LANTMÄTERIET

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Specialization of the Land Administration Domain Model (LADM)
## *A Legal approach*
16-5-2013

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FIG Working Week, Environment for Sustainability
6 – 10 May 2013, Abuja, Nigeria.

TUDelft Delft University of Technology

Challenge the future

Land Administration Domain Model ISO 19152 (LADM)

- Model includes:
  - Spatial part (geometry, topology)
 - Extensible frame for legal/admin parts

LA_Party

LA_RRR

LA_SpatialUnit

LA_BAUnit
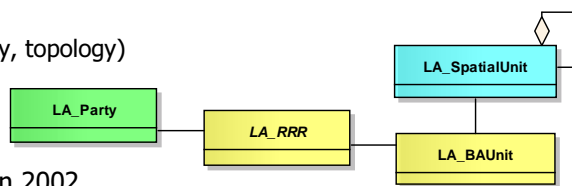
- Stared within the FIG in 2002

- FIG proposed LADM to ISO/TC211, January 2008 (parallel voting in ISO TC211 and CEN TC287)

cen

- Published by ISO, December 2012

- Includes integrated 2D and 3D support

ISO ISO/TC 211
Geographic information/Geomatics

LADM: Administrative (legal) package

- RRR (Right Restriction Responsibility) has associations with Party (Person) and Basic Administrative Unit (and indirectly to SpatialUnit)
- RRRs are in principle based on legal documents or decisions
- A RRR can be temporal

ss Administrative Package
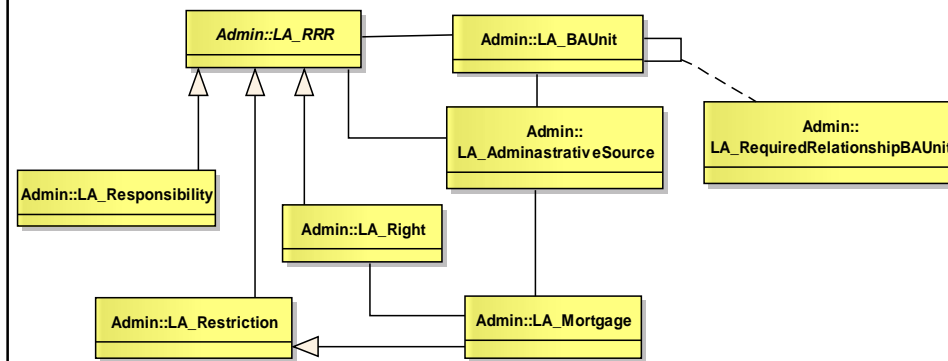
The LADM provide a rather coarse classification

- Right
  "action, activity or class of actions that a system participant may perform on or using an associated resource"

- Restriction
  "formal or informal obligation to refrain from doing something"

- Responsibility
  "formal or informal obligation to do something"

Legal Cadastral Domain Model (LCDM)

- A more detailed classification of rights, restrictions and responsibilities than LADM

- Based on how they influence ownership ← central concept

- *PhD-thesis Jesper Paasch (KTH, September 2012)*
  Standardization of Real Property Rights and Public Regulations
 *– The Legal Cadastral Domain Model*

Some rights and restrictions

(from Sweden, Ireland, Germany, the Netherlands and Portugal)

Possibility of reverter   *Easement*   *B.P. right*

Beschränkte persönliche Dienstbarkeiten   *Freehold covenant*

Ownership   *Erbbaurecht*

Grunddienstbarkeit   *Gemensamhetsanläggningar*

Servidão de Estilicio   *Profít á pendre*

Wayleave   *Niessbrauch*   *Erfdienstbaarheid*

Servitut   *Bearbetningskonsession*   *Building lease*

Right of entry or re-entry   *Vruchtgebruik*   *Rentenschuld*

Leasehold   *Detaljplan*

Emphyteusis   *Mortgage*   *Opstal*   *Grundschuld*

Reallast   *Usufruct*   *Erfpacht*   *Lien*   *Right of pre-emption*

Warning: temporarily non-LADM notation/naming (PhD-thesis Paasch)

