



# Progress Report on the Revision of the Land Administration Domain Model (LADM)

**International Seminar on United Nations Global  
Geospatial Information Management  
*Effective Land Administration*  
Singapore – 17 and 19 May 2022**

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Peter van Oosterom**



# Agenda

- Who are ISO/TC 211 Geographic Information/Geomatics Committee
- ISO 19152 LADM and its various parts
- UNGGIM and FELA
- LADM Examples of use

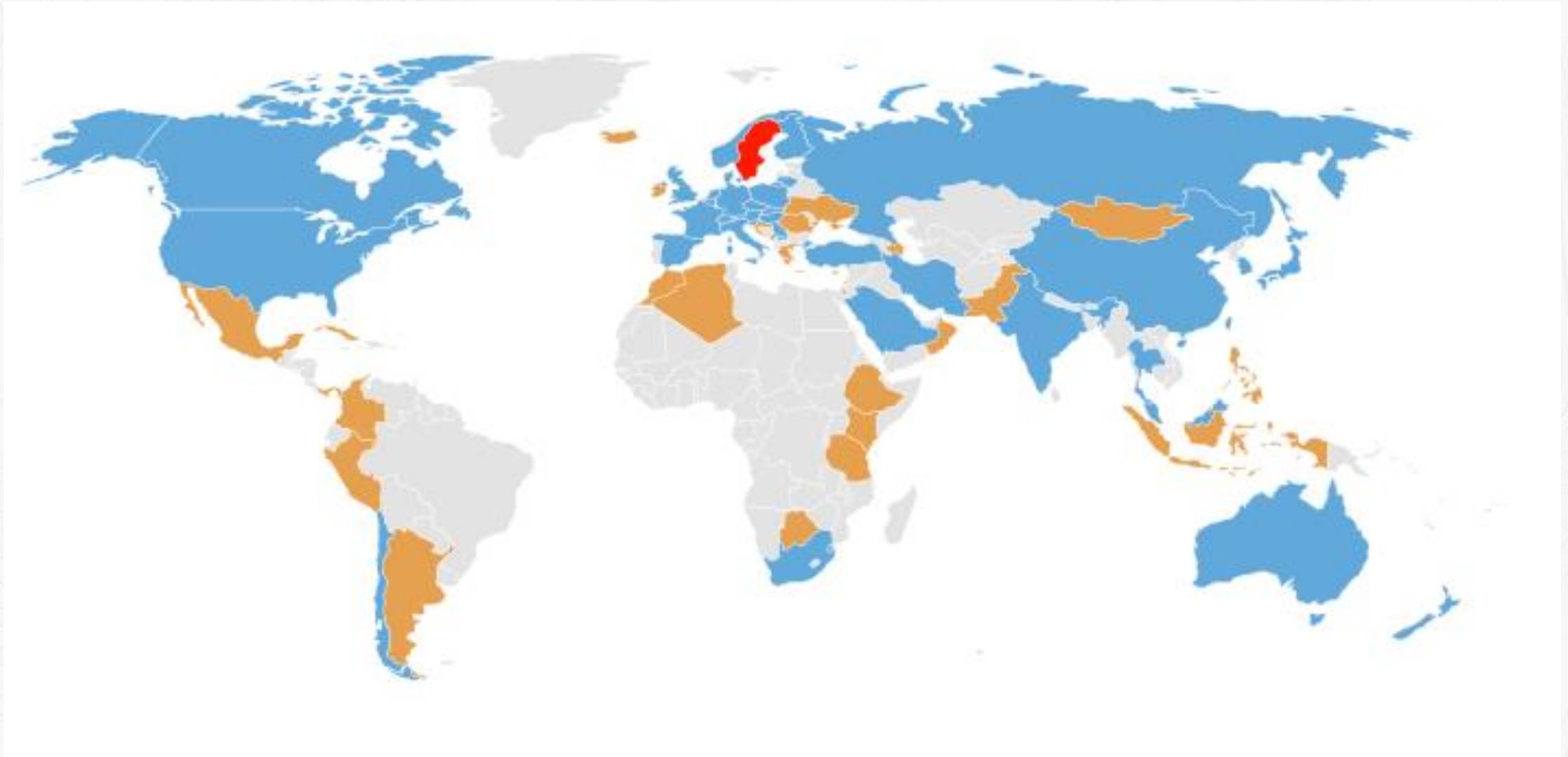


# ISO/TC 211

## Scope

- Standardization in the field of digital geographic information.
- This work aims to establish a structured set of standards for information concerning objects or phenomena that are directly or indirectly associated with a location relative to the Earth.
- These standards may specify, for geographic information, methods, tools and services for data management (including definition and description), acquiring, processing, analyzing, accessing, presenting and transferring such data in digital/electronic form between different users, systems and locations.
- The work shall link to appropriate standards for information technology and data where possible, and provide a framework for the development of sector-specific applications using geographic data.

