



United Nations

**Eighteenth United Nations
Regional Cartographic
Conference for Asia and the
Pacific**

Bangkok, 26-29 October 2009

Report of the Conference

(Advance unedited version)

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Regional Cartographic Conference
for Asia and the Pacific**

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Note

Symbols of United Nations documents are composed of capital letters combined with figures.

The proceedings of the Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific, held at Bangkok from 26 to 29 October 2009, are being issued in one volume as the report of the Conference.

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Chapter I

Organization of the Conference

A. Introduction

1. In accordance with Economic and Social Council decision 2007/275 of 4 October 2007, the Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP) was held at the United Nations Conference Centre of the Economic and Social Commission for Asia and the Pacific in Bangkok, Thailand, from 26 to 29 October 2009. The theme of the Conference was “Spatial Enablement and the Response to Climate Change and the Millennium Development Goals”.

B. Opening of the Conference

2. Mr. Li Weisen (China), temporary President, opened the Conference.
3. Mr. Paul Cheung, Director of the United Nations Statistics Division made an opening statement on behalf of the Secretary General.

C. Attendance

4. The Conference was attended by 149 representatives of 37 countries and 12 specialized agencies and international scientific organizations. The list of participants (E/CONF.100/INF/2) is available at http://unstats.un.org/unsd/methods/cartog/Asia_and_Pacific/18/18th-UNRCC-AP-Docs.htm.

D. Election of officers

5. At its 1st plenary meeting on 26 October 2009, the Conference elected the following officers by acclamation:

President:

Mr. Greg Scott (Australia)

Vice-Presidents:

Mr. Li Weisen (China)

Mr. Kheng Peng Soh (Singapore)

Rapporteur:

Mr. Hiroshi Murakami (Japan)

E. Organizational matters

1. Adoption of the rules of procedure

6. At its 1st plenary meeting, the Conference adopted its provisional rules of procedure, as contained in document E/CONF.100/2.

2. Adoption of the agenda and organization of work of the Conference

7. At its 1st plenary meeting, the Conference adopted its provisional agenda as contained in document E/CONF.100/1*. The agenda was as follows:

1. Opening of the Conference.
2. Election of the President and other officers of the Conference.
3. Adoption of the agenda and other organizational matters:
 - (a) Adoption of the rules of procedure;
 - (b) Adoption of the agenda and organization of work of the Conference;
 - (c) Establishment of technical committees and election of the Chairperson of each committee;
 - (d) Credentials of representatives to the Conference.
4. Objectives of the Conference.
5. Report of the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific.
6. Report on the implementation of resolutions adopted at the Seventeenth United Nations Regional Cartographic Conference for Asia and the Pacific.
7. Conference papers:
 - (a) Country reports;
 - (b) Invited papers on achievements and developments in geographical information in addressing national, regional and global issues including:
 - (i) Strategy, policy, economic and institutional issues;
 - (ii) Spatial data infrastructure and spatially enabled Government;
 - (iii) Geospatial data collection, management and dissemination;
 - (iv) Best practices and applications;
 - (v) Disaster management.

8. Reports of the technical committees of the Conference.
9. Provisional agenda for the Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific.
10. Adoption of the report of the Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific.

8. Also at its 1st plenary meeting, the Conference approved its draft work programme as contained in an informal paper.

3. Establishment of technical committees and election of the chairperson of each committee

9. At its 1st plenary meeting, the Conference established the following three technical committees and elected their chairpersons as follows:

Committee I: Geographic Information System, Remote Sensing and Geodesy for Disaster Management
Chairperson: Mr. John Dawson (Australia)

Committee II: Spatial data infrastructure and spatially enabled government
Chairperson: Mr. Manoj Tayal (India)

Committee III: Geospatial Data collection, management and dissemination
Chairperson: Mr. Bebas Purnawan (Indonesia)

4. Credentials

10. At the 6th plenary meeting, on 29 October 2009, the President of the Conference reported that, in accordance with rule 3 of the rules of procedure of the Conference, the credentials of representatives had been reviewed and found to be in order.

5. Objectives of the Conference

11. At its 1st plenary meeting, the representative of the United Nations Statistics Division reported that the primary objective of the Conference was to provide a regional forum where government officials, planners, scientists and experts from the Asia and the Pacific and other regions of the world could meet to report on the efforts being accomplished in the development and implementation of national and regional spatial data infrastructures in the region and other parts of the world, and to address common needs, problems, experiences and best practices in the field of cartography and geographic information, including educational and training

aspects, scientific and technological requirements, implementation issues and benefits.

6. Documentation

12. A list of the documents submitted to the Conference is available in Annex V and at http://unstats.un.org/unsd/methods/cartog/Asia_and_Pacific/18/18th-UNRCC-AP-Docs.htm.

Chapter II

Plenary Session

13. At its 1st plenary meeting, on 26 October 2009, the Conference began its consideration of agenda item 5, “Report of the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP)”. Mr. Greg Scott, President of PCGIAP, presented a summary of the activities of PCGIAP, highlighting the challenges that national mapping organizations are facing due to rapid technological changes, and emphasizing the importance of applying these technologies to outstanding problems in the region (E/CONF.100/3). He also acknowledged three people who are leaving PCGIAP, Peter Holland, Ian Williamson and Abbas Rajabifard, for their significant contribution to PCGIAP over a number of years.