Real property right

Public regulations
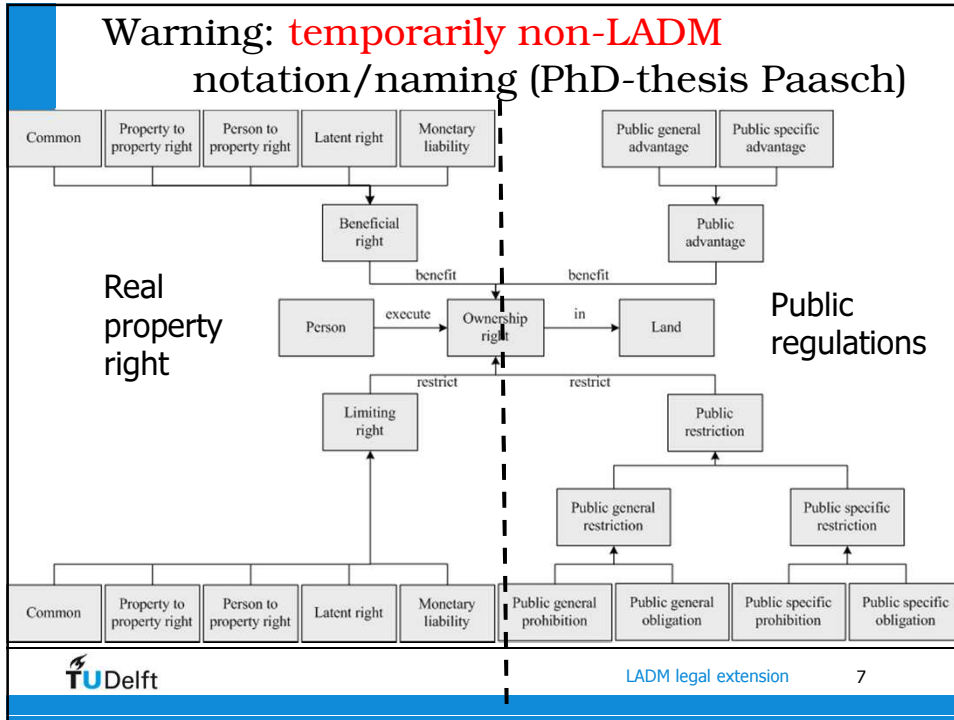
Real property right classes

+ benefit

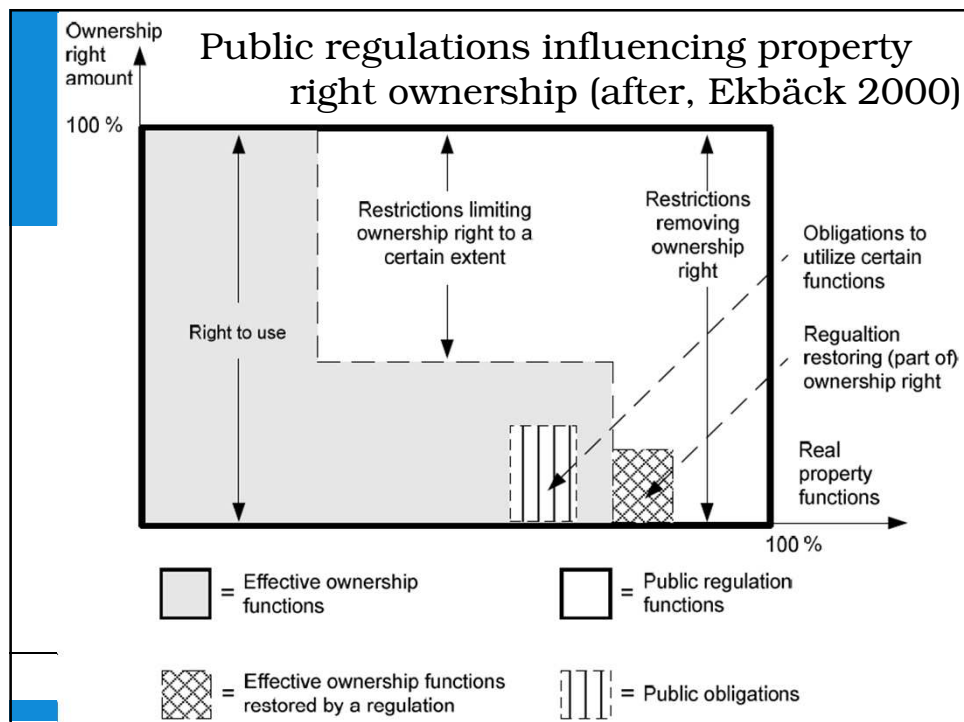**- restrict**
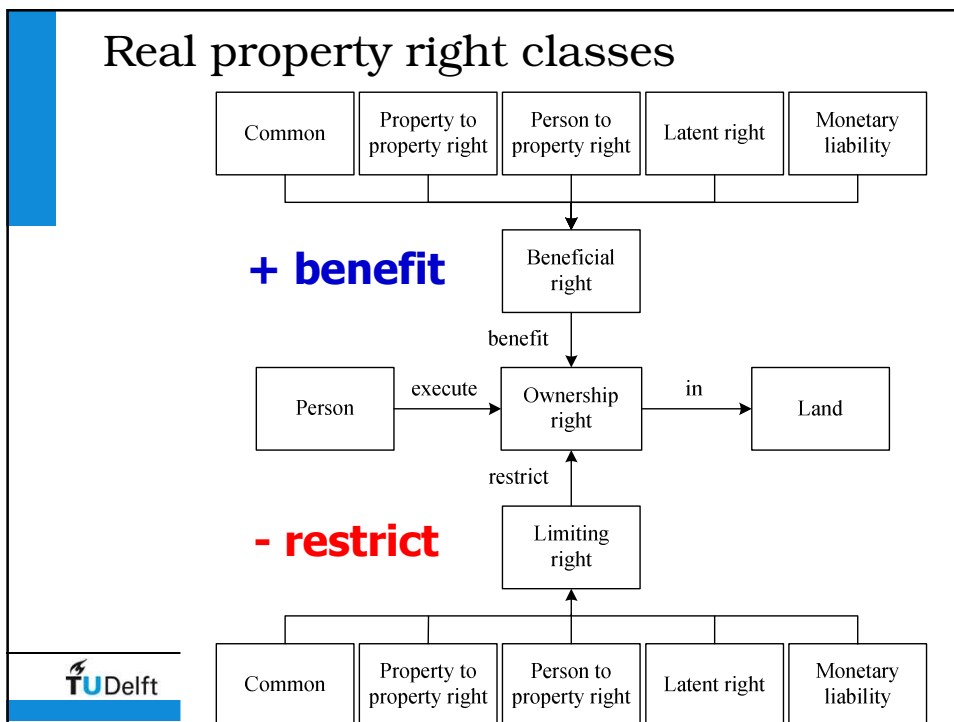
Private interests in LCDM are divided into five groups, examples