# ISO/TC 211 Membership

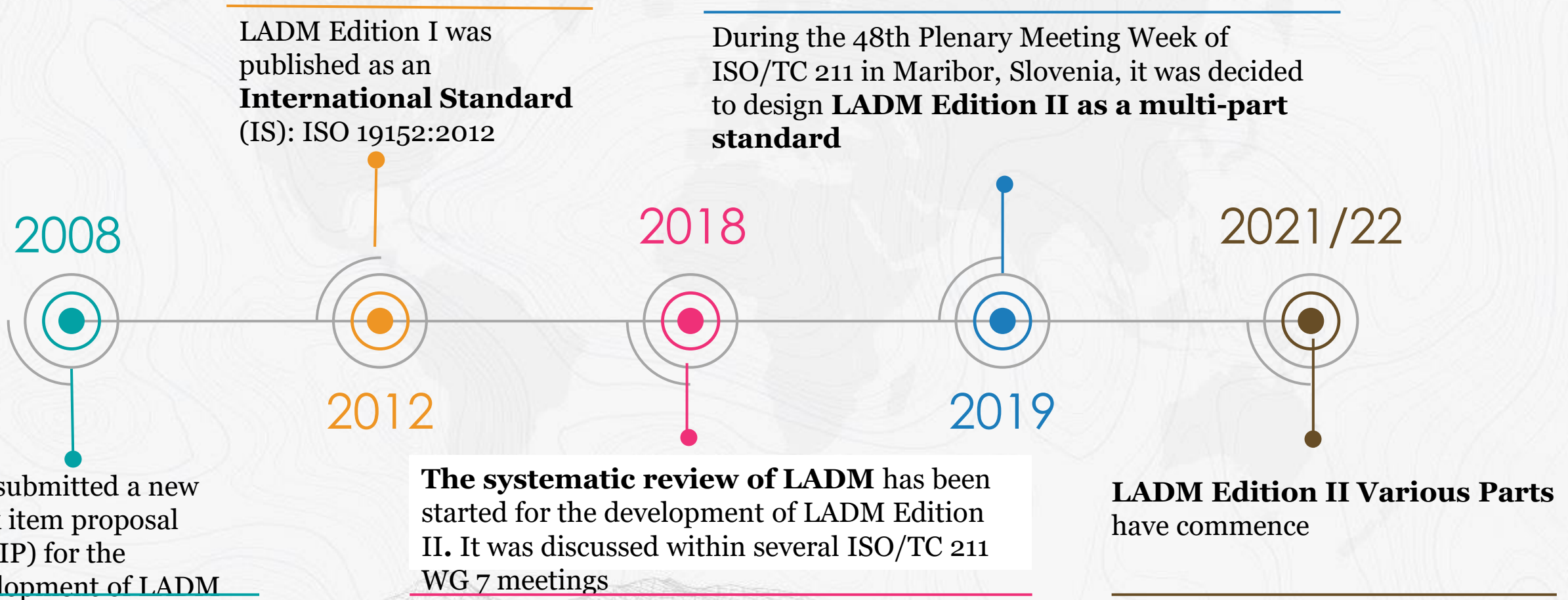


# ISO 19152 LADM Parts

- Land Administration Domain Model (LADM) Parts
  - Part 1 – Generic Conceptual Model
  - Part 2 – Land Registration
  - Part 3 – Marine Georegulation
  - Part 4 – Valuation Information
  - Part 5 – Spatial Plan Information
  - Part 6 – Implementations

