



REPORT

**The 13th Meeting of
The Permanent Committee on GIS Infrastructure for
Asia and the Pacific
(PCGIAP)**

12-15 June 2007, Seoul, Korea

PCGIAP Secretariat

Acknowledgement

Special thanks are offered to all who contributed to the 13th Meeting of the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) held on 12-15 June 2007 in Seoul, Korea.

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Record of Proceedings

13th Meeting of

The Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP)

12-15 June 2007

COEX Convention Center, Seoul, Korea

A. Introduction

1. This record is a summary of the 13th Meeting of the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) held from 12 to 15 June 2007 in Seoul, Korea.
2. The Committee meeting was preceded by an Executive Board meeting and an International Workshop on Spatial Enablement of Government and NSDI – Policy Implications. The program of the meeting is attached as Annex 1.
3. The International Workshop on Spatial Enablement of Government and NSDI – Policy Implications was jointly organized by PCGIAP WG3 and GSDI Association. 125 delegates from 14 countries participated in the workshop. The workshop reviewed national use of spatial enablement by governments and society, and focused on legal and economic issues in relation to the development of SDIs, including data sharing and collaboration developments; drivers for SDI investment; SDI benefit/cost studies; and data access policies. Presentations were made from five countries in the region, Australia, Korea, Malaysia, Singapore and Japan. A panel discussion was held for exchange of information and views on future direction and way forward.
4. The participants visited GIS Korea 2007, where the latest developments of the GIS industry in Korea were exhibited and introduced.

B. Attendance

5. The meeting was attended by about 90 national delegates and experts from 11 countries and 3 international organizations. The full list of participants is attached as Annex 2.

C. Opening of the meeting

6. The host of the 13th PCGIAP meeting, Mr. Sohn Bong Gyun, President of the National Geographic Information Institute, expressed his warm welcome and thanks to all members for their participation in and preparations for the meeting. The full text of his address is attached as ANNEX 3.
7. The President of PCGIAP, Mr. Peter Holland, expressed his appreciation to the host and to the members for their efforts to attend the meeting. In his address he

reiterated the goals of PCGIAP, and called for further cooperation among the members to pursue its work of regional significance and relevance. The full text of the President's address is attached as ANNEX 4.

D. Confirmation of Agenda

8. The proposed agenda was accepted as presented.

E. Apologies for absence

9. Apologies for absence had been received from Dato' Hamid bin Ali (Malaysia) and Mr. Bebas Purnawan (Chair of Working Group 2). They were represented by Mr. Ahmad Fauzi bin Nordin and Dr. Steeve Ebener respectively.

F. PCGIAP Executive Report

10. The Secretary, Mr. Li Weisen, gave a summary of the Committee activities since the 17th UNRCC-AP/12th PCGIAP in Bangkok, Thailand on 18-22 September 2006. The full report is attached as ANNEX 5.
11. The report reviewed the events of PCGIAP in the past year, including the 17th UNRCC-AP/12th PCGIAP, two workshops held during the 17th UNRCC-AP, one on *Use of Geo-information for Mitigating Large Scale Disaster and Attaining Sustainable Development* and the other on *Integration of Built and Natural Environmental Datasets within National SDI Initiatives*, the 10th APRGP GPS/GLONASS observation campaign in November 2006, the Executive Board meeting on 21 January 2007 in Hyderabad, India, and the PCGIAP WG3/GSDI Workshop on *Spatial Enablement of Government and NSDI – Policy Implications* on 12 June 2007 in Seoul, Korea.
12. Personnel changes were reported and accepted. Dr. Komaki Kazuo replaced Mr. Akira Yaguchi as Vice President and national delegate of Japan.
13. Cooperation with liaisons and other related international organs, including GSDI Association, ISCGM and SALB project, continued in various forms, through participation in the meetings, paper presentation and support to projects and initiatives.
14. Australia offered to host the next Executive Board meeting in early 2008 in Canberra, Australia.

G. Progress report from Working Group 1 - Regional Geodesy

15. Mr. Matsuzaka Shigeru, Chair of WG1, gave a summary on the progress and status of the WG1 project plans developed based on the resolution adopted at the 17th UNRCC-AP/12th PCGIAP in September 2006, Bangkok, Thailand. The report is attached as ANNEX 6.

16. Efforts continue for enhancement of the regional geodetic infrastructure through joint observation projects. APRGP 2006 was completed. And WG1 started the analysis of recent APRGP campaign data and is planning to re-analyse older data in a new ITRF frame and with absolute GPS antenna phase characteristics.

H. Progress report from Working Group 2 - Fundamental Data

17. Dr. Steeve Ebener, Project Manager, WHO, presented the WG2 report on behalf of Mr. Bebas Purnawan, Chair of WG2. The full report is attached as ANNEX 7.
18. The report presented the major progresses made and the activities performed since the 17th UNRCC-AP, mainly concerning the development of a regional dataset for the tsunami affected area as well as the development of a metadata profile for Asia and the Pacific.
19. Participation in and support to these projects from the member nations were strongly and urgently requested.

I. Progress report from Working Group 3 - Spatially Enabled Government

20. Prof. Ian Williamson, Chair of WG3, gave the report of the Working Group on Spatially Enabled Government. The full report is attached as ANNEX 8.
21. Over the last six years (2000-2006), WG3 successfully completed two major projects (cadastral template and marine administration Projects) and one well underway (data integration project), organised three international workshops, and established three dedicated websites for completed and current projects. Details were presented.
22. WG3 now focuses on the development of spatially enabled government. A new vision and objectives for its future direction and its activities has been undertaken.

J. Progress report from Working Group 4 - Institutional Strengthening

23. The Secretariat presented the report prepared by Major General M Gopal Rao, Chair of WG4. The full report is attached as ANNEX 9.
24. It was proposed to conduct a Training Program during Sept – Oct 2007 at STI, India, similar to that as conducted in 2005. It was emphasized that the capacity building would be approached in a three-tier structure addressing to different target groups, i.e. policy makers, working groups and the user segments.
25. To formulate strategy for capacity building in the region and finalize the syllabi / curriculums for different level programs, institutions / universities of Asia Pacific regions engaged in the field of Geospatial Information / SDI were being contacted. After finalization of the curriculums for different level programs the schedules would be finalized so that expertise in the field of Geospatial Information available

in the region would be utilized for the benefit of all target groups.

K. Reports from Liaison organizations

26. Dr. Steeve Ebener, Coordinator of the Second Administrative Level Boundary data set project (SALB), reported on the activities and the progresses that SALB project had made with the PCGIAP member countries since the 17th UNRCC-AP Conference. It was proposed efforts should be put in order to build on the collaboration already established between SALB, PCGIAP WG2 pilot project and the ISCGM. It was hoped that PCGIAP continue its efforts towards the existence of a regional culture for the creation and sharing of geographic information that would be of benefit to the countries. The full report is attached as ANNEX 10.
27. Prof. Bas Kok, President-Elect of GSDI organization, presented GSDI Association's founding principles, mission, vision, goals, conferences and tasks in 2007. The 10th GSDI Conference will be held in February 2008 in Trinidad. The presentation is attached as ANNEX 11.
28. Mr. Akeno Kazuhiko, Geographic Survey Institute, Japan, presented the report from the International Steering Committee for Global Mapping (ISCGM). As of 16 May 2007, Global Map data of 33 countries and regions had been released from the ISCGM website corresponding to 32.5% of the whole land area on the Earth and participating countries and regions came to 156 countries and 16 regions corresponding to 95% of the whole land area of the Earth. The full report is attached as ANNEX 12.
29. Report from Permanent Committee on Spatial Data Infrastructure for the Americas (PC IDEA) presented by the Secretariat outlined the recent activities including the determination of an advancement index of the SDIs in the Latin American countries, the Project of SDI Evaluation and Promotion for Sustainable Development of Latin America and the Caribbean, and the SDI Workshop on the Latin America Necessities. The full report is attached as ANNEX 13.
30. Status report of ISO/TC211 was given by Dr. Zhou Xu, PCGIAP Liaison Representative to ISO/TC211. The 33 published standards, the 20 standards still under work and the standardization trends were introduced. The members of PCGIAP were encouraged to contribute and benefit from the standardization activities of ISO/TC211. The full report is attached as ANNEX 14.

L. Discussions

31. Prof. Ian Williamson presented a White Paper titled *A Vision for PCGIAP in a Spatially Enabled World* proposed by PCGIAP Mongolian member regarding the need to establish a better mechanism to discuss and share land administration experiences in the Asia and Pacific region. The White Paper is attached as ANNEX 15. While welcoming discussion on this matter and appreciating the need

for better mechanisms to share land administration experiences in the region, the meeting agreed that more time would be needed to discuss the matter and that it be important for PCGIAP to maintain a dialogue with member countries on this issue. It was also agreed that in the short term Prof Ian Williamson, Chair of WG3, represent PCGIAP to discuss this issue at the PCGIAP sponsored International Workshop on Good Land Administration – Its Role in Economic Development on 27-29 June 2007 in Ulaanbaatar, Mongolia.

32. The meeting noted the need for PCGIAP to consider formal communication with the Ministry of Foreign Affairs in member countries explaining the formal link with the UN so as to provide the necessary justification for the member nations to participate in the PCGIAP activities and meetings.
33. It was accepted that the next PCGIAP Executive Board meeting be held in early 2008 in Canberra, Australia.
34. It was noted that GIS Development offered to host the 14th PCGIAP meeting in 2008 in Kuala Lumpur, Malaysia in conjunction with Map Asia 2008.
35. Member countries were encouraged to consider hosting the next meetings of PCGIAP, including the 18th UNRCC-AP/15th PCGIAP.

M. Technical Tour

36. The participants visited GIS Korea 2007, an annual expo organized by the Ministry of Transportation and Construction of Korea and exhibiting the latest developments of the GIS industry in Korea. The participants were given a presentation on GIS in Korea and showed around the exhibition.

N. Working Group sessions

37. WG1 on Regional Geodesy, WG2 on Fundamental Data, WG3 on Spatially Enabled Government, and WG4 on Institutional Strengthening met in the plenary meeting after the parallel sessions. Each Working Group presented a report to the plenary.

O. Report back to Plenary from Working Group 1

38. Mr. Matsuzaka Shigeru, Chair of WG1, provided a summary of the discussions at the WG parallel session to the plenary. Work plan for 2007-2009 was discussed to define projects, aims and responsibilities. Member countries were encouraged to take part in APRGP data analysis. APRGP2007 would be conducted in APSG20 11th September or APSG21 10th October.
39. WG1 resolved to organize the next Regional Geodesy Workshop in conjunction with the 14th PCGIAP meeting in 2008. It was also resolved that each country should investigate and report to the next Working Group meeting what geodetic

data sets are available for sharing, to what level of accuracy and resolution and to what spatial extent. The report is attached as ANNEX 16.

P. Report back to Plenary from Working Group 2

40. Dr. Steeve Ebener, Project Manager, WHO, presented a report on the WG2 discussions. The objective for the Working Group until the next UNRCC-AP Conference was agreed on as "Develop, maintain and distribute a seamless 1:1'000'000 scale framework data set covering the all AP Region". The activities of the working group would focus on the development of the framework data set, a metadata profile and network of country data node for the Region.

41. Some changes were made in terms of the structure and membership of the working group. One recommendation was proposed. The report is attached as ANNEX 17.

Q. Report back to Plenary from Working Group 3

42. Prof. Ian Williamson, Chair of WG3, reported on the discussions of the WG3 session. The meeting reviewed and discussed the presentation on Spatially Enabling Government and a draft response by PCGIAP to the White Paper titled *A vision for PCGIAP in a spatially enabled world* about sharing of land administration experiences in the Asia and Pacific Region.

43. The meeting also discussed the outcomes of the workshop conducted by the WG3 jointly with GSDI Association on *Spatial Enablement of Government and NSDI-Policy Implications*, 12 June in Seoul as part of the 13th PCGIAP meeting. Three recommendations were made. The WG3 work plan was reviewed and approved. The report is attached as ANNEX 18.

R. Report back to Plenary from Working Group 4

44. Prof. Sang-Ki Hong, Anyang University of Korea, presented the discussions of the WG 4 session. WG4 progress report was reviewed. It was stressed that the SDI course in India be organized on schedule with the cooperation of the Secretariat.

45. It was recognized that there are other efforts for capacity building in International community, such as metadata profile for AP by WG2, SDI workshop by AIT, ISO/TC211 Outreach AG and that there is a lack of formal educational courses specialized in SDI.

46. It was proposed that WG4 draw up a concrete work plan including cooperative programs such as visit to the countries with success stories, exchange of people and technology Transfer. It was also proposed that a repository be set up to accumulate the tools, including SW, Cookbooks, Manuals, Training Materials, PR Materials. One resolution was proposed. The presentation is attached as ANNEX 19.

S. Resolutions

47. Five resolutions drafted and presented by the four Working Groups were adopted as follows:

1. Regional Geodesy Workshop
2. Sharing of Geodetic Datasets
3. Fundamental Data Working Group Tasks
4. Spatial Enablement of Government
5. Institutional Strengthening

Full details of the resolutions are attached as ANNEX 20.

T. Closing

48. Mr. Peter Holland, President, reviewed the four-day program of the 13th PCGIAP meeting and concluded it by expressing gratitude to all the participants for their hard work and valuable contributions, which made the meeting a success. He extended special thanks to Mr. Sohn Bong-Gyun and the staff of NGII for their generous hospitality and support in hosting the meeting.



ANNEX 1

13th PCGIAP Meeting

12-15 June 2007

COEX Convention Center, Seoul, Korea

Program

Tuesday, 12 June 2007

- | | | |
|--|--|------------------|
| 0930-1200 | Registration | Lobby of R#401 |
| 1200-1330 | Lunch | Marche, B1 Floor |
| PCGIAP/GSDI Workshop on Spatial Enablement of Government and NSDI - Policy Implications | | R#401 |
| Chair: Prof. Ian Williamson, Prof. Bas Kok | | |
| 1330-1500 | Opening and Welcome , Peter Holland, PCGIAP President Introduction to Workshop - Workshop Aims & Objectives, Ian Williamson - Overview of PCGIAP-WG3 and Spatially Enabled Government, Abbas Rajabifard - GSDI support for Spatial Enablement of Government and NSDI, Bas Kok Position Paper on Spatially Enabled Government , Ian Williamson | |
| 1500-1515 | Break | |
| 1515-1630 | Invited Presentations - Spatially enabled government in Australia, Liz Marchant, Australia - Korea's National Spatial Data Infrastructure, Sang Ki Hong, Korea - Spatially Enabling Government: the Malaysian Case, Ahmad Fauzi, Malaysia - e-Initiatives in Singapore's Cadastral Survey System, Victor Khoo, Singapore - Further Advancement of Utilizing Geospatial Information in Japan, Akeno Kazuhiko, Japan | |
| 1630-1645 | Break | |
| 1645-1730 | Panel Discussion - Future Direction & Way Forward | |
| 1800-2000 | Welcome Reception, hosted by PCGIAP | R#402 |

Wednesday, 13 June 2007

| | | |
|-----------|--|--|
| 0900-1000 | EB meeting Chair: Mr. Peter Holland, PCGIAP President | R#403 |
| 1000-1030 | Opening Ceremony <ul style="list-style-type: none">· Welcome Address by President of NGII· Welcome Address by President of PCGIAP | R#401 |
| 1030-1040 | Group photo | |
| 1040-1200 | Plenary Session Chair: Mr. Peter Holland, President of PCGIAP <ul style="list-style-type: none">• Confirmation of Agenda Secretariat 5 min• PCGIAP Executive Report Secretary 15 min• Regional Geodesy Working Group report Chair, WG1 30 min• Fundamental Data Working Group report Chair, WG2 30 min | R#401 |
| 1200-1330 | Lunch | Marche, B1 Floor |
| 1330-1500 | Plenary Session Chair: Mr. Peter Holland, President of PCGIAP <ul style="list-style-type: none">• Spatially Enabled Government Working Group report Chair, WG3 30 min• Institutional Strengthening Working Group report Chair, WG4 30 min• Report from liaison organizations<ul style="list-style-type: none">- Report from SALB SALB 5 min- Report from GSDI GSDI 5 min- Report from ISCGM ISCGM 5 min- Report from PCIDEA Secretariat 5 min- Report from ISO/TC211 Secretariat 5 min | R#401 |
| 1500-1530 | Break | |
| 1530-1700 | Plenary Session Chair: Mr. Peter Holland, President of PCGIAP <ul style="list-style-type: none">• Discussions<ul style="list-style-type: none">- White Paper for PCGIAP- Next meetings- Other business | R#401 |
| 1800-2000 | Dinner, hosted by NGII | Water Lily, 2F, Grand Intercontinental Hotel |

Thursday, 14 June 2007

09:30-17:00 Technical Tour to GIS Korea 2007

Friday, 15 June 2007

0900-1030 **Working Group parallel sessions** R#304, 320

1030-1100 Break

1100-1200 **Working Group parallel sessions** R#304, 320

1200-1330 Lunch Marche, B1 Floor

1330-1500 **Plenary Session** R#320

Chair: Mr. Peter Holland, President of PCGIAP

- Report back to plenary from Working Groups
 - Regional Geodesy (WG1)
 - Fundamental Data (WG2)
 - Spatially Enabled Government (WG3)
 - Institutional Strengthening (WG4)

1500-1530 Break

1530-1630 **Plenary Session** R#320

Chair: Mr. Peter Holland, President of PCGIAP

- Resolutions and closing

ANNEX 2

List of Participants

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**Welcome Address
For the Opening Ceremony of the 13th PCGIAP Meeting
Mr. Sohn Bong-Gyun
President, National Geography Information Institute
13 June 2007
Seoul, Korea**

PCGIAP President, Mr. Peter Holland,
Vice President, Dr. Kazou Komaki,
Secretary, Mr. Li Weisen,
GSDI President-elect, Prof. Bas Kok,
Distinguished delegates, All the Attendees,

I would like to congratulate on the opening of the 13th meeting of the Permanent Committee on GIS Infrastructure for Asia and the Pacific in Korea. It is a great pleasure to meet and exchange views with experts and leaders in the field of spatial data from the Asia-Pacific region.