1. Common
   → e.g. be a property jointly owned by other properties
2. Property to property right
   → e.g. an easement
3. Person to property right
   → e.g. a personal use right
4. Latent right (is a right not executed yet)
   → e.g. a pre-emption right
5. Monetary liability (is a financial claim)
   → e.g. a mortgage.

Full definitions are provided in PhD-thesis Paasch

Public regulations influencing property right ownership (after, Ekbäck 2000)

Public regulation classes

+ benefit

- restrict

- General: regulation at class (type) level
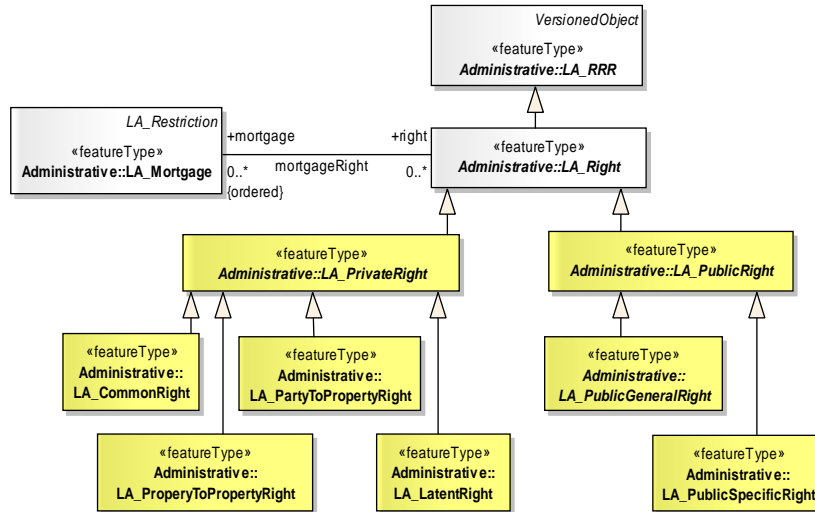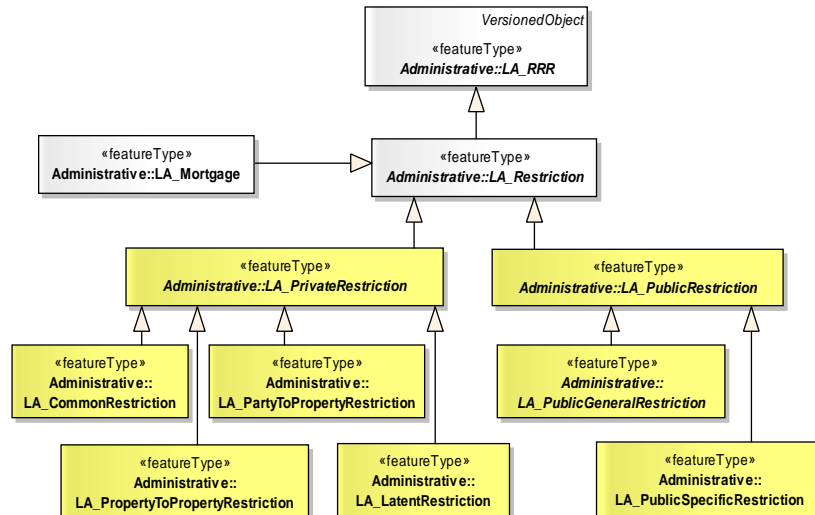- Specific: regulation by decision at instance (set) level

