

**FIG Working Week 2012**  
Knowing to manage the territory, protect the environment, evaluate the cultural heritage

**“Investigating the conformity between the Land Administration Domain Model (LADM) and the Vietnamese Land Administration system (LAS)”**

<i>Le Phuong Thuy</i>	<i>Vietnam</i>
<i>Jaap Zevenbergen</i>	<i>The Netherlands</i>
<i>Christiaan Lemmen</i>	<i>The Netherlands</i>
<i>Harry Uitermark</i>	<i>The Netherlands</i>
<i>Tran Quoc Binh</i>	<i>Vietnam</i>



## Research Objectives

Main objective is to investigate the conformity between the Land Administration Domain Model and the Vietnamese Land Administration system. There are three sub-objectives:

- ✓ To determine the similarities and differences between the existing systems in Vietnam (including land law 2003, legal documents, cadastral data standard, and LIS implementations) and LADM.
- ✓ To identify the users' requirements for Vietnamese LA system.
- ✓ To identify the classes in LADM that can be applied directly in Vietnam, and the classes that have to be modified, or extended to suit Vietnamese conditions.

## Research Questions

1. What are the similarities of the goals between the existing systems relevant to Vietnamese LAS and LADM?
2. What are the similarities and differences of the concepts between the existing systems relevant to Vietnamese LAS and LADM?
3. What are the users' requirements for Vietnamese LAS?
4. What LADM classes can be applied directly in Vietnamese LAS?
5. What LADM classes have to be modified to be suitable in Vietnamese LAS?
6. How to design a LA system in conformance with LADM for Vietnamese LAS?

## Research Methodology

- ✓ Literature review: to review the literature that supports this research such as Modern Cadastral vision, LADM, LA systems in Vietnam.
- ✓ Field survey: to collect user requirements through interviews (in Thanh Xuan district and Tan Linh commune, Ba Vi district); to collect documents through offices, and internet.
- ✓ Comparative analysis: to definite the similarities and the differences between LAS in Vietnam and LADM.
- ✓ Consulting experts' opinions.

## Overview of LADM

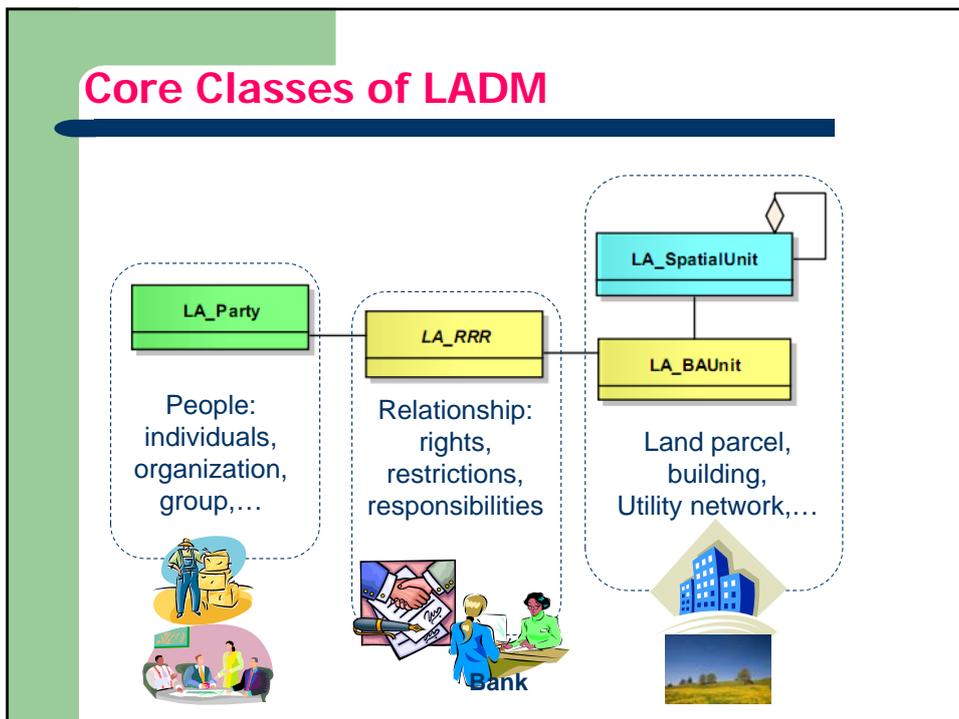
### LADM (Land Administration Domain Model)

