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**Nineteenth United Nations Regional Cartographic
Conference for Asia and the Pacific
Bangkok, 29 October – 1 November 2012
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Report of the Permanent Committee on Geographical Information
System Infrastructure for Asia and the Pacific**

**Report on the Actions Taken on Resolutions of the Eighteenth United
Nations Regional Cartographic Conference for Asia and the Pacific**

**Submitted by the United Nations Statistics Division and the Permanent
Committee on Geographical Information System Infrastructure for Asia and
the Pacific (PCGIAP)***

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**Nineteenth United Nations Regional Cartographic Conference
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**Actions taken on resolutions of the
Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific**

by
UN Statistics Division and PCGIAP Secretariat

This document has been prepared to summarize the follow-up actions taken on the resolutions adopted at the Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP), held in Bangkok, Thailand, 26-29 October 2009. It is following a format that has been already used as a system for monitoring the status of actions taken on UN Regional Cartographic Conference's resolutions.

RESOLUTIONS ADOPTED BY THE 18th UNRCC-AP	STATUS OF ACTION
1. Regional geodesy	
<p><i>The Conference,</i></p> <p><i>Recognizing</i> the importance of establishing a homogeneous geodetic network as the basis for the Asia and the Pacific regional spatial data infrastructure as well as for activities concerning disaster management of the region,</p> <p><i>Noting</i> the progress made by the Permanent Committee on Geographical Information System (GIS) Infrastructure for Asia and the Pacific Working Group on Regional Geodesy in improving the regional geodetic framework as the base layer for a regional spatial data infrastructure,</p> <p><i>Considering</i> the frequency of earthquakes, volcanic eruptions and tsunamis in the region and more generally the significant ongoing regional crustal deformation,</p> <p><i>Considering also</i> the need of member States to provide users with access to the reference frame with an accuracy of one centimetre or better to support spatial data collection for a wide range of applications,</p> <p><i>Realizing</i> the need to establish a new and precise geodetic framework in the Asia and Pacific region, which is linked to the International Terrestrial Reference Frame, to support disaster prevention/mitigation programmes,</p> <p><i>Recommends</i> that member States support the Asia-Pacific Reference Frame initiative by:</p> <p>(a) Participating in the Asia-Pacific Regional</p>	<p>In response to the resolution recommending the member countries to support the Asia-Pacific Reference Frame initiative, PCGIAP and other related organizations have taken actions as follows:</p> <p>(a) PCGIAP launched the Asia-Pacific Reference Frame (APREF) project in 2010 in order to improve the reference frame. WG1 established a Steering committee comprising from the representatives of PCGIAP member countries and International Association of Geodesy (IAG) and encouraged the participation in this project by releasing the Call for Participation (CfP) in March 2010.</p> <p>The APREF project websites was established as http://www.ga.gov.au/earth-monitoring/geodesy/asia-pacific-reference-frame.html.</p> <p>The weekly SINEX files and updated ITRF coordinate and velocity solutions for the APREF stations are published on the APREF website.</p> <p>(b) In 2010, 2011 and 2012, WG1 conducted annual the Asia Pacific Regional Geodetic Project (APRGP) campaigns where PCGIAP member countries contribute continuous Global</p>

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<p>Reference Frame initiative;</p> <p>(b) Sharing data from continuously operating reference stations operated in their respective countries;</p> <p>(c) Undertaking routine and continuous geodetic analysis, if the capability exists, of continuously operating reference stations data from all or a subcomponent of the region;</p> <p>(d) Installing additional continuously operating reference stations;</p> <p>(e) Supporting geodetic experts from member States to attend appropriate regional forums, such as the meetings of the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific Working Group on Regional Geodesy.</p>	<p>Navigation Satellite System (GNSS) data to the WG. In total three years, 24 data were received from 13 countries in the region. The analysis report for these campaigns has been distributed to the participant member countries and reported at the PCGIAP meetings held during 2010-2012. GNSS data from the APRGP are available for all participant member countries for local and global scientific research and local applications.</p> <p>(c) GNSS data-set collected through the APRGP project is subsequently analyzed by the WG so as to provide estimates of station coordinates in the International Terrestrial Reference Frame (ITRF). The results of the APRGP are also supplied by the WG to the official ITRF Product Centre to densify the ITRF in the Asia Pacific region.</p> <p>In addition, the study on monitoring natural disaster events, such as two earthquakes in New Zealand (Feb.2011) and Japan (Mar. 2011), has been conducted, aiming to recognize factors and signs of disaster events and predict before occurring natural disasters. The analysis results were reported at the 17th PCGIAP meeting in Mongolia in 2011.</p> <p>(d) Since 2010, 80 additional Continuously Operating Reference Stations (CORS) are installed which contributes data to APREF.</p> <p>(e) UNSD supported geodetic experts from PCGIAP member countries to attend the 2nd Session of UNGGIM and the Hangzhou Forum on UNGGIM.</p>
<p>2. Capacity-building in disaster management</p>	
<p><i>The Conference,</i></p> <p><i>Recognizing</i> that institutional strengthening, education and training programmes and facilities across the region may not be at the same level of development in all member States,</p> <p><i>Recognizing also</i> the ongoing need for training, education and capability development in the region,</p>	<p>In response to the resolution recommending the Capacity-Building in disaster management, the PCGIAP and other related organizations have taken actions as follows:</p> <p>(a) SPIDER activities in the region <u>I. Capacity building programme in the area of disaster management and geo-spatial</u></p>