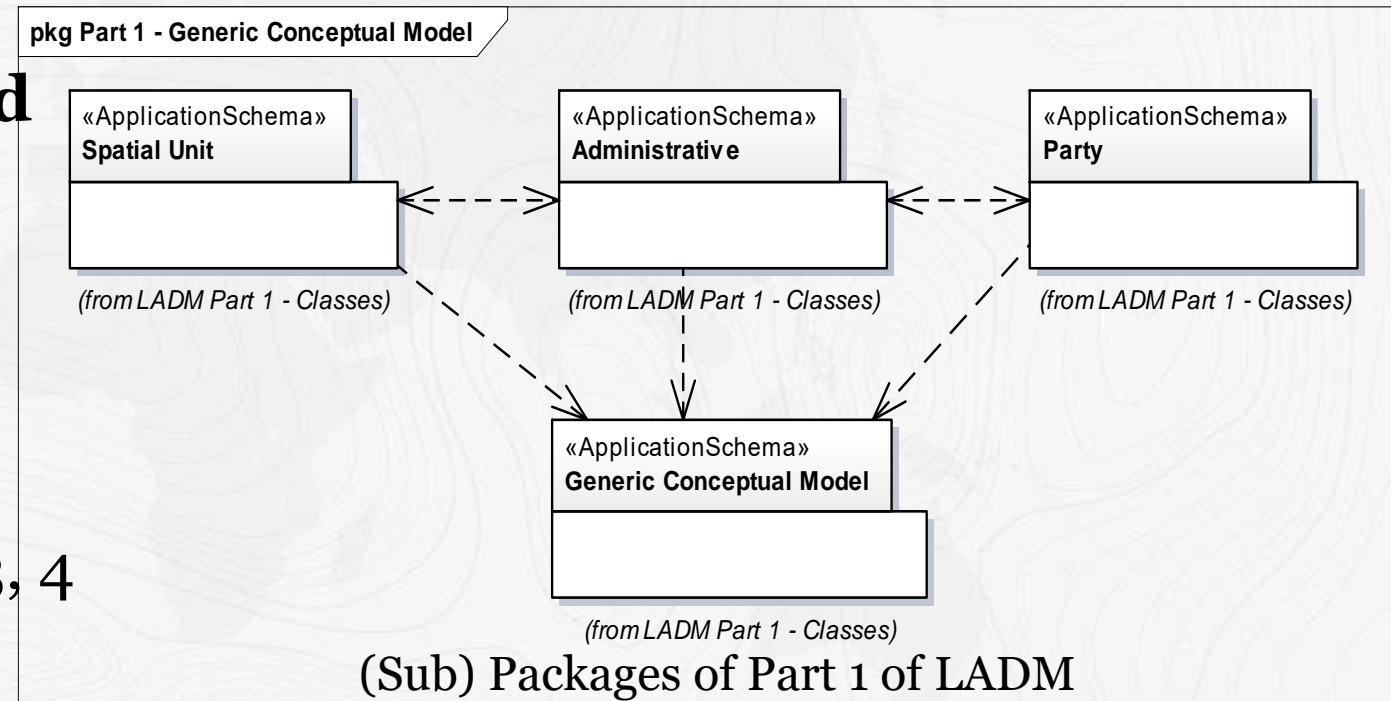


# Development timeline of the Land Administration Domain Model (LADM)



# ISO 19152 LADM – Part 1: Generic Conceptual Model

- A **high-level umbrella standard** that supports all the other parts of the LADM Edition II.
- **Backward compatible** with the LADM Edition I.
- It includes overview for the each parts of LADM Edition II (Part 2, 3, 4 and 5).



# ISO 19152 LADM – Part 1: Generic Conceptual Model

- defines a reference Land Administration Domain Model covering basic information-related components of land administration
  - including those over water and land, and:
  - elements above and below the surface of the earth
- provides an abstract, conceptual model with four packages:
  - parties: people and organizations
  - basic administrative units, rights, responsibilities, and restrictions: ownership rights
  - spatial units: parcels, and the legal space of buildings and utility networks, and:
  - surveying and representations: geometry and topology