- A **conceptual** model
- To show the data related to components of land administration (including cadastral record and land registration)

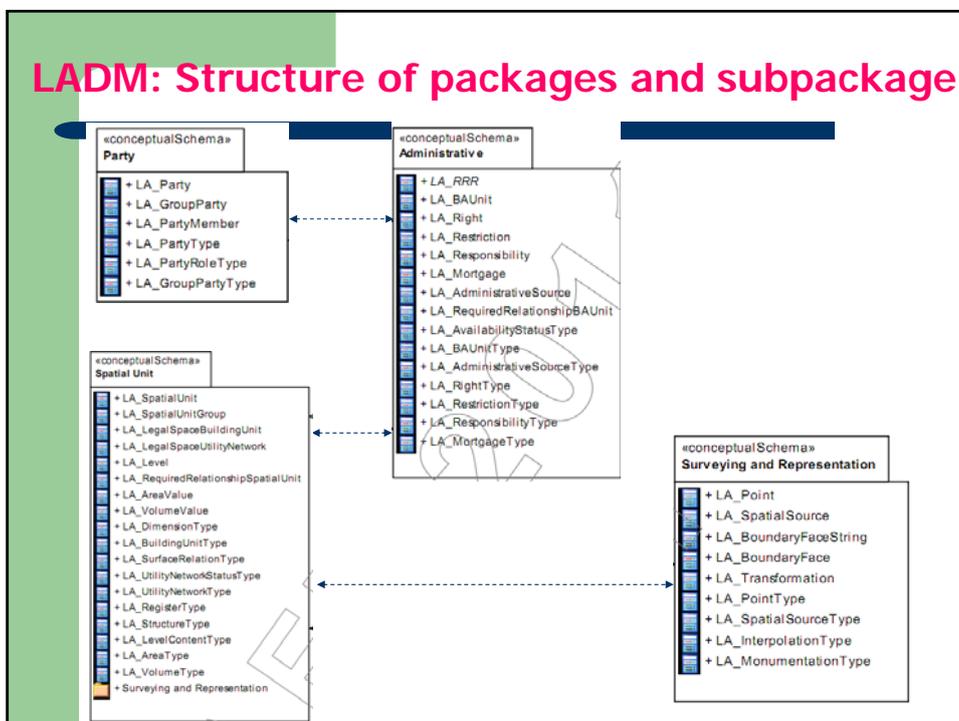
### Objectives of LADM

- Model for building Land Administration Systems (LAS)
- Basis for communication among countries in LA (a Land Administration terminology)

## Core Classes of LADM

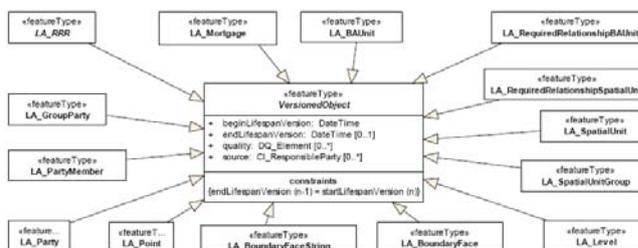


## LADM: Structure of packages and subpackage

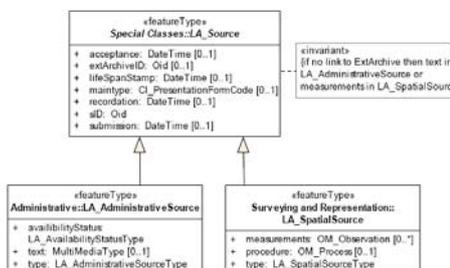


## Special classes in LADM

### VersionedObject Class



### LA\_Source Class



## Related Research

### Country profiles:

- Portugal
- Indonesia
- Japan
- Hungary
- The Netherlands,...