Taking this opportunity, I would like to express my appreciation of all the excellent outcomes achieved by PCGIAP until now. Through this meeting, I hope the activities of PCGIAP will be promoted and the cooperation among the member countries will be strengthened. With the strengthened relationships, information and technology can be shared easily among us. And I expect that all participants will do their best with one accord towards creating a better future for all mankind by making use of spatial data.

I hope everyone from either member countries or international organizations will have a pleasant and rewarding time during your stay in Korea. When you return, I hope you would have a beautiful memory.

I thank all of you for coming to my country and participating in this meeting.

Thank you.

Welcome Address

At the Opening Ceremony of the 13th Meeting of PCGIAP

Peter Holland, PCGIAP President

13 June 2007

Seoul, Korea

Honorable guests, distinguished delegates, PCGIAP colleagues, ladies and gentlemen,

It is a great pleasure and honor for me to welcome you to the 13th Meeting of the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP). I would like to thank all of you for taking time and effort to join us here in Seoul, Korea. My special thanks go to Mr. Sohn Bong-Gyun, President of the National Geographic Information Institute and your staff for hosting the meeting.

During the past twelve years since its establishment in 1995, in pursuance of a resolution adopted at the 13th United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP), PCGIAP has focused its efforts on the SDI development in Asia and the Pacific region, and has promoted regional cooperation and exchanges through various workshops, training courses and joint projects. At the same time, always referring to the UN banner as a guide and keenly aware of the regional and global needs, PCGIAP has engineered its strategies and developed action plans to meet the emerging needs and challenges.

As an institution for Asia and the Pacific, where the development level greatly varies from country to country, some with the NSDIs well in place while some just beginning, the PCGIAP should consider how it can further contribute to the regional SDI progress and ultimately to the sustainable development in Asia and the Pacific region, through the four Working Groups of Regional Geodesy, Fundamental Data, Spatially Enabled Government and Institutional Strengthening. At this meeting we will try to determine the future directions of PCGIAP and specific Working Group plans.

Thanks to the great hospitality of our host, a well-designed technical tour is arranged for the 14th as part of the meeting program. We will have the opportunity to see both the latest development in the geomatics field in Korea and experience the fascinating culture of Korea.

I thank you in advance for your kind cooperation and input throughout the sessions of the 13th PCGIAP meeting. And I wish you all a pleasant and memorable stay in this capital city of Korea with a combination of modern and traditional beauty.

Thank you.

**Executive Report
For the 13th PCGIAP Meeting
Mr. Li Weisen, PCGIAP Secretary
13 June 2007, Seoul, Korea**

Introduction

This report highlights the activities of the Permanent Committee since the 17th United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP) / 12th PCGIAP Meeting in Bangkok, Thailand on 18-22 September 2006.

17th UNRCC-AP/12th PCGIAP

The 17th UNRCC-AP in conjunction with the 12th PCGIAP was held on 18-22 September 2006, at ESCAP United Nations Conference Centre in Bangkok, Thailand.

It was attended by 210 representatives from 30 countries and international organizations around the globe. The Conference was successfully concluded, adopting seven resolutions that call further individual and collaborative efforts at all levels: 1. Geo-information for mitigating large scale disasters, 2. Regional Geodesy, 3. Marine Administration-the Spatial Dimension, 4. SDI to support spatially enabled Government, 5. Fundamental Data, 6. Timor-Leste SDI, 7. 18th UNRCC-AP.

The Conference program under the theme of “Geo-information Integration for Disaster Management and Sustainable Development in the Context of the Millennium Development Goals” included a keynote paper and invited papers from various organizations discussing disaster management and roles of SDI in this regard. Also as part of the Conference PCGIAP organized two workshops, one with ICA (International Cartographic Association) and ISCGM (International Steering Committee for Global Mapping) on Use of Geo-information for Mitigating Large Scale Disaster and Attaining Sustainable Development, and the other, PCGIAP Working Group 3 on the Integration of Built and Natural Environment Datasets within National SDI initiatives.

PCGIAP Executive Board members and Chair/Vice Chair of the four Working Groups were elected to lead the Committee activities for the period of 2006-2009.

All the papers presented during the Conference are available at the Conference web site:

<http://unstats.un.org/unsd/geoinfo/17thunrccapdocuments.htm>

A record of the Conference has been posted at the PCGIAP web site:

<http://www.pcgiap.org>

Personnel

A new PCGIAP Board and Chair/Vice Chair of the four Working Groups were elected at the 17th UNRCC-AP/12th PCGIAP for the period of 2006-2009. Now the 12 members of the Board are: President (Australia), Vice President (Japan), and Secretary (China), Brunei Darussalam, Fiji, India, Indonesia, Korea, Malaysia, Philippines, Russia and Singapore.

Dr. Komaki Kazuo replaced Mr. Akira Yaguchi as Vice President and national delegate of Japan.

The representatives of Board member countries and WG Chairs/Vice Chairs are tabled as below. Names in italics show the new members. Chairs of Working Groups who are not national delegates (with an asterisk*) are ex-officio of the Board.

| | | | | |
|----------------|---|------------------------------|---------------|---|
| President | | | Australia | Mr. Peter Holland |
| Vice President | | | <i>Japan</i> | <i>Dr. Komaki Kazuo</i> |
| Secretary | | | <i>China</i> | <i>Mr. Li Weisen</i> |
| Board Members | | | <i>Brunei</i> | <i>Hj Mohd Jamil Hj Mohd Ali</i> |
| | | | <i>Fiji</i> | <i>Mr. Barma Nand</i> |
| | | | India | Maj. Gen. M Gopal Rao |
| | | | Indonesia | Mr. Bebas Purnawan |
| | | | <i>Korea</i> | <i>Mr. Sohn Bong-Gyun</i> |
| | | | Malaysia | Dato Hamid bin Ali |
| | | | Philippines | Mr Diony A. Ventura |
| | | | Russia | Mr Alexander Prusakov |
| | | | | <i>Singapore</i> |
| Working Groups | 1 | Regional Geodesy | Chair | <i>Mr. Shigeru Matsuzaka*</i> (Japan) |
| | | | Vice Chair | <i>Dr. Cheng Pengfei</i> (China) Mr. John Manning (Australia) |
| | 2 | Fundamental Data | Chair | <i>Mr. Bebas Purnawan</i> (Indonesia) |
| | | | Vice Chair | <i>Dr. Zhou Xu</i> (China) |
| | 3 | Spatially Enabled Government | Chair | Prof. Ian Williamson* (Australia) |
| | | | Vice Chair | Mr Ahmad Fauzi bin Nordin (Malaysia) <i>Dr. Abbas Rajabifard</i> (Australia) |
| | 4 | Institutional Strengthening | Chair | Maj. Gen. M Gopal Rao (India) |
| | | | Vice Chair | Prof. Kim Eun-Hyung (Korea) Prof. Cho Woosug (Korea) <i>Dr. Li Pengde</i> (China) |

Secretariat Changeover

Due to the change of Secretary from Japan to China, location of the Secretariat has moved from Tsukuba to Beijing. During the transition period from September 2006 to March 2007, The PCGIAP Secretariat was smoothly transferred from GSI, Japan to SBSM, China through efforts of both parties. The collaboration between Japan and China enabled China to make a good head start as Secretary. The new Secretariat has been taking such responsibilities as below:

- Support to the Board, the Committee and Working Groups
- Secretariat support for and preparation and documentation of PCGIAP Board and annual meeting
- Preparation of PCGIAP papers for other meetings
- Close collaboration with liaison organizations
- Update and maintenance of the PCGIAP web site
- Production of PCGIAP stationery and PCGIAP brochures
- Contributions to GSDI Newsletter and other related magazines
- PCGIAP promotion and publicity
- Regular contact with the Board and the members

Hyderabad Board Meeting

The Board held a meeting in Hyderabad, India on 21 January 2007, preceding the Map World Forum. The Board meeting was well attended by 9 Board members from 8 countries, i.e. Australia, Japan, China, Brunei Darussalam, India, Indonesia, Korea and Malaysia, and 9 advisers and observers. The meeting reviewed PCGIAP's activities after the 17th UNRCC-AP/12th PCGIAP meeting in Bangkok, Thailand in September 2006. Work plans for 2006-2007 of each WG were endorsed in general.

Working Group Activities

Four working Groups, WG1 Regional Geodesy, WG2 Fundamental Data, WG3 Spatially Enabled Government, and WG4 Institutional Strengthening, established for the period of 2006-2009 conducted their activities under the new leadership and adjusted their work plans in response to the resolutions adopted at the 17th UNRCC-AP/12th PCGIAP.

WG1 carried out the 10th APRGP GPS/GLONASS observation campaign during the period of 5-12 November 2006. The data analysis has been started and preparations are being made to re-analyse older data in a new ITRF frame and with absolute GPS antenna phase characteristics. WG1 also completed the catalogue of the tide gauges as required in the UNRCC-AP Okinawa resolution.

WG2 continues its efforts to improve and extend the pilot project for development of seamless datasets for the tsunami affected area in collaboration with Global Mapping, Second Administrative Level Boundaries data set project (SALB) and other similar initiatives.

WG3 organized two international workshops, one on *Integration of Built and Natural Environmental Datasets within National SDI Initiatives* in Bangkok, Thailand on 21 September 2006 as part of the 17th UNRCC-AP Conference, and the other on *Spatial Enablement of Government and NSDI – Policy Implications* on 12 June 2007 as part of the 13th PCGIAP Meeting. And with its name changed from Working Group on Cadastre to Spatially Enabled Government, WG3 has aligned its vision and work plan for the next three years while continuing its work in cadastre, marine administration and data integration.

WG4 continues its efforts in capacity building and has initiated the process of organizing a course on institutional strengthening / capacity building for National SDI targeting different levels or groups during Sept - Oct, 2007. In addition, WG4 has requested all PCGIAP member countries to send detailed information of training institutions of their countries that are capable of conducting the course on the subject. It shall enable the Working Group to formulate the strategy for networking of the efforts for capacity building / institutional strengthening.

Liaison Activities

Cooperation with GSDI Association continues as follows:

- PCGIAP President, at the invitation of GSDI Association, attended the 9th Global Spatial Data Infrastructure Conference (GSDI-9) on 6-10 Nov. 2006 in Santiago, Chile.
- PCGIAP WG3 and GSDI jointly organized a workshop on Spatial Enablement of Government and NSDI – Policy Implications on 12 June 2007 as part of the 13th PCGIAP Meeting.
- PCGIAP helped distributing Information on GSDI Small Grants Program 2006-2007 and took part in the review and recommendation of submitted proposals.
- PCGIAP continued to provide information to and help distribute the SDI-AP Newsletters of GSDI.

A PCGIAP liaison report was presented to the 13th meeting of International Steering Committee for Global Mapping (ISCGM) on 11 Nov. 2006 in Santiago, Chile.

Cooperation on the pilot project for development of seamless datasets for the tsunami affected area has been going on among PCGIAP WG2, Global Mapping and Second Administrative Level Boundaries dataset project (SALB).

PCGIAP has offered support to the following three important activities in Asia and Pacific region:

- The International Workshop on Good Land Administration – Its Role in Economic Development to be held on 27-29 June 2007 in Ulaanbaatar, Mongolia, hosted by the Administration of Land Affairs, Geodesy and Cartography of Mongolia
- Map Asia 2007 to be held on 14-16 August in Kuala Lumpur, Malaysia
- The 2nd Indonesian Geospatial Technology Exhibition to be held on 29 August - 1 September 2007 in Jakarta, Indonesia

President, though unable to attend, was invited to the meetings as below:

- Directing Council meeting of the Pan American Institute of Geography and History (PAIGH) on 13 November 2006 in Santiago, Chile
- UNSDI Global Partners Meeting convened by the United Nations Geospatial Information Working Group (UNGIWG) on 1-2 March 2007 in Frascati, Italy

Next Meetings

Australia has offered to host the PCGIAP Executive Board meeting on 28-31 January 2007 in Canberra. A tentative program is proposed for discussions.

Fiji had offered to host the 14th PCGIAP meeting in 2008 before. However, due to the political situation of Fiji since the end of last year and continuing problems with their business of government, Fiji is presumably not in a position to deliver the PCGIAP meeting in 2008. The Secretariat has made some investigation on other possible venues but up to now no offer for hosting the 14th PCGIAP meeting has been received.



Permanent Committee on GIS Infrastructure for Asia and the Pacific

Working Group 1
Regional Geodesy

Status Report

For 13th PCGIAP Meeting
12-15 June 2007
Seoul, Korea

Chairman

Shigeru Matsuzaka, Japan - shigeru@gsi.go.jp

Vice Chairmen

Prof. Pengfei Cheng, China - chengpf@casm.ac.cn
John Manning, Australia - manning@bigpond.net.au

1. Background and role of geodesy working group

At the 17th United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP)/12th PCGIAP meeting in Bangkok, September 2006, following resolutions concerning the regional geodetic activities for the next three years were endorsed:

- 1) Enhance the regional geodetic infrastructure to contribute to monitoring, warning and post-event reconstructions through cooperative observations of crustal deformation and plate motion, and information exchange, including tide gauge networks and placement of new GPS key sites.
- 2) Encourage the transfer of GPS technology to nations in need through annual campaign observations, and the development and sharing of analysis techniques in the following geodesy workshop activities.
- 3) Promote the application of new geodetic adjustment techniques and datum change transformation parameters for regional spatial data integration and for geo-referencing cadastral and statistical information.
- 4) Interact with IAG commissions 1 and 2 on the status of the regional geodetic reference frames and geoid determination using absolute gravity, satellite, airborne and terrestrial gravity.
- 5) Review the status of geodetic networks in individual countries and upgrade PCGIAP web site information.
- 6) Support the expansion of continuous GPS installations in areas of earthquake and tsunami hazards and strongly encourages nations making such data readily available on a weekly basis for shared scientific study and warning systems in relation to tectonic events.

As planned in the last PCGIAP meeting, the definable work plan will be set during the working group session on Friday in this meeting. Tentative plan is included in this report (see Appendix 1). A role of each participating country should be discussed and agreed as well as anticipated milestones.

A Regional Geodesy Workshop should be held in conjunction with next PCGIAP meeting in 2008.

2. Recent Working Group Activities

a) Analysis of APRGP since 2003

Analysis of APRGP had been conducted by several countries and reported past WG1 workshops. Comprehensive report of the GPS analysis 1997-2002 was compiled and published by Geoscience Australia in 2004.

http://www.sbsm.gov.cn/pcgiap/98wg/98wg1/aprgp_analysis/aprgp_analysis.htm).

As for most recent campaigns, analysis has not been completed because of the lack of manpower and time. In a new phase of WG1 activities Geoscience Australia has started the analysis of recent APRGP campaign data and planning to re-analyse older data in a new ITRF frame and with absolute GPS antenna phase characteristics. Geographical Survey Institute, Japan is also preparing for the analysis and information distribution.

b) Other activities

Shigeru Matsuzaka, Chair of WG1, visited Geoscience Australia for four weeks in March – April, 2007 for the analysis of APRGP and coordination of WG1 activities for coming years with GA people.

A staff of Geographical Survey Institute, Japan visited NAMRIA (National Mapping and Resource Information Authority) of Philippines to talk about and ask for cooperation in the APRGP activities in late March, 2007. NAMRIA is planning to build 6 continuous GPS stations in 2007 and GSI will give help and advice on their project. They assured him there will be no problem in providing the GPS data.

Appendix 1.