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<p><i>Recommends that:</i></p> <p>(a) The United Nations Platform for Space-based Information for Disaster Management and Emergency Response be requested to undertake Geographic Information System, remote sensing and geodesy training in the region in support of disaster management on an ongoing, country-by-country basis, adopting the so-called “capability caravan” approach;</p> <p>(b) The Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific, United Nations and other partners be requested to support capacity-building in the region, in particular for developing countries such as Timor-Leste;</p> <p>(c) The Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific and other partners facilitate the development of a data and services inventory, catalogue, toolkit and guidelines using web services infrastructure.</p>	<p><u>technologists:</u></p> <p>Based on the recommendations of the technical advisory missions to various countries, capacity building programmes were planned and organised under the framework of UN-SPIDER programme. In 2012, following programmes are planned</p> <ol style="list-style-type: none"> 1. One month training programme on "Application of Space Technology for Disaster Risk Reduction" at UN Affiliated Centre for Space Science Technology Education for Asia and the Pacific, Dehradun, India. 2. One week training programme in Sri Lanka on "Space Technology for Improving Hazard Mapping in Sri Lanka" involving international experts from various organisations. 3. One week training programme in Myanmar on "Geo-informatics for Disaster Risk Management" jointly with ICIMOD. 4. One week training programme in Beijing on "Space Technology for Drought Monitoring in Africa and Asia" jointly with National Disaster Management Centre of China. <p><u>II. Support at national level to strengthen disaster management using space technologies.</u></p> <p>Under the framework of UN-SPIDER programme of UNOOSA, Technical Advisory Missions were carried out to Myanmar, Tonga and Solomon Islands. These missions are carried out based upon invitation from the National Disaster Management Authorities respective Governments. The mission team was comprised of the experts involved with these countries in improving geospatial technology usage for disaster management. The purpose of mission was to review current policies, procedures and mechanism related to the use of space based information and make recommendations, to engage key stakeholders who are custodians of geospatial data related to disaster management, to develop a capacity building strategy for stakeholder agencies, to facilitate capacity building programmes and resources available through UN-SPIDER network etc.. The recommendations of the report are utilized</p>

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	<p>by the government and international agencies to incorporate space based and geospatial information in their programmes to add value to disaster risk management activities.</p> <p><u>III. Outreach activities to promote use of space based information in disaster management in Asia and the Pacific:</u></p> <p>The UN-SPIDER Beijing Office is organising the "United Nations International Conference on Space-based Technologies for Disaster Management - Risk Assessment in the Context of Global Climate Change" from 7-9 November 2012.</p> <p>The UN-SPIDER Beijing Office is supporting China-ASEAN Seminar on "Space based information for disaster management" from 6-8 November 2012.</p> <p>(b) Number of activities were conducted to support capacity building in the region.</p> <p>In 2011, the International Training Workshop on Geospatial Support for Disaster Management was jointly organized by the National Administration of Surveying, Mapping and Geoinformation of China (NASG) and PCGIAP in Wuxi, Jiangsu Province, China. Twenty two participants from the national mapping agencies of ten countries in Asia and the Pacific attended the training workshop. The workshop provided the opportunity for knowledge sharing and technical support on disaster response.</p> <p>In West Sumatra earthquake on 30 September 2009, post-disaster data collection was supported by Australia-Indonesia Facility for Disaster Reduction (AIFDR) which is a joint initiative between the governments of Australia and Indonesia. The initiative encouraged the development of geospatial capability in the disaster management among Indonesian and the Asian region to support the initiative facilitated the development of Indonesian and Asian regional geospatial capability in the disaster management while strengthening the partnerships with APEC, ASEAN and the United Nations.</p> <p>Over the period between July 2009 and June 2010, Geoscience Australia provided a targeted</p>