- LADM is considered a Platform Independence Model, it is completely not meant to define a worldwide applicable standard for a Land Administration Information System. Indeed, it must be adapted to each country situation.

- It is important that, if Vietnam wants to apply LADM to its LAS, the conformity between this system and LADM will be investigated.



## Socialist Republic of Vietnam



---

**Location:** the region of Southeast Asia      **Capital:** Hanoi city

**The history of country leads to the complex history of land resource**



## Vietnamese Land Administration System

---

**Characteristic of land ownership**

- Land by law is belonging to all people with the State acting as the representative owner (Land law 2003).
- The owner is the State, the others are right holders or land users.
- The State grant land use rights to land users via the form of land allocation, land lease, and recognition of land use rights for persons currently using the land stably (“**Land use source**”).
- Land use source shows the role of ownership of the State.
- The difference between land parcel and properties associated with land (include buildings, forests, perennials garden). Land users can own properties; however, they can not own their land parcels.

## Vietnamese Land Administration System

### *Land users, land use rights, restrictions, and responsibilities?*

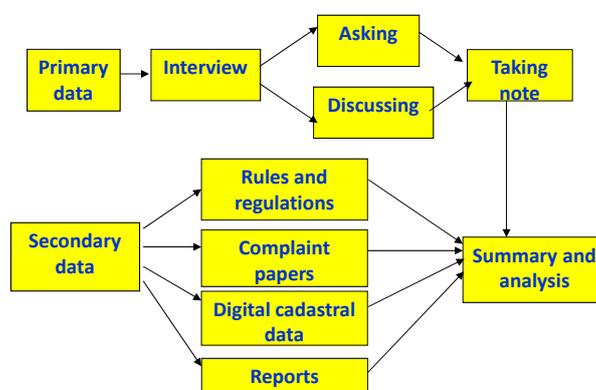
- **Type of land users:** domestic organizations, households, individuals, communities, religious establishments (e.g. pagodas), foreign organizations with diplomatic functions, Vietnamese residing overseas who invest in Vietnam, foreign organizations and individuals investing in Vietnam.
- **Rights:** exchange, assign, lease, sub-lease, bequeath and donate a land use right; right to mortgage, guarantee and contribute capital using land use rights; and the right to be paid compensation when the State recovers land.
- Depending on the type of land users and **the type of land use source** as well as financial contribution to the government, land users might have full rights or less.

## Users' requirements for LAS in Vietnam

Main places to collect data: Thanh Xuan district and Tan Linh commune (Hanoi).