14. At the same meeting, the Conference considered the report of the PCGIAP Working Group on Regional Geodesy (Working Group 1), presented by Mr. Shigeru Matsuzaka, Chairman of Working Group 1 (E/CONF.100/4). Mr. Matsuzaka reported on the activities of Working Group 1 during the past three years in response to the resolutions adopted at the Seventeenth UNRCC-AP in 2006. The main activity of the Working Group continued to be the Asia Pacific Regional Geodetic Project (APRGP). He also highlighted that geodetic techniques, including satellite radar and GPS observations, have been successfully applied to recent disasters caused by earthquakes and contributed to the understanding of the impacted damages. Future activities of Working Group 1 were also proposed, including the Asia-Pacific Reference Frame (APREF) Project as a natural extension of the current APRGP.

15. Also at the same meeting, Mr. Bebas Purnawan, Chairperson of PCGIAP Working Group 2 on Fundamental Dataset (E/CONF.100/5), reported on the three main activities of the Working Group, i.e., framework data set development, regional metadata profile development and data node network development. All these activities made significant progress during the past three years. He drew attention to the fact that the framework data sets that cover 22 countries in the region have been successfully prepared.

16. At the same meeting, Mr. Ian Williamson, Chairperson of PCGIAP Working Group 3 on Land Administration (E/CONF.100/6), reported that the Group successfully established an annual forum on land administration based on the discussions at a number of meetings and seminars organized by the Working Group. In view of the importance of involving experts on land administration for the development of spatially enabled government, he mentioned that such experts need to be involved in future UNRCC-AP and PCGIAP activities.

17. Also at the same meeting, Mr. Manoj Tayal, on behalf of the Chairperson of PCGIAP Working Group 4 on Institutional Strengthening (E/CONF.100/7), reported on the group's activities on institutional strengthening, highlighting the training programmes held in India that focused on NSDI training. He also introduced some future programmes for NSDI training.

18. At its 2nd plenary meeting, on 26 October 2009, the President drew the attention of the Conference to documents E/CONF.100/CRP.1 to CRP.18 submitted under agenda item 7(a), "Country reports". He informed the Conference that, following the practice at previous conferences, the country reports and other papers numbered as CRPs would not be presented in the Conference.

19. At the same meeting, the Conference considered agenda item 6, "Report on the implementation of resolutions adopted at the Seventeenth United Nations Regional Cartographic Conference for Asia and the Pacific". Mr. Hiroshi Murakami, representing Mr. Kazuo Komaki, Vice President of PCGIAP, introduced a report, jointly prepared by the United Nations Statistics Division (UNSD) and PCGIAP, on the actions taken during the past three years in response to the resolutions adopted at the Seventeenth United Nations Regional Cartographic Conference for Asia and the Pacific (E/CONF.100/8). He reported that most of the relevant actions had been taken by the PCGIAP Working Groups and member countries.

20. Also at the same meeting, the Conference began its consideration of agenda item 7(b), "Invited papers on achievements and developments in geographical information in addressing national, regional and global issues". Mr. Stig Enemark, President of the International Federation of Surveyors (FIG), presented a keynote paper entitled "Spatial Enablement and the Response to Climate Change and the Millennium Development Goals" (E/CONF.100/IP.6). The importance of land administration was emphasized as it plays a key role in adaptation to climate change and in prevention and management of natural disasters. He noted that mapping and cadastral agencies should have a key role to play in developing spatially enabled government by merging large-scale maps into small-scale ones.

21. At the same meeting, Mr. John Schneider, Group Leader of the Risk and Impact Analysis Group in the Geospatial and Earth Monitoring Division of Geoscience Australia, presented a keynote paper entitled "The Role of Spatial Information in Understanding Climate Change Risk" (E/CONF.100/IP.10). By referring to two of the recent disasters in Australia (related to wild fire and flood) and showing the detailed analyses on how various geospatial information could contribute to risk reduction, he explained the importance of employing geospatial information in measuring and assessing disaster risks. He reaffirmed that spatial and mapping

agencies have a vital role in disaster risk reduction.

22. Also at the same meeting, Mr. Abbas Rajabifard, President of Global Spatial Data Infrastructures (GSDI), presented a keynote paper entitled “Realizing Spatially Enabled Societies – a Global Perspective in Response to Millennium Development Goals” (E/CONF.100/IP.4). He stressed that while Spatial Data Infrastructures (SDIs) are important to leverage geospatial data, they have no value without business applications. He also emphasized the importance of spatial enablement in governments and in society, for which cadastre plays a crucial role. The development of a spatially enabled government and society will require a wide range of experiences and disciplines from surveying and mapping, land administration, GIS, information and communications technology, computer science, legal and public administration and many more.

23. At the same meeting, Mr. Kheng-Peng Soh, Vice-President of the Eighteenth UNRCC-AP, briefed the Conference on the 16th PCGIAP meeting to be held from 19 to 22 October 2010 in Singapore, in conjunction with the GSDI-12, and invited delegates to the forthcoming conference. He also emphasized the importance of SDIs for the governments of the region by introducing the experience of Singapore on SDI development.

