Permanent Committee on GIS Infrastructure for Asia and the Pacific

Working Group 2

Regional Fundamental Data

FINAL REPORT

FROM THE 5th PCGIAP MEETING

BEIJING, CHINA

19-22 APRIL 1999

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Vice Chairman

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Report of Working Group 2 – Regional Fundamental Data

1. Introduction

The Working Group on Regional Fundamental Data, WG2 of PCGIAP, met on Tuesday 20 April 1999 in Beijing. The agenda adopted by the meeting is at Attachment A. Mr. Peter Holland of Australia chaired the meeting. The meeting elected Mr. Saeid Bushehri of Iran as Rapporteur. A general report of the meeting is at Attachment B.

2. Participants

The following people attended the meeting:

Mohd. Jamil Ali	Brunei Darussalam	survey@pso.brunet.bn
Saeid Noori Bushehri	Iran	saeidn@ncc.neda.net.ir
William Cartwright	Australia	w.cartwright@rmit.edu.au
M. Enkhbayar	Mongolia	enkhbayar@mailcity.com
Peter Holland	Australia	peterholland@auslig.gov.au
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Wu Wanzhong	China	Tel 68437793
Min Yiren	China	Tel 68460864
Lim Lan Yuan	Singapore	bernhead@nus.edu.sg

3. Presentations

The following presentations were made at the meeting:

- Mr. Abbas Rajabifard of Iran described the regional fundamental dataset questionnaire and research program at Melbourne University.
- Professor Jun Chen of China described the APSDI data nodes network.
- Mr. Yoshihisa Hoshino of Japan described the Standards and Development Plan of National Spatial Data Infrastructure.
- Mr. M. Saandar of Mongolia described the digital atlas of Mongolia project.

4. Papers

The following papers were tabled at the meeting and have been passed to the Secretary of PCGIAP to be made available on request:

- Information which is Needed to Create Spatial Data Infrastructure for Mongolia
- DMGIS '99 First Announcement and Call for Papers
- Recent GIS-related Activities in the Japanese Government (Update)
- Order Form for book titled Multimedia Cartography

5. Working Group 2 Executive Group

Professor Jun Chen stepped down as Task Coordinator for the APSDI data nodes network project. Professor Jiang Jingtong of China was nominated by Professor Chen as the replacement Task Coordinator. Professor Jingtong accepted the nomination. Dr. M. Enkhbayar accepted the invitation to serve as Task Coordinator for the regional GIS application demonstration project alongside existing Task Coordinator Mr. Evgeniy Zhalkovskiy. The new Working Group 2 Executive Group for the period 1999-2000 is therefore as follows:

Chairman

Mr. Peter Holland, Australia <PeterHolland@auslig.gov.au>

Vice Chairman

Prof. Jun Chen, China <jchen@gps.ceic.gov.cn>

Task Coordinator - APSDI Data Nodes

Prof. Jiang Jingtong, China <rmliu@public3.bta.net.cn>

Task Coordinator - Regional Fundamental Data

Mr. Saeid Bushehri, Iran <saeidn@ncc.neda.net.ir>

Task Coordinators - Regional GIS Application Demonstrations

Mr. Evgeniy Zhalkovskiy, Russia <Fax: +7 095 124 3535>
Dr. M. Enkhbayar, Mongolia <enkhbayar@mailcity.com>

Executive Officer

Mr. Glenn Johnstone, Australia <GlennJohnstone@auslig.gov.au>

6. Project workplans

Project workplans for the period 1999-2000 are as follows:

Policy for Sharing Fundamental Data
Task Coordinator: WG 2 Executive Group

The working group considered pages 1 to 6 of the Draft Policy for Sharing Fundamental Data in some detail. The proposed amendments to the draft are shown at Attachment C.