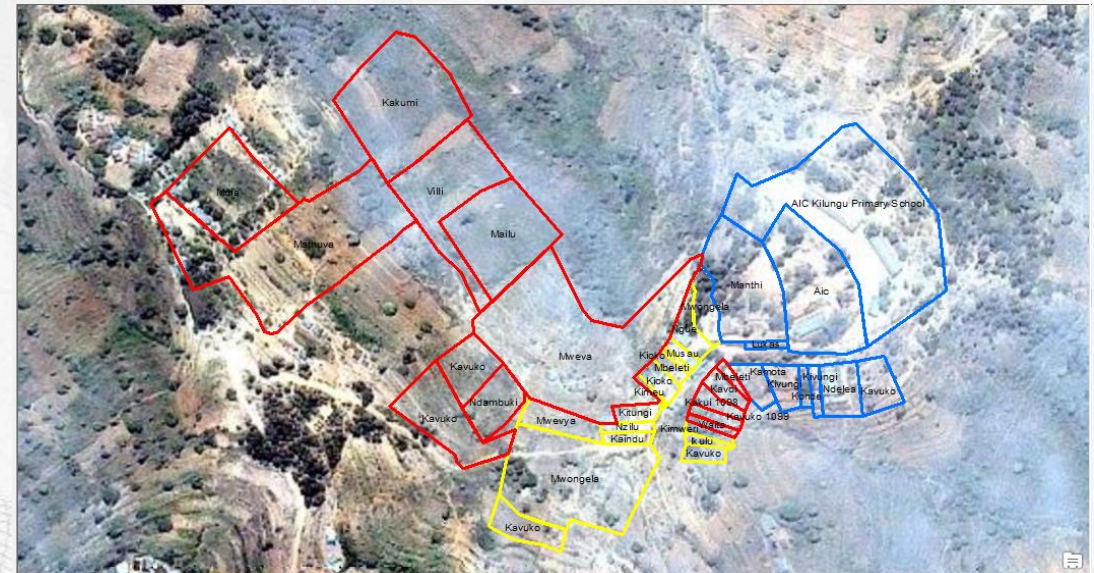


# ISO 19152 LADM – Part 1: Generic Conceptual Model

- provides terminology for land administration
  - based on various national and international systems
  - as simple as possible in order to be useful in practice
  - allows a shared description of different formal or informal practices and procedures in various jurisdictions
- provides a basis for national and regional profiles; and:
- enables the combining of land administration information from different sources in a coherent manner

# ISO 19152 LADM – Part 1: Generic Conceptual Model

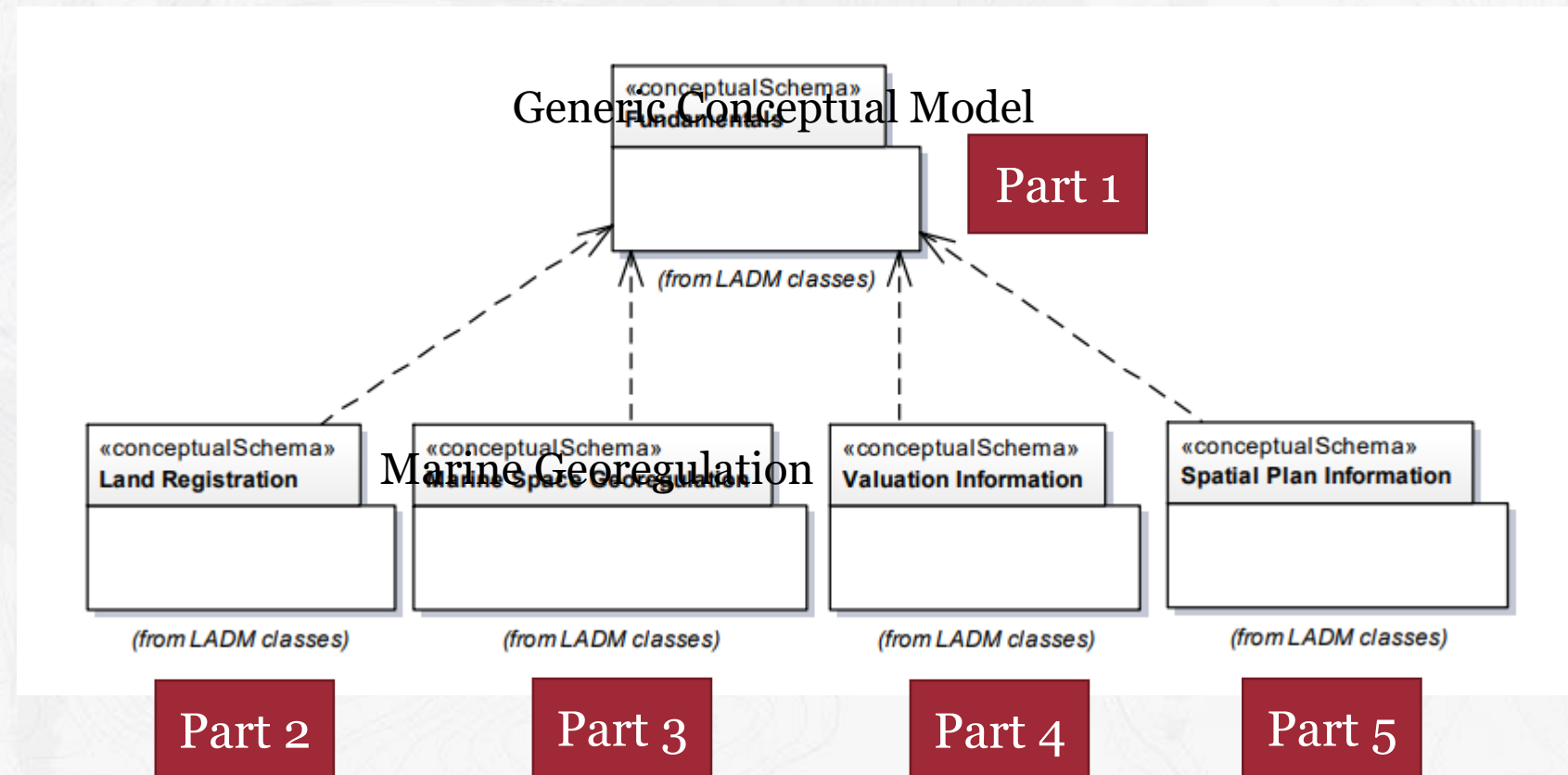
- Global vocabulary for land administration – knowledge model
- All people to land relationships – tenure certainty for all
- Implementation in distributed organisational environment





