

# Overview of Developments of Edition II of the Land Administration Domain Model

FIG Working Week 2023, Orlando FL, USA, 27 May 2023

(also presented at the ISO/TC 211 56th meeting, Jeonju, South Korea, 19 May 2023)

Christiaan Lemmen, Peter van Oosterom, Abdullah Kara, Eftychia Kalogianni,  
Abdullah Alattas, Agung Indrajit (Chris Body, Douglas O'Brien)





# LADM revision

- UN GGIM EGM on Land Administration and Management 2017 → Proposal to revise LADM ISO 19152:2012 with broader scope
- Five years after becoming an international standard, systematic review of LADM was started in 2018.
- In the 48th Plenary Meeting Week of ISO/TC 211 (2019), it was decided to design LADM Edition II as a multi-part standard.
- FIG LADM Workshops in Delft 2017, Zagreb 2018, Kuala Lumpur 2019, Online 2021, Dubrovnik 2022, Gavle (11-13 October 2023)

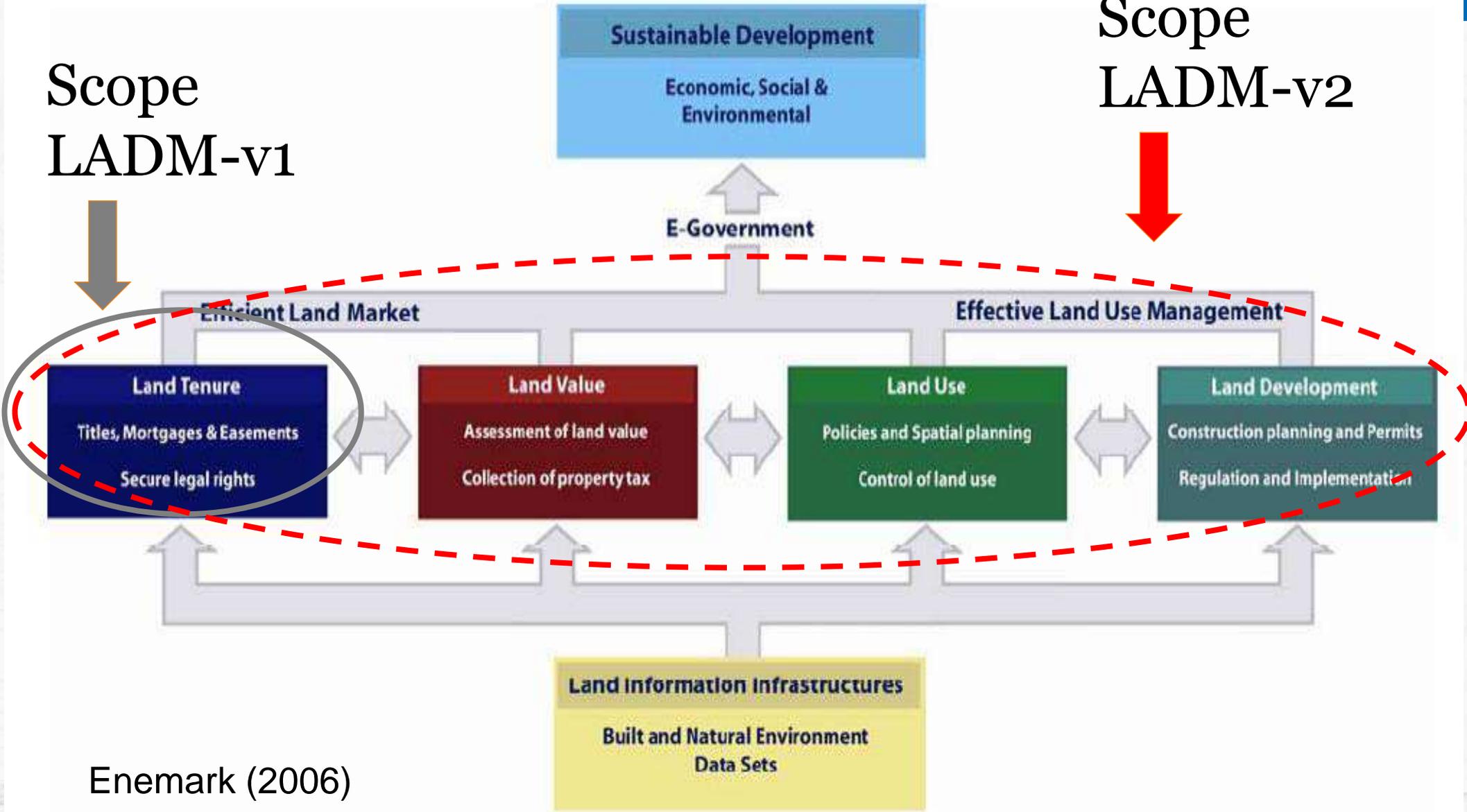
# LADM v2 will become multi-part

- Part 1 – Generic Conceptual Model
  - Part 2 – Land Registration
  - Part 3 – Marine Georegulation
  - Part 4 – Valuation Information
  - Part 5 – Spatial Plan Information
  - Part 6 – Implementation Aspects
- } **Scope current version  
LADM 2012**