Action	***Responsibility***	***Target Date***
1. Identify the relevant work done by the previous WG4, including relevant actions endorsed at Tehran meeting	Australia	January 1999
2. Identify the Global Mapping policy for sharing data	Australia	February 1999
3. Draft PCGIAP policy for discussion at the Beijing PC Executive Board meeting	WG 2 Executive Group	April 1999
4. Draft policy discussed at working group meeting in Beijing. Amendments to draft policy tabled for endorsement at 2nd Plenary Session in Beijing	WG2	April 1999
5. Distribute draft policy to all PC members for comment	WG 2 Executive Group	July 1999
6. Report on status of draft policy at PC Executive Board Meeting in Melbourne	WG 2 Executive Group	October 1999
7. Define regional fundamental datasets covered by policy	WG 2 Executive Group	December 1999
8. Consider report from WG2 Project 2 - on policy implications from pilot project	WG 2 Executive	December 1999
9. Final discussion and endorsement of policy	All members	6th PCGIAP meeting
10. Publication of policy	Secretariat	Post 6th PCGIAP meeting

Regional Fundamental Datasets
Task Coordinator: Iran

Action	***Responsibility***	***Target***
1. Obtain PCGIAP approval to use an Administrative Boundaries pilot dataset as a means of identifying issues associated with regional fundamental dataset creation within the APSDI	Iran	April 1999
2. Distribute the regional fundamental dataset questionnaire to PCGIAP members	PCGIAP Secretariat	April 1999
3. Receive responses to regional fundamental dataset questionnaire	PCGIAP Secretariat	June 1999
4. Research similar projects elsewhere around the world - particularly 1:1M scale mapping the Asia/Pacific area. Also examine the approach Global Mapping use to delineate areas of interest. Prepare summary report on what exists and how the WG may utilise	Iran / Australia, seeking input from all members	December 1999
5. Definition of what constitutes a regional fundamental dataset, including a definition of the technical specification for APSDI (based on Global Mapping spec)	All members	December 1999
6. Assess MEGRIN prototype dataset and make results available to WG members	Australia	December 1999
7. Assess results of regional fundamental dataset questionnaire	Melbourne University	December 1999
8. Conduct research on the Administrative Boundaries pilot dataset - what is available, formats, structure and how this matches with Global Map specification	Iran	December 1999
9. Develop the Administrative Boundaries pilot dataset and report on issues identified during the pilot project	Iran	6th PCGIAP meeting
10. Develop a draft APSDI technical specification for fundamental datasets	Iran and Australia	6th PCGIAP meeting
11. Make results of the various steps above available on WWW	Australia	On-going

APSDI Data Nodes
Task Coordinator: China

Action	***Responsibility***	***Target***
1. Present information on rationale and functions of a Data Node	China	April 1999
2. Prepare discussion paper on how a Data Node would be established, how it would operate.	China	April 1999
3. Identify contact points within China, Iran, Japan and Australia for a prototype Data Node network	China	May 1999
4. Design the prototype Data Node network, including architecture and functionality, for demonstration. Nodes will be located in China, Iran, Japan and Australia	China	October 1999
5. Set up prototype Data Node network. Link the prototype network to the pilot project admin. boundary dataset.	China	6th PCGIAP meeting
6. Develop a draft implementation plan for a regional data node network, including coordination arrangements for fundamental dataset generation, based on the experience of the prototype network	China	6th PCGIAP meeting
7. Make results of the various steps above available on WWW	Australia	On-going

Regional GIS Application Demonstrations
Task Coordinators: Russia and Mongolia

Action	***Responsibility***	***Target***
1. Investigate current small-scale GIS datasets that could be demonstrated. [Mapping of the Baltic Sea Region - may be a good example dataset to start. For more information visit http://www.grida.no/baltic/]	Russia	To be advised
2. Create a demonstration dataset for viewing based on the national atlas of Mongolia	Mongolia	6th PCGIAP meeting
3. Determine future GIS application projects	Russia and Mongolia	6th PCGIAP meeting

7. Recommendations

The meeting agreed to present the following recommendations to the plenary session of PCGIAP on Thursday 22 April 1999:

a) That PCGIAP endorse the membership of the WG2 Executive Group;

b) That PCGIAP endorse the four workplans of WG2:

   i) Workplan for Policy for Sharing Fundamental Data

   ii) Workplan for Regional Fundamental Datasets

   iii) Workplan for APSDI Data Nodes

   iv) Workplan for Regional GIS Application Demonstrations

c) That PCGIAP note the amendments to the draft policy on sharing fundamental data.

d) That PCGIAP members complete the questionnaire on regional fundamental datasets and return to the Secretariat within two months.