Tentative Workplan for Regional Geodesy Working Group for period 2006-2009

| | Project | Responsibility | Milestone |
|---|--|--|---|
| 1 | <p>Enhancement of the regional geodetic infrastructure to contribute to monitoring, warning and post-event reconstructions through cooperative observations of crustal deformation and plate motion, and information exchange, including tide gauge networks and placement of new GPS key sites</p> <ul style="list-style-type: none"> • Arrange regional observation campaign in 2007, and similarly for 2008 and 2009. • Observe data and forward to Australia in RINEX format with site information. • Analyse and prepare velocity/deformation solutions for the study of geodynamics in the region. • Prepare combined regional solution for ITRF densification. | <p>Australia/Japan</p> <p>All countries to participate to level of resources available</p> <p>Japan, Australia</p> <p>Australia</p> | <p>APRGP 2006 Completed (November 2006)</p> |
| 2 | <p>Interact with IAG commissions 1 and 2 on the status of the regional geodetic reference frames and geoid determination using absolute gravity, satellite, airborne and terrestrial gravity.</p> <ul style="list-style-type: none"> • Monitor the status of the regional geoid and development of new improved global gravity models developed from satellite gravity missions. • Connect gravity datums of individual countries by use of absolute gravity observations. | <p>Australia, China, Malaysia, Japan</p> <p>Malaysia, Australia</p> <p>Japan, China</p> | |

| | | | |
|---|--|--|---------------------------------|
| 3 | <p>Promote the application of new geodetic adjustment techniques and datum change transformation parameters for regional spatial data integration and for geo-referencing cadastral and statistical information.</p> <ul style="list-style-type: none"> • | (New Zealand) | |
| 4 | <p>Encourage the transfer of GPS technology to nations in need through annual campaign observations, and the development and sharing of analysis techniques in the following geodesy workshop activities.</p> <ul style="list-style-type: none"> • Identify funding sources (with Working Group 4) for access to GPS equipment resources to support participation in annual regional geodesy workshops for presentation of geodetic campaign results and technology. • Promote loan of GPS equipment to Pacific Island nations for regional campaigns and promote the knowledge of GPS techniques making use of available continuous GPS base stations in the region. | <p>China/Working group</p> <p>All countries</p> | <p>Workshop planned in 2008</p> |
| 5 | <p>Support the expansion of continuous GPS installations in areas of earthquake and tsunami hazards and strongly encourages nations making such data readily available on a weekly basis for shared scientific study and warning systems in relation to tectonic events</p> <ul style="list-style-type: none"> • endeavor to make GPS data available and shared by participating countries for hazard mitigation study • Gather information on the optimal placement of new GPS sites for crustal deformation observation. | <p>Working Group</p> <p>All countries</p> | |

| | | | |
|---|--|----------------------------------|-------------------------|
| 6 | <p>Review the status of geodetic networks in individual countries and upgrade PCGIAP web site information.</p> <ul style="list-style-type: none"> • Gather updated information from all countries and update the WG web site with datum and transformation details. • Develop a list server and seek contacts from each country | <p>Japan</p> <p>Japan</p> | <p>ongoing annually</p> |
|---|--|----------------------------------|-------------------------|



Permanent Committee on GIS Infrastructure for Asia and the Pacific

**Working Group 2
Fundamental Data**

STATUS REPORT

**For 13th PCGIAP Meeting
12-15 June 2007
Seoul, Korea**

Chairman

Mr. Bebas Purnawan, Indonesia <bebas@bakosurtanal.go.id>

Vice Chairman

Dr. Zhou Xu, China <apsdinode@nsdi.gov.cn>

REPORT FOR PCGIAP-WG2
13th PCGIAP meeting, Korea
June 8, 2007

INTRODUCTION

As stated in several resolutions accepted since the 16th UNRCC-AP conference (Okinawa, 2003) the development of a Fundamental Datasets for Asia and the Pacific remains one of the objective of PCGIAP.

This report present the major progresses made and the activities performed in the context of this working group since the 17th UNRCC-AP Conference (Bangkok, September 2006).

These progresses mainly concern the development of a regional dataset for the tsunami affected area as well as the development of a metadata profile for Asia and the Pacific.

ACTIVITIES

1. Development of a Regional Fundamental Dataset

The development of a Regional Fundamental Dataset is going through some stage. The current one aims at developing a 1:1'000'000 scale seamless dataset covering the countries affected by the 2004 tsunami as well as some neighboring countries.

During the 17th UNRCC-AP conference, Bakosurtanal presented the progresses made towards the creation this data set (Purnawan et al, 2006). From the 3 countries part of the feasibility study (Bangladesh, Myanmar and Thailand) the aggregation of the Global mapping data as allowed to extend the to cover 4 more countries (India, Indonesia, Malaysia and Sri Lanka). As an example, Figure 1 presents the hydrography layer resulting from that work.

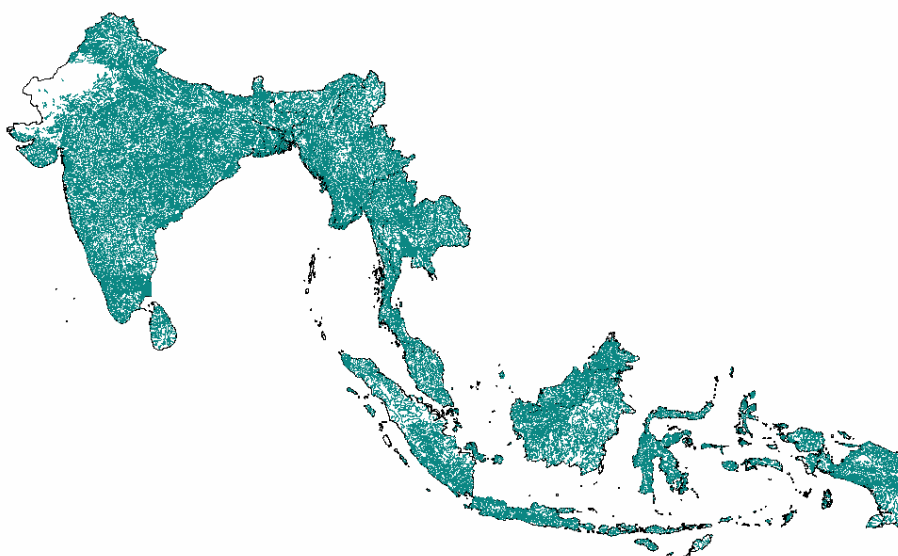


Figure 1 - Hydrography layer resulting form the aggregation work operated in the context of the WG2 pilot project

This layer as well as the other ones that resulted from this work can be downloaded from: <http://www.who.int/whosis/database/gis/PCGIAP/WG2.htm>.

Since this conference, what has been done is an analysis of the level of accuracy and completeness of the data set which has been aggregated. The result of this analysis will be presented during the 13th PCGIAP meeting.

The connection with the countries involved in the pilot project having been limited since the UNRCC-AP conference, a new email has been sent to the countries part of the pilot project in order to:

- get an update on the new data set they could have developed or being in the process of developing and which could replace the ones already part of the exercise.
- know if they are still interested in continuing to contribute to this project

The responses for only 3 countries have been received so far. We therefore hope to be able to complete this information during the coming PCGIAP meeting.

2. Development of a Metadata profile for Asia and the Pacific

Mr Bebas Purnawan from Bakosurtanal attended the Metadata session during the last ISO/TC 211 meeting which took place in Rome (28 may - 1 June 2007).

The Working Group is also looking at the process currently taking place for the creation of a Metadata profile for Africa. An important discussion took place in this regards during the CODI V meeting (Addis-Ababa, 29 April – 4 May 2007).

It is expected that the outcomes of both of these meeting could contribute to the development of a metadata profile for Asia and the Pacific.

WORKPLAN

The workplan for the year to come be discussed during the coming 13th PCGIAP meeting.

References

Purnawan B., Ebener S., Maruyama H. (2006): "Towards the creation of a regional dataset for the tsunami affected area". 17th UNRCC-AP Conference, Bangkok, Thailand, September 2006. Can be accessed at: <http://unstats.un.org/unsd/geoinfo/17thunrccapdocuments.htm> (document no. E/CONF.97/6/IP.8)



Permanent Committee on GIS Infrastructure for Asia and the Pacific

Working Group 3

Spatially Enabled Government

STATUS REPORT

For 13th PCGIAP Meeting

12-15 June 2007

Seoul, Korea

Chairman

Professor Ian Williamson, Australia ianpw@unimelb.edu.au

Vice Chairman

Mr Ahmad Fauzi, Malaysia <fauzi@jupem.gov.my>

Vice Chairman

Associate Professor Abbas Rajabifard, Australia <abbas.r@unimelb.edu.au>

REPORT FOR WORKING GROUP 3: Spatially Enabled Government

Working Group 3 (WG3) was originally the 'Cadastre' working group (until 2006 when re-named WG3 on Spatially Enabled Government) and was established in 2000 based on a Resolution from the 15th United Nations Regional Cartographic Conference (UNRCC-AP) in Malaysia. Through this Resolution, it has been recommended that the United Nations within available resources, and in cooperation with the Working Group on the Spatially Enabled Government under the PCGIAP, and with the expert assistance of relevant organisations such as the International Federation of Surveyors and the International Hydrographic Office, undertake work into and facilitate discussion on:

- Development of the Asia-Pacific Spatial Data Infrastructure;
- Development of regional marine cadastral infrastructure;
- Realisation of economic, social and environmental benefits for the region; and
- The implementation of the United Nations Conference on Environment and Development (UNCED) Agenda 21;

In response to this, Working Group 3 (WG3) has explored the technical, institutional and policy issues regarding the contribution of spatial data infrastructures (SDI) in designing, building and managing large scale, spatial, people relevant datasets, and in particular their role in cadastral, land administration and marine administration systems.

WG3 has been very active over the last six years (2000-2006) and had a successful period for its activities including:

- Successfully completed two major projects (cadastral template and marine administration Projects) and one well underway (data integration project),
- Successfully organised three international workshops,
- Established three dedicated websites for completed and current projects, and
- Successful and widely disseminated publication strategy.

In 2006, the working group was renamed '**Spatially Enabled Government**' at the 17th UNRCC-AP and 12th PCGIAP Meeting in Bangkok Thailand.

WG3 - Spatially Enabled Government

As a result of the need of the society and technology development, and in order to be inline with this development and to leverage off the achievements over the last six years, WG3 now focuses on the development of spatially enabled government. From this, a new vision and objectives for its future direction and its activities has been undertaken, which focuses on the concept of spatially enabling government. This includes work on:

- Concepts and principles of spatially enabled government
- Design requirements of spatially enabled government
- Issues associated in the development of spatially enabled government including: Institutional; Technical; Policy and Socio-economic
- Relationship between SDI and LA (Cadastre) to support spatially enabled government
- Capacity building for spatially enabled government.

Key activities undertaken since 17th UNRCC-AP Conference 2006 in Bangkok, Thailand

1. International Workshop on “Spatial Enablement of Government and NSDI – Policy Implications”

As part of the WG3 new objectives and workplan (2007-2009), WG3 in conjunction with the GSDI Association, will hold a dedicated workshop on “Spatial enablement of government and NSDI – policy implications” during the 14th PCGIAP meeting in Seoul, Korea on 12th June 2007.

The major aims of the workshop are:

- To communicate and refine the draft PCGIAP WG3 workplan
- Commence dialogue in PCGIAP and better understand and describe spatial enablement of government
- Gather preliminary data and refine understanding of data requirements for PCGIAP WG3 data gathering task
- Better understand and describe the legal and economic issues and policies on global level in the development and implementation of SDIs

The workshop will review national use of spatial enablement by governments and society including: how is spatial information being used nationally; who uses it – particularly in non traditional areas such as taxation, health services, human services etc; how widely is it used; is the concept of “place” or “location” such as street address used as an organising entity in government processes; do countries have a geocoded national street address file; is the use of spatial information linked to whole-of-government policies (such as e-government and ICT strategies); and what can be done to improve the use of spatial information.

The workshop will also focus on legal and economic issues in relation to the development of SDIs including: data sharing and collaboration developments; drivers for SDI investment; SDI benefit/cost studies; and data access policies.

Invited presentations by experts in the field, along with the presentations from case study countries in the Asia Pacific will form the basis of the workshop. A panel discussion and identification of future direction and way forward will conclude the workshop.

As part of this activity, WG3 with an input from a research team from the Centre for SDIs and Land Administration, the University of Melbourne has undertaken the majority of the activities relating to the design and development of this workshop. In this regard, the team has prepared related materials and have liaised with the PCGIAP Secretariat and also with the GSDI Association to put together the workshop program. All of these materials have been forwarded to the Korean Organising Committee (host country) and also to the PCGIAP Secretariat for uploading on the appropriate websites. WG3 has also been in regular contact with all presenters and have provided them with required documents and they are now preparing their presentations. Each presenter has also been asked to prepare a short report

to accompany their presentation. These reports will be included into a folder as part of the workshop materials and will be distributed during the workshop.

All of the outcomes of the workshop will be available on the PCGIAP-WG3 website which will be continuously updated.

2. Integration of Built and Natural environmental datasets within National SDI Initiatives

One of the major initiatives of WG3 over the last two years is work on the project of the "Integration of Built (cadastral) and Natrual (topographic) environmental datasets within National SDI initiatives. Sustainable development, assisting informative spatial decision making and meeting "the triple bottom line" (economic, social and environmental objectives) requires an understanding of the natural and built environments and the relationship between them in order to observe and monitor change and to create realistic simulations of the changing environment.

This initiative aims to introduce the importance and significance of the integration of various built and natural environmental spatial datasets through the creation of a framework and model for integration, which can be utilized in diverse jurisdictions to support sustainable development (Figure 1). This will be done through an understanding of the technical, jurisdictional, institutional, legal and land policy perspective surrounding built and natural environmental datasets, within the context of a National SDI.

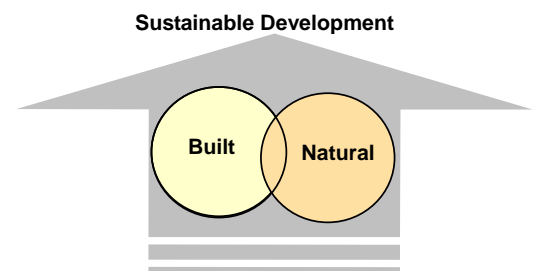


Figure 1: Integration of datasets to facilitate sustainable development

The work on this project began by WG3 in July 2005 through an overview of the history and application of these two datasets as well as the overall relations within the context of National SDI initiatives. Work on the project is well on the way and will continue till the end of 2007 and will contribute to meeting four main aims which include:

- 1 Investigate the problems and issues in integrating data in National SDIs within Asia-Pacific case study countries, through an analysis of:
 - a) History of integration of cadastral and topographic mapping and related National SDI initiatives.
 - b) Capacity for and policies relating to data integration of cadastral and topographic datasets.
 - c) Institutional support for and barriers against data integration of cadastral and topographic datasets.
- 2 Develop a framework mode and associated tools for the integration of built and natural environmental datasets at a national level, through the development of National SDIs.
 - d) Investigate interoperability issues of national topographic datasets and state/territory cadastral (and other relevant) datasets and develop a methodology to prioritise SDI datasets.
 - e) Develop a justification and strategy to integrate these datasets in support of

sustainable development.

3 Identify the benefits of the integration framework model for developed and transitional countries in the Asia-Pacific region, with reference to case study countries.

4 Undertake a publication strategy.

Work on the project continues to progress well. Work undertaken includes:

- Pilot study of Geo-web Service Integration.
- Case Study of Australia (Victoria, New South Wales and Federal Government Agencies) finalised.
- International Case Studies undertaken.
- International Workshop on Data Integration as part of the 17th UNRCC-AP.
- Publication Strategy.

The workshop held as part of the 17th UNRCC-AP was very successful, with integration reports and presentations from countries including Indonesia, Australia, Denmark, Japan, New Zealand and Malaysia. Analysis of the information stemming from the international case study is almost complete, and this will be used in the development of a data integration framework that can be utilized by a range of countries in the Asia-Pacific region, building on best practice outcomes. The pilot study of the use of Geo-web service integration is also well underway. A prototype is under development, which aims to analyse the fitness-for-purpose of multi-sourced spatial data sets for integration. The project team has also begun investigating developments in Europe and North America relating to SDI maturity matrix and assessment models which can aid us in developing a data integration framework. This will add to the international case studies.

The progress of this project is continuously monitored and results communicated among member of PCGIAP and presented through the PCGIAP meetings and in particular discussed within the WG3 meetings.

3. International Workshop on Integration of Natural and Built Environment Datasets in the context of National SDI Initiatives

As part of data integration project an International Workshop was conducted as part of the 17th UNRCC-AP in Thailand in September 2006. Approximately 40 people attended the workshop from 18 different countries and international organisations. The Workshop has reviewed the national administration of SDI and data integration within countries (especially those within the Asia and Pacific regions) based on a common template. This template aimed to identify problems, issues, similarities and differences in spatial data infrastructures; institutional arrangements; current data integration methods; technology and human resource and capacity building in data integration and also to share the experiences of others in this area. Analysis of the workshop outcomes will be used in the development of a data integration framework that can be utilized by a range of countries in the Asia-Pacific region, building on best practice outcomes. This will lead to the development of a model and

framework for integration of different datasets, and in particular these two forms of data capable of being used in diverse jurisdictions in support of sustainable development.