- Obligation: must do
- Prohibition: must refrain

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```
Public general          Public specific
advantage               advantage
        |                   |
        +--------+----------+
                 |
                 v
            Public
            advantage
                 |
               benefit
                 |
                 v
Person --execute--> Ownership --in--> Land
                    right
                 ^
               restrict
                 |
            Public
            restriction
                 |
        +--------+----------+
        |                   |
  Public general      Public specific
  restriction         restriction
     ^                   ^
     |                   |
  +--+--+             +--+--+
  |     |             |     |
Public  Public      Public   Public
general general     specific specific
prohibition obligation prohibition obligation
```

LADM Legal Profile

- Based on the Legal Cadastral Model Classification

- LCDM naming aligned with LADM terminology

- Monetary liability mapped to LA_Mortgage (more broad interpretation)

- Modeled in UML class diagrams
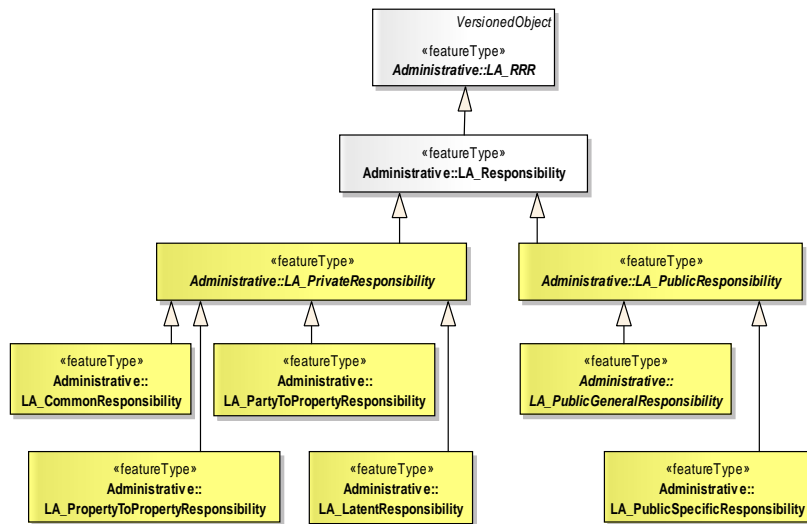 Note the use of *abstract* and concrete classes

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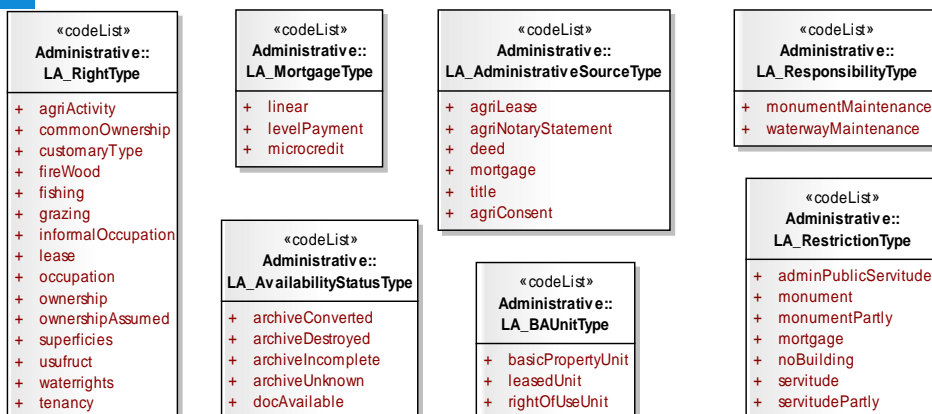## LA_Right extended profile for privately and publicly imposed rights

VersionedObject
«featureType»
Administrative::LA_RRR

LA_Restriction
«featureType»
Administrative::LA_Mortgage

+mortgage   +right
0..* mortgageRight 0..*
{ordered}

«featureType»
Administrative::LA_Right

«featureType»
Administrative::LA_PrivateRight

«featureType»
Administrative::LA_PublicRight

«featureType»
Administrative::LA_CommonRight

«featureType»
Administrative::LA_PartyToPropertyRight

«featureType»
Administrative::LA_ProperyToPropertyRight

«featureType»
Administrative::LA_LatentRight

«featureType»
Administrative::LA_PublicGeneralRight

«featureType»
Administrative::LA_PublicSpecificRight

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LADM legal extension   13