24. At its 3rd plenary meeting, on 27 October 2009, the Conference continued its consideration of item 7(b). Mr. Greg Scott, in his capacity as Director of the National Mapping and Information, Geospatial and Earth Monitoring Division of Geoscience Australia, presented a paper entitled “Disaster Risk Reduction and Climate Change Adaptation in the Australia-Pacific Region” (E/CONF.100/IP.7). By referring to the geospatial component included in the Hyogo Framework adopted at the United Nations World Conference on Disaster Reduction in 2005, the paper drew attention of geo-information specialists to the importance of being able to contribute to disaster risk reduction. While the United Nations Regional Cartographic Conferences for Asia and the Pacific mainly had their focus on data development in the past, more attention has to be paid to disaster mitigation in the Conference as it started at the Seventeenth UNRCC-AP. It was also emphasized that, in addition to employing geospatial information after disasters, it is more important to make geospatial information usable for the decision makers before disasters take place.

25. At the same meeting, Ms. Yukiko Tachibana, Deputy Head of the Information Access Division of the Geospatial Information Department of the Geographical Survey Institute (GSI) of Japan, presented a paper entitled “New NSDI and National Mapping Policy of Japan” (E/CONF.100/IP.5). She introduced a new NSDI legislation enacted in Japan in light of the rapid expansion of geospatial applications in the society. As one of the measures prescribed in the new law, GSI is now developing a Fundamental Geospatial

Data (FGD) in cooperation with local governments. She also explained about the implications of the FGD development to the national mapping programme, in which conventional topographic map data are rebuilt based on the newly developed FGD.

26. Also at the same meeting, Mr. Woosug Cho, Professor of Inha University, Republic of Korea, presented a paper entitled “The Present State of Geographic Information in Korea” (E/CONF.100/IP.15). He introduced the activities of developing an NSDI in the Republic of Korea starting in 1995 based on a GIS law and three master plans, including base map data development, data standardization, human resources development and R&D. He also introduced a new organizational structure in the Korean government merging land survey, cadastre and marine survey into one entity, as well as a new role of the National Geographic Information Institute.

27. At the same meeting, Mr. Victor Khoo, Senior Manager of Survey Services of the Singapore Land Authority, presented a paper entitled “Singapore NSDI: Towards a Spatially Enabled Nation” (E/CONF.100/IP.9). He introduced the activities of Singapore on the development of NSDI (“SG-SPACE”) starting from assessing the user needs. He explained that beyond data-sharing, SG-SPACE aims to create a sustainable environment where geospatial data is interoperable, accessible and usable by agencies in day-to-day operations to facilitate better policy, decision-making and governance.

28. Also at the same meeting, Mr. Shri L.P. Sharma, National Informatics Centre, Sikkim, India, presented a paper entitled “Geographical Information System Based Landslide Probabilistic Model with trivariate approach – a case study in Sikkim Himalayas” (E/CONF.100/IP.19). The region of Sikkim has been vulnerable to landslides due to steep slopes. Geospatial information was collected to classify the region in terms of the vulnerability to landslides. The developed GIS successfully identified vulnerable areas.

29. At the same meeting, Mr. Ian Williamson, Centre for Spatial Data Infrastructures and Land Administration, Department of Geomatics, University of Melbourne, Australia, presented a paper entitled “National mapping, land administration and spatially enabled government – looking back, looking forward” (E/CONF.100/IP.18). He drew the participants’ attention to the fact that the world has been changing since the beginning of United Nations Regional Cartographic Conferences and even after the establishment of PCGIAP, particularly in the role and concept of cadastre. While acknowledging that there are differences in land administration between countries, he stressed that integration of land administration into SDIs will be the key for the successful implementation of spatially enabled government. In light of these changes and challenges, he encouraged member states to develop a new vision to cope with the new order of the

world.

30. Also at the same meeting, Mr. Manoj Tayal, Surveyor General of India, presented a paper entitled “Achievements and Developments in Geographical Information in Addressing National Issues in India” (E/CONF.100/IP.22). He introduced the past engagement of the Survey of India in surveying and mapping of the country including country-wide surveying and mapping activities as well as large-scale mapping in state capitals. As one of the successful applications of geospatial information, India employed geospatial data in the national election in 2009.

31. At its 4th plenary meeting, on 27 October 2009, the Conference continued its consideration of item 7(b). Mr. Pengde Li, Director of the Map Supervision Centre of the State Bureau of Surveying and Mapping of China, presented a paper entitled “Institutional Strengthening to Stimulate Geospatial Industry Growth in China” (E/CONF.100/IP.11). He introduced the reorganization of the State Bureau of Surveying and Mapping (SBSM) of China that took place through the new initiative by the government, with new emphasis on the modernized relationship with the industry which has been growing rapidly during the past years with recent annual growth of more than twenty percent. Based on these changes, SBSM is tasked with new terms of reference and will work more closely with the industry.

32. At the same meeting, Mr. Paulino da Cruz, Head of Cadastral and Land Information of the National Directorate for Land and Property and Cadastral Services, Ministry of Justice of Timor-Leste presented a paper entitled “The efforts of building GIS infrastructure in a newly independent State: The case of Timor Leste” (E/CONF.100/IP.12). He introduced the experience of Timor-Leste in building a GIS infrastructure as a new independent State with support from the United Nations and other countries and organizations. He reported that some basic development has been completed, including geodetic datum through international support. But at the same time, the country still needs technical capacity development and overall coordination of its GIS infrastructure.