# LADM Edition II Part 1 and the other Parts

- All the concepts and definitions given in the Part 1 – Generic Conceptual Model is be used as basis by the other Parts of LADM Edition II.



# ISO 19152 LADM – Part 1: Generic Conceptual Model

- The Project manager Chris Body and editors Peter van Oosterom, Christiaan Lemmen, Abdullah Kara
- Countries contributing: Australia, Canada, China, Finland, Republic of Korea, New Zealand, Norway, Sweden, UK, US and FIG
- Committee Draft was reviewed during Jan-Mar 2022 and Draft International Standard will be submitted to ISO in the coming weeks.

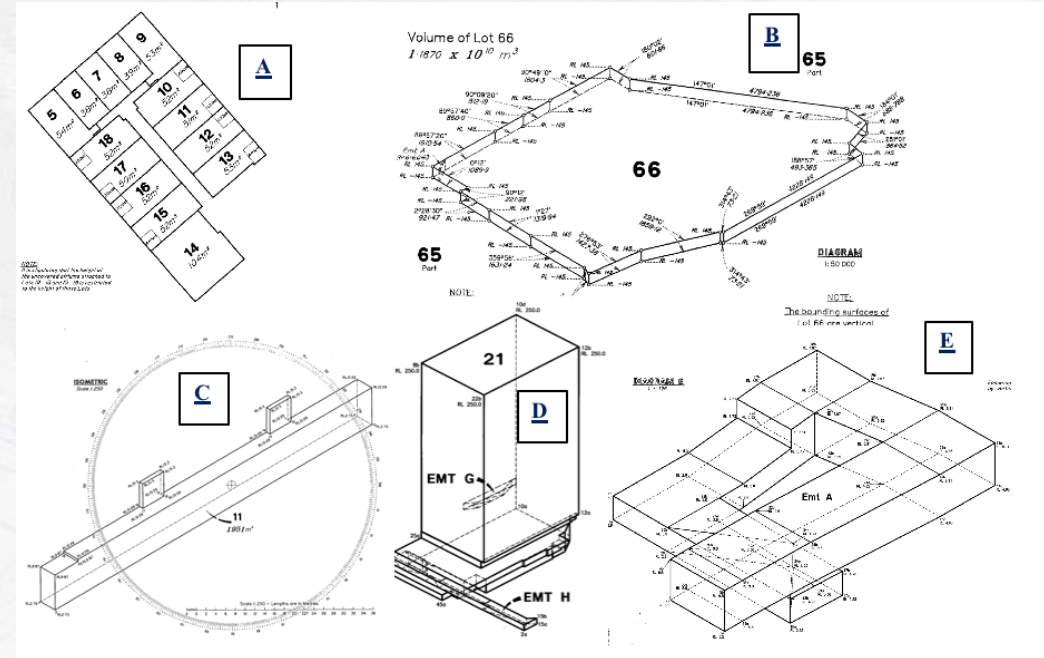


# ISO 19152 LADM – Part 2: Land Registration

- Part 2 extends the concepts from Part 1 with some refinements from LADM Edition I
- New subclasses for LA\_SpatialUnit
- Refined survey model (derived from OGC's LandInfra/InfraGML standard)

