

# UN-GGIM-AP Working Group 4 Report

The 6<sup>th</sup> Plenary Meeting of UN-GGIM-AP  
17 - 19 October 2017  
Kumamoto, Japan

## Introduction

This report highlights the activities carried out by Working Group 4 of United Nations Global Geospatial Information Management for Asia and the Pacific (UN-GGIM-AP) after the Fifth Plenary Meeting of UN-GGIM-AP held in Kuala Lumpur Malaysia, 16-20 October 2016 and 7<sup>th</sup> UN-GGIM Expert Meeting in New York, 31 July – 4 August, 2017.

## Working Group 4, Member Countries

Working Group 4: Cadastre and Land Management	Chair	Dr. Byung-Gul Lee (Korea)
	Vice-Chair	Mr. Ali Bakar Hj. Kasim (Brunei)
	Vice-Chair	1. Mr. Zhao Yousong (China)
	Vice-Chair	2. Mr. Solomone Nata (Fiji)
	Vice-Chair	3. Mr. Azamat Karypov (Kyrgyzstan)
	Vice-Chair	4. Dr. Teng Chee Hua (Malaysia)
	Vice-Chair	5. Mr. Gankhuyag Radnaabazar (Mongolia)
	Vice-Chair	Mr. SOH Kheng Peng (Singapore)
	Vice-Chair	Dr. Luu Van Nang (Vietnam)

WG4 on Cadastre and Land Management aims to promote land administration framework and good practices for the Asia and Pacific region. Main work steps include identifying land issues in the region, proposing affordable framework and good practices for the region, and disseminating good practices and enhancing training and capacity development.

## **Contributions to UN-GGIM-AP**

**1. WG4 carried out the 1st and 2nd surveys to investigate the cultural, social, administrative and technical environments of the countries in the Asia and Pacific region. The analysis report has been completed. The survey results are as follows,**

- In most of the countries, basic legislation and law system for land informatization are constructed.
- There are many countries considering the land information related to country's basic plan be either revised or complemented.
- Except some countries, the investigation result showed that most countries did not have any significant problem regarding system connection, mutual data exchange etc. among various public institutions.
- As for hardware or network environment, system operation did not contain any significant problem.
- Many countries are pointing out that there are a lot of problems regarding the completeness of data related to land information.
- Many countries are perceiving a need to improve the functions of their existing land management systems.
- The investigated countries remark that various administrative services should be carried out through land informatization and want the land information to be utilized to cover the whole region of the country.

**2. WG4 carried out the analysis on Korea's case of land information system construction and learned some important lessons. Based on the case, the draft of land management framework was proposed. The proposed models are as follows,**

The land management system's framework is a standardized land related information model. This will provide a consistent guideline and a system as a reference in the process of integrating each developing environment and support to realize services utilizing the standard. The framework consists of four reference models and the implementation related document details. The form of standard reference model consists of business reference model, application reference model, data reference model and technical reference model as Figure 1.