33. Also at the same meeting, Ms. Adibah Awang, University of Technology and Department of Mapping and Surveying of Malaysia, presented a paper entitled “Geo-Spatial Data Accuracy and its Legal Implications in the Malaysian Context” (E/CONF.100/IP.14). She drew the delegates’ attention to some outstanding legal issues associated with geospatial information, particularly when maps are inaccurate. Due to the peculiar nature of geospatial information, such as multiple developers for a single dataset, the existing legal framework is not adequate for the current situation and new legislation is needed in Malaysia.

34. At the same meeting, Mr. Gholam Reza Fallahi, GIS Department of

the National Cartographic Center of Iran, presented a paper entitled “Implementation of Web Geoservices” (E/CONF.100/IP.13). He introduced a three-layer system on their Web map service based on Web 2.0 technology by introducing an application layer in the middle of data and client layers. He also explained the advantage of the new Web services implemented in the National Cartographic Center of Iran with its enhanced efficiency and ease of maintenance in comparison to the traditional ones.

35. Also at the same meeting, Mr. Dietmar Grünreich, Director General of the Federal Agency for Cartography and Geodesy of Germany, presented a paper entitled “The German NSDI (GDI-DE)” (E/CONF.100/IP.17). He introduced the structure of German NSDI in the government, and the work of the German federal government mapping agency. He also introduced domestic laws on geospatial information as well as regional framework of INSPIRE (Infrastructure for Spatial Information in Europe) Directive that requires the European Union member countries to provide the geospatial data for the European policy making.

36. At the same meeting, Mr. Dodi Sukmayadi presented a paper entitled “Indonesia Emergency: Quick Response to the West Sumatra Earthquake” (E/CONF.100/IP.21) on behalf of Mr. Rudolf W. Matindas, Head of the National Coordinating Agency for Surveys and Mapping (BAKOSURTANAL) of Indonesia. He introduced the responses provided by BAKOSURTANAL immediately after the earthquake which took place on 30 September 2009 in the Padang area of Sumatra Island. He reported that since there were 1:10,000-scale maps that had been prepared by the mapping agency a year before, the government was able to respond quickly to the disaster caused by the earthquake. One of the lessons learned at the time of the disaster was that paper maps are valuable as opposed to digital map data in case of electric power outage immediately after a disaster.

37. Also at the same meeting, Mr. Luiz-Paulo Fortes (Brazil), Chair of the Ninth United Nations Regional Cartographic Conference for the Americas and President of the Permanent Committee on Spatial Data Infrastructure for the Americas (PC-IDEA), presented a paper entitled “Importance of policies and legal instruments for the building of spatial data infrastructures in the Americas” (E/CONF.100/IP.16). He reviewed how PC-IDEA was created with membership of 24 countries in the Americas and the Caribbean region and reported on the legal status of SDIs in the region based on the survey conducted in 2008 on the legal framework that prescribe the development of NSDI, standards, capacity building and the level of SDI development. He pointed out that there seems to be a positive relationship between the availability of legal framework and actual SDI development, suggesting that legal framework is essential for success of SDI implementation.

38. At its 5th plenary meeting, on 28 October 2009, the Conference continued its consideration of item 7(b). Mr. Orhan Altan, President of the International Society for Photogrammetry and Remote Sensing (ISPRS), presented a paper entitled “Geospatial Technologies to Reach the Millennium Development Goals” (E/CONF.100/IP.3). He pointed out significant changes, including disasters, climate change and food shortage, that have been taking place globally and causing serious threats to the people living in the affected areas. He introduced important activities that ISPRS and other related international organizations are doing to tackle these global issues by employing earth observations and photogrammetric technology.

39. At the same meeting, Mr. William Cartwright, President of the International Cartographic Association (ICA), presented a paper entitled “Web 2.0 map production & publishing and geospatial information dissemination” (E/CONF.100/IP.1). He introduced the recent development of map production and publishing through sophisticated Web 2.0 software and powerful computer hardware by non-professionals, including ordinary citizens, illustrating a shift from the conventional publishing model. He pointed out that such amateur mapmakers are now ready to produce and immediately publish maps globally to support their cause.

40. Also at the same meeting, Mr. Fraser Taylor, President of the International Steering Committee for Global Mapping (ISCGM), presented a paper entitled “Global Mapping: A Tool for Natural Disaster Mitigation for Asia and the Pacific Region” (E/CONF.100/IP.2). He introduced the current status of the Global Mapping project starting from its history to recent progress, while highlighting that disaster mitigation and management has been added as a new application of Global Map with great contribution. The future challenges of Global Map include improved data interoperability and institutional cooperation among the various stakeholders responsible for collecting, storing and distributing geo-information.

41. At the same meeting, Mr. Kyoung-Soo Eom, from the United Nations, presented a paper entitled “Geospatial Support for United Nations Operations” (E/CONF.100/IP.20). He introduced the responsibilities of the United Nations Cartographic Section, which encompass a wide range of geospatial information support activities, including timely provision of geospatial information for the United Nations Secretariat, particularly in support of the work the Security Council, direct support on GIS to United Nations field missions, and technical support to international boundary issues. The Section works closely with other United Nations agencies and national, regional and global organizations through partnerships to enhance its functions, including capacity building and data sharing.

42. Also at the same meeting, Mr. Mauro Salvemini, President of the

European Umbrella Organization for Geographic Information (EUROGI), presented a paper entitled “Spatially enabling e-government through geo-services” (E/CONF.100/IP.8). He introduced the European experience in developing SDIs in the region, including EUROGI, and the ongoing activities based on INSPIRE Directive. Through such experience, it was emphasized that networking and dialogues among stakeholders, users, developers and institutions are crucial to the successful implementation of SDIs.

