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

**Juciela C. SANTOS and Andrea F.T CARNEIRO, Brazil;
Alex J.B ANDRADE, Cape Verde**



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INTRODUCTION

LAND ADMINISTRATION IN BRAZIL

CADASTRE

LAND
REGISTRY

URBAN

RURAL

FEDERAL
LEGISLATION

No legislation
Local
administration

Federal Legislation
Federal
Administration

Private Offices



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INTRODUCTION

2009

- Guidelines for the creation, institution and update of the Multipurpose Cadastre in Brazilian municipalities (*Portaria 511 of Ministry of Cities*)

2012

- ISO 19.152 - LADM

This paper explores the potentialities of the LADM and its application on the Brazilian urban cadastre (according to Portaria 511).



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THE BRAZILIAN CADASTRE – Some Aspects

Rural cadastre

- 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.

Urban 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.

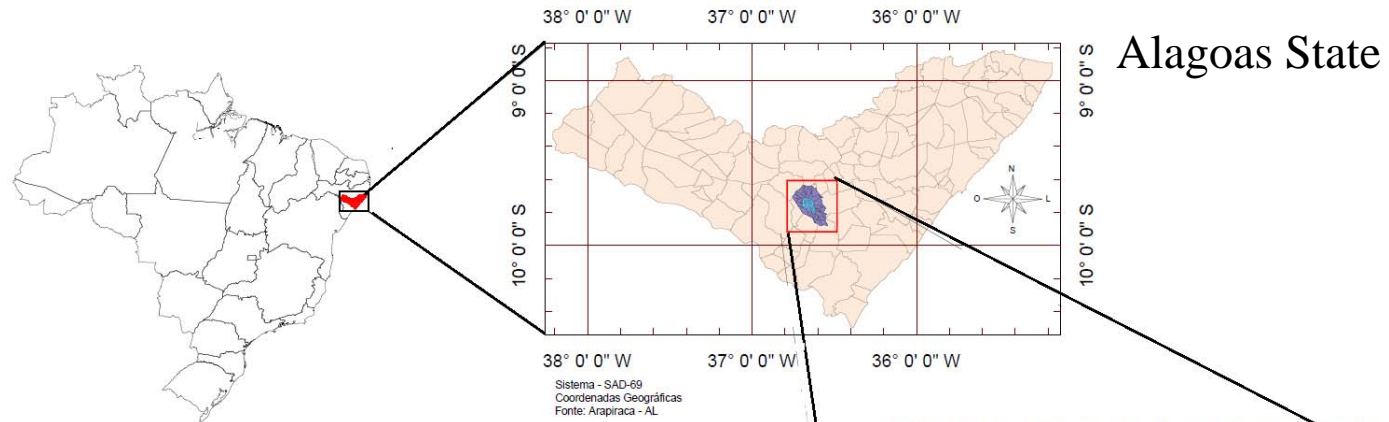
Establishing standards for modeling a land administration system is a challenge for Brazil. The aim of this study was to evaluate the application of LADM on urban cadastres



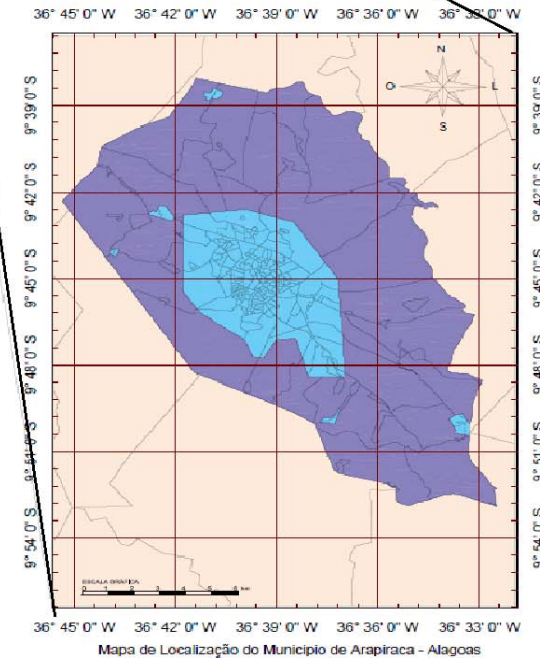
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Case Study: ARAPIRACA – AL (Northeast Region)



Arapiraca and its urban area



Why Arapiraca?