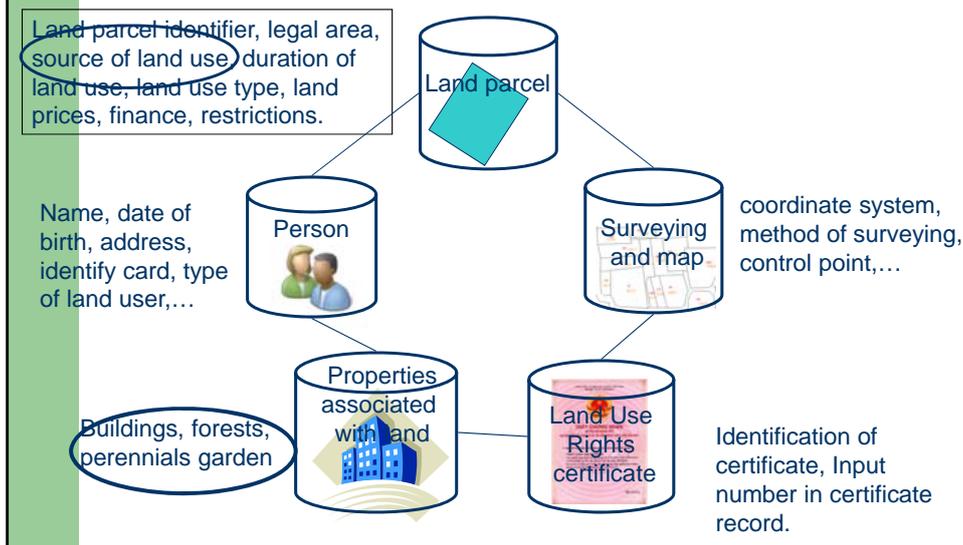
Thanh Xuan → urban area

Tan Linh → rural area



## Users' requirements for LAS in Vietnam

### 5 groups of information



## Similarities and differences between LADM and Vietnamese LAS

### Similarities

- **in terms of the goal** → to serve requirements supporting a modern economic-social development, and to connect among the local governments and the levels of the land management system.
- **in terms of the concepts** → the main relationship between people and parcels via rights, restrictions, and responsibilities (RRR class); the same concepts of objects or classes related to land (party, spatial units, rights,...)

### Differences

- the attributes of classes
- types in the code lists

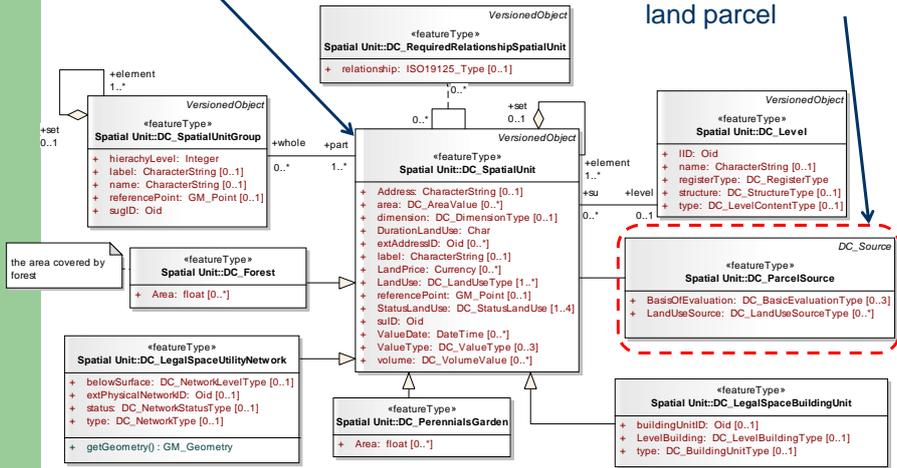
Due to the characteristic of land ownership, land law, ...



## Spatial Unit package, Vietnam country profile

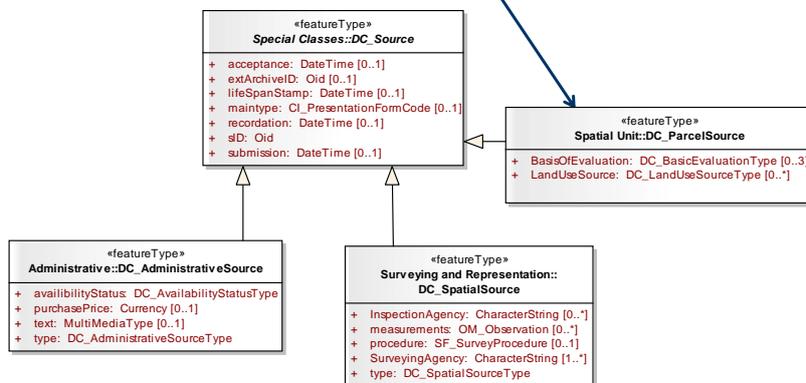
Some new attributes based on the users' requirements