LA_Restriction extended profile for privately and publicly imposed restrictions

VersionedObject
«featureType»
Administrative::LA_RRR

«featureType»
Administrative::LA_Mortgage

«featureType»
Administrative::LA_Restriction

«featureType»
Administrative::LA_PrivateRestriction

«featureType»
Administrative::LA_PublicRestriction

«featureType»
Administrative::LA_CommonRestriction

«featureType»
Administrative::LA_PartyToPropertyRestriction

«featureType»
Administrative::LA_PropertyToPropertyRestriction

«featureType»
Administrative::LA_LatentRestriction

«featureType»
Administrative::LA_PublicGeneralRestriction

«featureType»
Administrative::LA_PublicSpecificRestriction

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LADM legal extension   14

LA_Responsibility extended profile privately and publicly imposed responsibilities

VersionedObject
«featureType»
Administrative::LA_RRR

«featureType»
Administrative::LA_Responsibility

«featureType»
Administrative::LA_PrivateResponsibility

«featureType»
Administrative::LA_PublicResponsibility

«featureType»
Administrative::LA_CommonResponsibility

«featureType»
Administrative::LA_PartyToPropertyResponsibility

«featureType»
Administrative::LA_PublicGeneralResponsibility

«featureType»
Administrative::LA_PropertyToPropertyResponsibility

«featureType»
Administrative::LA_LatentResponsibility

«featureType»
Administrative::LA_PublicSpecificResponsibility

LADM's current code lists for Administrative Package (annex J.2)

«codeList»
Administrative::LA_RightType

+ agriActivity
+ commonOwnership
+ customaryType
+ fireWood
+ fishing
+ grazing
+ informalOccupation
+ lease
+ occupation
+ ownership
+ ownershipAssumed
+ superficies
+ usufruct
+ waterrights
+ tenancy

«codeList»
Administrative::LA_MortgageType

+ linear
+ levelPayment
+ microcredit

«codeList»
Administrative::LA_AvailabilityStatusType

+ archiveConverted
+ archiveDestroyed
+ archiveIncomplete
+ archiveUnknown
+ docAvailable

«codeList»
Administrative::LA_AdministrativeSourceType

+ agriLease
+ agriNotaryStatement
+ deed
+ mortgage
+ title
+ agriConsent

«codeList»
Administrative::LA_BAUnitType