43. At the same meeting, the representative of the Russian Federation stated that the Russian government had recently reorganized three geospatial information related organizations (land property sales, cadastral service and cartography) and merged them into one body.

44. Also at the same meeting, under agenda item 5, “Report of the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific”, the Conference had a panel discussion on “*PCGIAP Future Directions*”. The panelists were Mr. Luiz Paulo Fortes of PC-IDEA, Mr. Mauro Salvemini of EUROGI, Mr. Claude Obin Tapsoba of CODIST-Geo (Africa) and Mr. Abbas Rajabifard of GSIDI. Mr. Greg Scott, President of the Conference and PCGIAP opened the panel discussion, and presented a summary of discussions which took place at the PCGIAP Executive Board meeting, held from 19 to 20 May 2009 in Xi’an, China, in terms of the future of the PCGIAP. He also introduced the outcome of an informal meeting convened by the United Nations Statistics Division on 25 October 2009, at which consultation was held with member countries and regional and global NGOs on the importance of global geographic information management. He proposed that the Conference should consider a resolution highlighting the need for a global forum to tackle outstanding global issues and coordinate more effectively by enhancing global geographic information management. He invited the views of the panelists on these subjects.

45. At the same meeting, Mr. Luiz Paulo Fortes of PC-IDEA expressed his views on the lack of global political framework on the applications of geospatial information, and the need for high level global coordination to direct regional activities, including technical standards and specifications on SDIs.

46. Also at the same meeting, Mr. Mauro Salvemini of EUROGI expressed his views that SDIs need a platform of networking with other SDIs and supported the initiative of global geographic information management. He also added that PCGIAP should take the lead in setting up an instrument to lead in Asia and the Pacific region to communicate with each other through workshops.

47. At the same meeting, Mr. Claude Obin Tapsoba of CODIST-Geo (Africa) expressed his view that Africa is the area where geospatial information is desperately needed but in reality the work done so far lacks a lot. In Africa, NSDI initiatives are established, but the management committees may not be sustainable for various reasons and need support from other countries. He added that Africa supports the proposed idea of global geographic information management.

48. Also at the same meeting, Mr. Abbas Rajabifard of GSDI welcomed the initiative on global geographic information management and mentioned that GSDI and the proposed global body complement the work of each other. He added the need for a high-level arrangement for global geographic information management and emphasized the need to facilitate better outreach by global bodies such as the United Nations to promote the idea of spatial enablement.

49. At the same meeting, the President invited comments from the floor. The representatives of Finland, Fiji, Germany and Canada expressed their support for the proposed idea of global geographic information management, pending high level support from their respective governments.

50. Also at the same meeting, the President proposed that a draft resolution on global geographic information management be prepared and discussed in the plenary on 29 October 2009 and that another preparatory meeting be organized in 2010, which was accepted by the floor by acclamation.

51. In the afternoon of 28 October 2009, the three Technical Committees, established at the first plenary meeting, met in parallel sessions in order to discuss various relevant topics and work on the texts of draft resolutions to be submitted to the Conference plenary for consideration and adoption.

Chapter III

Conclusion of the Conference

52. At its 6th plenary meeting, on 29 October 2009, the Conference considered agenda item 8, "Reports of the technical committees of the Conference". The Rapporteurs of Committee I, Mr. Shigeru Matsuzaka (Japan), Committee II, Mr. Zoher Nomanbhoy (Malaysia), and Committee III, Mr. Cho Wu Sug (Republic of Korea), reported on the work undertaken by their respective Committees. The Conference agreed to include the reports of the three Technical Committees in the final report of the Conference (see annexes I, II and III).

53. At the same meeting, under agenda item 9, the Conference adopted the provisional agenda for the Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific, which was circulated in an informal paper (see annex IV).

54. At the same meeting, the Conference discussed and adopted six draft resolutions recommended by the Technical Committees (see chapter IV, resolutions 1-6); one draft resolution proposed by the Panel at the 5th meeting (see chapter IV, resolution 7); and a resolution on the holding of the Nineteenth UNRCC-AP (see chapter IV, resolution 8).

55. At the same meeting, under agenda item 10, the Rapporteur introduced the draft report of the Conference as contained in an informal paper. The Conference adopted the draft report and authorized the Rapporteur to finalize the report, in consultation with the Secretariat, with a view to its submission to the Economic and Social Council for appropriate action.

56. At the same meeting, the President of the Conference made a statement and declared the Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific closed.

Chapter IV

Resolutions adopted by the Conference

A. List of resolutions

1. Regional Geodesy
2. Capacity building in disaster management
3. Data Access
4. Data Integration
5. Spatially Enabled Government and Society
6. Annual Forum on Land Administration
7. Global geographic information management
8. Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific

B. Texts of resolutions

1. Regional Geodesy

The Conference,

Recognizing 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,

Noting the progress made by the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) working group on regional geodesy in improving the regional geodetic framework as the base layer for a regional spatial data infrastructure,

Considering the frequency of earthquakes, volcanic eruptions and tsunamis in the region and more generally the significant ongoing regional crustal deformation,

Considering also the need of member States to provide users with access to the reference frame with an accuracy of 1cm or better to support spatial data collection for a wide range of applications,

Realizing the need to establish a new and precise geodetic framework in the Asia and the Pacific region, which is linked to the International Terrestrial Reference Frame (ITRF), to support disaster prevention/mitigation programmes

Recommends that member States support the Asia-Pacific Reference

Frame (APREF) initiative by:

- (a) Participating in the APREF initiative,
- (b) Sharing data from Continuously Operating Reference Stations (CORS) operated in their respective countries,
- (c) Undertaking routine and continuous geodetic analysis, if the capability exists, of CORS data from all or a sub-component of the region,
- (d) Installing additional CORS,
- (e) Supporting geodetic experts from member States to attend appropriate regional forums, such as the PCGIAP regional geodesy WG meetings.

