

MALAYSIA GEOSPATIAL FORUM 2012

6-7 March 2012, Holiday Inn Melaka

“Geospatial Technology: Digital Impetus to Economic Transformation”

STRATEGIC PARTNER



HOST ORGANISER



Melaka State Government

ORGANISER



Opening Ceremony

Welcoming the audience on behalf of the Melaka State Government, Abdul Jamil Bin Arshad, Director, Department of Town & Country Planning Melaka, elaborated upon the economic growth envisioned by the nation and role of geospatial technology in the process. He said that 'Vision 2020', introduced by the former Prime Minister, Tun Mahathir Mohamad, calls for the nation to be self-sufficient, industrialised and fully developed country, by the year 2020. In



its Tenth Malaysia Plan (2011-15), the Malaysian Government has identified key sectors that have the highest potential to contribute significantly to the growth to the economy. These sectors, among others, include ICT, tourism, agriculture, plantation, oil and gas, and business services. In addition, the Government has introduced six National Key Result Areas, in order to gauge government performance towards achieving Vision 2020, which are: reducing crime, fighting corruption, improving student outcomes, raising living standards of low-income households, improving basic rural infrastructure and improving urban public transport. These sectors offer tremendous opportunities for the geospatial industry to tap into. He stressed that with the government moving forward with the new economic strategy, it is high time for the geospatial industry to demonstrate that geospatial technology can be the digital impetus to the country's economic transformation vision. The theme of the conference **"Geospatial Technology: Digital Impetus to Economic Transformation"**, is very apt in this regard, he opined. The state of Melaka too recognises the relevance of use and applicability of geospatial information technology in various spheres of human activity and society and is taking suitable measures to develop and promote it, he informed.



Plenary Sessions

“Creating Geospatial Environment for Economic Growth”

The first plenary session of the Forum, with the theme “Creating Geospatial Environment for Economic Growth,” saw deliberations upon the major projects and sectors in Malaysia which provide huge opportunities, along with industry solutions to facilitate economic development processes.

Multipurpose cadastre



Y. Bhg. Datuk Prof. Sr Dr. Abdul Kadir Taib, Director General, Department of Survey & Mapping, Malaysia highlighted the potential of a multipurpose cadastre in supporting spatially enabled government, private sectors and society and to expand computer support in the process of visualisation, organisation and management of useful land information. Such a multipurpose cadastre is being developed in Malaysia under the

10th Malaysian Plan. It is a long way from the cadastre developed in 1885 which had a single purpose – issuance of land titles. Detailing about the multipurpose cadastre (MPC), Datuk Kadir informed that MPC is principally a survey-accurate national digital cadastral database (NDCDB) that has been populated, adjusted and undergone quality checks at every level of its formation and large scale geospatial datasets that will be mostly acquired from the measurement of mobile terrestrial laser scanner survey. The spatially-enabled MPC will integrate land information system containing survey-accurate cadastre, topography, man-made features and cultural (e.g., land use, demographics) information in a common and accurate reference framework. The key components of MPC are national digital cadastral database plus large-scale geographic features. An important information required to support realisation of ubiquitous MPC is street addresses. The MPC can extend benefits in various areas of governance including public works, fire management, cadastral records, policing, public facilities, revenue, planning and building. The other benefits of MPC extend to property inventory, project implementation and monitoring, crime prevention and detection, utility management, school management, national identity cards, census mapping, population estimates, electoral processes and agricultural yield prediction, informed Datuk Kadir.

Discovering tourism with GIS

The State Government of Perak has chosen 2012 as the Visit Perak Year. As part of Visit Perak Year, the State has introduced 10 tourism icons, displaying the State’s rich tourism attractions including natural attractions, manmade attractions and heritage and culture. The State is promoting these icons through Web GIS, informed Dato’ Dr. Dolbani Bin Mijan, Director, Department of Town and Country Planning Perak. Tourism maps for the State existed earlier, but



through this project, the department has published the same on the Web. The Department is managing and publishing layers using OGC Web Map Services like WFS / WMS through Geoserver. Through this project, Department aims to publish its current data layer on tourist attractions in Perak, to develop know-how on Web-GIS development using FOSS4G solutions and complement the existing Perak tourism website. The organisation is able to deliver more geospatial information to the Perak-GIS stakeholder in efficient way. This data is also linked to Google. By searching for the popular tourism attractions in the State on Google, visitors can get more geo-tagged information about the attraction.