Further information on the integration project can be found at the dedicated project website http://www.geom.unimelb.edu.au/research/SDI_research/Integrated/ or through the PCGIAP-WG3 web page. Information regarding the outcome of the workshop can also be found on the project webpage by clicking on the link at the top of the webpage. This is a dedicated website for the Integration project and this upcoming workshop. All of the outcomes of the workshop and details of the integration project are available on this website which will be continuously updated.

4. Cadastre Template Project

The development of a cadastral template was one of the objectives of WG3. As part of this objective and the implementation of the Resolution 4 of the 16th UNRCC-AP, WG3 in collaboration with FIG/Commission 7 has jointly designed and successfully established a dedicated website for publicising the results of the cadastral template project (www.cadastraltemplate.org). This website was maintained and run by the Centre for SDIs and Land Administration, Department of Geomatics, the University of Melbourne until end of 2006 according to the WG3 workplan. However, due to the importance of this project and its value for all countries and international organisations such as FIG, PCGIAP and others, it is now maintained and run by FIG Commission 7 (through a request from FIG and in agreement with PCGIAP-WG3).

As a result of all activities through WG3 and FIG Commission 7, currently *40 country reports on cadastral systems* have been placed in this website. Analysis of these reports has been undertaken over the past year, culminating in the creation of a technical paper titled "*Assessing the Worldwide Comparison of Cadastral Systems*" which summarises the results of the analysis. This paper has been accepted for publication in the International Journal of Land Use Policy. This paper has employed several indicators which have been used to analyse and benchmark countries' cadastral systems, which contribute to an improved understanding of the complex relationship between cadastral, land administration system and National SDI initiatives. This analysis helps to enable a worldwide comparison of cadastral systems, forming the basis for best practice and a tool to improve national cadastral systems.

5. Future Workplan

The workplan for the next 3 years is as follows:

| No | Activities/Steps | Date |
|----|---|----------------------------------|
| 1 | International Workshop on “Spatial Enablement of Government and NSDI – Policy Implications” | June 2007 13th PCGIAP Meeting |
| 2 | Analysis of the result of the workshop and refine the WG3 workplan in line with the initiative on spatial enablement of government | July-Sept 2007 |
| 3 | Work on the concept of spatially enabling government, including work on: <ul style="list-style-type: none"> • Concepts and principles of spatially enabled government • Design requirements of spatially enabled government • Issues associated in the development of spatially enabled government including: Institutional; Technical; Policy and Socio-economic • Relationship between SDI and LA (Cadastre) to support spatially enabled government • Capacity building for spatially enabled government. | Oct. 2007- 2009 |
| 4 | Work on Data Integration Project as part of the Integration of Built and Natural Environmental datasets in the context of National SDI initiatives | Dec. 2007 |
| 5 | Report on outcomes of WG3 activities (including analysis of current projects, recommendations, future plan, etc.) | PCGIAP Meetings |



Permanent Committee on GIS Infrastructure for Asia and the Pacific

Working Group 4

Institutional Strengthening

STATUS REPORT

For 13th PCGIAP Meeting

12-15 June 2007

Seoul, Korea

Chairman

Maj. Gen. Gopal Rao Mocherla, India <gopalraom@yahoo.com; sgo@nde.vsnl.net.in >

Vice Chairmen

Prof Eun-Hyung Kim, Korea <ehkim@kyungwon.ac.kr>

Prof Woosug Cho, Korea <wcho@inha.ac.kr>

Dr. Li Pengde, China <lipd@shasm.gov.cn>

REPORT FROM WORKING GROUP 4: Institutional Strengthening

Background

The aim and objective of the Permanent Committee on GIS Infrastructure for Asia and Pacific (PCGIAP) is to propagate the knowledge of geospatial data and develop the Spatial Data Infrastructure (SDI) from local to regional level for sustainable development of the Asia Pacific region. This is achieved through cooperation and sharing of knowledge & responsibilities among the nations. Endeavor of all the Working Groups is towards this purpose. Working Group 4 (WG-4) chaired by Surveyor General of India has the responsibility of Institutional Strengthening / Capacity Building in this field, which is a crucial component for development of Spatial Data Infrastructure.

Survey of India having the potential in this field had conducted a training programme, participated by 10 countries, successfully from 12th Oct to 28th Oct 2005 at Survey Training Institute, Hyderabad. A report has been submitted and also read at the 12th meeting of PCGIAP at Bangkok during 18th – 22nd Sept 2006.

Action Plan

In continuity of the programme with a broader perspective it has been recommended in the 12th meeting that WG-4 will work in collaboration with WG-2 with the responsibility of Fundamental Data and a training programme will be conducted by Geographical Survey Institute (GSI), Japan funded by JICA. In addition to this it has also been proposed to conduct a Training Programme during Sept – Oct 2007 at STI, India, similar to that as conducted in 2005.

In a follow up to the feed backs received after the training programme conducted in Oct. 2005 and discussion at the board meeting held during Jan.2007 at Hyderabad the capacity building will be approached in three tier structure addressing to different target groups. In the first level it will be addressed to policy makers, in the second level to the working groups and in the third level to the user segments. This approach will benefit the policy makers as well as the technocrats engaged in building SDI keeping in view the requirements of user segments, the ultimate beneficiaries of SDI.

To formulate strategy for capacity building in the region and finalizing the syllabi / curriculums for different level programmes, institutions / universities of Asia Pacific regions engaged in the field of Geospatial Information / SDI are being contacted. The information of the institutions of some countries like Korea has already been received and the same from other countries are awaited.

Conclusion

After finalization of the curriculums for different level programmes the schedules will be finalized so that expertise in the field of Geospatial Information available in the region will be utilized for the benefit of all target groups.

**Report on the progresses made with the SALB project
since the 17th UNRCC-AP Conference**

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Introduction

The objective and process of the Second Administrative Level Boundaries data set project (SALB) project as well as the specific issues encountered over the PCGIAP region have been described in two papers which can be downloaded from the SALB web site: (http://www.who.int/whosis/database/gis/salb/salb_home.htm):

- Ebener & Guigoz (2005) presented during the Executive Board Meeting of Permanent Committee on Geographical Information System Infrastructure for Asia and the Pacific (PCGIAP) which took place on 26 November 2005 in Bandar Seri Begawan, Brunei Darussalam
- Ebener & Guigoz (2006) presented during the 17th United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC-AP) which took place in Bangkok in September 2006

This document therefore only reports on the activities and the progresses made with the PCGIAP member countries since the 17th UNRCC-AP Conference in terms of the:

- National Mapping Agencies (NMA) contact information
- historic changes observed in the administrative structure in terms of geography and names at the 1st sub national level since January 1990 and at the 2nd sub national level since January 2000
- GIS format map for each period of representativity observed since January 2000

The details of these activities and the progress achieved are reported in the next section of this document.

Modification in the structure of the SALB network

In order to be more effective and have a chance to really have an up-to-date data set by the end of 2007, the capacity of some of the SALB nodes has been expanded and two new ones have been created. These changes directly affect the way the project is

going to move forward with the PCGIAP members countries as follows (Figure 1):

- Afghanistan, Iran and Pakistan are now under the responsibility of the new node that has been created at the WHO Regional Office for the Eastern Mediterranean (EMRO) in order to cover the countries of the Middle East. The person in charge of the technical work for these countries is Mr Ahmed Bayomie.
- Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan are going to be covered from the node located at WHO headquarter in Geneva. The capacity of this node has recently been extended with the hiring of a new staff, Mr Tony Rajan Mathew, who will be working part time on the SALB project.
- the remaining 36 countries will be managed from the new node that has been established in Bangkok at the Asian Institute of Technology (AIT) in collaboration with the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). The person in charge of the technical work for these countries is Ms Kulapramote Prathumchai.

It is hope that this new distribution of the work load will help us moving forward faster on these countries.

October 2006 edition of the SALB Newsletter

The October 2006 edition of the SALB Newsletter was dedicated to the situation observed in Asia. This Newsletter is sent every 3 months to the contacts we have in the National Mapping Agencies as well as more than 300 individuals working within and outside of the United Nations.

This edition, as well as the other ones, can be downloaded from the project overview page on the SALB web site (http://www.who.int/whosis/database/gis/salb/salb_PO.htm).

Participation in the 9th GSDI Conference and 13th International Steering Committee for Global Mapping (Santiago de Chile, 7-12 November 2006)

Because of its geographic location, the objective for our presence at the 9th GSDI conference has more been to enter in contact with NMAs of the Americas. It has nevertheless also been possible to meet with the representative from Japan, Malaysia and Mongolia.

Our participation in the 13th International Steering Committee for Global Mapping has been an occasion for us to mention again, our support to the Global Mapping initiative and the willingness to work towards a more collaborative process. In this regards SALB has been accepted as a member of the working group 2 which deals with what should be the specification of version 2 of the Global Mapping database.

Presentation during the Workshop on Spatial Data Infrastructure jointly organized by SCOSA and the Geoinformatics Center of the Asian Institute of Technology (Bangkok, 22-24 February 2007)

The presentation made by Mr Cihat Basocak (UNESCAP) during this workshop as well as the contacts made by Ms Kulapramote Prathumchai (AIT) has allowed us to move forward or get an update on the progress made in 7 countries (Indonesia, Japan, Lao People's Democratic Republic, Malaysia, Philippines, Thailand and Vietnam).

The slides that have been presented can be downloaded from the project overview page on the SALB web site

(http://www.who.int/whosis/database/gis/salb/salb_PO.htm).

Participation to the FIG working week (Hong-Kong, 13-17 May 2007)

Since last September, the only opportunity to meet with representatives of the National Mapping Agencies has been the working week organized in Hong Kong by the International Federation of Surveyors (FIG).

Ms Kulapramote Prathumchai from AIT attended this meeting on behalf of SALB and was able to meet with representative coming from 32 countries. Unfortunately, only 9 of them were coming from Asian countries and were not necessarily the ones we have been in contact with in the past. A follow up is therefore currently taking place with these persons in order to hopefully obtain the information/data we are looking for.

Current state of progress for the PCGIAP member countries

The current situation for the 47 countries part of PCGIAP that are also Members of the United Nation is presented in Table 1. In this table, the progresses made since last September are reported in grey. These progresses translate into the following information and data that can now be downloaded from the SALB web site:

- NMA contact information for 33 countries (+7 compared to last September)
- January 2000 list of administrative units for 34 countries (+2),
- Historic changes going at least until January 2005 for 18 countries (+6),
- January 2000 map validated for 7 countries (+7)
- January 2005, or more recent, map validated for 4 countries (+2)

The countries where significant progresses have been made are (by alphabetical order): Brunei Darussalam, Cambodia, China, Fiji, Indonesia, Iran, Lao People's Democratic Republic, Malaysia, Nepal, New Zealand and Viet Nam.

| Country | Contact information update | List January 2000 | historic changes 1st level | historic changes 2nd level | Process regarding the map, August 2006 |
|---------------------------------------|----------------------------|-------------------|----------------------------|----------------------------|--|
| Afghanistan | - | yes | under process | under process | Problem for obtaining a map |
| Armenia | 18.04.2006 | under process | under process | under process | Problem for obtaining a map |
| Australia | 19.01.2006 | yes | under process | under process | Jan 2000 map validated |
| Azerbaijan | 28.03.2006 | yes | 1991-2006 | 2000-2006 | Problem for obtaining a map |
| Bangladesh | 19.09.2006 | yes | under process | under process | Jan 2000 map under validation |
| Bhutan | 06.07.2005 | yes | 1990-2005 | 2000-2005 | Problem for obtaining a map |
| Brunei Darussalam | 03.10.2006 | yes | 1990-2005 | 2000-2005 | January 2000-December 2005 maps under validation |
| Cambodia | 28.11.2006 | yes | 2000-2006 | 2000-2006 | Jan 2000-March 2006 maps validated |
| China | 08.09.2005 | yes | 1990-2006 | 2000-2006 | Map ready for edition |
| Democratic People's Republic of Korea | - | under process | - | - | - |
| Fiji | 14.09.2005 | yes | 1990-2006 | 2000-2006 | Map under editing |
| India | 22.06.2005 | under process | 1990-2004 | partial (not coded) | - |
| Indonesia | 01.07.2005 | yes | 1990-2006 | 2000-2006 | Map ready for edition |
| Iran (Islamic Republic of) | 20.12.2005 | yes | under process | under process | Map to be received soon |
| Japan | 07.09.2005 | yes | 1990-2003 | under process | Problem for obtaining a map |
| Kazakhstan | 05.04.2006 | yes | under process | under process | Missing information |
| Kiribati | - | yes | under process | no 2nd admin level | Missing information |
| Kyrgyzstan | 07.03.2006 | yes | under process | under process | Jan 2000 map under validation |
| Lao People's Democratic Republic | 11.07.2006 | yes | 1990-2006 | 2000-2006 | Jan 2000-July 2006 maps under validation |
| Malaysia | 11.05.2006 | yes | 1990-2005 | 2000-2005 | Map under editing |
| Maldives | - | yes | 1990-2005 | under process | Jan 2000 map validated (1 st level) |
| Marshall Islands | - | yes | under process | no 2nd admin level | Problem for obtaining a map |
| Micronesia (Federated States of) | - | yes | 1990-2003 | 2000-2003 | Problem for obtaining a map |

| | | | | | |
|--------------------|------------|--------------------|--------------------|--------------------|--|
| Mongolia | 21.02.2006 | yes | under process | under process | Problem for obtaining a map |
| Myanmar | - | under process | - | - | - |
| Nauru | - | no admin divisions | no admin divisions | no 2nd admin level | Jan 2000-May 2005 map under validation |
| Nepal | 01.06.2005 | yes | 1990-2005 | 2000-2005 | January 2000-June 2005 map validated |
| New Zealand | 03.10.2006 | yes | 1990-2005 | no 2nd admin level | Problem for obtaining a map |
| Pakistan | - | under process | under process | under process | - |
| Palau | 04.07.2006 | under process | under process | under process | - |
| Papua New Guinea | 15.08.2006 | yes | 2000-2006 | 2000-2006 | Problem for obtaining a map |
| Philippines | 06.09.2005 | yes | 1990-2006 | 2000-2006 | Jan 2000-Feb 2001 map validated, Feb 2001-Feb 2006 maps under validation |
| Republic of Korea | 07.10.2005 | yes | under process | under process | Missing information |
| Russian Federation | 06.12.2006 | under process | under process | under process | - |
| Samoa | - | no admin divisions | no admin divisions | no admin divisions | - |
| Singapore | 03.10.2006 | yes | 2000-2006 | no 2nd admin level | January 2000 map under validation |
| Solomon Islands | - | under process | - | - | - |
| Sri Lanka | 07.07.2005 | yes | 1990-2005 | 2000-2005 | Jan 2000-Jul 2005 map validated |
| Tajikistan | 25.04.2006 | under process | under process | under process | - |
| Thailand | 05.07.2005 | yes | 1990-2003 | under process | Problem for obtaining a map |
| Timor-Leste | 29.09.2005 | yes | 2000-2005 | 2000-2005 | Jan 2000-Nov 2005 map validated |
| Tonga | - | under process | - | - | - |
| Turkmenistan | - | yes | - | - | Jan 2000 map under validation |
| Tuvalu | 24.05.2006 | under process | - | - | - |
| Uzbekistan | 14.06.2005 | yes | 1991-2002 | 2000-2002 | Jan 2000-Dec 2001 map under validation |
| Vanuatu | - | yes | under process | no 2nd admin level | Jan 2000 map under validation |
| Viet Nam | 22.06.2005 | yes | 1990-2006 | 2000-2006 | Map ready for edition |

Table 1 - State of progress regarding the tables and maps produced in the context of the SALB project for the PCGIAP member countries

Discussion and Conclusion

Despite the different meetings and conferences attended and the efforts put in contacting the countries part of PCGIAP from the WHO Headquarters, progress made in these past 8 months remains limited. If we continue at this speed, several years will still be necessary before accessing a data set that would at least be up-to-date for January 2005.

The problem is that we can't wait that long if we want to be able to address the challenges that the region might have to face in the near future. As an example, health related issues, such as the ones which the International Health Regulation (IHR) look at covering, will need to be monitored down to the district level for effective intervention.

We therefore need to engage all the PCGIAP member states in the SALB process in order to obtain a first version of the data set before the end of 2007. In this regards, the resolution which have been accepted these past two years in the context of the 2005 PCGIAP Executive Board meeting (Annex 1) and the 17th UNRCC-AP Conference (Annex 2) are not sufficient. We need to be able to:

1. Enter in contact with the countries that are still not engaged in the process (e.g. the small island territories)
2. Support the countries that do not have the technical capacity to provide the data that is required.
3. Merge/combine efforts of similar/close nature in order to better use the limited resources at our disposal

The creation of new nodes for the SALB project in Asia and in the Middle East as well as the extension of the capacity of the node for Europe should help filling these gaps. If for the small island territories the progresses are expected to be fast difficulties in progressing quickly are unfortunately expected for other countries such as Democratic People's Republic of Korea, India, Myanmar, Pakistan, Russian Federation and Turkmenistan.