To show the legal properties related to the land parcel

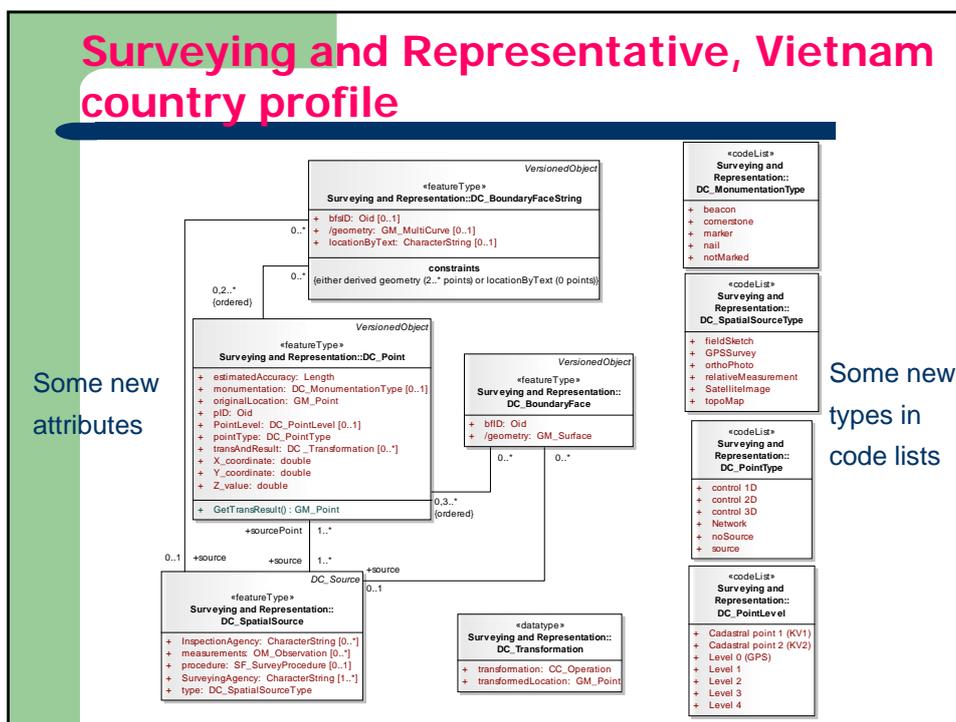


## DC\_Source, Vietnam country profile

DC\_ParcelSource is also the subclass in DC\_Source (similar LA\_Source in LADM)



## Surveying and Representative, Vietnam country profile



## Conclusion

- ✓ LADM provides the general conceptual schemas for land administration in turn to lay foundation to establish a land data infrastructure system.
- ✓ It can be seen that the adoption of LADM in Vietnam is possible.
- ✓ There are **17 classes can be applied directly** (*DC\_Party, DC\_GroupParty, DC\_PartyMember, DC\_RRR, DC\_Right, DC\_Restriction, DC\_Responsibility, DC\_Mortgage, DC\_BAUnit, DC\_AdministrationSource, DC\_RequiredRelationshipBAUnit, DC\_RequiredRelationshipSpatialUnit, DC\_Level, DC\_SpatialUnitGroup, DC\_LegalSpaceUtilityNetwork, DC\_BoundaryFaceString, and DC\_BoundaryFace*) and **14 classes should be modified** (*DC\_PartyType, DC\_PartyRoleType, DC\_GroupPartyType, DC\_RightType, DC\_RestrictionType, DC\_ResponsibilityType, DC\_AdministrativeSourceType, DC\_SpatialUnit, DC\_LegalSpaceBuildingUnit, DC\_NetworkType, DC\_RegisterType, DC\_Point, DC\_SpatialSource and DC\_PointType*)

## Conclusion

- ✓ Vietnam country profile shows the characteristics of land ownership that land belongs to all people and the role of the State as owner via the new proposed class named “DC\_Parcel Source”.
- ✓ Moreover, to present the properties associated with land more complete; this research also adds two new classes, which are DC\_Forest and DC\_PerennialGarden. They are subclasses of DC\_SpatialUnit.
- ✓ This research is considered as the initial research to find out the conformity between LADM and Vietnamese LAS. In the future, these results should be validated through the specific model and system.

**THANK YOU FOR  
YOUR ATTENTION!**