Industry solutions



Observing that “If GIS data collection is worth doing, it’s worth doing right,” Ray Chung, APAC Regional Manager – Trimble Navigation, highlighted the benefits of digital field data collection over manual data collection to maximise its importance in decision making. Traditional paper methods are cumbersome and prone to inaccuracies, a lot of which can result during the transcription of field workers’ data sheets by data entry personnel. The

systems offered by the company are designed for GIS and integrated with supportive technologies so everything is available whenever it is needed, he said. Some of the benefits of these systems over traditional methods include data immediacy, knowledge retention and streamlining of field-to-office workflow.

Tan Teik Eooi, Regional Segment Manager, Asia of Intergraph Corporation, Security, Government & Infrastructure Division, highlighted Geo-ICT solutions as a smarter way to enable the nations. Today, more than ever before, cities around the world need to be smarter and safer, he observed. Cities need to develop an architecture in which technology can evolve and grow. The challenges of data explosion, population growth, demographic change, urbanisation and resource depletion mean that the world’s great cities need to adapt to survive and thrive over the coming decades. He referred to a Frost & Sullivan estimate according to which by 2025, 8 of the top 20 megacities will be in the Asia-Pacific region alone.



Geospatial and incident information can impact key areas that affect all the people living in cities; these are smart governance, safe cities and smart grid. Elaborating upon the role of Geo-ICT, he said that Geo-ICT links spatial awareness, incident command, intelligent video and sensor information into a single system and integrate with local, state and federal government agencies. Geospatial technology provides actionable intelligence which can facilitate smart decisions by providing a pictorial / graphical and multi temporal perspective on complex situations.

“Facilitating Dynamic Nation Building”

The second plenary session, with the theme “Facilitating Dynamic Nation Building”, chaired by Y.Bhg. Assoc. Prof. Datuk Dr. Mizan Bin Hitam, Rector of Universiti Teknologi MARA Melaka, explored various facets related to geospatial technology in nation building in Malaysia.



Tech from space

Dr. Mustafa Din Subari, Director General, National Space Agency, explored the connection



of “space” with “geospatial” and asserted that the geospatial sector should be part of space sector. In this direction, he underlined role of the upcoming National Space Policy, which is in final stages of being drafted, in acting as a catalyst to development of the geospatial industry in Malaysia, in particular the downstream geospatial-related industries such as location-based services. The two thrust areas of this policy which have great

relevance for the geospatial sector are: nurturing the space industry; and enhancing the national space programmes. Nurturing the space industry will make provisions for aspects like setting up the space government-industry council; incubation programmes for start-ups and tax incentives; whereas the enhancement of national space programme will include developing the national satellite programme.

Water resource management

A key asset of a nation is water resources and Dato’ Ir. Lim Chow Hock, Director, River Basin and Coastal Zone Management, Department of Irrigation and Drainage Malaysia detailed the audience about a programme undertaken by the Department to “rehabilitate” rivers, or to restore the degrading rivers to its original condition with a healthy eco-system and recreate the dynamic balance and function of the river to a sustainable state to maximise the economic and social benefits derived from water resources. According to Dato’ Lim, geospatial data, capturing the location and ground condition is a very useful



information tool that helps in making sound decision within a river basin. The geospatial information used in river basin management included topographical map, cadastral map, satellite images, DEM (LiDAR or IFSAR), structures (dam, bed control, barrage, gates, log boom etc.), hydrological stations (water level, rainfall) and water quality stations.