In addition to that, efforts should be put in order to build on the collaboration already established between SALB, PCGIAP in the context of its Working Group 2 pilot project and the ISCGM to:

- add other potential initiative/project, such as Digital Asia, to this "consortium"
- make sure that each of these initiatives/projects support each other and avoid duplication of efforts

The most productive way to engage NMAs remaining to meet their representative in person we will continue to be present as much as possible during the important conference/meetings attended by NMAs.

Last but not least, it is hoped that PCGIAP will continue its efforts towards the existence of a regional culture for the creation and sharing of geographic information that would be of benefit to the countries.

Acknowledgements

The author of this paper would like to take the opportunity to thank all the National Mapping Agencies who have already provided the SALB project with the necessary information and data. This project would not have been possible without their contribution.

They would also like to thank the institutions and individuals who have contributed to the progress of SALB in Asia these past months. Hoping that nobody has been forgotten these thanks goes to:

- USAID, WHO/HAC/EPC and UNHCR for the funding provided to the project,
- UNESCAP, AIT and WHO EMRO for their active role as nodes for the SALB project
- the PCGIAP secretariat and ISCGM for their support in contacting countries,

References

Ebener S., Guigoz Y. (2005): The SALB project in Asia: Description, current status and new objective. Paper presented during the Executive Board Meeting of PCGIAP, Bandar Seri Begawan, Brunei Darussalam, November, 2005

Ebener S., Guigoz Y. (2006): "Data preparedness in Asia: Where we are with SALB 10 months after the last PCGIAP Executive Board Meeting". 17th UNRCC-AP Conference, Bangkok, Thailand, September 2006.

Annex 1 - Resolution accepted during the PCGIAP Executive Board meeting, Brunei Darussalam, November 2005

1. Development of special dataset

The Workshop,

Recalling the huge disaster linked to the earthquake and the tsunami which happened in the Asia and the Pacific region the 26 Dec. 2004, and the necessity to react to such event at the regional level,

Noting the significance of the results obtained from WG1 Extraordinary Geodetic Campaign,

Recommends that WG2, jointly with WG1, to develop and implement a pilot project for the generation of a set of seamless data layers for the tsunami affected area to contribute to the creation of the AP seamless data set in collaboration with Global Mapping, SALB and other similar initiatives.

2. Strengthening the linkage between Global Map, SALB, and PCGIAP

The Workshop

Recalling the resolution #3 Fundamental Data adopted by the 16th UNRCC-AP,

Recalling the resolution adopted by the 8th PCGIAP encouraging cooperation on development of SALB dataset,

Noting the important progress of fundamental data development at regional level.

Noting the importance of Global Map and the SALB dataset for Asia and the Pacific region,

Recommends that

- (a) PCGIAP WG2 seek to strengthen the linkage with Global Map, SALB and other similar initiatives
- (b) PCGIAP Member States, particularly through their National Mapping Organizations and notably with the help of PCGIAP, support and participate actively in Global Map and the SALB project by providing the necessary data and information they require.

Annex 2 - Resolution accepted during the 17th UNRCC-AP Conference, Bangkok, 2007

5. Fundamental Data

The Conference,

Recalling that the Asia and the Pacific region is a potential area for disasters (e.g. earthquake, tsunami,...).

Further recalling the importance of generating a seamless dataset covering the entire Asia and the Pacific region.

Noting the significant interest expressed by the participating countries and the results obtained so far in the context of the pilot project for the generation of a set of seamless data layers for the tsunami affected area.

Further noting the strong support for the pilot project from the 11th PCGIAP Meeting in Bali, 2005 and the PCGIAP Executive Board Meeting in Brunei, 2005.

Welcoming the efforts of the Global Mapping project and those of the UNGIWG (United Nations Geographic Information Working Group) SALB (Second Administrative Level Boundaries) project in the generation of global seamless data sets including those for Asia and the Pacific.

Recognizing that the availability of fundamental data sets, such as national administrative divisions, are crucial for the analysis and management of socio-economic phenomena,

Further Recognizing that the Government of the Russian Federation adopted, in August 2006, the concept of Spatial Data Collection and Development.

Recommends that:

- (a) PCGIAP Working Group 2 on Regional Fundamental Data, jointly with PCGIAP Working Group 1 on Regional Geodetic Network, extends and improves the above mentioned pilot project in collaboration with ISCGM, SALB and other similar initiatives.
- (b) PCGIAP through Working Group 4 in collaboration with Working Group 2 encourages efforts in capacity building in data development, in particular the training programs by the Geographical Survey Institute (GSI) funded by the Japan International Cooperation Agency (JICA).

- (c) PCGIAP encourages close collaboration between PCGIAP Working Group 2 with ISO/TC211 in the development of an ISO Metadata standard profile for Asia Pacific.
- (d) Countries in Asia and the Pacific region, particularly through their NMOs and notably with the help of the PCGIAP, support and participate actively in the SALB and the Global Mapping project by providing the necessary data and information they require, and take full advantage of participating in the Global Mapping and SALB projects for capacity building to help establish National and Regional Spatial Data Infrastructures in the region;
- (e) Countries in Asia and the Pacific region continue their efforts to create and support national geo-information databases and spatial data infrastructures and undertake this work in the most efficient and effective way by avoiding

Report from GSDI Association

Global Spatial Data Infrastructure Association

"Activity focus 2007"

Bas Kok
President-elect, GSDI Association

www.gsd.org

Founding Principles

- Be inclusive
- Enhance democratic decision making processes
- Be as simple, transparent and open as possible
- Be flexible and adaptable to change
- Support sustainable development
- Build on and support existing activities
- Engender partnerships (Brand, 1998)

GSDI Mission

The GSDI Association promotes international cooperation and collaboration in support of local, national and international spatial data infrastructure developments that will allow nations to better address social, economic, and environmental issues of pressing importance. It is an inclusive non-governmental, non-profit international organization of organizations, firms, and individuals from around the world formed exclusively for educational, scientific, and research purposes.

The GSDI Association:
Where are we now...?

- A formal incorporated non-profit organization
- Global membership of organizations and individuals from all sectors
- Board and Officers
- Bylaws
- Strategic and Implementation Plans

Global Spatial Data Infrastructure Vision.....

Foster SDI development locally to globally

- Promote access data at a variety of scales and from multiple sources
- Common standards an interoperable systems and techniques
- Heavy reliance on partners world-wide

Global Spatial Data Infrastructure Goals.....

1. Promote and develop awareness and exchanges - knowledge portal for all things related to SDI
2. Facilitate data access/discovery
3. Stimulate & conduct capacity building ... small grants, conferences, workshops
4. Encourage and conduct SDI development research
5. Engage partners to help

**Global Spatial Data Infrastructure
GSDI conferences.....**

- GSDI 1 Bonn, Germany Sept 1996
- GSDI 2 Chapel Hill, NC October 1997
- GSDI 3 Canberra, Australia Nov. 1998
- GSDI 4 Capetown, So. Africa Mar. 2000
- GSDI 5 Cartagena, Colombia May 2001

**Global Spatial Data Infrastructure
GSDI conferences.....**

- GSDI 6 Budapest, Hungary Sept. 2002
- GSDI 7 Bangalore, India February 2004
- GSDI 8 Cairo, Egypt April 2005
- GSDI 9 Santiago, Chile Nov 2006
- GSDI 10 Trinidad, Feb 2008
- GSDI 11 Netherlands, Spring 2009

... very open to collaboration

GSDI Task Groups for 2007 (1)

- Recruitment
- Corporate Member Benefits
- Membership of Individuals
- Publishing Best Practices
- Global Survey of SDIs
- Hosting an Organization's Website
- Web Site Improvements

GSDI Task Groups for 2007 (2) :

- Small Grants
- Annual Newsletter/Report
- Legal and Economic Working Group Tasks
- Technical Working Group Tasks

The Present Status of Global Mapping Project

International Steering Committee for Global Mapping (ISCGM)



**For PCGIAP13
12-15 June 2007
Seoul, Rep. of Korea**

1 Progress of Global Mapping project

1.1 Progress of Global Map development

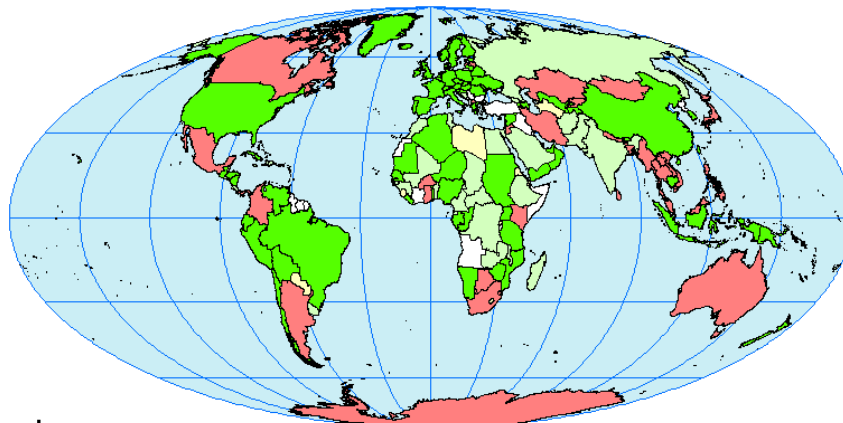
Global Map data released 31 countries (Argentina, Australia, Bahrain, Bangladesh, Botswana, Burkina Faso, Canada, Colombia, Ghana, Iran, Japan, Jordan, Kazakhstan, Kenya, Kyrgyz, Laos, Latvia, Macedonia, Malaysia, Mexico, Mongolia, Myanmar, Nepal, Panama, Philippines, Samoa, South Africa, Sri-Lanka, Swaziland, Thailand, and Viet Nam) and 2 regions (Antarctica and Tristan da Cunha) from the ISCGM website at <http://www.iscgm.org/>. These data correspond to 32.5% of the whole land area on the Earth.

1.2 Participation in Global Mapping project

Participating countries and regions are steadily increasing and now come to 156 countries and 16 regions as of 16 May 2007. This corresponds to 95% of the whole land area of the Earth.

Progress of Global Mapping Project

As of 2007-05-16
International Steering Committee for Global Mapping



Legend

- data available
- considering joining the project
- data for verification
- not participating in the project
- developing data

Most raster data of current Global Map are compiled from GTOPO30 and GLCC, contribution of United States of America.
This map is for the purpose of reference and the boundaries in this map are not authorized by any organizations.

2 ISCGM activities

2.1 13th ISCGM Meeting

The 13th ISCGM Meeting was held on 11 November 2006 in Santiago, Chile in conjunction with "GSDI-9." The main items resolved are as follows:

2.1.1 Acceleration of data submission and release

Among the Global Map participating countries, about 100 countries have not submitted their data to the secretariat of ISCGM. ISCGM requests these countries to submit their data by June 2007. As it takes considerable time to reach data release after the submission, it was decided that the data would be released as interim data if they are not fully comply with Global Map specifications as long as the data contain information necessary for Global Map. For not-yet-participating countries and participating countries whose data development is not feasible, ISCGM will develop their data by using existing data such as Global Map Version 0. For data development of land cover and vegetation layers, it was confirmed that data from ongoing GLCNMO (Global Land Cover by National Mapping Organizations) data development would be used.

2.1.2 Phase 3 plan

Strategic directions, such as high resolution data and compliance of data format with international standards, of Phase 3 (2008-2012) were decided. Details will be finalized in future. Detailed Specifications of Global Map Version 2 data for Phase 3 will be discussed in future. In order to increase the number of Global Map data family, it was decided that discussion would be done for introducing a scheme such as Global Map associated data.

2.1.3 Establishment of disaster WG

It was decided that preparation for establishing a new working group to cope with disasters would be started.

2.1.4 Strengthening partnership with PCGIAP and other initiatives

In order to promote regional framework database development, it was decided that partnership with regional initiatives such as PCGIAP would be strengthened.

2.1.5 Multilingualization of web site

In order to increase the number of project participating countries and data users, it was decided that ISCGM web site would be multilingualized (In addition to the web site in English, those of Japanese, Chinese, Spanish French, etc. will be opened).

2.2 Next Meeting

The 14th ISCGM Meeting will be held on 17 July 2007 in Cambridge, United Kingdom in conjunction with "Cambridge Conference."

**PERMANENT COMMITTEE ON
THE SPATIAL DATA INFRASTRUCTURE
FOR AMERICA**

The main objective of the Permanent Committee on the Spatial Data Infrastructure for America (PC IDEA) is to establish and coordinate the policies and technical standards for the SDIs regional development, as well as to support the establishment and implementation of each State Member's NSDI. The Committee is now formed by 24 State Members, having different stages of development in this matter.

In this context, the PC IDEA efforts during the last years have been centered in the accomplishments of its objectives, but with a constant problem: not enough funds for the operation, difficulting its management and impeding a true support for the State Members.

The achievements and the work performed are due to the Boarding Committee and some of the State Members' efforts. The lack of resources or financial support has made impossible to carry out three general meetings, and in order to have the needed quorum, the meetings have been performed under the protection of meetings with higher funds, such as the United Nations Regional Cartographic Conferences, the GSDI and the PAIGH meetings.

In spite of the lack of financing, the PC IDEA, with the support of some State members has generated some solutions, in such ways it has been the knowledge of each member's real situation, in the spreading of and learning on SDIs, and in training as well.

At present, outstanding are the following activities of the PC IDEA:

- The determination of an advancement index of the data infrastructures in the Latin American countries:

The index was obtained with a survey applied by the PC IDEA in order to evaluate the organizational, information, technological, human and financial factors in each country, for the determination of a readiness index for SDIs in the region. The methodology used to obtain the index was proposed and evaluated by Cuba; the survey result will allow to redirect the policies with respect to the strengthening of individual fortitudes in the benefit of the other countries in the region and to support the initiatives that show a smaller index through capacity building, encouraging courses performance, and training and experience exchange.

- “Evaluation and promotion of Spatial Data Infrastructures for the Sustainable Development of Latin America and the Caribbean Project” of the “Science and Technology Development Program” (CYTED, by its abbreviation in Spanish).

This is a three-year program with the main objective of promoting SDIs through the geospatial service development in order to improve the decision making process in Latin America and the Caribbean countries.

- The “Spatial Data Infrastructure Workshop on the Latin America necessities”.

With the purpose to support and collaborate with the continental SDIs, the Military Geographic Institute (IGM, by its abbreviation in Spanish) of Chile, along with the PC IDEA, and with the financial support of Canada, developed the “Spatial Data Infrastructure Workshop on the Latin America necessities” providing 20 grants to Latin American countries. Participants from Bolivia, Paraguay, Belize, Colombia, Venezuela, Ecuador, Brazil, Panama, Cuba, Uruguay and Chile attended to the workshop which was scheduled, in Santiago de Chile, the previous week to the GSDI-9, in such way that the workshop participants could also attend to the interesting papers given during this international conference; the instructors were from Mexico, Cuba, Canada and Chile. The activity was of great regional interest, but it was limited only because of the lack of means of the countries to send their personnel, nevertheless that the grants covered all of the workshop costs, food and lodging.

In the framework of the GSDI-9, the Sixth PC IDEA Meeting was scheduled, but it was not held, only a meeting of the Boarding Committee was carried out, in which the following agreements were assented: to continue promoting the PC IDEA activities through the PC IDEA web site, to look for financial support for the PC IDEA and, due to the success of the above mentioned workshop, to programme another for 2007, possibly with the financial support of Canada (as a function of the workshop objective).

One of the great limitations of the PC IDEA State Members is the lack of resources, as it has been mentioned, that is why the PC IDEA is asking the cooperation of its similar PC GIAP for Asia and the Pacific both providing one or two transportation grants for the second workshop and an instructor, and by the other hand, to look for a kind of knowledge transference about the “better practices for obtaining financing” for training and knowledge and experience sharing.

Progress of ISO/TC211

13th Meeting of the PCGIAP
Soul, Korea
12-15 June 2007
ZHOU Xu
Liaison representative to ISO/TC211

ISO/TC211 aims to establish a structured set of standards for information concerning objects or phenomena that are directly or indirectly associated with a location relative to the Earth. These standards may specify, for geographic information, methods, tools and services for data management (including definition and description), acquiring, processing, analyzing, accessing, presenting and transferring such data in digital/electronic form between different users, systems and locations. PCGIAP has been one of the liaison organizations of ISO/TC211 since 1997. The members of PCGIAP can contribute and benefit from the standardization activities of ISO/TC211.

1 . Progress

According to ISO/TC 211, there are 53 standards have been considered. They can be divided into 9 groups (fig.1), framework and reference model, information management, information administration, geospatial data models and operators, imagery, geospatial services, information communities, location based services and profiles and functional standards.