It is applying concepts proposed by the *Portaria 511* to its urban cadastre, which are compatible with the LADM proposal.



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THE CADASTRE OF ARAPIRACA

1984

- Implementation of urban cadastre

2006

- Cadastral maps – 1:2.000, photogrammetric survey

2010

- updating the cadastral database (according to Portaria 511.

Arapiraca is one of the first Brazilian municipalities to validate the applicability of Portaria 511.



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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

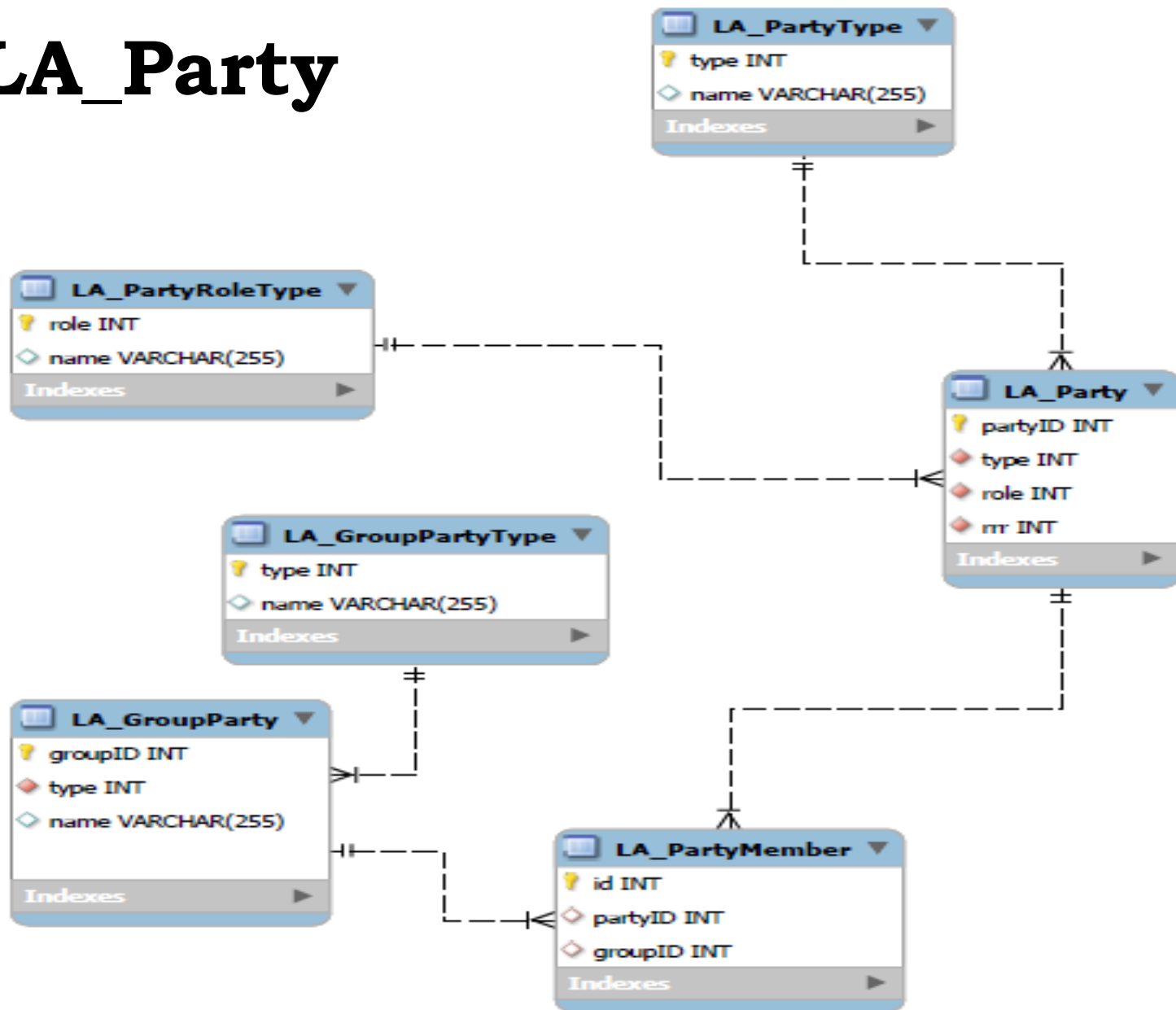
- Rights: property, possession
- Restrictions: urban, environmental, historical heritage.
- Mortgages