City planning



Effectively developing its megacities is important for a nation with firm economic growth targets. The Malaysian megacity, Kuala Lumpur which is on its future course of development and has a development plan blueprint in place, has incorporated geospatial technology in various aspects of city planning, said Nik Mastura Diyana Nik Mohammad, Deputy Director of Physical Planning, Kuala Lumpur City Council. She informed that spatial

data in GIS format was first developed in-house fully by the Department of Physical Planning in preparing the Kuala Lumpur Structure Plan 2020. She highlighted how it is being used to address various aspects of the Kuala Lumpur City Plan 2020, including land use zoning, development intensity, environmental protection zones, heritage zones, transit planning zones, height control zones, commercial zones, residential zones and contributing to the management of proposed transit corridors. The Kuala Lumpur City Plan 2020 also has provision for executive information system (EIS), the objective of which is to provide a Web-based, multimedia-based and GIS based information to the end users and to have the following information at “finger tips”: written statements/reports; maps and plans and GIS database.

Geospatial data for sustainable development

Nations should focus not just on development, but sustainable development. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Geospatial solutions are necessary to support decision making for sustainable development, said Fuziah Binti Abu Hanifah, Director, Malaysian Centre for Geospatial Data Infrastructure (MaCGDI). A key requirement for geospatial solutions is the availability of the geospatial information, and geospatial data infrastructure can facilitate availability and sharing of the geospatial information. Malaysian national spatial data infrastructure (NSDI) – MyGDI is one such initiative by the government to enhance the awareness about data availability and improve access to geospatial information by facilitating data sharing among participating agencies, informed Fuziah. She urged that geospatial information should be as “infrastructure” and for use of fundamental dataset for business information.



Gala Dinner

A delectable dinner ends the inaugural day of Malaysia Geospatial Forum, with special appearance by Guest of Honor, Y.A.B. Datuk Seri Haji Mohd Ali bin Mohd Rustam, Chief Minister of Melaka.



“Geospatial technology has shown a great market potential in Malaysia, as it is applied not only in perambulation and mapping but also in resource investigation, environment assessment, regional planning, public facility management, traffic, telecom, city construction, energy, power, agriculture etc. A proactive government and a wanting user and industry, together have created an environment of synergy in the region essential for the exponential growth of geospatial in Malaysia”, remarked the Right Honorable Chief Minister, during his speech. Addressing the participants of the Forum, Datuk Seri observed that the theme of the conference is very significant to the country today based on the fact that the government is working hard in achieving its goal to become a transformed nation by 2020. He also stressed that as we are living in an era where the pace of change in science and technology is mind boggling, “geospatial sector will have to continue to strive to change and become better and more useful for its users.”

The Gala Dinner was also attended by a few State EXCOs and Heads of Departments, including, among others, Y.B. Datuk Hj. Md Yunos bin Husin, Chairman of Local Government and Environment State Committee; Y.B. Datuk Ghazale Mohamad, Chairman of Transportation, Information, Unity and Consumerism Committee; Y.B. Datuk Latiff bin Tamby Chik, Chairman of Tourism and Culture State Committee; Y.Bhg. Datuk Zainal bin Husin, Deputy State Secretary (Development); and various representatives from the state agencies, socialising with the conference delegates. A series of dance performances courtesy of Institut Seni Malaysia Melaka (ISMMA) entertained the guests throughout the dinner.



Seminars

Agriculture & Plantation

Agriculture and plantation are important contributors to the country's economy and a seminar on this theme deliberated upon how the technology can further strengthen this sector. Satellite data for this sector is restricted by data recurrence, high data-collecting cost, weather impediment and resolution while other data collection mechanisms like aerial photography and LiDAR are too expensive for precision farming. In such a scenario, unmanned aerial vehicle (UAV) system exhibits much potential in solving these problems, observed Dr. Mohaizi Mohamad, Rector, Geomatika College International. He added that multi sensors such as IR camera and SAR be used with the UAV for precision farming. Dr. Wan Mohd Kamil bin Dato' Wan Nik, Senior Veterinary Officer, Division of Livestock Commodity Development, Department of Veterinary Services Malaysia demonstrated the application of geospatial technology in veterinary services. He informed how mapping of livestock has helped in planning and decision making in aspects like animal disease outbreak and controlling environmental pollution.