2. Capacity building in disaster management

The Conference,

Recognizing 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,

Recognizing the ongoing need for training, education and capability development in the region,

Recommends that:

- (a) UN-SPIDER be requested to undertake GIS, 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,
- (b) PCGIAP, United Nations and other partners be requested to support capacity building for the region, in particular for developing countries such as Timor-Leste,
- (c) PCGIAP and other partners facilitate the development of a data and services inventory, catalogue, toolkit, guidelines using web services infrastructure.

3. Data Access

The Conference,

Recognizing 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 GIS, remote sensing and land administration for disaster management,

Noting the difficulties of transferring large volumes of data via the Internet in many countries is problematic,

Further noting the development of web technologies that assist in providing access to data over the Internet,

Recommends that efforts be made by countries to improve access to data so as to support disaster management in a number of ways, including:

- (a) developing and using web technologies, such as geo-portals, to disseminate data,
- (b) using appropriate standards for data sharing,
- (c) capturing timely data to support regional hazard assessment,
- (d) approaching development partners, including UN-SPIDER to acquire and widely share timely data for disaster management.

4. Data Integration

The Conference,

Recognizing the importance of integration of fundamental data with other spatial data, including hazard and exposure data sets in support of disaster mitigation and reduction,

Further recognizing the power of spatial tools in integrating various data from many sources and multiple formats,

Noting that the discovery, access, integration and delivery of spatial data can become much easier with enhanced interoperability,

Recommends that:

- (a) PCGIAP assist member states to understand and pursue the principles of data integration within the context of spatially enabled society,
- (b) PCGIAP cooperate with ISCGM, UNSD and other international organizations in order to integrate spatial and statistical data.

5. Spatially Enabled Government and Society

The Conference,

Noting the progress made in the development of national spatial data infrastructures in Asia and the Pacific region,

Further noting the global importance of spatially enabled government and society and the outcome of the forum on this matter, convened by PCGIAP and held in Seoul, Republic of Korea, in June 2007.

Recognizing that spatially enabled government is an important part of countries ICT, e-government and information sharing strategies and key activity that fosters innovation,

Recommends that PCGIAP undertake a study to understand, compare and determine the state of spatially enabled government and society, including levels of maturity and governance of SDI, in the region.

6. Annual Forum on Land Administration

The Conference,

Noting the importance of good land administration systems in supporting sustainable development, poverty alleviation, social justice and economic development;

Further noting the role that land administration and the cadastre plays in providing large scale people relevant spatial data within spatial data infrastructures;

Mindful of the growing importance to integrate all forms of spatial data, and particularly natural and built environmental spatial data in support of spatially enabled society;

Noting the outcomes of the PCGIAP supported Mongolian Conference on good land administration and its role in economic development and the outcomes of the PCGIAP Round Table Discussion on mechanisms for sharing land administration policies, strategies, related technologies and experiences in Mongolia in 2007;

Further noting the outcomes of the 2nd PCGIAP Land Administration Forum in Malaysia in 2008 and the 3rd PCGIAP Land Administration Forum and PCGIAP Land Market Seminar in Tehran in 2009 that resulted

in the Tehran Declaration on Land Administration to support sustainable land markets and e-Government;

Also further noting the importance of the Tehran Declaration on land administration to support sustainable land markets and e-government;

Recognizing the needs of member States in Asia and the Pacific region to have an annual land administration forum supported by PCGIAP;

Recommends that PCGIAP formalizes and maintains its annual Forum on Land Administration in Asia and the Pacific; and

Further recommends PCGIAP renames the existing WG3 (Spatially enabled government) as “Spatially enabled government and society” being responsible for the two inter-connected 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.

7. Global geographic information management

The Conference,

Recalling the recommendations made in Economic and Social Council resolution 131 (VI) of 19 February 1948, entitled “Co-ordination of Cartographic Services of Specialized Agencies and International Organizations,” and subsequent resolutions,

Taking note of the rapid development of and increased demand for geographic information infrastructure in all countries in past years that has made geographic information an invaluable tool in policy planning and decision making

Bearing in mind that global issues such as climate change, food and energy crisis, peace operations and humanitarian assistance all require strong support for geographic information management on a global scale,

Acknowledging with appreciation the work of the United Nations regional cartographic conferences and the significant role that they are serving in Asia and the Pacific and the Americas regions, as well as in Africa, and recognizing the important role and contribution of regional organizations in Europe,

Also acknowledging the important contribution of other regional and international organizations as well as of global initiatives and projects,

Recognizing the absence of a United Nations consultation process which is led by member states that deals with global geographic information management, coordinates the regional efforts, promotes global norms on geographic information and brings such information to bear on global issues,

Also recognizing the requests of the 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,

Requests that, by 1 November 2010, the Secretary-General and the United Nations Secretariat initiate discussion and prepare a report, for a future session of ECOSOC, on global coordination of geographic information management, including the consideration of a possible creation of a United Nations global forum for the exchange of information between countries and other interested parties, and particularly 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 that geographic information and services are easily and timely accessible.

8. Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific

The Conference,

Noting the progress made in the spatial data infrastructure, at the national, regional and global levels, by States Members of the United Nations,

Noting also the essential role played therein both by the present United Nations Regional Cartographic Conference for Asia and the Pacific and by the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific,

Noting further that the Permanent Committee was established in 1994 pursuant to resolution 16 adopted by the Thirteenth United Nations Regional Cartographic Conference for Asia and the Pacific, held in Beijing,¹

¹ *Thirteenth United Nations Regional Cartographic Conference for Asia and the Pacific, Beijing 9-18 May 1994*, vol. I, *Report of the Conference* (United Nations publication, Sales No. E.94.I.19), chap. VI, sect. B.

Noting that the Permanent Committee has expressed the wish to hold its meeting in conjunction with the Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific,

Recognizing the necessity of continuing this important work,

Recommends to the Economic and Social Council that the Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific be convened in 2012.

Annex I

Work of Technical Committee I: Geographical Information System (GIS), remote sensing and geodesy for disaster management

1. Technical Committee I met in the afternoon of 28 October 2009. Mr. John Dawson (Australia), Chairperson of Technical Committee I, presented a paper on a new regional geodesy initiative, the Asia-Pacific Regional Reference Frame (APREF) Project. He mentioned that the objective of APREF is to create and maintain an accurate and dense geodetic frame based on continuous observation and analysis of GNSS data and an evolution from the campaign-based Asia-Pacific Regional Geodetic Project (APRGP, 1997-2009). Discussions confirmed the importance of the project for regional spatial data infrastructure as well as disaster management.

2. The Committee also discussed the following issues:

- (a) Vertical datums: importance and difficulties of regional integration;
- (b) Difficulties in data sharing;
- (c) Capacity building;
- (d) Access to data and its problems for disaster management;
- (e) Interaction with UN-SPIDER in both capacity building and data access; and
- (f) Positioning systems and their appropriate use.

3. The Committee presented draft resolutions concerning following the three subjects as a result of discussions: (i) APREF project, (ii) Capacity building and cooperation with UN-SPIDER, and (iii) Data access improvements, standardization for adoption by the Conference.

Annex II

Work of Technical Committee II: Spatial data infrastructure and spatially enabled government

1. Technical Committee II met in the afternoon of 28 October 2009. Mr. Manoj Tayal (India) Chairperson of Technical Committee II, proposed some key issues related to spatial data infrastructure and spatially enabled government and society for discussion, including networking for sustainability, user needs at sub-national as well as national level, revenue model and geographic information as a driver for economy, etc.

2. The Committee also discussed the following issues:

- (a) Develop a Spatially Enabling Government and Society template for the quantitative SDI/SEG study of the AP region. Understand the levels of maturity and institutional arrangements in each of the 56 member states.
- (b) Member nations develop a better understanding and pursue the principles of the integration of fundamental data with natural hazard and community exposure data sets in support of disaster mitigation and reduction within the context of spatially enabling society.
- (c) Facilitate capacity and capability development in the region by developing a data inventory, catalogue, toolkit, guidelines using web services infrastructure.
- (d) Acknowledging that GI as a driver for economic development, appropriate cost/benefit SDI models should be considered for societal well being.
- (e) Adopt the principles of the Tehran Declaration with regard to land administration to support sustainable land markets and e-Government and support an annual land administration forum in the pursuit of these principles

3. The Committee presented draft resolutions for adoption by the Conference.

Annex III**Work of Technical Committee III: Geospatial Data collection, management and dissemination**

1. Technical Committee III met in the afternoon of 28 October 2009. The Chairperson of the Committee, Mr. Bebas Purnawan (Indonesia) and the Vice-Chairperson, Mr. Victor Khoo (Singapore) made brief oral presentations on the work of the Committee. The meeting covered the following topics:

- (a) Focus on poverty, education, disaster management, and climate change, where geospatial data should be well appreciated and recognized.
- (b) Developing norms, procedures, guidelines, standards, specifications and best practices on data collection, dissemination, management.
- (c) Provide support work on national geocode.
- (d) SDI primary dataset and collection of metadata in support of implementing GIS application.
- (e) Ensuring that projects are needs-driven.
- (f) Supporting developing countries, such as Timor-Leste, that require support in managing geospatial data and capacity building.
- (g) Ensuring quality of volunteered geodata.
- (h) Role of ICT solution in managing, disseminating and collecting large volume of geospatial data.

2. The Committee presented four draft resolutions for adoption by the Conference.

Annex IV**Provisional agenda for the Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific**

1. Opening of the Conference.
2. Election of the President and other officers of the Conference.
3. Adoption of the agenda and other organizational matters:
 - (a) Adoption of the agenda and organization of work of the Conference;
 - (b) Adoption of the rules of procedure;
 - (c) Establishment of technical committees and election of the Chairperson of each committee;
 - (d) Credentials of representatives to the Conference.
4. Report of the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific.
5. Report on the implementation of resolutions adopted at the Eighteenth United Nations Regional Cartographic Conference for Asia and the Pacific.
6. Conference papers:
 - (a) Country reports;
 - (b) Invited papers on achievements and developments in geographical information management in addressing national, regional and global issues.
7. Reports of the technical committees of the Conference.
8. Provisional agenda for the Twentieth United Nations Regional Cartographic Conference for Asia and the Pacific.
9. Adoption of the report of the Nineteenth United Nations Regional Cartographic Conference for Asia and the Pacific.