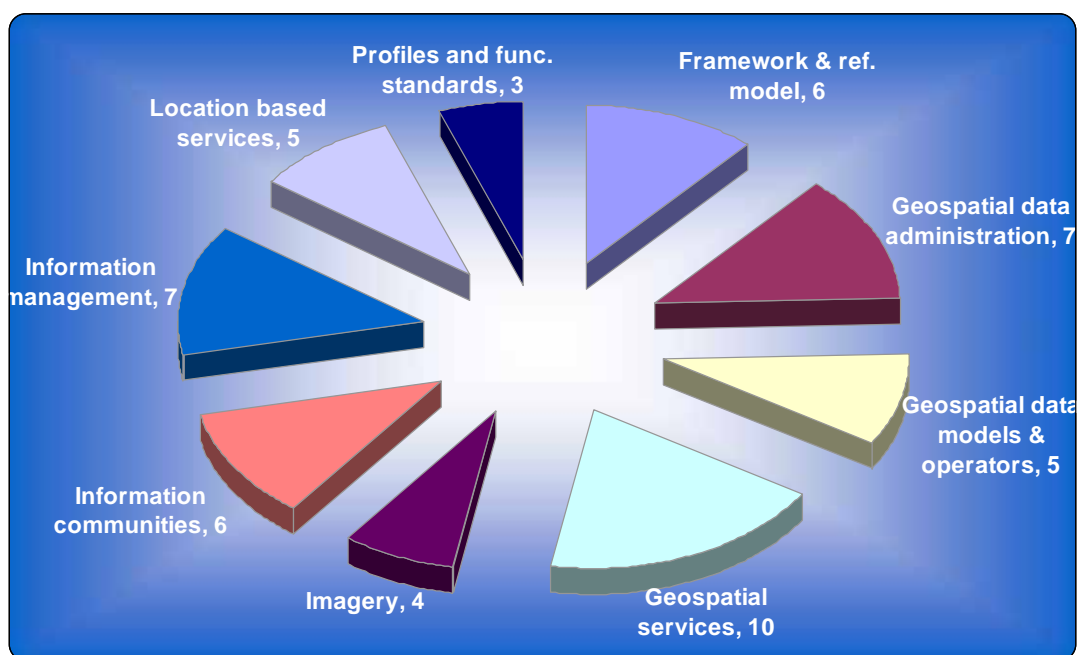


fig.1 Groups and counts of standards considered by ISO/TC 211 (2007-05)

Of these standards, there are 33 have been published, and the rest 20 are still under work. fig. 2 shows the count of standards published or planning to publish every year since 2000.

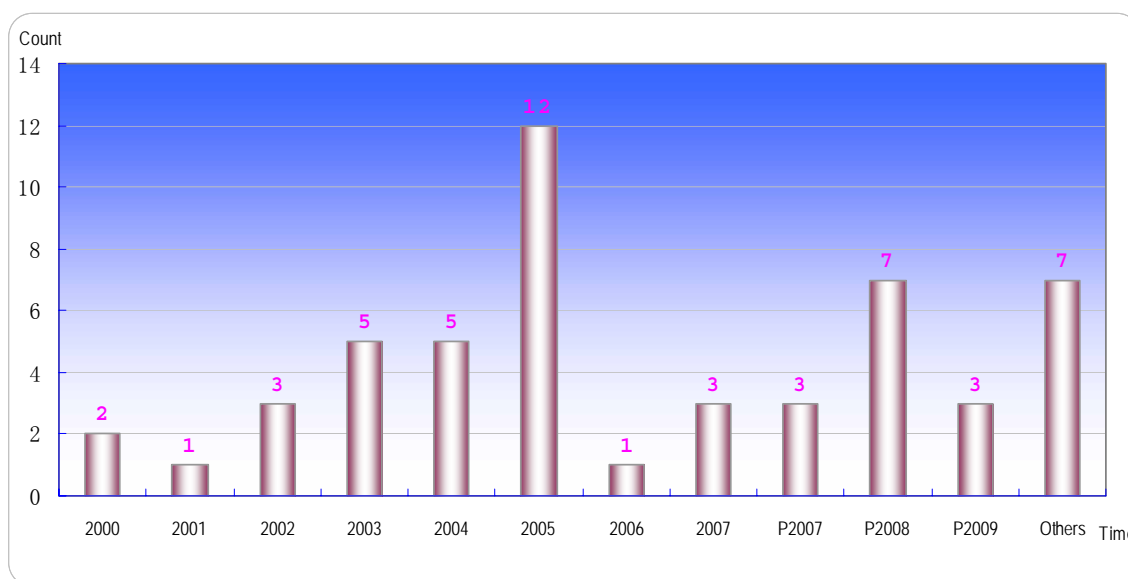


fig.2 the count of standards published or planning to publish every year since 2000(2007-05)

Among the published 33 standards, 3 are of technical report, 4 are of technical specification, 3 have their corrigendums, 1 has been amended, and 2 are in revision, 1 is in amending (table 1).

Table 1 list of published standards

| NO. | Ref. | Title | History |
|-----|-------------------|--|-----------------------|
| 1. | ISO 6709:1983 | Standard representation of latitude, longitude and altitude for geographic point locations | Under revision |
| 2. | ISO 19101:2002 | Geographic information -- Reference model | |
| 3. | ISO/TS 19103:2005 | Geographic information -- Conceptual schema language | |
| 4. | ISO 19105:2000 | Geographic information -- Conformance and testing | |
| 5. | ISO 19106:2004 | Geographic information -- Profiles | |
| 6. | ISO 19107:2003 | Geographic information -- Spatial schema | |
| 7. | ISO 19108:2002 | Geographic information -- Temporal schema | Corrigendum(2006) |
| 8. | ISO 19109:2005 | Geographic information -- Rules for application schema | |
| 9. | ISO 19110:2005 | Geographic information -- Methodology for feature cataloguing | Under amendment |
| 10. | ISO 19111:2003 | Geographic information -- Spatial referencing by coordinates | Under revision (FDIS) |
| 11. | ISO 19112:2003 | Geographic information -- Spatial referencing by geographic identifiers | |
| 12. | ISO 19113:2002 | Geographic information -- Quality principles | |
| 13. | ISO 19114:2003 | Geographic information -- Quality evaluation procedures | Corrigendum(2005) |
| 14. | ISO 19115:2003 | Geographic information -- Metadata | Corrigendum(2006) |
| 15. | ISO 19116:2004 | Geographic information -- Positioning services | |
| 16. | ISO 19117:2005 | Geographic information -- Portrayal | |
| 17. | ISO 19118:2005 | Geographic information -- Encoding | Under revision |
| 18. | ISO 19119:2005 | Geographic information -- Services | Amended |
| 19. | ISO/TR 19120:2001 | Geographic information -- Functional standards | |
| 20. | ISO/TR 19121:2000 | Geographic information -- Imagery and gridded data | |
| 21. | ISO/TR 19122:2004 | Geographic information -- Qualification and certification | |

| NO. | Ref. | Title | History |
|-----|-------------------|--|---------|
| | | of personnel | |
| 22. | ISO 19123:2005 | Geographic information -- Schema for coverage geometry and functions | |
| 23. | ISO 19125-1:2004 | Geographic information -- Simple feature access -- Part 1: Common architecture | |
| 24. | ISO 19125-2:2004 | Geographic information -- Simple feature access -- Part 2: SQL option | |
| 25. | ISO/TS 19127:2005 | Geographic information -- Geodetic codes and parameters | |
| 26. | ISO 19128:2005 | Geographic information -- Web Map Server interface | |
| 27. | ISO 19131:2007 | Geographic information -- Data product specifications | |
| 28. | ISO 19133:2005 | Geographic information -- Location-based services -- Tracking and navigation | |
| 29. | ISO 19134:2007 | Geographic information -- Location-based services -- Multimodal routing and navigation | |
| 30. | ISO 19135:2005 | Geographic information -- Procedures for item registration | |
| 31. | ISO 19137:2005 | Geographic information -- Core profile of the spatial schema | |
| 32. | ISO/TS 19138:2006 | Geographic information -- Data quality measures | |
| 33. | ISO/TS 19139:2007 | Geographic information -- Metadata -- XML schema implementation | |

Among the rest 20 (table 2), 13 of them have been targeted to be IS by 2009, and the last 6 items in the list are newly approved after 2006.

Table 2 list of standards under work

| NO. | Ref. | Title |
|-----|---------|--|
| 1. | 19101-2 | Geographic information -- Reference model -- Part 2: Imagery |
| 2. | 19104 | Geographic information --Terminology |
| 3. | 19111-2 | Geographic information -- Spatial referencing by coordinates -- Part 2: Extension for parametric value |
| 4. | 19115-2 | Geographic information -- Part 2: Extensions for imagery and gridded data |
| 5. | 19124 | Geographic information -- Imagery and gridded data components |
| 6. | 19126 | Geographic information -- Feature concept dictionaries and registers |
| 7. | 19129 | Geographic information -- Imagery, gridded and coverage data framework |
| 8. | 19130 | Geographic information -- Sensor data models for imagery and gridded data |
| 9. | 19132 | Geographic information -- Location-based services -- Reference model |
| 10. | 19136 | Geographic information -- Geography Markup Language |
| 11. | 19140 | Geographic information amendment process |
| 12. | 19141 | Geographic information -- Schema for moving features |
| 13. | 19142 | Geographic information -- Web Feature Service |
| 14. | 19143 | Geographic information -- Filter encoding |
| 15. | 19144-1 | Geographic information -- Classification Systems -- Part 1: Classification system structure |
| 16. | 19144-2 | Geographic information -- Classification Systems -- Part 2: Land Cover Classification System LCCS |
| 17. | 19145 | Geographic information -- Registry of representations of geographic point locations |
| 18. | 19146 | Geographic information -- Cross-domain vocabularies |
| 19. | 19147 | Geographic information -- Location based services -- Transfer Nodes |
| 20. | 19148 | Geographic information -- Location based services -- Linear Referencing System |

2. Some Trends

After more than 10 years work, ISO/TC 211 has established the initial system of standards necessary for geographic information data management, acquiring, processing, analyzing, accessing, presenting and transferring. Many standards have played very important roles in practice.

1) Standard Harmonization

Recent years, ISO/TC 211 put considerable efforts on standards harmonization, a special group, the Harmonized Model Management Group (HMMG) was created to maintain all ISO19100 family models for use by the members of the ISO TC 211 community in the creation of standards. Also a related ad hoc group on registry establishment and management was established last year, this is very useful for standard harmonization, especially for standard implementation.

2) Standard maintenance

With practice of the published standards, some new needs come up, some problems are found, so that, many published standards come into their maintenance stage. As a result, ISO/TC 211 resolves to establish a Programme Maintenance Group in 22nd plenary meeting, May 2006. And Corrigendum or amendment has been applied for 4 standards, 3 new work projects special for standard maintenance were started only in the latest two plenary meetings.

3) Standard on Information sharing

In the past years, ISO/TC 211 started several projects on interoperability with cooperation of other standard organizations, including geospatial services and data management standards. And recently, several new work items are started focusing on information sharing between different domains, for example, Ontology, Cross-domain vocabularies, and so on.

3. Coming Events in 2007

| | | | |
|----|-----------------|---|--------------|
| 1. | 27 May - 1 June | ISO/TC 211 24th plenary and WG meetings | Rome, Italy |
| 2. | 28 Oct.- 2 Nov. | ISO/TC 211 25th plenary and WG meetings | Xi'an, China |

A VISION FOR PCGIAP IN A SPATIALLY ENABLED WORLD

Background

The Asia and Pacific region is the largest region in the world with some 60 per cent of the world's population, or 3.5 billion people and includes 56 countries as defined by the UN. The Asia and the Pacific has emerged as the most dynamic region of the world and its rapid and sustained development has created vast trade and investment opportunities, especially for the economies of its individual nations. This region is changing fast and for the better. Its countries have absorbed dramatic and widespread changes due to the forces of globalisation, industrialisation and urbanisation. One of the most significant developments in Asia and the Pacific regional economy has been the rapid growth of regional cooperation.

Through the efforts of the United Nation Regional Cartographic Conference for Asia and the Pacific region (UNRCC-AP) and following its 13th Conference in Beijing, May 1994, the national mapping agencies in Asia and the Pacific region formed the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) in 1995 (as a result of Resolution 16 of the Conference) to develop a Regional SDI for Asia and the Pacific region to facilitate data sharing among member nations.

The aims of the PCGIAP are to maximise the economic, social and environmental benefits of geographic information in accordance with Agenda 21 by providing a forum for nations across the region to cooperate in the development of the Asia-Pacific Spatial Data Infrastructure (APSDI) and contribute to the development of the global infrastructure.

As a result, PCGIAP has made significant achievements since its inception in 1995. It has provided a focus for spatial data infrastructure initiatives across Asia and the Pacific region and for sharing experiences about designing, building and managing regional SDIs.

The national mapping agencies in member states have shown leadership in these initiatives. suited to the evolving nature of SDIs with their traditional focus on small scale national initiatives.

A changing regional environment

However the concept and role of SDIs changed significantly over the last 10 years with large scale, people relevant data, especially land parcel data, playing a much more important role in national governance. The integration of this large scale built environmental data with smaller scale natural resource data (usually topographic or geographic data) to provide support for sustainable development is now a key strategy for assisting in the delivery of economic development, social stability and environmental sustainability.

Integration of information is part of the evolving concept of "spatially enabling government" and society. Again PCGIAP took a leadership role embracing these developments and concepts, however this is just the start of a journey into a new

spatial or virtual world. We are seeing a glimpse of this world through new flexible products such as Google Earth where every land parcel and street address is available in countries like Australia at the click of mouse on a computer. These new products present a huge opportunity for PCGIAP to lead their nations into this new virtual world.

The challenge for PCGIAP

To meet these challenges, the next stage of PCGIAP development should incorporate all core or basic information in the geo-coded world, - the national mapping or geographic information agencies and the core land parcel, cadastral or land administration information - if it is to continue to pursue sustainable development objectives. This approach allows PCGIAP to facilitate the integration of natural and built environmental data bases, a pre-condition for pursuing sustainable development initiatives and supporting better decision making by governments.

This integrated approach is endorsed by PCGIAP as stated by Resolution 4 “SDI to support spatially enabled government” by the 17th UNRCC for AP, Bangkok, September, 2006. This broadening will ensure nations in Asia and the Pacific region deliver leadership in national management and use of geocoded information throughout their governments and their societies. It will position countries in the region to participate directly and effectively in the new technologies and improve management of their land information.

One member of PCGIAP has expressed a desire to have a better mechanism for sharing experiences about land administration in the region in a similar manner to the European system under the UNECE Working Party on Land Administration (WPLA). While PCGIAP actively supported sharing of experiences through its previous Working Group 3 (Cadastre), countries such as Mongolia now view this as insufficient. These countries need a much more focussed and institutionalised arrangement, desirably under a UN mandate.

A strategy workshop supported by PCGIAP

As a result of this, the Mongolian Government through the Administration of Land Affairs, Geodesy and Cartography of Mongolia (ALAGaC) organised an international workshop on “Good Land Administration – its role in economic development” to be held June 27-29, 2007 in Ulaanbaatar, Mongolia with the support and close cooperation from PCGIAP, UNECE, WPLA and Swedesurvey, the overseas agency of the National Land Survey of Sweden. See www.la-east-west.mn and attached invitation.

A key aim of this workshop is to establish a land administration sector network and a mechanism to share experiences in cadastre, land administration and related SDI initiatives between Asia and the Pacific and European countries. The Workshop will discuss the establishment of a working party on land administration or similar within the Asia and the Pacific countries desirably under a UN umbrella to ensure that the land administration and SDI areas are well linked and coordinated.

Opportunity for PCGIAP

This situation presents an opportunity for PCGIAP to widen its mandate, to continue to remain fully relevant to member countries and to assist national governments to seize opportunities created by the newest spatial technologies that increasingly integrate ALL spatial, geocoded information. This initiative would also strengthen PCGIAP and ensure a stronger attendance at meetings.

Unless it broadens its scope to include land administration activities (and all core land information), PCGIAP risks encouraging countries, by necessity to create a parallel organisation responsible for national large scale land information as an integral component of a national SDI. Duplication would inevitably weaken PCGIAP over time as the authoritative manager of spatial information in the region.

The reasons for and advantages of the broadening of the PCGIAP base are:

- 1 PCGIAP would have strategic oversight of the key spatial data sets supporting sustainable development (and particularly the natural and built environmental data sets)
- 2 PCGIAP would have jurisdiction over all land information in the region.
- 3 PCGIAP would be positioned to deliver leadership to the AP region in treatment of all land information.
- 4 PCGIAP will support strategies in nations to develop new approaches to delivering coherent and integrated small, medium and large scale data sets (topographic and cadastral). Segregation of these datasets is becoming increasingly untenable.
- 5 The AP region countries who adopt a leadership role in holistic treatment of all land information will be better positioned to take up new technologies than countries where the spatial information is split between cadastral (built) and topographic (natural) environments.
- 6 A broad based PCGIAP would incorporate all significant land information resources and agencies under its umbrella.
- 7 PCGIAP member nations will play more strategic roles in technology developments. The new trends in use of spatial information – including the rapid take up of mobile phones, digital cameras, location enabled systems – show the potential of spatially enabled systems for governments and the public. These are all location enabled devices and indicate the potential of the trend to spatially enable systems to support better government decision making.
- 8 PCGIAP will improve services to all nation members. Those countries that separate cadastral and other spatial information (Korea, Japan, China) are able to include respective agencies. Those countries (Mongolia, Malaysia, Singapore) where all land information activities are in one agencies are also able to participate to the full extent of their responsibilities.
- 9 The PCGIAP will play a strategic role in assisting governments to spatially enable their organisations. This involves moving them from reliance on images and maps into using geocoded information to improve service delivery throughout government.