Haji Mohd Yazid Abdullah, Principal Assistant Director, Agriculture Drainage and Irrigation Division, Ministry of Agriculture and Agro-based Industry Malaysia discussed the prospects and constraints in the applications of geospatial systems in Malaysian agricultural economic transformation plan programmes. Application of geospatial technology in agro-food sector, especially for rice production as envisaged under Economic Transformation Plan, is an

important element to increase productivity, reduce cost of production and increase efficiency, according to Haji Yazid. He added that the Ministry of Agriculture and Agro-based Industry has planned several initiatives to promote and utilise those technologies through several projects in granary areas. Dr. Muhamad Radzali Mispan, Principal Research Officer, Malaysian Agriculture Research and Development Institute (MARDI) too discussed issues and challenges related to use of geospatial technology in agriculture. He remarked that experts in geospatial technology should look into the issues and challenges facing the agriculture sector in an integrated manner and should not be technology driven.

Haji Wahid Bin Omar, Head of Crop and Livestock Integration Unit, Malaysian Palm Oil Board (MPOB) and Mohd Zahlan Mohd Zaki, Senior Scientist, Sime Darby Research, both highlighted the application of geospatial technology for oil palm plantation management. MPOB being the custodian of Malaysian oil palm industry, has been using geospatial information to predetermine the basic information of the land for oil palm cultivation such as total area, plantable area, slope categories, potential terrace length and density, number of planting points, etc. While Sime Darby, the largest palm oil operator in Malaysia uses the

technology for various aspects like yield forecasting, site yield potential, leaf area index and nutrient mapping, growth performance index, palm management performance index and terrain analysis. Both speakers agreed that geospatial technology is a powerful and useful agro-management tool for precision agriculture to enable sustainable oil palm cultivation.



Another interesting paper in this seminar was presented by Wong Tai Hong, General Manager at Jurupro Sdn Bhd. He made a comparison between satellite imagery, aerial photos and images obtained from unmanned aerial vehicle (UAV) for crop monitoring purposes. Studying the basal stem rot disease in oil palm plantation, it was found that visible and near-infrared (NIR) spectral reflectance data derived from UAV images are able to detect Ganoderma boninense, the fungal pathogen that causes the disease.

Infrastructure & Rural Development

The second seminar was on Infrastructure & Rural Development, supported by Ministry of Rural and Regional Development Malaysia. The first speaker, Mohd Jamil Ahmad, Senior Vice President from Iskandar Regional Development Authority (IRDA) spoke about the geospatial elements involved in the planning and development of Iskandar Malaysia. Understanding that GIS is not just about mapping, IRDA is looking forward to developing analytical applications that will contribute in developing Iskandar Malaysia as an international standing metropolis.



Speaking on communications infrastructure, Norsam Bin Mohd Yusoff, Deputy Director, Infrastructure Development and Standards Division, Malaysian Communications and Multimedia Commission (MCMC), shared that MCMC has developed two GIS-based applications, MagicMap and Communication Infrastructure Management System (CIMS), to map the spatial and attribute data for solving communications infrastructure planning and management problems. This system also uses web-based module that allows users to upload their own data into the system.

Syarikat Air Johor is known to have one of the best geospatial systems in the water utility industry. Its representative, Ir. Fuad Bakri, Section Head – Technical Support, Project Planning Department, gave the audience an overview of their Integrated GIS (IGIS) system, which contributed in solving their daily operational issues, such as hydraulic model verification, validation of water supply strategic distribution mains for site simulation, backup distribution in case of plant shutdown, monitoring non-revenue water at designated district metre areas, and others.



Still in water utility, Sr Mohd Hazley Halim, Head of Asset Management from Pengurusan Aset Air Berhad (PAAB), explained the role of PAAB in managing water assets in Peninsular Malaysia and Labuan. According to Hazley, “maintenance of an asset registry which comprises an accurate record and valuation of assets will support effective decision-making about asset utilisation”. The implementation of Total Asset Management System (TAMS) will ensure that all assets will deliver its desired services as long as they are required and at the lowest life cycle cost. Mohd Zubaidi bin Daud, GIS Executive from Indah Water Konsortium, also shared their usage of geospatial technology in facilitating effective asset management. Their existing databases: asset registry; equipment level registry and inventory; customer and desludging; customer database and compliance data are integrated with GIS system, in order to identify and geographically locate their critical assets.