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LA_Party

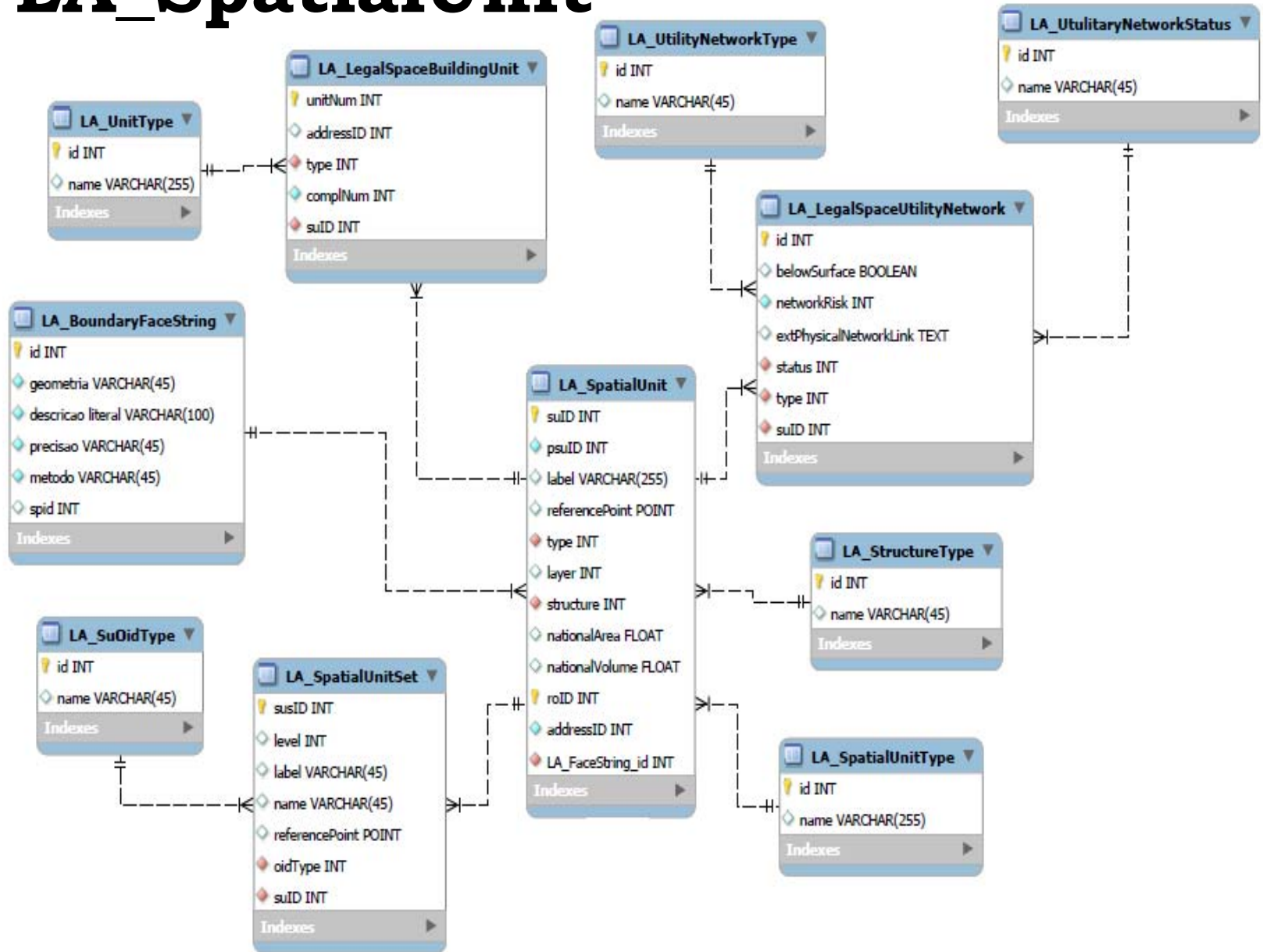




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LA_SpatialUnit

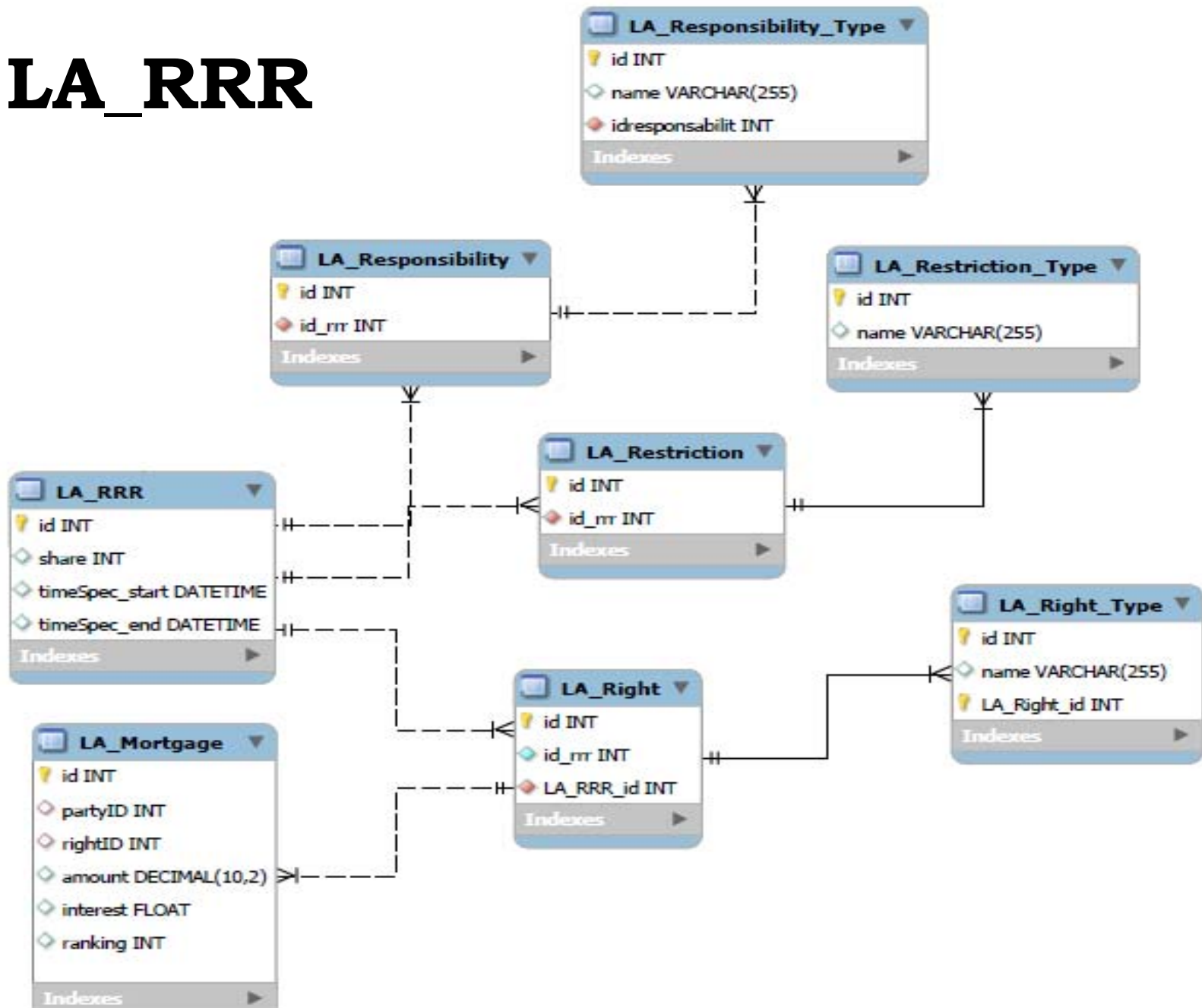




