Esri EMEA User Conference 2010

Italy, INSPIRE and Imagery

With 1500 visitors, the Esri EMEA User Conference is becoming larger and larger. This year's event was held in Rome, Italy. During 26-28th of October, the Ergife Palace Hotel was the stage for three days of keynotes and presentations by Esri users and partners.

by Eric van Rees

Before his keynote speech, Esri President Jack Dangermond was presented with a lifetime achievement award by Esri Italia.

No less than 1500 visitors were welcomed at the Esri EMEA User Conference 2010. The main topics were the major new release of ArcGIS 10, the INSPIRE directive and the fusion between imagery and GIS, all of which were discussed several times during the event. Although these topics were expected to be high on the agenda, others such as mobile GIS were slowly emerging. For instance, location-aware devices promise to be very interesting for the GIS market in the coming years, not only in terms of using citizens as data collectors and sharers through different types of social media, but also for business GIS (location based advertising for example).

The first conference day featured a keynote speech by Jack Dangermond, as well as several European keynotes and a number of technical presentations and demonstrations of ArcGIS 10. The following two days highlighted a series of user presentations (or paper sessions), in no less than ten different tracks.

ArcGIS 10

Before his keynote speech, Dangermond was presented with a lifetime achievement award by Esri Italia, which celebrated its 20th anniversary this year. The following keynote, named 'GIS for Everyone', stressed that ArcGIS 10 was a major release, because it includes not only desktop, but also mobile and server platforms, which together form one integrated GIS platform. Apart from the desktop, server and federated approach, a pervasive approach through cloud/web GIS and the mobile device can be seen. A great deal of the keynote was about ArcGIS Online and the basemap initiative, where authoritative cartographic data is provided by cartographic organizations worldwide to produce a basemap of the whole world. It was interesting to see that an Open Street Map template is used for hard to reach locations, such as the city of Algiers. The following three keynotes showed a glimpse of what to expect for the coming two days: topics discussed were GIS and humanitarian aid, environmental information in Europe and intergovernmental geo-intelligence. Apart from user presentations such as these, various technical presentations and demonstrations could be followed, given by Esri staff worldwide.

Trimble

Michelle Frey and Lee Braybrooke from Trimble presented different GPS and GIS applications used for rail infrastructure management in Canada and the U.S. One of the tasks was to create a database that describes the network and wayside assets (tracks, mile-

posts, switches etc.) of the railway company and to keep the track database updated as changes occur in the field. To facilitate field and office use, a combination of four components was created: Esri ArcGIS mobile, Esri ArcGIS Server, Trimble post processing and Trimble devices for use in the field. The field users include mobile staff as well as inspectors, maintenance crews and construction workers. The office users are GIS analysts. Since there are a lot of assets to be maintained and mapped, the system requires rapid data collection, via simple data entry forms. Although not as accurate as employing surveying instruments, the end solution guarantees highly accurate data capture of assets and precise positional information for each. It also enables a seamless transfer of data direct from the field, travel time savings, and an almost real-time review of project progress.

ITT

ITT Visual Information Solutions was in attendance with a presentation called 'Image Analysis Techniques for Disaster Management and Monitoring'. Cherie Darnel presented a number of case studies in which image analysis techniques were used for disaster management.

First, she showed how remote sensing was used for damage analysis after Hurricane Katrina. She then went on to explain how change detection, as well as assessments, was done on a regional, neighborhood and per-building level. Qualitative analysis was done with ArcGIS for the assessment of flooded areas. For this, available Quickbird and LiDAR data were used.

Quantitative and qualitative analyses were combined for a case study of the Indian Ocean tsunami. Here, extracted building outlines and locations were viewed, evacuation routes were planned and the most distressed or flooded areas requiring immediate assistance were identified.

In Western North America, mountain pine beetle outbreaks can result in the loss of millions of pine trees. Through forestry analysis, the damage to the forest can be analyzed. The steps required are as follows: calculate the NDVI (Normalized Difference Vegetation Index), calculate the vegetation difference and, the last step, perform post classification clean up.