Pasawat Tipyotha, Application Engineer from Trimble Thailand presented the latest real time monitoring system that is used in large infrastructure construction projects such as bridges, MRT systems and roadways. One of the case studies shown was the construction of Incheon Bridge, the longest spanning cable-stayed bridge in South Korea.



Nelson Philip Fernandes, Assistant General Manager, PSI InControl Malaysia, insisted that most rural development projects have overlooked one key stakeholder, which is the rural community itself. The rural community, being the eventual beneficiary, should be involved right from the information gathering phase to the implementation phase of the rural development. The “Participatory Rural Appraisal”, when combined with GIS, will achieve sustainable rural development in a true sense.

Abu Hassan Abdullah, Pave Engineer from Selia Selenggara Engineering, presented the challenges in data capturing for digital road datasets using integrated network survey vehicle. According to him, road asset management is important to promote effective management and to provide improved services for the community.



Sessions and Technology Track

Tourism

Apart from the two seminars, concluding day of the conference also witnessed six other sessions and one Technology Track conducted by Trimble. A session on Tourism was conducted for the first time in Malaysia Geospatial Forum, in conjunction with “Melaka 750 years” celebration. The session, supported by Melaka Tourism Promotion Division and chaired by Jeffri Bin Munir, Director of Tourism Malaysia Melaka, saw five speakers present their geospatial applications in tourism sector. Melaka and George Town (Penang) were inscribed as UNESCO’s World Heritage Sites on 7th July 2008 due to their heavy multi-cultural heritage and traditions. Muhammad Hijas Sahari, Research Officer from George Town World Heritage Site, Penang shared with the audience the geospatial implementation in developing George Town Heritage Inventory Application. This web-based application allows the public to search for tourist spot by integrating address and location. This session also attracted two speakers from Indonesia. One of them was Setiyani, an officer from Indonesia Coordinating Agency for Surveys and Mapping (BAKOSURTANAL). The government of Indonesia has developed a tourism atlas to help local government in promoting tourism sites for domestic and overseas tourists. The development of this atlas includes field data survey and post data processing to generate maps in various scales.



Open Source

Another session that received overwhelming response was Open Source. This session, supported by OSGeo, was chaired by Tan King Ing, Deputy Director of Policy and ICT Planning from Malaysian Public Sector Open Source and Open Standard Section in Malaysian Administrative Modernisation and Management Planning Unit (MAMPU). The first speaker, Sr Dr. Zainal Bin A. Majeed, Director, Department of Survey and Mapping Kelantan, had an interesting question on his first slide: “Usage of Open Source GIS Software in the Public Sector: Possibility and Irrationality?” He then continued to run through the local trends of GIS open source in Malaysia, which among others include lack of support from policy makers and management, lack of skilled resources and complicated installation and configuration that cause problems. A test case was also presented where a Web-based GIS application that supports data request, retrieval, integration and presentation was successfully developed on an open source platform. Dr. Zainal concluded his presentation by



saying “open source GIS is possible in the public sector and can be rationally proposed as one of any transformation programme”. A well-known open source enthusiast, Abbas Bin Abdul Wahab, Senior Assistant Director, Federal Department of Town and Country Planning Peninsular Malaysia (JPBD), presented the chronology of Quantum GIS (QGIS) software in Malaysia. Beginning in 2009, the open source software has made significant achievements not only in terms of awareness but also implementation. JPBD, for instance, has been using QGIS as a GIS analysis tool rather than GIS mapping tool and is currently looking to integrate QGIS with open source GIS database in future.

Spatial Data Infrastructure for e-Governance



Session on Spatial Data Infrastructure for e-Governance featured five prominent speakers representing the SGDC coordinators in different States in Malaysia. The states represented were Melaka, Negeri Sembilan, Federal Territory, Penang and Sabah. Each speaker presented their version of spatial data infrastructure, their current achievements and their future plans. It was observed that the challenges in coordinating the State SDI are almost

similar, mainly involving data sharing issues. There was a remark by Abdul Azhar Ibrahim, PEGIS Coordinator, Penang State Government regarding this matter: “agreements cannot exist without trust” and that dialogues are needed to reach consensus. The future plans presented was also impressive, such as the 1MapMelaka system, presented by Puan Rozita Hamit, Deputy Director of Department of Town and Country Planning Melaka; and e-Kampung and Local Plans Monitoring System (SPRTD) as presented by Puan Kamariah Ibrahim, Director of Department of Town and Country Planning Negeri Sembilan.