RECOMMENDATION

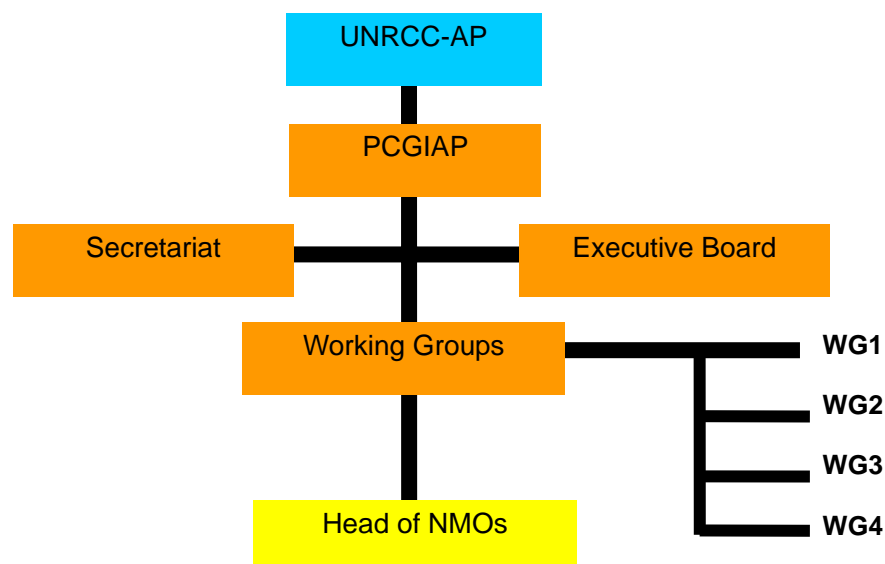
PCGIAP explore possibilities and structures to ensure that national mapping and geographic information agencies as well as cadastral and land administration agencies are represented for each country in the Asia and Pacific region. This would mean that countries where the national mapping and land administration/cadastral activities are combined (such as Malaysia, Cambodia, Laos, Singapore, Mongolia, Fiji, New Zealand, Fiji, etc) would normally be represented by one person even though they may wish to have two representatives representing each broad area of national mapping and land administration. Where the functions are split between two agencies then two representatives would attend PCGIAP.

PCGIAP technical sessions could typically have two parallel sessions, one for national mapping and NSDI initiatives and one for land administration matters. There would also be plenary sessions to integrate activities in support of the common vision of spatially enabling governments and society.

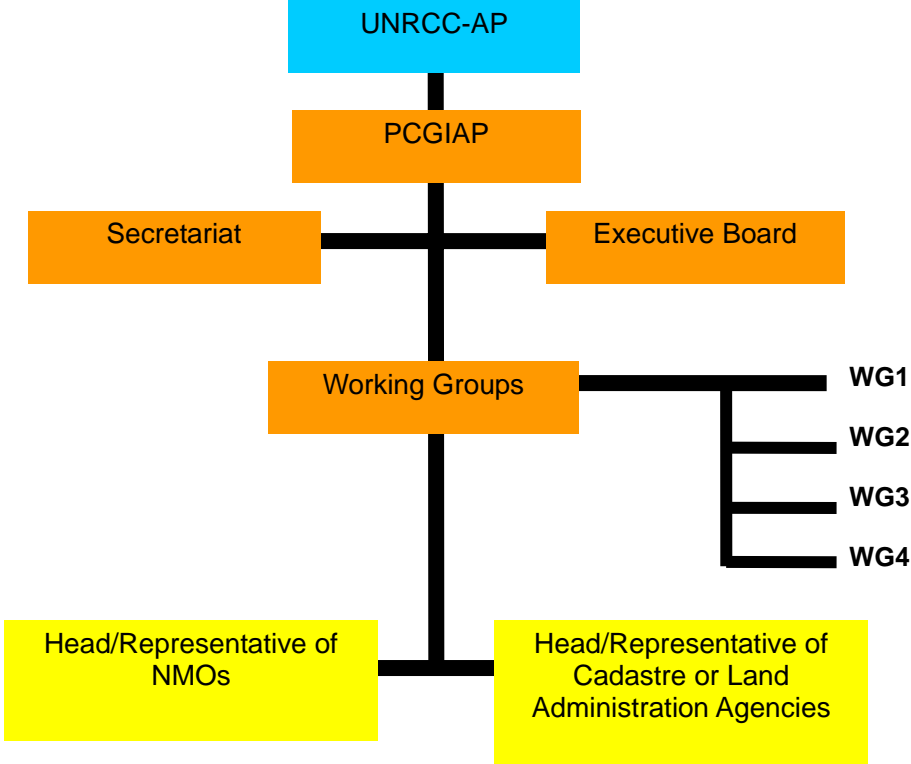
The organisational model would provide an innovative approach to functional and seamless treatment of land information, and assist countries in the region to position themselves for world leadership in take up of new technologies and delivery of government services that depend on a fully integrated approach to managing spatial information.

Current organisational Structure and Operation of PCGIAP

The current organisational structure of the PCGIAP and its relation with the UNRCC-AP and other components of the Committee are illustrated in the following Figure.



A **proposed structure** to support the integrated vision and to facilitate the involvement of both national mapping organisations and geographic information agencies as well as cadastral and land administration agencies is shown below.



The current Executive Board, comprising representatives from twelve member nations (President, Vice President, Secretary and up to nine other members), coordinates the Committee’s work program. In order to support the new structure and give an appropriate opportunity to both national mapping and cadastre agencies to be active in the region, the PCGIAP can have two Vice Presidents, one from each discipline.

ATTACHMENT – Invitation to Land Administration Workshop in Mongolia



www.la-east-west.mn
International Workshop in Ulaanbaatar, Mongolia
June 27 – 29, 2007

INVITATION

Dear Colleagues,

The Administration of Land Affairs, Geodesy and Cartography of Mongolia (ALAGaC) and the Permanent Committee on GIS Infrastructure for Asia and the Pacific (PCGIAP) have the pleasure to invite you to participate in the International Workshop on Good Land Administration – Its Role in Economic Development to be held during June 27-29, 2007 in Ulaanbaatar, Mongolia. This will be an excellent meeting point of officials, academics, non-governmental organizations' and private sector representatives working in the land administration sector in Asia and Europe. This workshop will be the meeting point of EAST & WEST and the intention is to establish a land administration sector network and a mechanism to share experiences between Asian and European countries. The workshop is organized in close cooperation with and strong support by PCGIAP, UNECE WPLA (Working Party on Land Administration under the UN Economic Commission for Europe), and Swedesurvey, the overseas agency of the National Land Survey of Sweden.

The workshop will be organized during June 27-28, 2007 and the participants are invited to submit papers on the themes i) Good Governance – Good Land Administration, ii) Putting land into economic process and iii) Land Information System in place, what next?

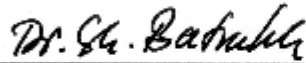
A major issue we are raising at the workshop "Is good land administration and secure tenure enough to support the economic development?". Our view is that it is not enough. In developing and transition countries there is a lack of financial resources to provide long term loans with low interest rates, where the land and real properties are used as collateral, given that the title to the land and real property are secure. In contrast the developed countries, where the financial resources are available to support an active land market. What can be done to establish active land markets supported by adequate financial resources in developing and transition countries?

A round-table meeting for the stakeholders in the land administration, cadastre, surveying and mapping fields of Asian countries will also be organized on June 29, 2007. The objective of this meeting will be to discuss the establishment of a Working Party on Land Administration or similar within Asia & Pacific countries. The intention is that this shall be

a setup under the UN umbrella (such as PCGIAP or UN ESCAP) to ensure that the land administration and spatial data infrastructure (SDI) areas, two closely related and complementary areas, are linked and coordinated. This initiative has the strong support of PCGIAP, UNECE WPLA, GSDI (Global Spatial Data Infrastructure Association), FIG (International Federation of Surveyors) and Eurogeographics, as well as PCGIAP will actively participate in this round table meeting and contribute with their ideas and experiences.

We cordially invite you to Mongolia to discuss the important issues of the land administration sector and cross continental & regional cooperation and, also, experience the combination of dynamic urban and simple nomadic life in Mongolia.

SEE YOU IN MONGOLIA – THE LAND OF BLUE SKY AND NOMADS.



Dr. Shairai Batsukh
General Director, ALAGaC



Peter Holland
President, PCGIAP

Report back from Working Group 1

Geodesy Working Group Session

Friday, 15th June, 2007, Seoul, Korea

Attendance

Japan (Chair), China, Korea, Australia, USA

1. Discussion of work plan for 2007-2009

1. 1Projects, aims and responsibilities

1.1.1 APRGP data analysis

- Seek Countries wishing to participate in analysis (by email)
- Complete data cleaning for distribution

1.1.2 APRGP2007

- APSG20 11th September, APSG21 10th October

2. Geoid models

Australia, China, Japan support advice to region e.g Korea

Sharing of border region gravity data for geoid model determination

Recognizing next generation grace mission – 1cm geoid with ~70km resolution

3. Adjustment/transformation parameters

4. GPS Technology transfer

Australia discussing with SOPAC to devise strategy for seeking aid money for GPS purchases

China has agreement with Pakistan

5. CGPS densification for tectonic studies for natural hazards studies (earthquakes and volcanoes)

China, Japan, Korea, Australia densifying networks

6. Maintain web page of countries geodetic network status.

Countries encouraged to check and update website

7. Borneo project

Need to check status

Resolutions

1. Regional Geodesy Workshop

- Recognising the importance to members of the working group to share technical advice and to monitor the progress of the Working Group Projects,
- Acknowledging that
 - a workshop has not been held for the past few years;
 - new geodetic data sets are becoming available;
 - some countries are seeking advice/assistance to enhance their geodetic capability,
- Resolves that the next Regional Geodesy Workshop be held in conjunction with the 14th PCGIAP meeting proposed to be held in 2008.

2. Sharing of Geodetic data sets

- Recognising the need to share data sets especially in country border regions to advance modeling of country geoids and other geophysical phenomena,
- Acknowledging that the policies for release of various data sets differs from country to country,
- Resolves that each country should investigate and report to the next Working Group meeting,
 - what geodetic data sets are available for sharing;
 - to what level of accuracy and resolution;
 - to what spatial extent.

Report back from Working Group 2

Report of Working Group 2 meeting to the PCGIAP Korea, 15 June 2007-06-15

Chair: Dr Steeve Ebener (Switzerland) on behalf of Mr Bebas Purnawan (Indonesia)
Vice Chair: Dr Zhou Xu (China)

The meeting was attended by representative from Bangladesh, China, Korea and Singapore. The meeting then had for objective to:

- Define the objective and realistic activities work plan of the Working Group until the next UNRCC-AP Conference
- Potentially revisit the actual structure of the Working Group to achieve the proposed work plan
- derive the potential necessary resolutions to be accepted by the Permanent Committee in relation with the activity work plan
- Discuss on the content of the WG2 web site

1. Definition of the objective and activities work plan until the next UNRCC-AP Conference

1.1 Definition of the objective

The participants to the meeting agreed on the following objective for the Working Group until the next UNRCC-AP Conference:

"Develop, maintain and distribute a seamless 1:1'000'000 scale framework data set covering the all AP Region"

1.2 Activities workplan

For the all region, the activities of the working group will focus on the development of:

- framework data set,
- metadata profile,
- data node network.

More details about the discussion which took place for each of these elements are reported in the coming sections.

1.2.1 Development of a regional framework data set

It has been agreed that the layers concerned by this work will remains the same as follow:

- International and administrative boundaries

- road network (transportation)
- hydrography
- populated places

The following technical specifications applied in the context of the tsunami affected area pilot project will continue to be applied for the regional framework data set:

1. Scale: 1:1,000,000
2. Data format ESRI shape file
3. Datum: WGS84
4. Map Projection: Geographic Projection.
5. Attribute information complying with the Global Mapping Specification for the rivers, roads and populated places and with the ones of the Second Administrative Level Boundaries dataset project (SALB) for the administrative boundaries,

The issue of the horizontal accuracy will be revisited and the following two new specifications considered:

- Precise match with the ground reference at the border of the country
- Use of a more precise coastline layer

In terms of work plan, the new philosophy of the working group is to work on facilitating the work of each country by providing them with the necessary:

- data
- standards, protocols and guidelines
- external technical support

The following work plan for 2007-2009 was then reviewed and approved

| No | Activity/Steps | Date |
|----|---|---------------------------|
| 1 | Modification of the WG2 web site | September 2007 |
| 2 | New set of standards and protocols and guidelines | December 2007 |
| 3 | Provision of the necessary data to the countries that want to participate | April 2008 |
| 4 | Deadline for submitting the new data set | April 2009 |
| 5 | Aggregation, cleaning and presentation of the data set | 18 th UNRCC-AP |

1.2.2 Development of a metadata profile for the region

The following process has been discussed in order to create a metadata profile for the region:

- Use what has already been done by PCGIAP in the past
- Select ISO as the standard for this exercise
- look at the profile already developed by the UN (UNGIWG)

- connect the PCGIAP process with the one started by CODI and eventually PCIDEA
- create a draft profile to be discussed among the members of PCGIAP
- look at tools that could support the use of this profile
- provide information and material to the members through the WG 2 web site
- increase awareness through the organization of at least one workshop on metadata in the region
- address the language issue (e.g.: glossary of terms, ISO)

This translated into the following workplan which was reviewed and approved

| No | Activity/Steps | Date |
|----|--|---|
| 1 | Modification of the WG2 web site | September 2007 |
| 2 | Creation of a new draft profile based on the already existing ones | December 2007 |
| 3 | Discussion about the new draft profile (PCGIAP meeting or ISO meeting) | End 2007 or early 2008 |
| 4 | Feedback from the countries regarding the new draft profile | June 2008 |
| 5 | Proposition of a final profile | December 2008 |
| 6 | Presentation and agreement on the final profile | 2009 PCGIAP EB or 18 th UNRCC-AP |

The language issue will be follow up on by the working group on the basis of the work performed in this area by ISO.

1.2.3. Development of a data node network for the region

The discussion started by making sure that the participants had the same understanding of what is meant by a data node. The following description has been agreed upon as the one to be used in the context of the activities of the working group:

"A Data node is a server which can be accessed by any user (ubiquitous) and which at least gives access to:

- a metadata catalogue
 - a map repository (GIS layer, pdf maps,..)
- and eventually an online mapping application"

An important discussion has therefore been made with the notion of clearinghouse which used to be used by the working group.

A review of the past activities in this area then lead to the description of a specific implementation strategy to be followed in order to allow countries to establish a data node in their own country. The following elements are considered in this strategy:

- Focus on standard and protocol which are used to develop geospatial clearinghouse/geo-portal, for example metadata profile and technical guideline
- Deliver technology and experience to members by information exchange and technical training
- Encourage members to use the standards, protocols and technology in their own work with close conjunction with their national related activities, that is, members need not to do that special for PCGIAP. APSDI clearinghouse should be based on the success of the members' data nodes.
- By this way, PCGIAP can achieve the goal by promoting the members' concerning national projects on geospatial clearinghouse/geo-portal.

This translated into the following work plan for 2007-2009 which was reviewed and approved.

| No | Activity/Steps | Date |
|----|---|---------------------------|
| 1 | Modification of the WG2 web site | September 2007 |
| 2 | Compile existing training material for countries to develop their own clearinghouse development plan | 18 th UNRCC-AP |
| 3 | Provision of standards, protocols and guidelines that would insure the interoperability between the different nodes | |
| 4 | Provision of a list of tools that complies with the recommended standards, protocols and guidelines | |
| 5 | Being able providing countries with technical support in order to implement their plan | |
| | Modification of the WG2 web site | |

1.3 Structure of the Working Group

In order to be in the position to be able to implement the workplan presented in the above section some changes have been proposed in terms of the structure and membership of the working group. The new structure and membership now reads as follow:

Chair: Mr Bebas Purnawan, Indonesia

Vice Chair: Dr Zhou Xu, China

Vice Chair: Dr Steeve Ebener, Switzerland

Vice Chair: Prof Sang-Ki Hong, Korea

Task force coordinators:

- Pan Asia Pacific fundamental data set Taskforce: Mr Bebas Purnawan, Dr Steeve Ebener

- Metadata profile for AP Taskforce: Prof Sang-Ki Hong

- APSDI Data Nodes Taskforce: Dr Zhou Xu

1.4 Recommendations

The following recommendations have been proposed and accepted during the plenary session which followed the WG 2 meeting:

"The Meeting,

Recalling the importance of generating a seamless dataset covering the entire Asia and the Pacific region.

Further recalling the important work already performed by Working Group 2 these past years in the context of the tsunami affected area pilot project, the creation of a metadata profile and the establishment of APSDI data nodes for the region .