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	<p>technical assistance to the Philippine National Mapping and Resource Information Authority (NAMRIA) in the delivery of fundamental spatial data for enhanced natural hazard identification and risk modelling.</p> <p>(c) In order to provide appropriate support and make necessary adjustment in the PCGIAP activities for the capacity-building, WG2 took an initiative to design the questionnaires and circulated to member countries twice.</p> <p>The first questionnaire on Status of SDI in PCGIAP members was circulated in September 2011.</p> <p>The questionnaire covers three parts on: ‘the fundamental socio-economic demographic geospatial data for better disaster management’, ‘access network and web services for disaster management’ and ‘Present status of PCGIAP member countries related to using spatial data for disaster management’.</p> <p>As of September 2012, a total of 19 member countries out of 56 have responded to the questionnaire and its preliminary analysis was reported to PCGIAP meetings.</p> <p>The second questionnaire was sent to member countries in September 2012. It covers 4 topics on: Data accessibility and sharing; Questionnaire on Data Resource; Spatial data for disaster management; and Access network and web services for disaster management.</p>
<p>3. Data access</p>	
<p><i>The Conference,</i></p> <p><i>Recognizing</i> the benefits of having access to data in time of disaster for assessment and relief, but also the ongoing difficulties of many member States in accessing all forms of spatial data, such as the Geographic Information System, remote sensing and land administration for disaster management,</p> <p><i>Noting</i> that transferring large volumes of data via the Internet in many countries is problematic,</p> <p><i>Also noting</i> the development of web technologies that</p>	<p>In response to the resolution recommending the member countries to improve data access, PCGIAP and other related organizations have taken actions as follows:</p> <p>(a)(b) To ensure the development of valuable projects that matches the needs of the member countries, WG2 designed two questionnaires which include the topic of data-sharing, data-accessibility, online-services, to identify the current situation and the challenges.</p>

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<p>assist in providing access to data over the Internet,</p> <p><i>Recommends that</i> efforts be made by countries to improve access to data so as to support disaster management in a number of ways, including by:</p> <p>(a) Developing and using web technologies, such as geo-portals, to disseminate data;</p> <p>(b) Using appropriate standards for data-sharing;</p> <p>(c) Capturing timely data to support regional hazard assessment;</p> <p>(d) Approaching development partners, including the United Nations Platform for Space-based Information for Disaster Management and Emergency Response to acquire and widely share timely data for disaster management.</p>	<p>(c) In West Sumatra earthquake on 30 September 2009, post-disaster data collection was supported by Australia-Indonesia Facility for Disaster Reduction (AIFDR) which is a joint initiative between the governments of Australia and Indonesia. The initiative encouraged the development of geospatial capability in the disaster management among Indonesian and the Asian region to support the initiative facilitated the development of Indonesian and Asian regional geospatial capability in the disaster management while strengthening the partnerships with APEC, ASEAN and the United Nations.</p> <p>Over the period between July 2009 and June 2010, Geoscience Australia provided a targeted technical assistance to the Philippine National Mapping and Resource Information Authority (NAMRIA) in the delivery of fundamental spatial data for enhanced natural hazard identification and risk modelling.</p> <p>(d) SPIDER activities in the region <u>Knowledge management in the area of space based information for disaster management:</u> Following publications are planned jointly with the UN-SPIDER Regional Support Offices in Asia and the Pacific Region. 1. ADRC - Booklet on 'Considerations for effective use of space based information to assess Tsunami impact - Lessons learned from recent Tsunami in Japan' 2. SUPARCO, Pakistan - Booklet on 'Considerations for effective use of space based information to monitor massive flood disaster and its impact- Lessons learned from Pakistan floods in 2010' 3. Iranian Space Agency - Booklet on 'Considerations for effective use of space based information to assess drought at national level - Experiences from Iran'</p>
<p>4. Data integration</p>	
<p><i>The Conference,</i> <i>Recognizing the importance of the integration of</i></p>	<p>In response to the resolution recommending the member countries to support data integration, PCGIAP has taken actions as follow:</p>