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LA_RRR





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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.

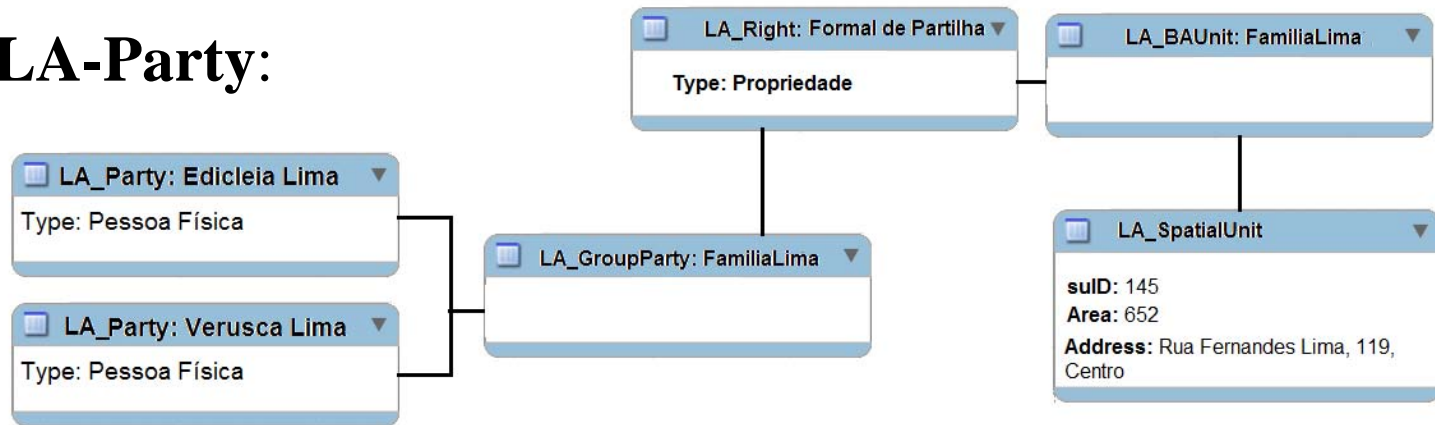


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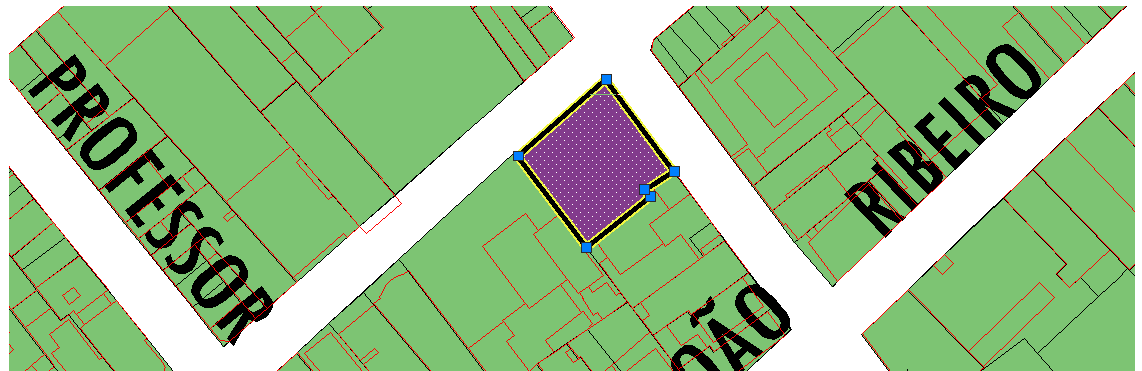
Case I: Right of inheritance – a parcel that belongs to a group of people