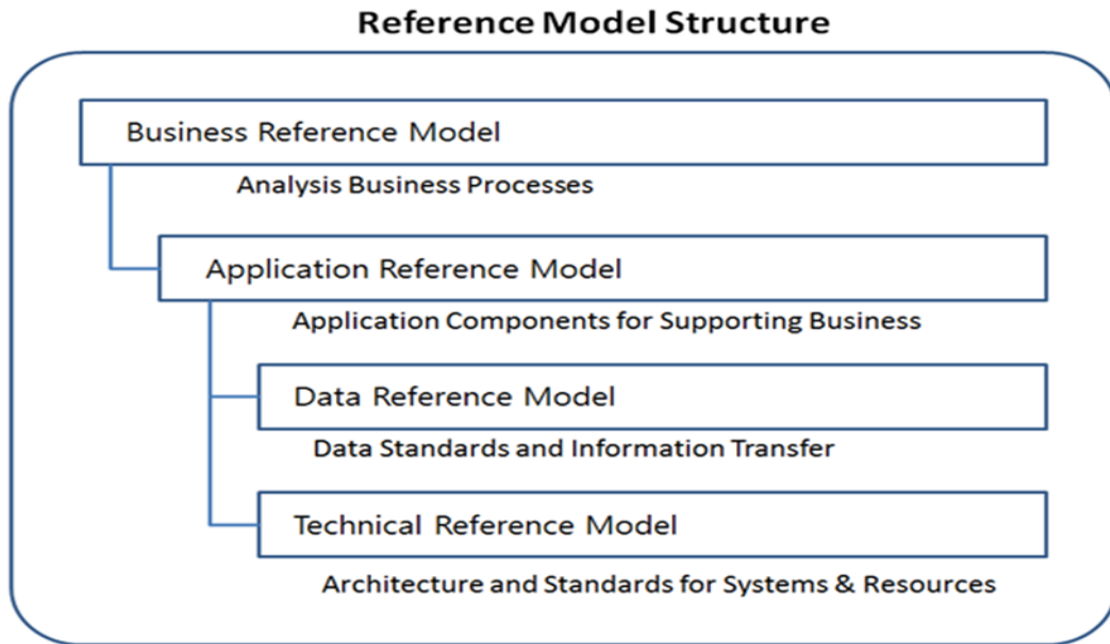


Figure 1. Reference Model Structure of the land information system based on Korea's case

#### 1) Business reference model

The business reference model is a reference model which defines the independent functions of tasks at each organizational unit. The business reference model is made analyzing the roles and the functions of an organization and the overall operation system is constructed by relating them to the functions of the application reference model. The business reference model includes some domains of tasks according to the function of an organization and overall demonstrates the roles, functions, and the flows of information among organizations.

The model is shown in Figure 2.

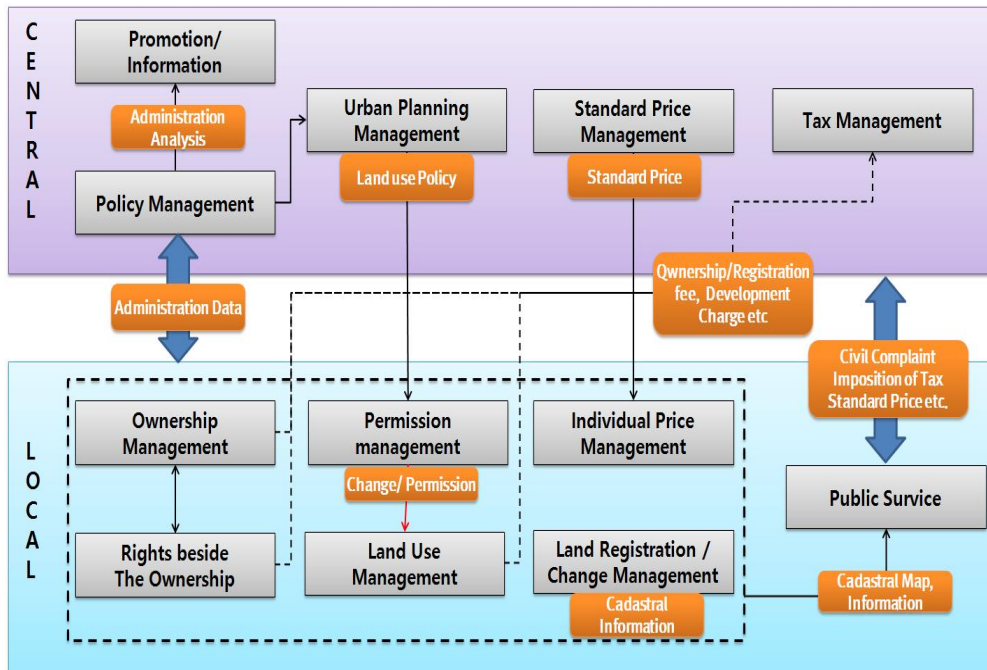


Figure 2. Feature of business reference model for land information

## 2) Application reference model

The application reference model is a reference model which mainly defines the function of tasks that should be independently performed.

The application reference model is a function-oriented approach which is irrelevant to organization and it could be used as a standard to define other architectures. The application reference model divides the whole task into the domains of a couple of task functions.

The model is shown in Figure 3.

## 3) Data reference model

The data reference model is a set of standard data to carry out the business reference and the application reference models. It is used to express all the information necessary for the land management. With the data reference model, we can efficiently manage the data, prevent the duplication of data and it can be efficient for making connections to preexisting and external

data. The model is shown in Figure 4.

