INTEROPERABILITY ISSUES RELATED TO LADM PROFILED IMPLEMENTATIONS – A FIRST EXPLORATION

Peter OUKES, Christiaan LEMMEN and Erwin FOLMER

8th International FIG workshop on the Land Administration Domain Model
1-3 October 2019, Kuala Lumpur, Malaysia
Introduction

Peter Oukes
Kadaster (NL)
IT Architect
MSc Information and Management
Agenda

Interoperability Observations
Standards
Challenges
Practices
Approach
Interoperability means loosely coupled systems with components that are connected and can interact but still contain their own logic of operation (Chen, Doumeingts, & Vernadat, 2008). Interoperability can be contextualized in concepts as coexistence, autonomy and a federated environment, whereas integration refers more to the concepts of coordination, coherence and uniformization (Chen, Doumeingts, & Vernadat, 2008).

The CEN/ISO 11354-1:2011 (2011) ‘the ability of enterprises and entities within those enterprises to communicate and interact efficiently’. EC (2017) ‘the ability of organizations to interact towards mutually beneficial goals, involving the sharing of information and knowledge between these organizations, through the business processes they support, by means of the exchange of data between their ICT systems’.
The Athena framework (2007)

Source: The ATHENA Interoperability Framework. In R. J. Gonçalves, J. P. Müller, K. Mertins & M. Zelm (Eds.). *Enterprise Interoperability II - New Challenges and Approaches*
CEN/ISO standard 11354-1:2011

The Athena framework


Challenges operationalization

Time, cost, effort
Stakeholders connected
Citizen-centric approaches
Organization has its own IS
Connecting Old IS and new IS
User friendly
LADM to Land profile

Figure 4: Modularization of the LADM-COL.

Source: MDSEA - Architecture for interoperability and alignment of service system
Modeling and translation

Effort:
- Land profile
- Translation
- Tools
- Standard languages
- Experts / Automation

Source: MDSEA - Architecture for interoperability and alignment of service system
Approach

Minimum needed in local profile?

Configuration

Testing use cases

Collecting

light weight communication

Easy to Translate, generate and update

Freeware tools

mapitGIS
Approach

Create a minimal Core profile from LADM ISO standard 19152 which is basis in 90% of local situation, extendable and backward compatible, with existing (freeware) tools with no expert knowledge.

In an easy way generate that minimal core model into functional schema which is the basis for Services and data storage.

Based on experiences and publications, generate the services for stakeholders and citizens and Data structures for a registration.

For Field Collecting apps create a minimal profile which is configurable from the core system, downloadable on any mobile device and use light weight communication standards and data formats so can also be used in Local and Mobile Networks with limited capacity.

The development, implementation and testing of these use cases to prove and adjust interoperability in land administration.