# ISO 19152 LADM – Part 2: Land Registration

- Refinements in Part 2
  - semantically enriched and versioned code list (metamodel for refined code list using the definitions of SKOS)
  - integration of the LADM and OGC's IndoorGML (Alattas et al., 2018)
  - a set of possible representations of spatial units in 2D, 3D or mixed dimension (Kalogianni et al., 2021)
  - legal spaces in buildings
  - refined legal profiles
  - interface classes for SDG Land Indicators





# ISO 19152 LADM – Part 2: Land Registration

- The Project manager Christiaan Lemmen and editors Peter van Oosterom, and Abdullah Kara
- Countries contributing: Canada, China, Finland, France, Germany, New Zealand, Sweden and US
- New Proposal issued for ballot Oct 2021 and was passed Jan 2022
- Editing committee will convene in Jun 2022 to start work developing a Working Draft

# ISO 19152 LADM – Part 3: Marine Georegulation

- Part 3 provides the concepts and structure for standardisation for georegulation in the marine space.
  - It will address the information structure related to management of legal spaces such as the international maritime limits and boundaries, marine living and non-living resources management areas, marine conservation area and their related rights and obligations.
  - References and use the work by IHO S-100 Universal Hydrographic Model and S-121 Marine Limits and Boundaries and United Nations Convention on the Law of the Sea.
  - Provide a model for representing rights, restrictions and responsibilities within the context of the marine space.