8. Thanks

The chairman closed the meeting by thanking the following people:

- Mr. Bushehri for his job as Rapporteur
- Mr. Rajabifard, Prof. Chen, Mr. Hoshino and Mr. Saandar for their presentations.
- Prof. Chen for his contribution as Task Coordinator.
- Prof. Jingtong and Dr. Enkhbayar for accepting the invitation to serve as Task Coordinators
- All participants for their contributions to the meeting.
- SBSM staff for providing excellent facilities for the meeting.

AGENDA

- Welcome and Introductions
- Confirmation of Agenda and Standing Resolutions
- Nomination of Rapporteur
- Review of Terms of Reference
- Questions arising from WG2 report to Plenary session
- Work Plan / Projects
  - Policy
    - Policy for Sharing Fundamental Data
    - Guidelines for Custodianship
  - Fundamental Data
    - Project being undertaken by the University of Melbourne. Presentation by Abbas Rajabifard, Iran, on technical questionnaire and project work.
  - Data Nodes
    - Paper produced by Task Coordinator – Professor Jun Chen, China (possible demonstration of Data Nodes concept)
  - GIS Applications
- Future Working Group arrangements
- Recommendations to Plenary session
  - Endorsement of revised Work Plan
  - Endorsement of Policy on Sharing Fundamental Data
  - Endorsement of WG Structure

General Report of Meeting

Saeid Bushehri – Rapporteur

Working Group 2 Session on April 20, 1999

Attendees:

Brunei Darossalam	Singapore
Japan	Australia
China	Mongolia
Thailand	I.R. Iran

WG2 Regional Fundamental Data – Work Plan 1998-2000 (Doc 7)

- Titles, Role, Context, Objectives, Structure, Operation, Reporting and Actions approved
- APSDI Data Node Coordinator, Prof Chen, substituted by Mr. Jiang, China

Policy for Sharing Fundamental Data (Doc 9)

The draft document has been updated (see Attachment B)

I.R. Iran:

- Regional Datasets are important components of APSDI, so there is need for a clear data policy
- Exchange of data is important issue in terms of common regional interest

Japan:

- ISO/TC211 specifications
- Exchange based on international standards
- Global map free for Asian-Pacific countries

Brunei:

- Data is available and exchangeable in Brunei in large scale maps

Mongolia:

- A paper regarding problems of Mongolia in mapping was tabled

Thailand:

- Sharing data is undergoing in Thailand

- Security of data regarding scale (small scales are O.K. but large scales are not)

Australia:

- Nature of data to be shared must be clarified.

- Confidentiality and integration of data are important

China:

- Scale, metadata and format of data are important items

- China has restriction on some layers and scales

WG2 project 2 (doc. 7)

Action plan was updated.

Regional Fundamental Datasets (Questionnaire was presented by Mr. Abbas Rajabifard, I.R. Iran.

The questionnaire will be distributed to the member nations by the Secretariat in both hardcopy and digital form (email)

WG2, project 3

The discussion paper was presented by Prof. Chen from china.

Action plan was updated

Australia, China, I.R.Iran and Japan were volunteers to be involved in data node project as Nodes.

The output of the pilot project in regional fundamental datasets can be used in data node project.

Following the project, establishing of clearinghouse should be considered.

WG2, project 4:

Mongolia was nominated as co-chair of the project

Mongolia project on National Atlas of Mongolia was presented and considered for GIS application demonstration within the next 12 months.

The chairman of WG2 concluded the session and announced change of WG2 personnel.

Amendments to Draft Policy for Sharing Fundamental Data

As the key role of spatial data has become increasingly recognised, regional governments have initiated a variety of cooperative arrangements to ensure that such information is consistent and available. However, there is no regional framework within which all existing arrangements can operate and which can provide the basis for future cooperation at the national, regional and global levels.