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<p>fundamental data with other spatial data, including hazard and exposure data sets in support of disaster mitigation and reduction,</p> <p><i>Also recognizing</i> the power of spatial tools in integrating various data from many sources and multiple formats,</p> <p><i>Noting that</i> the discovery, access, integration and delivery of spatial data can become much easier with enhanced interoperability,</p> <p><i>Recommends that:</i></p> <p>(a) The Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific assist member States in understanding and pursuing the principles of data integration within the context of spatially enabled society;</p> <p>(b) The Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific cooperate with the International Steering Committee for Global Mapping, the United Nations Statistics Division and other international organizations in order to integrate spatial and statistical data.</p>	<p>(a) In order to understand the current situations of the member countries, questionnaires are prepared by WG2 and distributed through the PCGIAP Secretariat in order to understand, compare and determine the state of spatially enabled government and society, including levels of maturity and governance of spatial data infrastructure in the region.</p> <p>(b) PCGIAP has been repeatedly addressed the issue of data integration. Since the inaugural session of GGIM, PCGIAP contributed to the UN initiative by providing the inputs to regional agenda addressing the challenges for data integration. The issue was explicitly addressed at the Second session and the need to develop a global map for sustainable development is considered. With the decisions to establish a new Steering Committee for global map for sustainable development, PCGIAP reassured the responsibility for conducting the concrete action in close cooperation with ISCGM and other international organizations in order to integrate spatial and statistical data.</p>
5. Spatially enabled Government and society	

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<p><i>The Conference,</i></p> <p><i>Noting</i> the progress made in the development of national spatial data infrastructures in the Asia and Pacific region,</p> <p><i>Also noting</i> the global importance of spatially enabled Government and society and the outcome of the forum on this matter, convened by the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific and held in Seoul in June 2007,</p> <p><i>Recognizing</i> that spatially enabled Government is an important part of the information and communications technology, e-Government and information sharing strategies of countries and is the key activity that fosters innovation,</p> <p><i>Recommends</i> that the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific undertake a study to understand, compare and determine the state of spatially enabled Government and society, including levels of maturity and governance of spatial data infrastructure, in the region.</p>	<p>To enhance the understandings and to recognize the importance of spatially enabled government and society, Department of Survey and Mapping Malaysia and Ministry of Natural Resources and Environment Malaysia organized the International Symposium on Spatially enabled Government and Society - towards spatial maturity held in Kuala Lumpur in February 2012. PCGIAP and Federation of Surveyors (FIG), Global Spatial Data Infrastructure Association (GSDI), International Cartographic Association (ICA), and International Society of Photogrammetry and Remote Sensing (ISPRS) substantively supported the symposium. The symposium identified 3 key areas: the spatial needs of societies; the role of land administration, management and governance in Specially Enabled Society (SES); and the key elements for SES. The Declaration “Kuala Lumpur Declaration on Spatially Enabled Government and Society” was adopted. The Declaration reflects the future vision of the community towards transcending the concept of “special enablement” to unlock the wealth of the existing knowledge that are foundational towards informed policies, frameworks, decisions and actions.</p>
<p>6. Annual forum on land administration</p>	
<p><i>The Conference,</i></p> <p><i>Noting</i> the importance of good land administration systems in supporting sustainable development, poverty alleviation, social justice and economic development,</p> <p><i>Also noting</i> the role that land administration and the cadastre plays in providing large-scale, people-relevant spatial data within spatial data infrastructures,</p> <p><i>Mindful of</i> the growing importance to integrate all forms of spatial data, in particular natural and built environmental spatial data in support of spatially enabled society,</p> <p><i>Noting</i> the outcomes of the Mongolian Conference, supported by the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP) on good land administration and its role in economic development and the outcomes of the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific round-table discussion on mechanisms for sharing land</p>	<p>In accordance with the resolution, PCGIAP jointly with the University of Melbourne, GSDI, Geoscience Australia, FIG and other Australian federal and state organizations organized the 4th PCGIAP Land Administration Forum in Melbourne, Australia in October 2011 with the theme of Beyond Spatial Enablement. The forum discussed and shared wide ranging land administration issues including access to land and security of tenure, the role of land administration in supporting sustainable development, cadastral surveying and mapping, and best practices and experiences.</p> <p>In response to the resolution, PCGIAP Working Group 3 was renamed to “Spatially Enabled Government and Society” by the PCGIAP Executive Board at its first meeting immediately following the UNRCC-AP in Bangkok, 29 October 2009.</p>

