.



The Optem Digital Transfer Scope (DTS) allows the viewing and interpretation of stereo-pairs of hard copy aerial photos superimposed over the corresponding digital map data. (Courtesy Optem)

PCI Geomatics

The Canadian PCI Geomatics company seemed to be particularly active during the Conference. On the one hand, it launched its new Geomatica software at the Conference. This combines elements from its remote sensing (EASI/PACE), GIS (SPANS), cartography (ACE) and photogrammetry (OrthoEngine) products to produce a single integrated software package. Besides which, Geomatica provides a range of tools that allows the user to customize the package to suit his particular requirements and allows a direct interaction with Oracle's geospatial (raster and vector) data management software. As for PCI's OrthoEngine software, Version 7 will support Landsat- 7 ETM+ imagery and provide a new Radarsat sensor model that makes use of the orbital parameter data supplied with the imagery. PCI has also implemented the non-rigorous rational polynomial model in OrthoEngine SE. Finally, one of the company's senior software engineers, Dr. Cheng, presented a whole series of interesting papers in the Conference's Educational Sessions giving the results of extensive tests carried out using OrthoEngine.

DPWs

With regard to digital photogrammetric workstations (DPWs), the main suppliers based in North America, including both the large system suppliers - LH Systems (and its partner, BAE Systems), Z/I Imaging and Autometric - and the smaller players - ISM, DVP, KLT, DAT/EM and R-WEL - were all present.

Rumours and gossip are an inevitable part of a big conference: in the particular context of DPWs, these included the speculation that Autometric was about to be taken over by the giant aerospace company, Boeing. A few days later, after the Conference had finished, this rumour turned into fact. In the Exhibition, Autometric did show the new Windows NT versions of its SoftPlotter DPW and its KDMS digital data collection software. However, rather unexpectedly, the company has dropped its OrthoKork product. Its partner in terms of the OrthoMAX product, ERDAS, also introduced its own long awaited Stereo Analyst package. This will be available both as a stand-alone package and integrated into the ArcView GIS product. Noticeable too was the DPW from DVP which demonstrated, jointly with Applanix, the capability of its DPW to handle the orientation data captured in-flight by the latter's integrated DGPS/INS system to create stereo-models direct from this data. For the rest, each supplier showed small but useful improvements to their DPW products. However, in this context, Z/I Imaging showed a more substantially re-worked and upgraded DPW in the shape of its ImageStation 2000.

China

There were no European suppliers of DPWs present in the Exhibition. However there was a surprise new entrant to the market in the form of the China Siwei Surveying & Mapping Company from Beijing. This appears to be the commercial arm of the China Academy of Surveying & Mapping based in the Chinese capital. The principal item shown in the

Exhibition was the JX-4A DPW running on a Pentium-based PC. This was equipped with a reasonably complete software suite allowing orientation; stereo-viewing; DEM generation using image matching; ortho-image generation; vector line mapping; and close-range photogrammetric operations. A separate automated aerial triangulation package was also on offer, as are a film scanner (Imatizer-2300) and a large-format laser raster film plotter (JSH6080). Of course, another DPW developed by a Chinese academic institute (Wuhan University of Surveying & Mapping) in the form of the VirtuoZo DPW has already become established in the market place (and indeed was also shown in the Exhibition), but this new entrant was a real surprise. It is now looking for agents to market and sell its new range of products world-wide.

Transfer Scopes

Two interesting devices, each of which claims to be a digital/electronic development of the well known and purely optically based Zoom Transfer Scope (ZTS), were shown in the Exhibition. The first is the Digital Transfer Scope (DTS) made by Optem, the successor company to Bausch & Lomb, makers of the original ZTS. This DTS device allows the interpretation of stereo-pairs of hard-copy aerial photos and the simultaneous viewing of these photos superimposed on the corresponding digital map data on the display monitor of a PC. The DTS software is an extension of ESRI's ArcView that allows the warping and rotation of the digital base map to fit the photographic images. It is then possible to update the map data from the photographs. The second device is the Electronic Zoom Transfer Scope (EZTS) from Lockheed Martin. This takes digital (rather than hard copy) images and fits them to an existing geo-referenced digital image or map. Essentially the EZTS is used for the transfer of individual points and their accurate geolocation within a recognised coordinate system.

Conclusion

In summary, this was a very good ASPRS Conference and, as usual, extremely informative in terms of keeping abreast of current developments and applications of photogrammetry and remote sensing in North America. Next year's meeting is scheduled to take place in St.Louis between April 23rd and 27th April, 2001.

Professor G. Petrie (g.petrie@geog.gla.ac.uk),
Department of Geography & Topographic Science,
University of Glasgow, Glasgow, G12 8QQ,
Scotland, U.K.
URL: <http://www.geog.gla.ac.uk/~gpetrie>