Recommends that PCGIAP Working Group 2:

- a) Re-establish the activities of the Pan Asia-Pacific Framework Dataset Taskforce in order to work towards the creation of a seamless dataset covering the entire Asia and the Pacific region in collaboration with ISCGM, SALB and other similar initiatives.
- b) Establish a new task force that will work in close collaboration with ISO/TC211 to develop an ISO Metadata standard profile for Asia and the Pacific.
- c) Develop the necessary framework made of training material, standards, protocols, guidelines, list of tools and technical support that would allow the establishment of data nodes in countries in conjunction with the development of their own NSDI.
- d) In collaboration with the PCGIAP secretariat, revisit the structure and content of the WG2 section on the PCGIAP web site in order to make it become a knowledge platform that members could use as a reference for their activities."

Report back from Working Group 3

Report of Working Group 3 Meeting to the PCGIAP Korea, 15 June 2007

Chair: Professor Ian Williamson (Australia)

Vice Chair: Mr Ahmad Fauzi (Malaysia)

Vice Chair and Rapporteur: Associate Professor Abbas Rajabifard (Australia)

The meeting was attended by representatives from China, Indonesia, Korea, Malaysia, Singapore, Thailand, and Australia, and also representative from GSDI Association (Prof Bas Kok from The Netherlands). The meeting then discussed the following Agenda:

1. Review presentation on Spatially Enabling Government
2. Discuss Mongolian Workshop on Land Administration and PCGIAP response to White Paper
3. Review outcomes of the Workshop on Spatially enabled Government
4. Discuss and agree on WG3 Workplan
5. Other issues related to WG3 Activities

1. Review presentation on Spatially Enabling Government

Prof Williamson first started by reviewing the presentation on Spatially Enabled Government to provide some background information for the better WG meeting discussion. After this presentation, there were some discussions and comments from each participant regarding their views on the concept of spatially enabled government and the issues associated with that for its implementation.

2. Discuss Mongolian Workshop on Land Administration and PCGIAP response to White Paper

WG3 discussed a draft response by PCGIAP to the White Paper titled “*A vision for PCGIAP in a spatially enabled world*” presented at the PCGIAP meeting in Korea 13-15 June, 2007 which was about sharing of land administration experiences in the Asia and Pacific Region. As a result of this discussion, the following statement has been agreed:

Response by PCGIAP to the White Paper titled “A vision for PCGIAP in a spatially enabled world” presented at the PCGIAP meeting in Korea 13-15 June, 2007.

At the PCGIAP meeting in Korea from 13-15 June, 2007 the PCGIAP discussed the proposal by our Mongolian member regarding the need to establish a better mechanism to discuss and share land administration experiences in the Asia and Pacific region.

While welcoming discussion on this matter and appreciating the need for better mechanisms to share land administration experiences in the region, the initial

response from the PCGIAP members at the meeting is that more time is needed to discuss the matter and that it is important for PCGIAP to maintain a dialogue with member countries on this issue.

In the short term PCGIAP has asked Professor Ian Williamson, Chair of PCGIAP WG3 (Spatially Enabling Government) (formally Cadastre) to represent PCGIAP at the Roundtable in Mongolia to discuss this issue on Friday 29 June, 2007. The Roundtable is part of the PCGIAP sponsored "International Workshop on Good Land Administration – Its role in Economic Development". PCGIAP notes that at least 9 PCGIAP member countries will be represented at the Workshop (Mongolia, Australia, Russia, China, Thailand, Vietnam, Laos, Korea, Indonesia) as well as representatives of at least 9 other European countries (Sweden, UK, Finland, Poland, Netherlands, Austria, Belarus, Germany, Georgia).

PCGIAP is pleased to consider all suggestions and recommendations that arise from this Roundtable at its next PCGIAP Board Meeting in Canberra, Australia in January, 2008.

PCGIAP welcomes the dialogue on this matter and is prepared to facilitate a special workshop on "Land administration issues in the Asia and Pacific Region" at the next PCGIAP meeting in 2008. Options and implications arising from that workshop could be considered by PCGIAP and if all parties agree, any new arrangements could be presented for consideration to the next United Nations Regional Cartographic Conference for Asia and the Pacific (UNRCC for AP) scheduled for 2009.

PCGIAP looks forward to the outcomes of the Mongolian Workshop and Roundtable, and a continued dialogue on the matter of improving the opportunity for dialogue on land administration issues in the Asia and Pacific region.

3. Review outcomes of the Workshop on Spatially enabled Government

The meeting then reviewed and discussed the outcomes of the workshop on "*Spatial Enablement of Government and NSDI-Policy Implications*" conducted jointly by the Working Group 3 and GSDI Association on the 12 June 2007 as part of the 13th PCGIAP meeting, in Seoul, Korea. As a result of this discussion, the meeting agreed on the following outcomes and recommendations and further agreed to forward this to the PCGIAP meeting for its consideration.

1. The Workshop endorses the concept of Spatially Enabled Government (SEG) as an important activity of government for improving effectiveness, efficiency, better decision making, business processes and policy implementation, nationally, regionally and globally. SEG facilitates the use of spatial information from a whole-of-government perspective by all government and society by using place or location as a means of organizing activities. It builds on traditional uses of spatial information in mapping, positioning, asset management, visualization, web enablement and GIS in supporting economic development and environmental management and extends it across the whole of government into non traditional areas such as taxation, health, human services, census, education, immigration, sustainability accounting, security and emergency response, in a transparent and ubiquitous manner.

2. SEG builds on National SDI initiatives (NSDI) that are an important and integral part of a country's infrastructure by developing an enabling platform, including institutional, legal, governance and political arrangements that facilitates the integration of natural resource environmental data (particularly topographic and geographic information) with large scale built environmental data (and particularly cadastral data), together with all related non spatial data such as demographic and census data, to support the objectives of sustainable development. In simple terms SEG is about using NSDI to improve the operation and processes of government, and deliver better policy implementation and decision making by extending the use of spatial information to the whole of government and society.
3. The Workshop recognizes SEG as an important part of countries' ICT, e-government and information sharing strategies as a key activity that fosters innovation. The focus of SEG is on the use of spatial information to achieve government policy objectives, not the supporting NSDI as such even, though NSDI is essential to achieving SEG outcomes.
4. The Workshop recognizes that the key to SEG is the integration of a spatially enabled cadastral layer within an NSDI that provides information about properties, land parcels, land use, land value, roads, buildings and other built environmental data.
5. While the focus of SEG is government, it is equally important for promoting private sector activities and business outcomes.
6. The Workshop recognizes that SEG is an evolving concept that requires ongoing research and development by PCGIAP, the GSDI Association and by member countries to clarify and expand the principles and applications associated with the concept that involves policy, social, institutional, legal and technical dimensions.
7. SEG shows that governments increasingly require access to national large scale data sets as a key component of a NSDI, where some of those data sets have traditionally been represented or made available at lower levels of governments. As such SEG requires a national approach to coordinate the management of these large scale data sets even though in many cases legal or constitutional responsibility rests with a lower level of government. Importantly SEG requires cooperation at all levels of governments from national to lower levels such as states, provinces, counties, municipalities.
8. The implementation of SEG requires:
 - a. an enabling platform comprising institutional, collaborative framework, governance, legal and technical tools for data sharing as part of ICT, e-government and information sharing strategies;
 - b. building on NSDI and related initiatives;
 - c. using geocodes and "place" related information, such as national geocoded street address files;
 - d. facilitating the use of legal land parcels and legal property objects to better manage all rights, restrictions and responsibilities relating to land;

- e. develop more holistic data models to integrate separate land administration data silos where they exist;
- f. maintain complete and optimally continually updated national cadastral maps of legal parcels, properties and legal objects, as part of the NSDI;
- g. often re-engineering the institutions of government;
- h. increasingly legal frameworks to facilitate integration and management;
- i. activities on spatial data standards, interoperability and integratability;
- j. development of authoritative registers of key spatial information;
- k. research and development;
- l. growth in capacity at society, institutional and individual levels.

Recommendations

1. PCGIAP and the GSDI Association re-endorse Resolution 4 of the 17th UNRCC-AP, Bangkok 2006 with regard to encouraging countries to explore the principles of spatially enabling government as they support the four dimensions of sustainable development being economic, environmental, social and governance.
2. PCGIAP endorses the outcomes of the PCGIAP Workshop on “*Spatial Enablement of Government and NSDI-Policy Implications*” conducted jointly by the Working Group 3 (Spatially Enabling Government) and GSDI Association on the 12 June 2007 as part of the 13th PCGIAP meeting, in Seoul, Korea
3. PCGIAP and GSDI Association encourage closer collaboration between national mapping/GI organizations and large scale land administration/cadastre/land parcel organizations, as a key aspect of promoting spatial enablement of government.

4. Discuss and agree on WG3 Workplan

The following work plan for 2007-2009 was reviewed and approved.

| No | Activities/Steps | Date |
|----|---|-----------------|
| 1 | Analysis of the result of the workshop and refine the WG3 workplan in line with the initiative on spatial enablement of government. | July-Sept 2007 |
| 2 | Work on the concept of spatially enabling government, particularly based on the agreed outcomes of the workshop which includes the following: <ul style="list-style-type: none"> • Concepts and principles of spatially enabled government • Design requirements of spatially enabled government • Issues associated in the development of spatially enabled government including: Institutional; Technical; Policy and Socio-economic • Relationship between SDI and LA (Cadastre) to support spatially enabled government | Oct. 2007- 2009 |

| | | |
|---|--|-----------------|
| | <ul style="list-style-type: none"> Capacity building for spatially enabled government. | |
| 3 | Work on Data Integration Project as part of the Integration of Built and Natural Environmental datasets in the context of National SDI initiatives | Dec. 2007 |
| 4 | Report on outcomes of WG3 activities (including analysis of current projects, recommendations, future plan, etc.) | PCGIAP Meetings |

5. Other issues related to WG3 Activities

| | |
|-----------------------------|--|
| Possible activities for WG2 | As a result of the discussion by the WG3 meeting, there was a suggestion for a benchmarking mapping activity similar to the Cadastral Template Project conducted by WG3 in 2003-2006. Therefore WG3 would suggest the consideration of this activity as part of future WG2 workplan. |
|-----------------------------|--|

Ian Williamson (WG3 Chair), Ahmed Fauzi (WG3 Vice Chair), Abbas Rajabifard (WG3-Vice Chair)

15 June 2007

Report back from Working Group 4

| | |
|---|---|
| <p>13th Meeting of PCGIAP</p> <p style="text-align: center;">Report to PC</p> <p style="text-align: center;">Working Group 4</p> <p style="text-align: center;">2007. 6.15</p> <p style="text-align: center;">Seoul, Korea</p> | <p style="text-align: center;">Task of Working Group</p> <ul style="list-style-type: none"> ■ Main Objective: <ul style="list-style-type: none"> ■ To work for institutional strengthening, capacity building for geo-spatial information for Asia-Pacific Region ■ Chairman: <ul style="list-style-type: none"> ■ Maj. Gen. Gopal Rao Mocheria, India ■ Vice Chairmen: <ul style="list-style-type: none"> ■ Prof. Eun-Hyung Kim, Korea ■ Prof. Woosug Cho, Korea ■ Dr. Li Pengde, China ■ Temporary Chair: <ul style="list-style-type: none"> ■ Prof. Sang-Ki Hong, Korea |
| <p style="text-align: center;">Status</p> <ul style="list-style-type: none"> ■ Survey of India initiated the process of organizing a course on institutional strengthening/capacity building for NSDI in Sep. – Oct. 2007 ■ The offered course will have the same structures as the course offered in 2005 ■ 3-tier structure <ul style="list-style-type: none"> ■ Policy makers ■ Technocrats ■ General users | <p style="text-align: center;">Findings</p> <ul style="list-style-type: none"> ■ Development of the SDI course in India <ul style="list-style-type: none"> ■ Secretariat needs to check the status of the progress ■ WG4 recognizes that there are other efforts for capacity building in Int'l community <ul style="list-style-type: none"> ■ Metadata profile for AP by WG2 ■ SDI workshop by AIT ■ ISO/TC211 Outreach AG etc. ■ There is a lack of formal educational courses specialized in SDI |
| <p style="text-align: center;">Work Items</p> <ul style="list-style-type: none"> ■ Draw up a Work Plan for WG4 ■ Cooperative programs <ul style="list-style-type: none"> ■ Visit to the countries with success stories ■ Exchange of people ■ Technology Transfer ■ Tools <ul style="list-style-type: none"> ■ SW, Cookbooks, Manuals, Training Materials, PR Materials ■ Setup a repository to accumulate the tools ■ Formal University Courses on SDI | <p style="text-align: center;">Recommendation</p> <ul style="list-style-type: none"> ■ PCGIAP to encourage educational institutions of higher learning to offer a formal educational course for SDI |

**Resolutions adopted at the 13th PCGIAP meeting
12-15 June 2007, Seoul, Korea**

1. Regional Geodesy Workshop

The Committee

Recognizing the importance to members of the working group to share technical advice and to monitor the progress of the Working Group Projects,

Acknowledging that

- a workshop has not been held for the past few years;
- new geodetic data sets are becoming available;
- some countries are seeking advice/assistance to enhance their geodetic capability,

Resolves that the next Regional Geodesy Workshop be held in conjunction with the 14th PCGIAP meeting in 2008.

2. Sharing of Geodetic Datasets

The Committee

Recognizing the need to share data sets especially in country border regions to advance modeling of country geoids and other geophysical phenomena,

Acknowledging that the policies for release of various data sets differs from country to country,

Resolves that each country should investigate and report to the next Working Group meeting,

- what geodetic data sets are available for sharing;
- to what level of accuracy and resolution;
- to what spatial extent.

3. Fundamental Data Working Group Tasks

The Committee

Recalling the importance of generating a seamless dataset covering the entire Asia and the Pacific region,

Further recalling the important work already performed by Working Group 2 these past years in the context of the tsunami affected area pilot project, the creation of a metadata profile and the establishment of APSDI data nodes for the region,

Recommends that PCGIAP Working Group 2:

- Re-establish the activities of the Pan Asia-Pacific Framework Dataset Taskforce in order to work towards the creation of a seamless dataset covering the entire Asia and the Pacific region in collaboration with ISCGM, SALB and other similar initiatives.
- Establish a new task force that will work in close collaboration with ISO/TC211 to develop an ISO Metadata standard profile for Asia and the Pacific.
- Develop the necessary framework made of training material, standards, protocols, guidelines, list of tools and technical support that would allow the establishment of data nodes in countries in conjunction with the development of their own NSDIs.
- In collaboration with the PCGIAP secretariat, revisit the structure and content of the WG2 section on the PCGIAP web site in order to make it become a knowledge platform that members could use as a reference for their activities.

4. Spatial Enablement of Government

The Committee

Noting the outcomes of the joint PCGIAP Working Group 3 (Spatially Enabling Government) and the GSDI Association International “Workshop on Spatial Enablement of Government and NSDI Policy Implications”, Korea 2007, which endorses the concept of Spatially Enabled Government (SEG) as an important activity of government for improving effectiveness, efficiency, better decision making, business processes and policy implementation, nationally, regionally and globally,

Further noting SEG facilitates the use of spatial information from a whole-of-government perspective by all government and society by using place or location as a means of organizing activities, building on traditional uses of spatial information in mapping, positioning, asset management, visualization, web enablement and GIS in supporting economic development and environmental management and extends it across the whole of government into non traditional areas such as taxation, health, human services, census, education, immigration, sustainability accounting, security and emergency response, in a transparent and ubiquitous manner.

Recalling the outcomes of the 17th UNRCC-AP conference, Bangkok 2006 and the 17th UNRCC-AP international workshop on integration of natural and built environmental data, Bangkok 2006 which concluded that firstly such integration is an important component for delivering technical, economic and social solutions to real world problems in government, business and the community at large, and second that SDIs serve as enabling platform supporting spatially enabled government to support strategies such as e-government, and

Recognising that the key to SEG is the integration of a spatially enabled cadastral layer within an NSDI providing information about properties, land parcels, land use, land value, roads, buildings and other built environmental data,

Recommends that

- PCGIAP and GSDI Association re-endorse Resolution 4 of the 17th UNRCC-AP, Bangkok 2006 with regard to encouraging countries to explore the principles of spatially enabling government as they support the four dimensions of sustainable development being economic, environmental, social and governance.
- PCGIAP endorse the outcomes of the PCGIAP Workshop on “*Spatial Enablement of Government and NSD I- Policy Implications*” conducted jointly by the Working Group 3 (Spatially Enabling Government) and GSDI Association on the 12 June 2007 as part of the 13th PCGIAP meeting in Seoul, Korea.
- PCGIAP and GSDI Association encourage closer collaboration between national mapping/GI organizations and large scale land administration/cadastral/land parcel organizations, as a key aspect of promoting spatial enablement of government.

5. Institutional Strengthening

The Committee

Recommends that member countries encourage educational institutions of higher learning to offer a formal educational course for SDI.