

PCGIAP-Working Group 3 (Cadastre)

Report on Workshop on Cadastral Systems in Asia and Pacific Region 12-13 July, 2003, Okinawa, Japan

1. Objectives of Workshop

As part of the WG3 Workplan (2002-2004), WG3 organised a two-day workshop (12-13 July 2003) on Cadastral Systems in Asia and Pacific region which was conducted prior to the 16th UNRCC-AP conference and 9th PCGIAP meeting in Okinawa, Japan.

The objectives were to understand the role that cadastre plays in a state or national spatial data infrastructure and to compare best practice as a basis for improving cadastres as a key component of SDIs.

2. Agenda of the Workshop

- a. Opening and Welcome address
- b. Overview of PCGIAP and Working Group 3 (Cadastre)
- c. Aims and Objectives of Workshop
- d. Cadastral Template - History and Concept
- e. Cadastral Systems and related concepts - Invited presentations
- f. Marine Cadastre - WG3 second component
- g. Country Reports on individual Cadastral Systems
- h. Discussion of Cadastral Template
- i. Preparation of Report and Resolutions for PCGIAP meeting
- j. The way forward
- k. Closing remarks

Workshop Chair: Prof Ian Williamson (Australia)

Workshop Coordinator: Dr Abbas Rajabifard (Australia)

Workshop Secretary: Dr Conrad Tang (Hong Kong-China)

3. Participants

45 people from 25 countries attended the workshop. The list of countries shown as Attachment 1.

4. The Workshop

Prof Ian Williamson, the Chair of WG3 opened the Workshop by presenting an overview of PCGIAP, Working Group 3 (Cadastre), and the aims and objectives of Workshop.

As part of his presentation, the Chairman explained that details of the WG3 Workplan 2002-2004 and particularly the components concerned with the development of a cadastral template and marine cadastre issues. He then identified the points that needed to be discussed and the decisions to be made during the workshop.

Following the opening of the workshop, Dr Abbas Rajabifard, the Research Coordinator-WG3, reviewed and presented the background to the development of the cadastral template followed by future plans to complete the template by all countries in the Asia and Pacific region and the steps to process and publish the results.

Following the history and development of the concept of the cadastral template, Prof Williamson (Chair WG3) made a presentation on the relationship between Land Administration and SDI and the role that cadastral databases play in the construction of different level of SDIs. As part of this presentation, Prof Williamson demonstrated the relationship between Land Administration and SDIs in Victoria, Australia in which he highlighted that in Australia for example the land parcels are the key in building the State SDI and contribute through this to the National SDI. He concluded that we cannot separate land administration and SDIs. Since this subject is critical to the role that WG3 plays in the PCGIAP, an expanded version of the paper with input from the delegates to the Workshop will be presented to the 16th UNRCC and 9th PCGIAP.

The first presenter in the second session was Mr Daniel Steudler from Switzerland (currently in Australia, University of Melbourne). Mr Steudler's presentation was about "Evaluation of Land Administration Systems" and a Report on an UN Economic Commission for Europe (UNECE) Working Party on Land Administration initiative to investigate and standardise terminology for cadastral units (real estate units and identifiers) in the cadastral layer in an SDI. During this presentation, he first reviewed the concept of benchmarking and highlighted the importance of benchmarking in any organisations as well as presenting a systems approach to benchmarking. He then reviewed the evaluation elements, evaluation framework and methodology, followed by the steps involved in such activities. He concluded by comparing the PCGIAP initiative on cadastral template in Asia Pacific region with respect to the indicators and identifiers for the evaluation of land administrations in UNECE.

The second presenter in this session was the Chairman of WG3 in which he talked about "Marine Cadastre" – the second component of WG3 Workplan. Prof Williamson explained that this component of the current WG3 three year Workplan (2002-2004) is to support research to improve understanding of Marine Cadastres in Asia and Pacific region. He then reported that the work and activity on this component of the WG3 Workplan will start after this workshop and following PCGIAP and UNRCC conference. As part of this project, WG3 will host a workshop (early 2004) in Asia and the Pacific region to develop both Guidelines for the establishment and maintenance of marine cadastres and a Future Action Plan for the development of marine cadastres. The Chairman also mentioned that this project also aims to review best practice, to establish networks and to evaluate the potential for

ICT expertise in establishing marine cadastres. In order to prepare more information and do research on Marine Cadastre issues, the WG3 Chair and Research Coordinator are involved in the activities of the Marine Cadastre Research Group at the Department of Geomatics, The University of Melbourne (<http://www.sli.unimelb.edu.au/maritime/>).

The next item of the Workshop Agenda (and the last item for the first day) were the presentation of the national reports on cadastral systems by participant countries based on the WG3 cadastral template. In this session, 15 country reports were presented (Attachment 1) in which there was a short question and discussion after them. As a result of this session, and based on the submitted national cadastral reports, a list of issues (organisational, technical, and other related issues) pertaining to participating countries cadastral system was prepared (Attachment 2) for discussion during the second day of the Workshop.

The second day of the Workshop was allocated for the discussion on cadastral template, development of WG3 future Workplan and possible Resolutions to the 16th UNRCC-AP and 9th PCGIAP meeting. The discussion was concerned with summarising the cadastral issues in the region and particularly issues concerned with the role of cadastres and land administration in SDI development. Discussion also focussed on issues which could form the basis of the Workplan of WG3 for the next period 2003-2006 noting that the current Workplan requires the marine cadastre to be discussed and a workshop organised to provide guidelines on the marine cadastre issue in 2004. Therefore WG3 needs to determine the focus and activities for 2005-2006.