Annex V**List of documents²**

<i>Number</i>	<i>Title/country</i>
E/CONF.100/1* (A, C, E, F, R, S)	Provisional Agenda
E/CONF.100/2 (A, C, E, R, S)	Rules of Procedure
E/CONF.100/INF/1* (E, F, S)	Documentation for the Conference
E/CONF.100/INF/2	Provisional list of participants
E/CONF.100/3	Report of the Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP)
E/CONF.100/4	Report of the PCGIAP Working Group 1: Regional Geodesy
E/CONF.100/5	Report of the PCGIAP Working Group 2: Fundamental Dataset
E/CONF.100/6	Report of the PCGIAP Working Group 3: Land Management
E/CONF.100/7	Report of the PCGIAP Working Group 4: Institutional Strengthening
E/CONF.100/8	Report on the actions taken on resolutions of the seventeenth UNRCC-AP
E/CONF.100/9	Report of the Conference
E/CONF.100/IP.1	Web 2.0, Map Production & Publishing and Geospatial Information Dissemination
E/CONF.100/IP.2	Global Mapping: A Tool for Natural Disaster Mitigation for Asia and the Pacific Region
E/CONF.100/IP.3	Geospatial Technologies to Reach the Millennium Development Goals
E/CONF.100/IP.4	Realizing Spatially Enabled Societies – A Global Perspective in Response to Millennium Development Goals
E/CONF.100/IP.5	New NSDI and National Mapping Policy of Japan
E/CONF.100/IP.6	Spatial Enablement and the Response to Climate Change and the Millennium Development Goals
E/CONF.100/IP.7	Disaster Risk Reduction and Climate Change Adaptation in the Australia-Pacific Region
E/CONF.100/IP.8	Spatially Enabling E-Government through Geo-Services
E/CONF.100/IP.9	Singapore NSDI: Towards a Spatially Enabled Nation
E/CONF.100/IP.10	The Role of Spatial Data in Understanding Climate Change Risk
E/CONF.100/IP.11 (C, E)	Institutional Strengthening to Stimulate Geospatial Industry Growth in China
E/CONF.100/IP.12	The Efforts of Building GIS Infrastructure in a Newly Independent State: The case of Timor Leste
E/CONF.100/IP.13	Implementation of Web Geoservices by National Cartographic

² All documents are posted, without any formal editing, on the UNSD website http://unstats.un.org/unsd/methods/cartog/Asia_and_Pacific/18/18th-UNRCC-AP-Docs.htm.

	Center
E/CONF.100/IP.14	Geo-Spatial Data Accuracy and its Legal Implications in the Malaysian Context
E/CONF.100/IP.15	The Present State of Geographic Information in Korea
E/CONF.100/IP.16	Importance of Policies and Legal Instruments for the Building of Spatial Data Infrastructures in the Americas
E/CONF.100/IP.17	The German NSDI (GDI-DE)
E/CONF.100/IP.18	National Mapping, Land Administration and Spatially Enabled Government – Looking Back, Looking Forward
E/CONF.100/IP.19	Geographical Information System Based Landslide Probabilistic Model with Trivariate Approach - A case study in Sikkim Himalayas
E/CONF.100/IP.20	Geospatial Support for UN Operations
E/CONF.100/IP.21	Indonesia Emergency Quick Response to the West Sumatra Earthquake
E/CONF.100/IP.22	Achievements and Developments in Geographical Information in Addressing National Issues in India
E/CONF.100/CRP.1	Survey and Mapping Activities in Viet Nam
E/CONF.100/CRP.2	Geospatial Information in Japan
E/CONF.100/CRP.3	Technical Cooperation in Surveying, Mapping and Charting by Japan
E/CONF.100/CRP.4	Present status of NSDI policy of Japan
E/CONF.100/CRP.5	Disaster Prevention Activities
E/CONF.100/CRP.6	Utilization of Global Map for Asia and the Pacific Region
E/CONF.100/CRP.7	Provision of 2,147 Environmental Sensitivity Index (ESI) Maps
E/CONF.100/CRP.8	National Report - Finland
E/CONF.100/CRP.9	Country Report on SDI Activities in Singapore
E/CONF.100/CRP.10	Current Status of GIS in the Sudan
E/CONF.100/CRP.11	National Report - Iran
E/CONF.100/CRP.12	Geographic Information System (GIS) Infrastructure Development in Timor-Leste 2006-2009
E/CONF.100/CRP.13	Application of Geodetic Tools for Crustal Deformation Monitoring in Iran
E/CONF.100/CRP.14	GSDI Association - Report to the 18th UNRCC-AP Conference
E/CONF.100/CRP.15	Report of Thailand on Cartographic Activities During the Period of 2007-2009
E/CONF.100/CRP.16	China Geodetic Coordinate System 2000
E/CONF.100/CRP.17	Country Report on Surveying and Mapping in the Philippines
E/CONF.100/CRP.18	Iran Cadastre Report