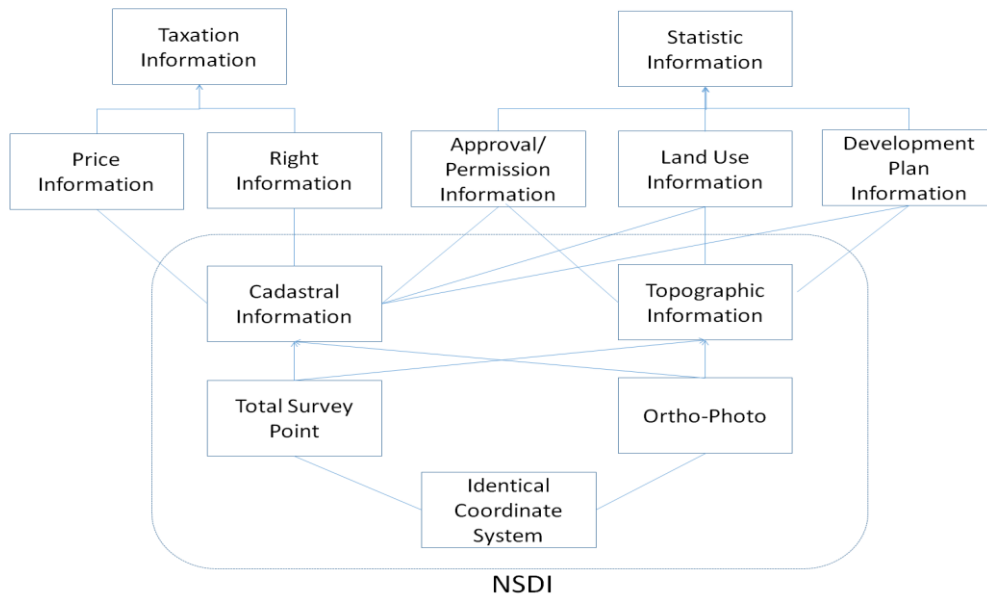


Figure 3. Features of application reference model for land information.

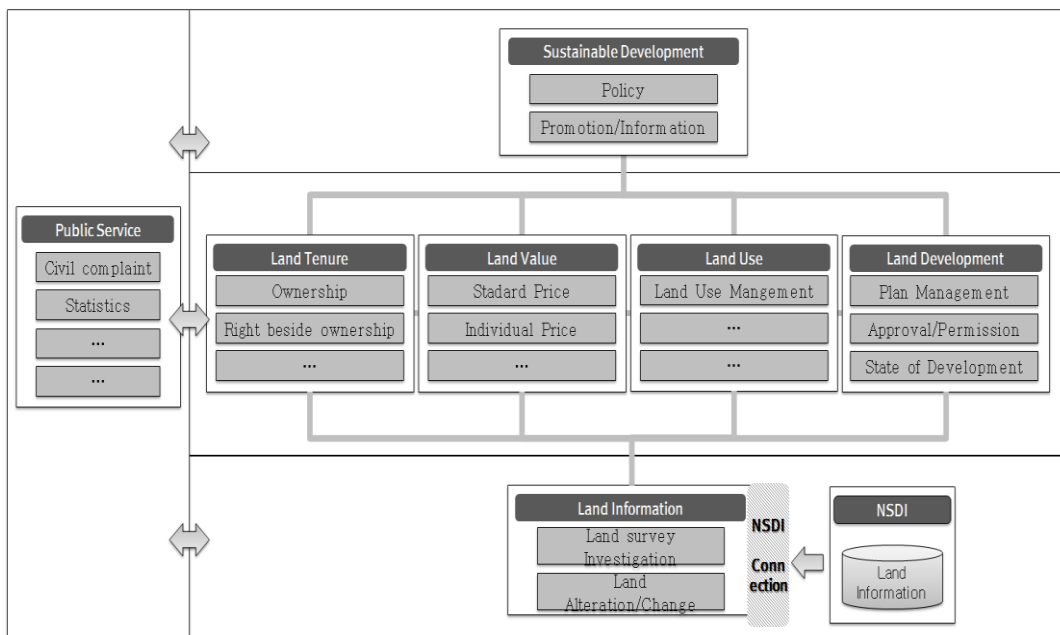


Figure 4. Features of data reference model for land information

#### 4) Technical reference model

The technical reference model is a standard to operate the land management system and design technical infrastructure and the architectures of the hardware and software. The hardware and software which construct the system should be designed separately. It is hard to generalize the hardware and software architectures since they can be designed differently depending on the circumstance of each country. Therefore, the reference model here is presented to the extent that basic structure and functions are demonstrated. The model is shown in Figure 5.