As part of the plan and objective for the second day of the workshop and mainly to facilitate the development of the future WG3-workplan, there was a presentation by Mr John Manning (Chair of PCGIAP-WG1-Geodesy) on the cooperation between WG1 (Geodesy) and WG3 (Cadastre). In this presentation, Mr Manning highlighted that the regional geodetic framework is a top level framework of connections between different datasets, therefore it is a base layer for any SDI and its datasets. Thus, cadastral data and topography data and their linkages should be datasets top on the geodetic data, and geodetic data then can be pinpoint control for these types of datasets. At the end of the presentation, Mr Manning proposed the way forward for the cooperation between WG1 and WG3 in which he identified how to make more use of geodetic framework as well as control for cadastral map and databases and also the importance of identifying the datum in Marine Cadastre.

5. General Outcomes from the Workshop

The workshop participants recognised the following items:

- The importance of the WG3 research, activities and program (especially cadastral template and marine cadastre) and to the development of SDI in the Asia-Pacific region.
- The relationship between cadastre and land administration and SDIs as well as the roles that land parcels play in building different level of SDIs.

- The importance of understanding a methodology for evaluation and benchmarking of Land Administrations as a basis for improving the cadastral and land administration systems in the Asia and Pacific region and the roles they play in establishing and maintaining SDIs.

6. Possible Topics Suggested for the next three years WG3-Workplan (2004-2006)

Participants identified and suggested some important topics in order to develop future plan and activities for WG3. These topics are:

- Participation of all countries in the Asian and Pacific region in completion of the cadastral template
- Support and maintenance of the joint PCGIAP and FIG website for cadastral templates and country reports (www.swisstopo.ch/cadastraltemplate2003/)
- Relationship between cadastres and SDIs and particularly the relationship and integration of cadastral and topographic datasets
- Cadastral parcel identifiers and their role in building and maintaining SDIs
- Continuation of marine cadastre issues
- The different issues confronting developed and developing countries in building and maintaining cadastral layers in their national SDIs
- Capacity building issues in cadastre and land administration in the Asia and Pacific region
- Benchmarking cadastral system

7. Proposed Resolutions from the Workshop

The Workshop participants agreed as follows:

- To present a resolution to the PCGIAP on the Cadastral Template
 - a. To adopt the current template
 - b. To propose that all countries in the Asia and Pacific region complete the template
 - c. To cooperate with the FIG Commission 7 (Cadastre and Land Management) in seeking to have countries world wide complete the template
 - d. To cooperate with FIG Commission 7 (Cadastre and Land Administration) in placing the individual country cadastral template information on the joint FIG/PCGIAP www site
- To propose to PCGIAP that the Workplan for WG3 2004-2006 focuses on developing a better understanding of the relationship between cadastre and topographic mapping in the establishment and maintenance of country SDIs, and to explore the following topics
 - a. Justification
 - b. Conceptual issues
 - c. Institutional issues
 - d. Technical issues

- To support a broader PCGIAP resolution on capacity building in land administration and SDI in the Asia and Pacific region

Attachment 1

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Country Participants and Presenter

Country	Country Report	Country	Country Report
Australia	*	Kiribati	
Bolivia #		Korea (Republic of)	*
Brunei	*	Laos	
Cambodia	*	Macao-China	*
Columbia #		Malaysia	
China	*	Mali #	
Denmark #	*	Myanmar	
Hong Kong-China	*	Nepal	*
India	*	New Zealand	*
Indonesia		Senegal #	
Iran (Islamic Republic)	*	Sri Lanka	*
Japan	*	Switzerland #	*
Kenya #			

: Invited participants

Attachment 2

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Issues (Organisational, Technical, and Legal and Administrative Issues) pertaining to participating countries cadastral system

Organisational Issues

- institutional re-organisation (bringing land-related organisations closer together or merge them in order to provide better service to clients)
- improve capacity building and HRD issues in land administration, cadastre and SDI
- strengthening of cadastral legislation and its processes
- greater promotion of benefits and strengths of cadastre to the wider community
- integration of a wider range of rights, restrictions and responsibilities into cadastre and linking cadastre to other systems (a role of SDI) including indigenous rights
- making cadastral processes more efficient (digital lodgment, clear definition of transaction content and aim)
- promoting the role of cadastre in good governance and e-government
- marine cadastre is an expanding issue with many economic, social, environmental dimensions
- 3-Dimensional cadastre

Technical Issues

- integration of cadastral data with other spatial and textual data
- integration of topographic and cadastral in an SDI
- integration of cadastral layer into SDI
- web-based access to cadastral data
- role of basic spatial units and identifiers in cadastral data including land and buildings
- digital cadastral data format
- standards for data modeling and exchange of cadastral data
- processes to support the higher accuracy of spatial cadastral data
- approaches for modeling spatial cadastral data to support multi users

Legal and Administrative Issues

- different drivers, initiatives and strategies for developing and developed countries
- benchmarking and evaluation of cadastral systems
- the position of the cadastre in the SDI hierarchy
- lack of completeness of digital cadastral information in one data model
- access to cadastral data and privacy issues