ANALYSIS OF THE APPLICATION OF THE LADM IN THE BRAZILIAN URBAN CADASTRE: A CASE STUDY FOR THE CITY OF ARAPIRACA – BRAZIL

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INTRODUCTION

LAND ADMINISTRATION IN BRAZIL

CADASTRE

URBAN

No legislation
Local administration

RURAL

Federal Legislation
Federal Administration

LAND REGISTRY

FEDERAL LEGISLATION

Private Offices
This paper explores the potentialities of the LADM and its application on the Brazilian urban cadastre (according to Portaria 511).
THE BRAZILIAN CADA斯特RE – Some Aspects

- Law 10.267/01: georeferencing of rural parcels, the exchange for information with the land registry; creation of the National Cadastre of Rural Properties, which includes sharing of information with other cadastre.

- Portaria 511/2009: land unity to be registered, cadastral mapping, multipurpose use of the cadastre, management and financing of the cadastre, and land evaluation. It is a guiding document, not obligatory.

Establishing standards for modeling a land administration system is a challenge for Brazil. The aim of this study was to evaluate the application of LADM on urban cadastres.
Case Study: ARAPIRACA – AL (Northeast Region)

Why Arapiraca?
It is applying concepts proposed by the Portaria 511 to its urban cadastre, which are compatible with the LADM proposal.
THE CADASTRE OF ARAPIRACA

- Implementation of urban cadastre
- Cadastral maps – 1:2.000, photogrammetric survey
- Updating the cadastral database (according to Portaria 511)

Arapiraca is one of the first Brazilian municipalities to validate the applicability of Portaria 511.
APPLICATION OF THE LADM IN THE CADASTRE OF ARAPIRACA

The principal classes LA Party, LA_RRR and LA_SpatialUnit were modeled. For each class, an analysis of attributes was carried out to identify those which are compatible with the data of the cadastre of Arapiraca:

**LA_Party**
- The responsible for inserting data
- The person related to the parcel
- Group of people to whom the parcel is related
- People who are part of the group

**LA_SpatialUnit**
- address
- administrative unit
- reference system

**LA_RRR**
- Rights: property, possession
- Restrictions: urban, environmental, historical heritage.
- Mortgages
LA_Party
LA_RRR
RESULTS AND DISCUSSION

The validation of the proposed model was achieved from tests applied to some specific situations.

The analysis of the relation between the attribute packages of the LADM and the database of the cadastre was carried out to identify the integration between them.
Case 1: Right of inheritance – a parcel that belongs to a group of people

LA-Party:

- LA_Party: Edicelia Lima
  - Type: Pessoa Física
- LA_Party: Verusca Lima
  - Type: Pessoa Física
- LA_GroupParty: FamiliaLima
  - LA_Right: Formal de Partilha
    - Type: Propriedade
- LA_BAUnit: FamiliaLima
- LA_SpatialUnit
  - suID: 145
  - Area: 052
  - Address: Rua Fernandes Lima, 119, Centro

LA-SpatialUnit:

the parcel related on the map
Case 2: Validation of the modeling of the RRR for a mortgage

The LA_Party was constituted by the tenant and by the financing institution (Caixa Econômica Federal).
CONCLUSIONS

• The results of the implementation of the cadastre model of Arapiraca by using the principles of LADM, demonstrated the viability of its use. It is important to emphasize that the LADM was compatible also with the concepts of Portaria n. 511.

• This work showed the potential of the model as an instrument to share information and to understanding the rights, restrictions and responsibilities which are pertinent to each portion of the land.

• Brazil still has a long way to go with respect to the standardization of cadastral units and the promotion of the exchange of information with land registries. The dissemination of a model such as the LADM would greatly contribute to the consolidation of a more efficient land administration system.
Thank you very much:

To the City Hall of Arapiraca,
for making available the data used in this study;

To the LADM 2013 organization committee, for the opportunity to present this work;

For your attention!

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