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<p>administration policies, strategies, related technologies and experiences, held in Mongolia in 2007,</p> <p><i>Also noting</i> the outcomes of the second PCGIAP Land Administration Forum, held in Malaysia in 2008, and the third PCGIAP Land Administration Forum and PCGIAP Land Market Seminar, held in Tehran in 2009, that resulted in the Tehran Declaration on Land Administration to support sustainable land markets and e-Government,</p> <p><i>Further noting</i> the importance of the Tehran Declaration on land administration to support sustainable land markets and e-Government,</p> <p><i>Recognizing</i> the needs of member States in the Asia and Pacific region to have an annual land administration forum supported by the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific,</p> <p><i>Recommends</i> that the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific formalize and maintain its annual Forum on Land Administration in Asia and the Pacific,</p> <p><i>Also recommends</i> that the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific rename the existing Working Group on Spatially Enabled Government (Working Group 3) as “Spatially enabled Government and society”, being responsible for the two interconnected components of spatially enabled Government and society, and land administration and under the direction of PCGIAP facilitates the annual land administration forum and liaises with the respective agencies in the Asia and the Pacific region in pursuit of this objective.</p>	
<p>7. Global geographic information management</p>	
<p><i>The Conference,</i></p> <p><i>Recalling</i> the recommendations made in Economic and Social Council resolution 131 (VI) of 19 February 1948, entitled “Coordination of cartographic services of specialized agencies and international organizations”, and subsequent resolutions,</p> <p><i>Taking note</i> of the rapid development of and increased demand for geographic information infrastructure in all countries in past years, which has made geographic information an invaluable tool in policy planning and</p>	<p>After wide-ranging consultations with Member States and relevant stakeholders, the United Nations Economic and Social Council (ECOSOC) recognized the need to promote international cooperation in the field of global geospatial information. Upon the request by ECOSOC in July 2010, the Secretary-General prepared a report on global geographic information management. The ECOSOC considered the report and decided in its substantive session in Geneva, in July 2011, to formally establish the United Nations</p>

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<p>decision-making,</p> <p><i>Bearing in mind</i> that global issues, such as climate change, food and energy crises, peace operations and humanitarian assistance, all require strong support for geographic information management on a global scale,</p> <p><i>Acknowledging</i> with appreciation the work of the United Nations regional cartographic conferences and the significant role that they are serving in the Asia and Pacific and Latin America and the Caribbean regions, as well as in Africa, and recognizing the important role and contribution of regional organizations in Europe,</p> <p><i>Also acknowledging</i> the important contribution of other regional and international organizations and of global initiatives and projects,</p> <p><i>Recognizing</i> the absence of a United Nations consultation process led by member States, which deals with global geographic information management, coordinates regional efforts, promotes global norms on geographic information and brings such information to bear on global issues,</p> <p><i>Also recognizing</i> the requests of member States for a global mechanism, the work to develop common frameworks and tools and a process of standardization, for which the United Nations has a key mandate, to address the need and the necessity for experience exchange and technology transfer on geographic information tools and infrastructures, with specialized, regional and international organizations,</p> <p><i>Requests</i> that, by 1 November 2010, the Secretary-General and the United Nations Secretariat initiate discussions and prepare a report, for a future session of the Economic and Social Council, on global coordination of geographic information management, including consideration of the possible creation of a United Nations global forum for the exchange of information between countries and other interested parties, and in particular for sharing best practices in legal and policy instruments, institutional management models, technical solutions and standards, interoperability of systems and data, and sharing mechanisms that guarantee easy and timely accessibility of geographic information and services.</p>	<p>Committee of Experts on GGIM (see ECOSOC resolution 2011/24). The UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) is an intergovernmental mechanism that aims to play a leading role in setting the agenda for the development of global geospatial information and to promote its use to address key global challenges. It convened its inaugural session on Wednesday 26 October 2011 in Seoul (Republic of Korea), which was attended by representatives from 87 countries and major international/regional organizations. The Committee has recently held its second session in New York, from 13 to 15 August 2012 and the third session is planned to take place in Cambridge (United Kingdom) from 24-26 July 2013.</p>