LA-Party:



LA-SpatialUnit:

the parcel
related on the map



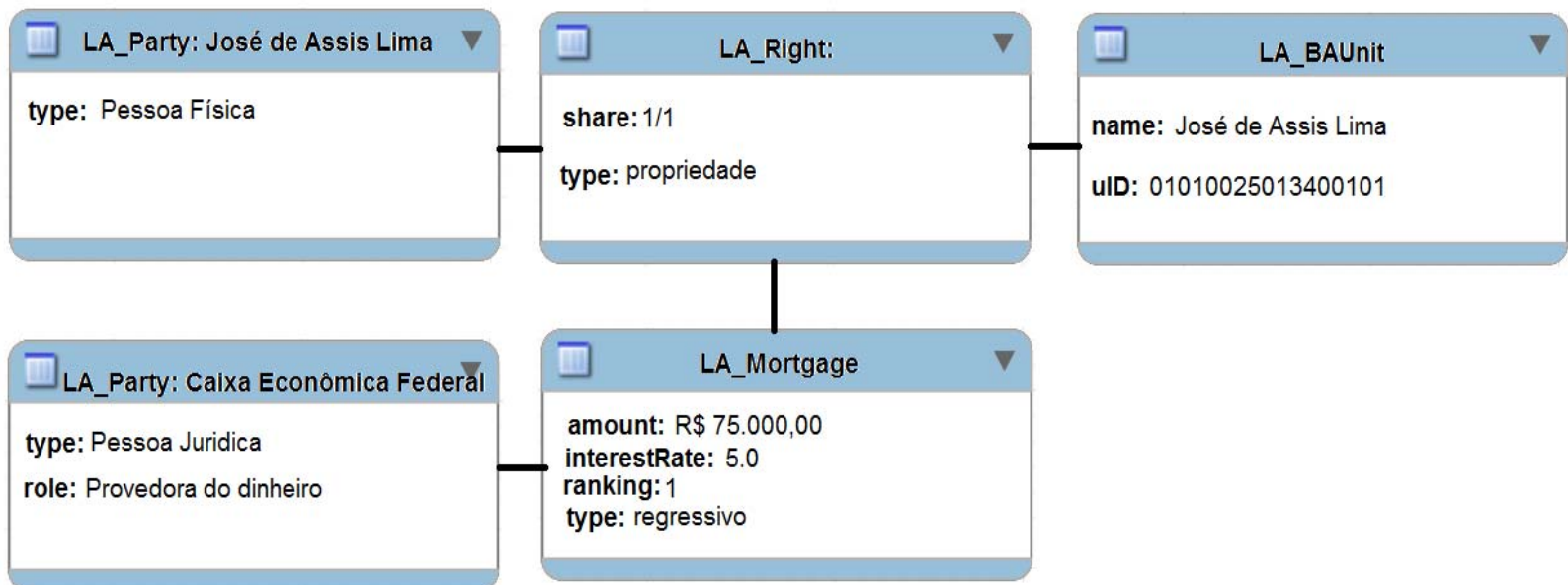


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Case 2: Validation of the modeling of the RRR for a mortgage

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





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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



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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!

Juciela Santos, Andrea Carneiro Alex Andrade