This policy has been developed by the PCGIAP in order to provide such a framework and is based on a similar policy developed by the Australia New Zealand Land Information Council (ANZLIC). Similar policies within the European Commission, the Canadian Government, the Baltic Sea region and the USA have also been investigated to compliment and harmonise this policy.

SCOPE

Recognising that the management and use of intra-government spatial data is the responsibility of the relevant country, this Policy applies to:

- ~~all~~ specified forms of regional fundamental spatial data (see definitions)
- the collection, management and use of fundamental spatial data in the regional and the global interest~~, whether application is at national, regional or international levels~~
- the use of fundamental spatial data by governments, industry and the community.

accordingly, all member countries agree to strive to adopt the following principles.

PRINCIPLES

PCGIAP believes that the adoption of the following Principles will ensure that management practices for fundamental spatial data are regionally consistent to achieve the benefits of the Asia-Pacific Spatial Data Infrastructure.

1 Responsibility Each member country accepts responsibility for the creation and maintenance of that component of the APSDI covering the region over which it holds recognised sovereignty

2 Access Member countries shall ensure that the APSDI component for which they are responsible is made

available to other member countries and to global projects under Access Conditions determined by the PCGIAP.

3 Access Conditions

The PCGIAP shall determine Access Conditions that facilitate the use of the APSDI to address regional and global economic, social and environmental issues.

All sectors of the community should have easy, efficient and equitable access to fundamental spatial data where technology, data formats, institutional principles, location, costs and conditions do not inhibit its use under access conditions defined by PCGIAP. Access conditions will recognise cultural, national and regional requirements.

4 Compliance and Compliance Specifications

Each component of the APSDI shall be in the form of a database of geographic information that satisfies a Compliance Specification determined by the PCGIAP ~~from time to time~~. The PCGIAP will use appropriate international standards in developing the compliance specification.

Custodians of fundamental spatial data should ensure that these data sets conform to the APSDI Compliance Specification to achieve a consistent level of quality that can meet the needs of the various users in the region and/or globe. The Compliance Specification may include specifications for data themes, content, scale or resolution, accuracy, currency, compatibility format, documentation, quality assurance and accessibility, or any other aspect that the PCGIAP may, ~~from time to time,~~ determine.

5 Content

The fundamental spatial data needed by all sectors of the community to support economic, social and environmental development and well being should be available.

6 Relationship to NSDI

At the discretion of each member country, the APSDI component for which they have responsibility may be a component of their national spatial data infrastructure (NSDI), an extract from it or a stand-alone product. Whichever approach is adopted by the member nation, every endeavour shall be taken to ensure that the APSDI component reflects the best available information for the region.

7 Relationship to GSDI

Member countries agree that the APSDI shall represent the region's contribution to the Global Spatial Data Infrastructure (GSDI) and that the PCGIAP shall represent the region's views on access, content, applications and

	standards for the GSDI
8 Sensitivity	Management of fundamental spatial data will include arrangements to preserve confidentiality, privacy, security and intellectual property rights which will protect the rights of data custodians and all sectors of the community.

ADVANTAGE OF SHARING SPATIAL DATA

People need to share spatial data to avoid duplication of expenses associated with generation and maintenance of data and their integration with other data. Moreover, GIS benefits are increased by data sharing among organisations and nations. Often, the spatial data produced for one application can be applied in others, thus saving money by sharing data. For many nations, building and using a GIS for especial applications at the regional level requires enormous amounts of current and accurate digital data. Significant time, money, and effort can be saved when the burden of data collection and maintenance is shared among nations. This is important, not only to the nations looking for the data, but also for the nations with the data. The more partners there are, the more the savings and the greater the efficiency.

Furthermore, sharing data can also improve data quality by increasing the number of individuals who find and correct errors. Savings realised on the production of common data can be used for other vital areas, such as application development. In addition, resources that would be used to collect repetitive data can be diverted into quality control, data management, and collection of other needed data.