In her conclusion, Darnel made clear that image analysis and GIS, when used together, can have powerful results, such as the ability to perform advanced analytics using imagery-derived data, and geodatabases that are easily updated with the availability of current imagery.

ITT announced ENVI 4.8 and ENVI for ArcGIS Server. ENVI 4.8 now includes full integration with ArcGIS, making image analysis tools accessible directly from within the ArcGIS interface (accessible through the ArcGIS toolbox). The release also includes functionality for viewing LiDAR data in a display as well as a new automated process for viewshed analysis, giving users situational awareness from fixed vantage points.

GIS and INSPIRE

INSPIRE was a central theme for this conference, not just because of the location of the event (Europe) but because the INSPIRE deadline is getting closer and closer. This is causing software companies and government agencies to get their acts together and work hard to offer software solutions, and get the data right. Announced during Intergeo, but discussed in detail during this event, the ArcGIS for INSPIRE product was showcased during a presentation from con terra GmbH, which developed the product.

ArcGIS for INSPIRE includes a commercial extension to ArcGIS Server as well as Esri's open source solutions for geoportals. With this, it is possible to manage and publish metadata, manage and publish geospatial data and consume INSPIRE data and services. On top of this, there are also a number of add-ons from the sdi.suite from con terra. These enable extended data sharing and monitoring, and reporting of quality control, usage accounting and the like. To make things a little more clear, Christian Elfers from con terra outlined a scenario for applying ArcGIS for INSPIRE for a public agency that owns and manages a dataset of the administrative boundaries of Europe. Elfers identified three tasks for the product: first, the use of data models for spatial data sets that are compliant with INSPIRE data specifications. Second, the integration of business processes and the transformation of data, into INSPIRE. Third, access via INSPIRE network from UML models to enterprise geodatabase schema (in other words, publish an INSPIRE Network Service, a web services extension to ArcGIS Server). For performing the second task, an add-on from FME is available, called the FME INSPIRE Solution Pack, which can be used to simplify the complex INSPIRE schema mapping.

GIS and Disaster Management

There were also a number of Dutch presentations: the Railways Management track featured a presentation on the integration of three databases of the Dutch Railway Network (GIS, SAP, Infra Atlas Triangle), by Juliette van Driel from ProRail. During the 'Techniques and Methods for Disaster Management' track, a presentation on the Eagle product was given by Frits van der Schaaf (Esri The Netherlands). He focused on how a netcentric and mapcentric approach for crisis management and emergency response could serve as a 'common operational picture' where different parties share the same information rather than just a piece of the puzzle. The system combines GIS, the web and general IT to share and update information when managing disasters. Making this 'common operational picture' happen requires a steady technological infrastructure (internet connection, a lot of bandwidth, etc.) and audience members asked if this was actually the case in disaster areas such as Pakistan, where Eagle was applied successfully.

GIS and Humanitarian Response

The Humanitarian Response track concluded with three strong presentations. Inna Cruz from the Geneva International Centre for Humanitarian Demining presented a project called SERWIS, a server for the global contamination from the explosive remnants of war (SERWIS is short for Server for Explosive Remnants of War Information Systems). With the project, overview maps are created of areas where mines are located but have not yet been disarmed. Not only is the location mapped, but also the population density in the contaminated areas, which enable the potential dangers to be estimated. The aim of the project is to display data on a global scale, which is badly needed, because collected vector data is unable to show the real contamination problem on such a scale. Output maps have four different layers: the first layer shows the ERW (explosive remnants of war) contamination, the second layer illustrates the field activity, layer three shows the impact and layer four the operational difficulties for demining. Critical points for this project are data accuracy and sensitivity of the data (if the data is available at all).

Next year, the Esri EMEA User Conference will be hosted in Madrid, Spain (26-28 October 2011), followed by the Esri Middle East and Africa Conference in Lebanon (1-3 November 2011).

Internet:
www.esri.com/events/EMEA
www.ittvis.com
www.sdi-suite.com
www.esri.com/INSPIRE
www.isma.org