+ basicPropertyUnit
+ leasedUnit
+ rightOfUseUnit

«codeList»
Administrative::LA_ResponsibilityType

+ monumentMaintenance
+ waterwayMaintenance

«codeList»
Administrative::LA_RestrictionType

+ adminPublicServitude
+ monument
+ monumentPartly
+ mortgage
+ noBuilding
+ servitude
+ servitudePartly

Code lists need further structuring and formalization

- Should there for every of the 6 leaf and 2 non-leaf subclasses of LA_Right be separate code lists?
- Same questions for LA_Restriction and LA_Responsibility?
- Can code lists inherit from corresponding parent code lists?
- How to add country specific code list values (related to the standard code list values)?
- How to deal with country profiles in which standard code list are not applicable?

- For code lists related to the *abstract leaf* classes:
  these code list values encode public (general) regulations!

Summing up

- The extended model is suitable for classification of real property rights and public regulations (at least in Western legal systems), based on the case study results

- The model should be further tested in other legal systems

- Applying the "correct" terminology is important and an ongoing

- Code lists with values for types of rights, restrictions and responsibilities need further structuring and formalization

- LCDM does extend the LADM standard and has been integrated

Annex F (informative) Legal profiles

- Restrictions (Figure F.2)
- Looks familiar?
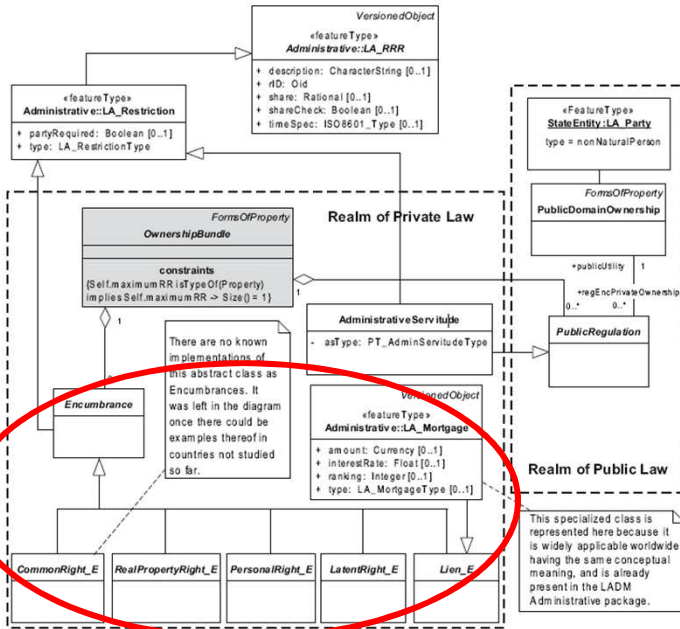
Legal Families in Europe

Newman and Thornley (1996)

Finally published 1 December 2012..

INTERNATIONAL STANDARD
ISO 19152

First edition 2012-12-01

Geographic information — Land Administration Domain Model (LADM)

Information géographique — Modèle du domaine de l'administration des terres (LADM)
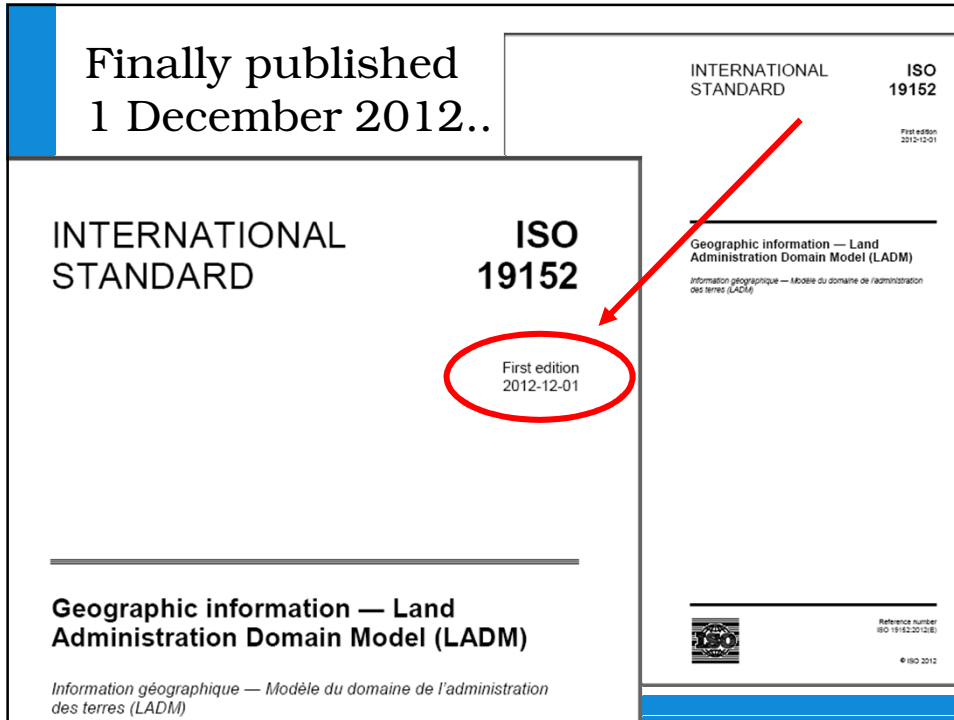
LADM Voting Results by ISO/TC 211 Members

Voting ISO 19152	New Work Item Proposal 2 May 2008	Committee Draft 12 October 2009	Draft International Standard 27 June 2011	Final Draft International Standard 30 November 2012
Approve:	15	22	26	30
Disapprove:	6	3	2	0
Abstain:	4	4	4	3
Not Voted:	7	3	0	0