Working together in a geographic area can also provide data coverage in a common form over a wider area. This aids cross-jurisdictional or cross-national analysis, decision making, and some types of operations. For example, adjoining jurisdictions may have a common interest in an environmental issue. A transit operator may serve a region, rather than stopping at country boundaries. Moreover, sharing common interest geographic data that any countries have been created also enable them to defray some of the costs of producing and maintaining those data.

Mechanisms to facilitate the use and exchange of spatial data are a major justification for developing and expanding any type of spatial data infrastructures.

IMPLEMENTATION

The Permanent Committee on GIS Infrastructure for Asia and the Pacific is charged with implementing this Policy by:

- Supporting and promoting the implementation of the Principles expressed in this Policy;
- Continuing to provide an effective regional coordination and consultative mechanism for governments;
- Establishing effective regional consultative arrangements between governments;
- Providing leadership, consultation and coordination for the development of the APSDI with the following characteristics:
  - a network of countries databases which, collectively, satisfy the region's need for consistent fundamental datasets;
  - a suite of technical standards and specifications, endorsed by PCGIAP and, where appropriate, submitted to ISO for consideration as a global standard, which facilitates the sharing of data between countries and which provides the necessary consistency and compatibility to enable the fundamental datasets to be combined to develop value-added products;
  - principles to facilitate the equitable sharing of data between countries in the region;
  - administrative principles and policies that facilitate access to fundamental data under conditions that promote better decision making based on good quality fundamental spatial data;
  - an Asia-Pacific Spatial Data Directory (APSDD) of metadata, implemented as a distributed network of country based directories, complying with standards endorsed by PCGIAP.

All jurisdictions will contribute to the implementation of this Policy by striving to:

- Adopt and promote the implementation of the Principles expressed in this Policy;
- Actively participate in, support and promote the work program of PCGIAP and its associated coordination arrangements;

- Establish and support effective jurisdiction coordination principles to give effect to PCGIAP initiatives;

- Implement country based spatial data infrastructures that conform to and contribute to the implementation of the APSDI;

- Make metadata available by establishing nodes as conforming components of the APSDD;

- Adopt and encourage the implementation of technical standards that facilitate the implementation of the APSDI;

- Use their best endeavours to adopt and implement administrative principles and policies that give full effect to the APSDI, facilitate industry and community access to fundamental data, and encourage sharing of data between agencies and jurisdictions.

DEFINITIONS

PCGIAP	The Permanent Committee on GIS Infrastructure for Asia and the Pacific. The regional committee for coordination of spatial data management in Asia and the Pacific
APSDD	The Asia-Pacific Spatial Data Directory of metadata. A key component of the APSDI that will provide to the community information about the availability, characteristics and quality of spatial data held by governments and the private sector and how that information may be obtained.
APSDI	The Asia-Pacific Spatial Data Infrastructure. A network of fundamental spatial databases maintained by custodians and linked through the adoption of consistent standards, policies and administrative principles.
fundamental spatial data	Spatial data for which there is a justified need for national consistency by multiple users in order for those users to meet their objectives. A fundamental dataset may comprise a number of compatible databases maintained by custodians in several countries.
metadata	Data about data. The data about the content, quality, condition, and other characteristics of data.
spatial data	Spatial data, often called geographic information is the location and name of features that are associated with a position on, above or beneath the surface of the earth. It includes data about road, railways, hydrography, airports, harbours, public utilities, property boundaries, climate, atmosphere, community features and facilities, tenure, valuation, landform, geology, marine, demography, soil type, vegetation, human and economic geography, elevation and administrative boundaries.
spatial data infrastructure	A term that describes the fundamental spatial datasets, the standards that enable them to be integrated, the distribution network to provide access to them and the policies and administrative principles that ensure compatibility between jurisdictions and agencies.
sponsor	An organisation having a special interest in ensuring that the dataset is widely available to the community as part of a regional spatial data infrastructure and has a structure and resources to support its implementation
user community	Means all PCGIAP members and users within nations who deal with applications on a national or regional level. Users may range from individual citizens to national government organisations.