Technology Track



The Technology Track by Trimble kept the audience up-to-date with their latest solutions in cadastral, land mobile imaging, GIS mapping and utilities segments.



Closing Ceremony and Best Papers / Poster Awards

The closing ceremony began with closing speech delivered by Abdul Jamil Arshad, Director, Department of Town and Country Planning Melaka. In his address, he expressed his pleasure to see representatives not only from Federal but also from the other parts of Malaysia participating at the event. He also encouraged for more geospatial events to be held in Melaka, either at national or State level.

A total of 57 papers were presented during the course of the event.

Best Paper Awards were given to:

- Azmi Hassan, GeoStrategist, Universiti Teknologi Malaysia
Paper: Malaysia Space Act: A Catalyst for a Vibrant Space Industry
- Ooi Wei Han, Research Officer, National Space Agency (ANGKASA), Malaysia
Paper: GPS Jamming Mitigation System: An Overview



Best Poster Award was bagged by:

- Muhamad Nazmi Bin Sumardi, Student, Faculty of Science and Technology, Universiti Kebangsaan Malaysia
Paper: Variability of Chlorophyll-a Distribution Off Pahang Coastal Water Using Satellite Images

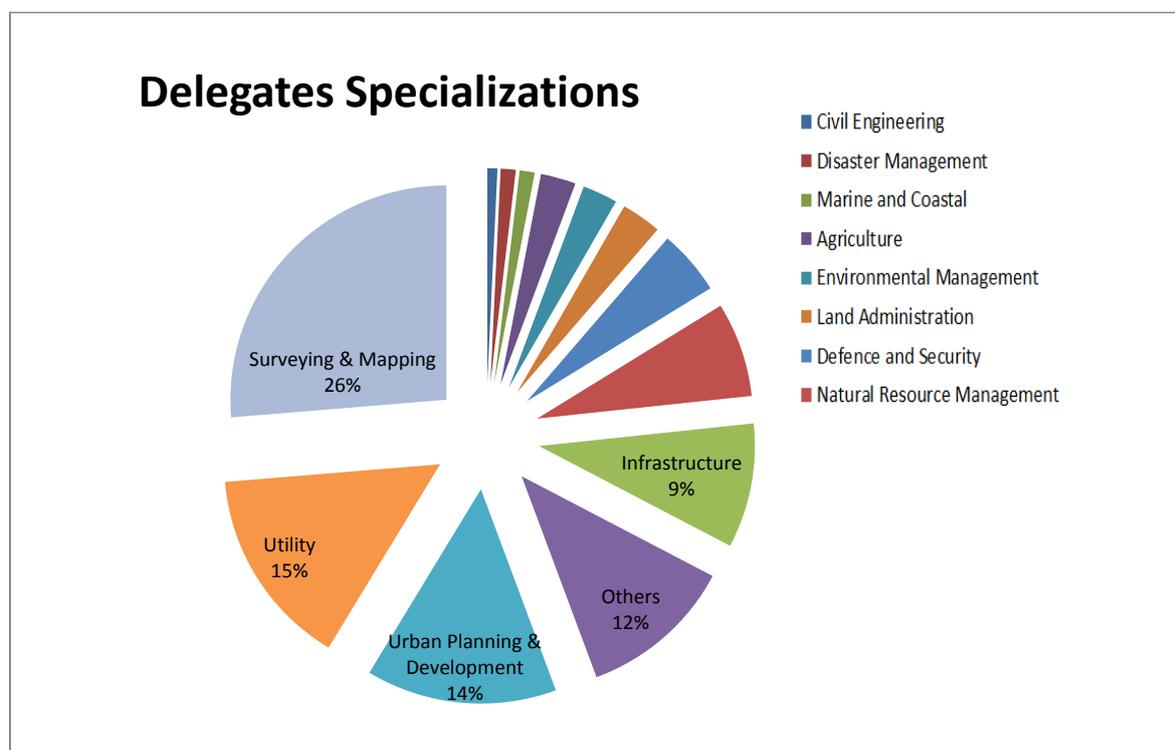
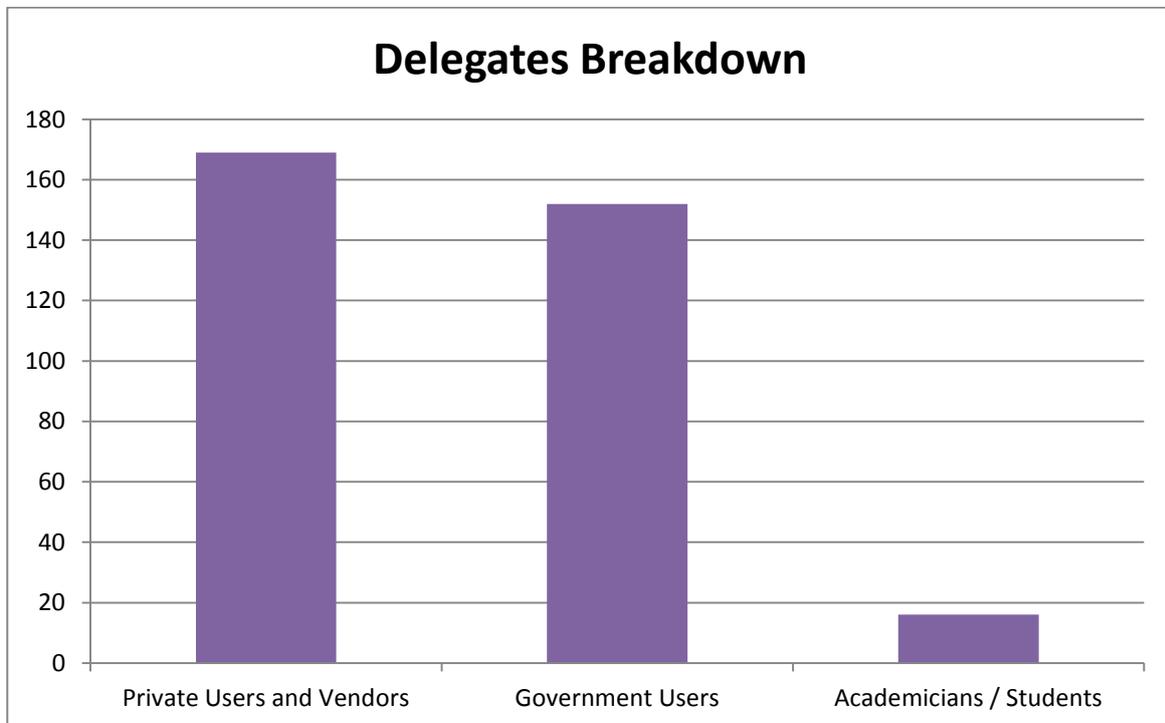


The closing ceremony also witnessed the announcement of lucky draw winner by one of the exhibitors, Hewlett Packard. The lucky winner, Herman Ibrahim from Telekom Malaysia walked away with an iPad 2.



Participants Profile

A total of 323 delegates from 8 countries attended Malaysia Geospatial Forum 2012. The breakdown shows that Private Users and Vendors represented 50% of the total, followed by Government Users at 45% and Academicians/Students at 5%.



Exhibition and Networking

The exhibition hall was filled by 16 exhibitors, with total exhibition area of 230sqm. Inaugurated by Y.Bhg. Datuk Prof. Sr Dr. Abdul Kadir Taib, Director General of Survey and Mapping Malaysia after the Plenary I session, the hall was constantly buzzing with visitors eager to update themselves with the latest geospatial technology available. The Y.A.B. Chief Minister of Melaka also paid the exhibitors a visit before addressing the delegates at dinner.

The exhibition area really served its purpose to be the networking hub during the conference where relationship between users and providers of geospatial products and services was further strengthen and developed.