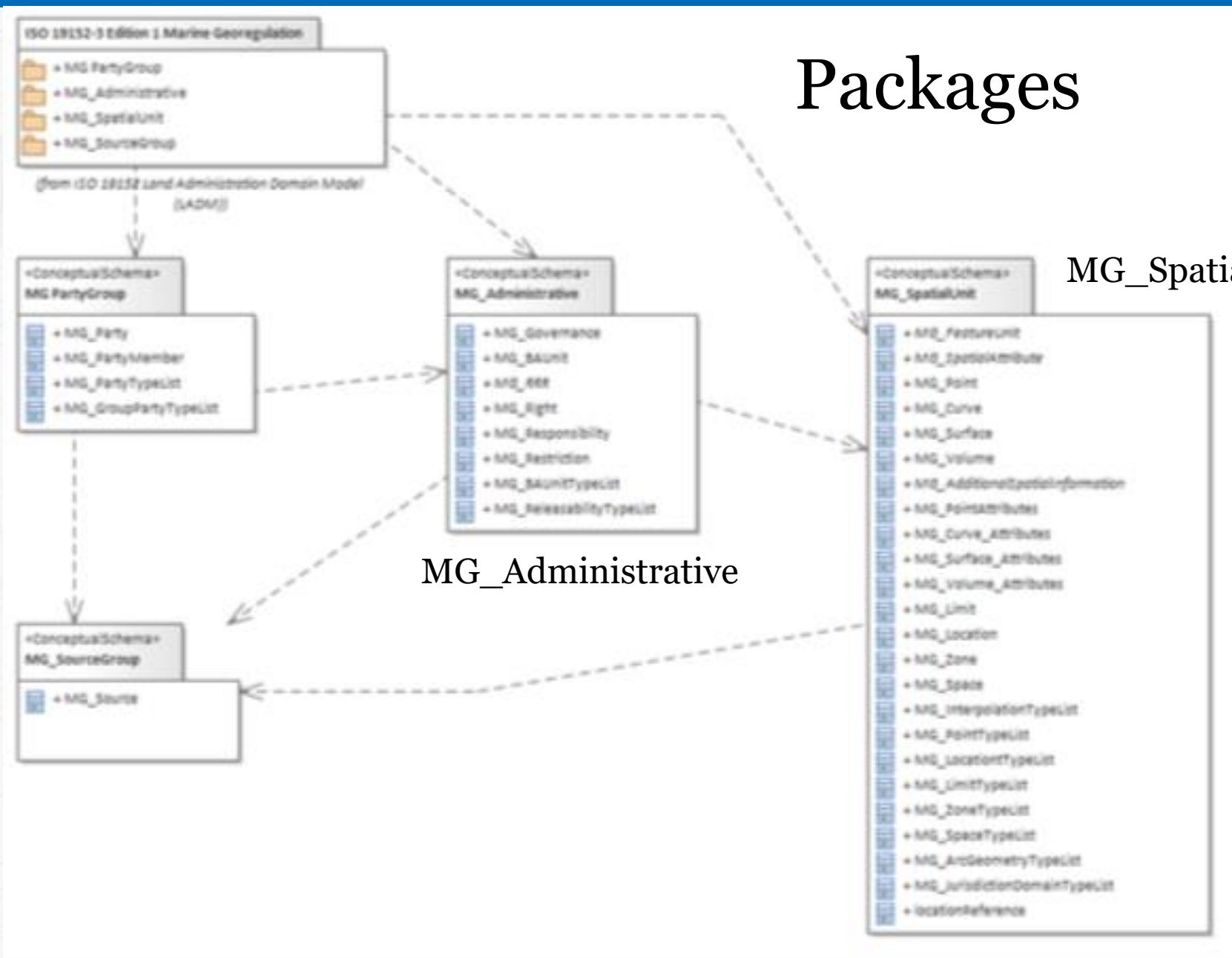
# Packages

MG PartyGroup

MG\_SpatialUnit

MG\_Administrative

MG\_SourceGroup



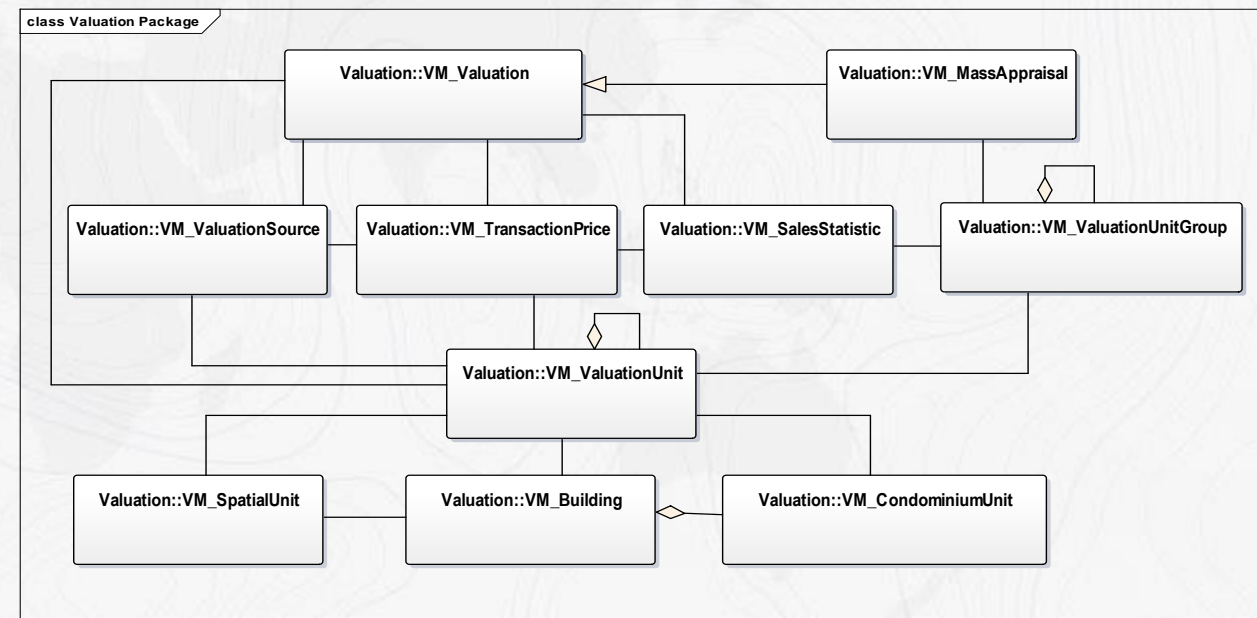
# ISO 19152 LADM – Part 3: Marine Georegulation

- The Project manager Chris Body and editors Douglas O'Brien, & Jean-François Beaupré
- Countries contributing: Australia, Canada, China, France, Germany, Republic of Korea and US
- New Proposal issued for ballot Jan 2022 and was passed Apr 2022
- It is anticipated work will start in June to develop a Working Draft document



# ISO 19152 LADM – Part 4: Valuation Information

- Part 4 is designed to represent **all stages of administrative property valuations** (input and output data in valuation processes).
- It also includes basic **components of property valuation systems** (e.g. transaction prices, sales statistics, etc.).