#### Technical Reference Model

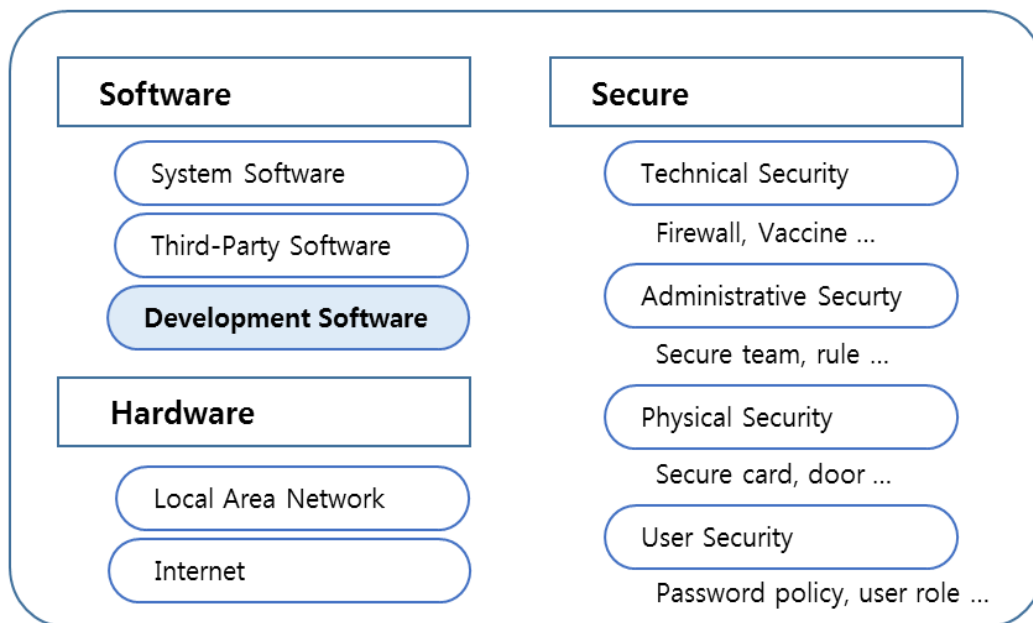


Figure 5. Feature of technical reference model for land information

**3. The Regional workshop on Fit-For-Purpose and Social Tenure Domain Model (STDM) contributed by Malaysia Vice-Chair of WG4 was held in conjunction with UN-GGIM-AP Plenary meeting on 17 October 2016 to disseminate good practices and enhance training and capacity development as follows,**

## **Fit-For-Purpose and STDM Workshop 17 October 2016, Kuala Lumpur - Malaysia**

**Event Organisers - Department of Surveying and Mapping Malaysia (JUPEM)  
United Nations Global Geospatial Information Management for Asia and the Pacific  
(UN-GGIM-AP)**

To National Cadastre and Land Administration Representative,

JUPEM and UN-GGIM-AP jointly hosted a half (1/2) day workshop on Fit-For-Purpose and Social Tenure Domain Model (STDM) on 17 October 2016 in conjunction with the UN-GGIM-AP Plenary meeting, at the Park Royal in Kuala Lumpur, Malaysia.

This half-day workshop was implemented to help the participants better understand and design a fit-for-purpose approach to building sustainable land administration system.

For Fit-For-Purpose and STDM. Topics were as follows,

Fit-For-Purpose concept

- ✓ Components of the Fit-For-Purpose
- ✓ The concept of "Continuum of Continuums"

Demo on STDM covered:

- ✓ Preparation of textual data in MS Excel
- ✓ Importing textual data into STDM
- ✓ Managing entity data
- ✓ Defining hierarchy of administrative units
- ✓ Importing parcel data into LIMS (i.e. shapefile, DXF, GPS points):
- ✓ Creating parcels by digitizing from other spatial data sources
- ✓ Defining tenure relationship between party and spatial unit
- ✓ Querying existing tenure relationships
- ✓ Designing map-based report templates
- ✓ Generating reports using custom templates
- ✓ Recap of report design module