# ISO 19152 LADM – Part 4: Valuation Information

- The Project manager Christiaan Lemmen and editors Peter van Oosterom, and Abdullah Kara
- Ballot closes early Jun 2022



# ISO 19152 LADM – Part 5: Spatial Plan Information

- The Preliminary Work Item (PWI) is expected to be submitted mid to late May by FIG

# ISO 19152 LADM – Part 6: Implementation

- OGC and ISO/TC 211 will arrange workshops/meetings over the coming months to better understand the requirements from industry and software developers to support LADM



# Cooperation



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Making location count.



# ISO 19152 LADM Supporting UNGGIM & FELA

Addis Ababa Declaration Geospatial Information Management Towards Good Land Governance for the 2030 Agenda:

*‘develop and agree on a set of fundamental geospatial information elements for land governance as a subset of the UN-GGIM fundamental data themes aligned with the SDG global indicator framework, taking into account the ISO 19152 Land Administration Domain Model and progress in multi-dimensional cadastre and city models’*

## FELA

*the ISO 19152 Land Administration Domain Model, being an endorsed ISO standard, with links to OGC (Open Geospatial Consortium) and the International Hydrographic Organization (IHO) (S-121) informs at the level of data and information management.’*



# Examples of LADM Use

# LADM Country Profiles

Albania	Israel	Russian federation
Bénin	Japan	Saudi Arabia
Brazil	Kenya	Scotland
Cape Verde	Malaysia	Serbia
China	Mongolia	Singapore
Colombia	Montenegro	South Africa
Croatia	Morocco	South Korea
Cyprus	Mozambique	The Netherlands
Czech Republic	Nigeria	Trinidad and Tobago
Ethiopia	Nicaragua	Turkey
Greece	Poland	Uganda
Honduras	Portugal	Victoria, Australia
Hungary	Queensland, Australia	Vietnam
Indonesia	Republic of Srpska	



# Case: Kenya – MoL, ISK, Kadaster, Esri





# Identification of Landobject



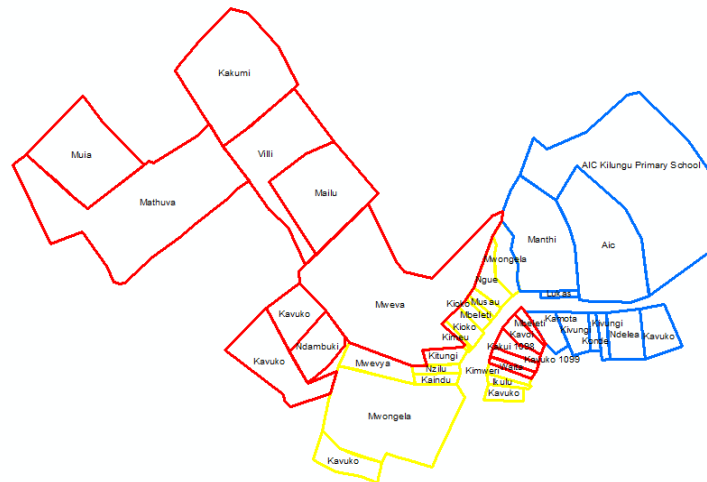


# Identification of Person





# Sharing Results: Public Inspection











# 10th Workshop on the Land Administration Domain Model

- In conjunction with the VII. Croatian congress on Cadastre (31 March - 2 April 2022)
- Eva-Maria Unger introduced the FELA in a keynote
- The LADM is gaining recognition in many countries
- 40 country profiles are known, including 10 country implementations
- Software suppliers are adopting and implementing LADM
- The 10th Workshop was in support the development of a second edition of the standard
- <https://wiki.tudelft.nl/bin/view/Research/ISO19152/LADM2022Workshop>







# Thank you

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# Contact us

Standards are developed by the people who need them – that could mean you.

Technical committees include experts from both standards and industry and these experts are put forward by ISO's national members.

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