Scope  
LADM-v1

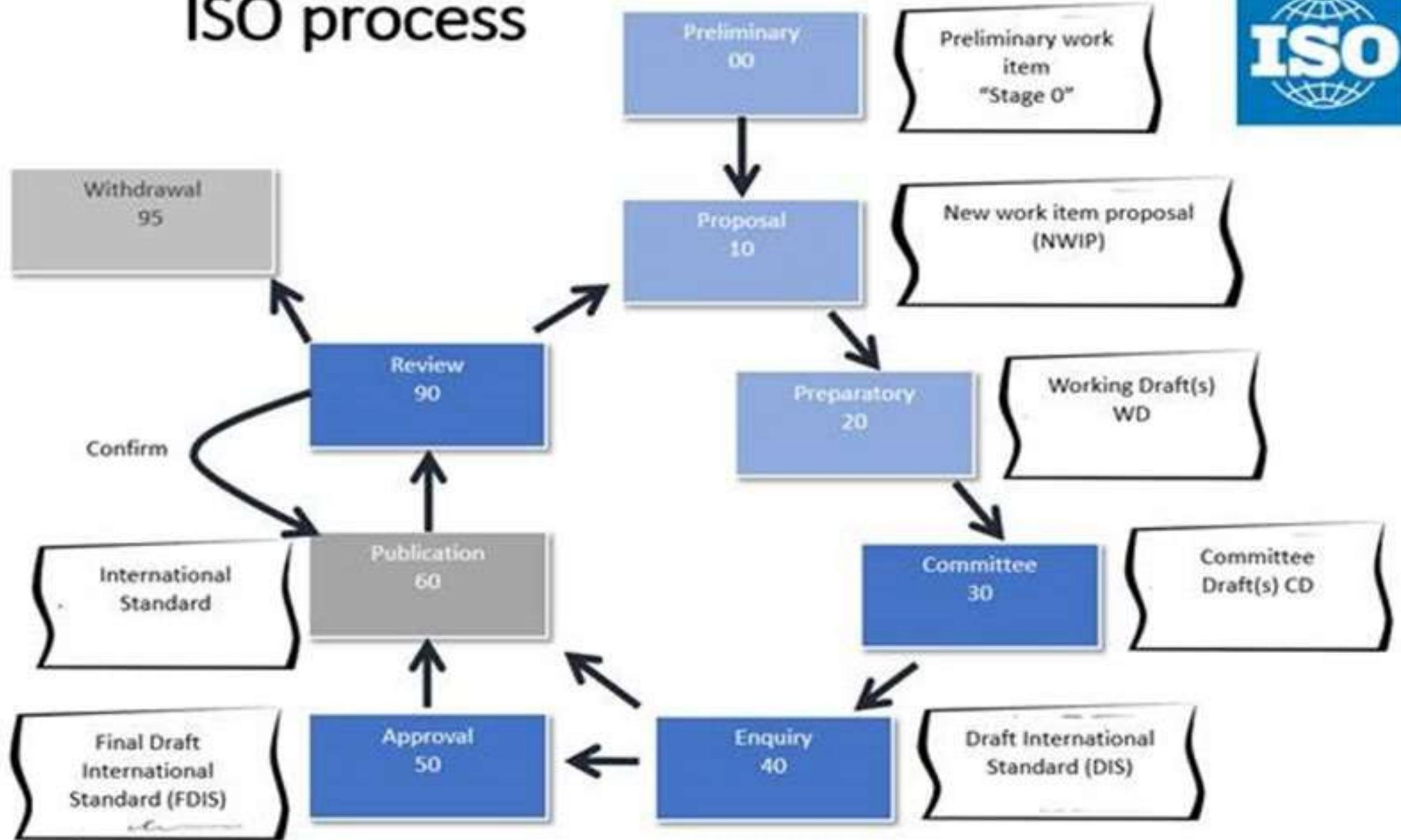


Scope  
LADM-v2



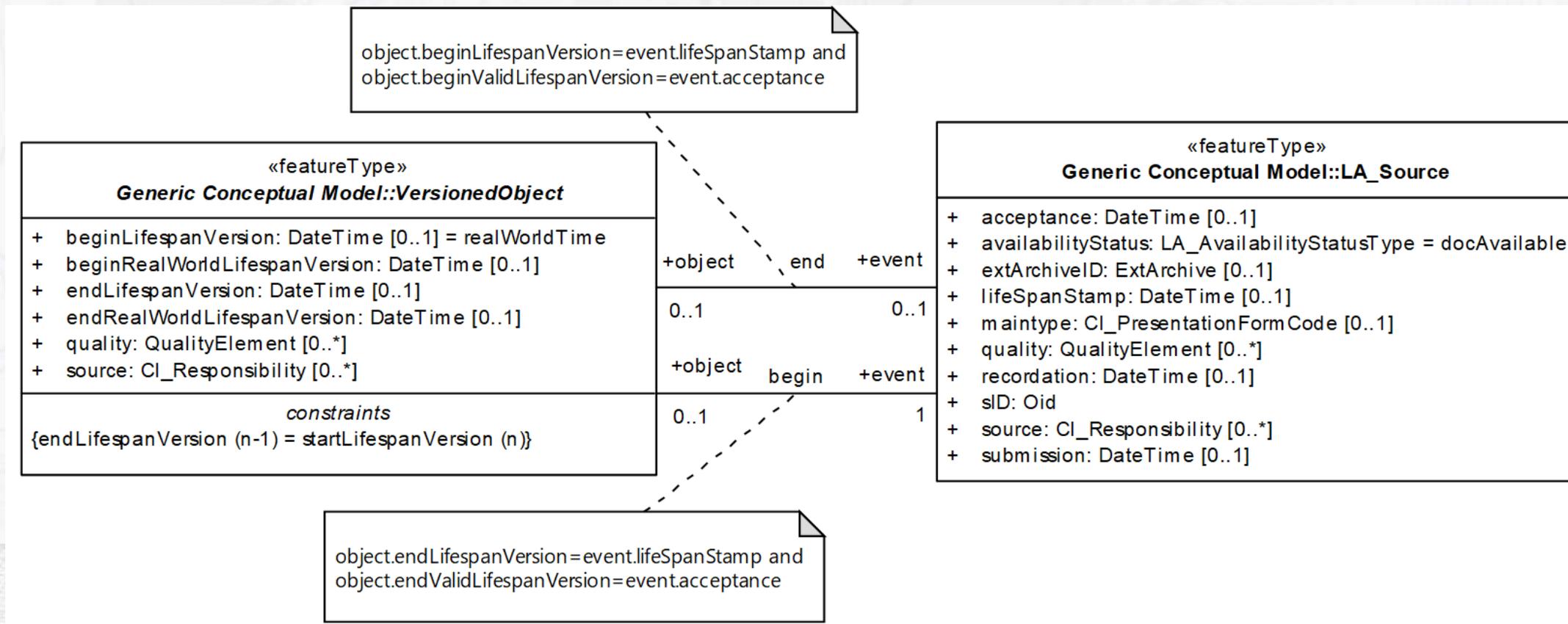
Enemark (2006)

# ISO process



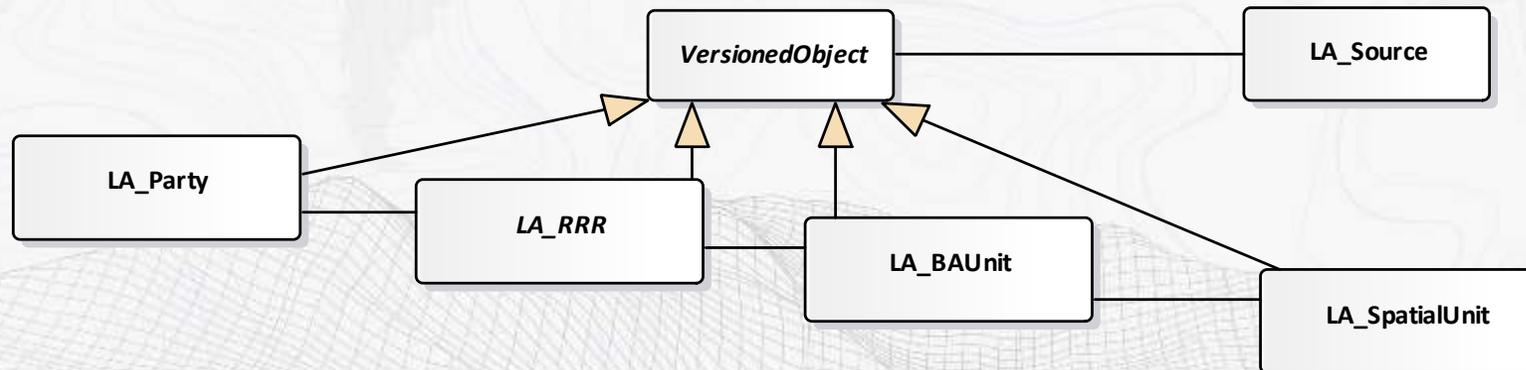
# ISO 19152 LADM – Part 1: Generic Conceptual Model

- A high-level umbrella standard, backward compatible, overview for each part
- Introduces bi-temporal model, VersionedObject linked to LA\_Source



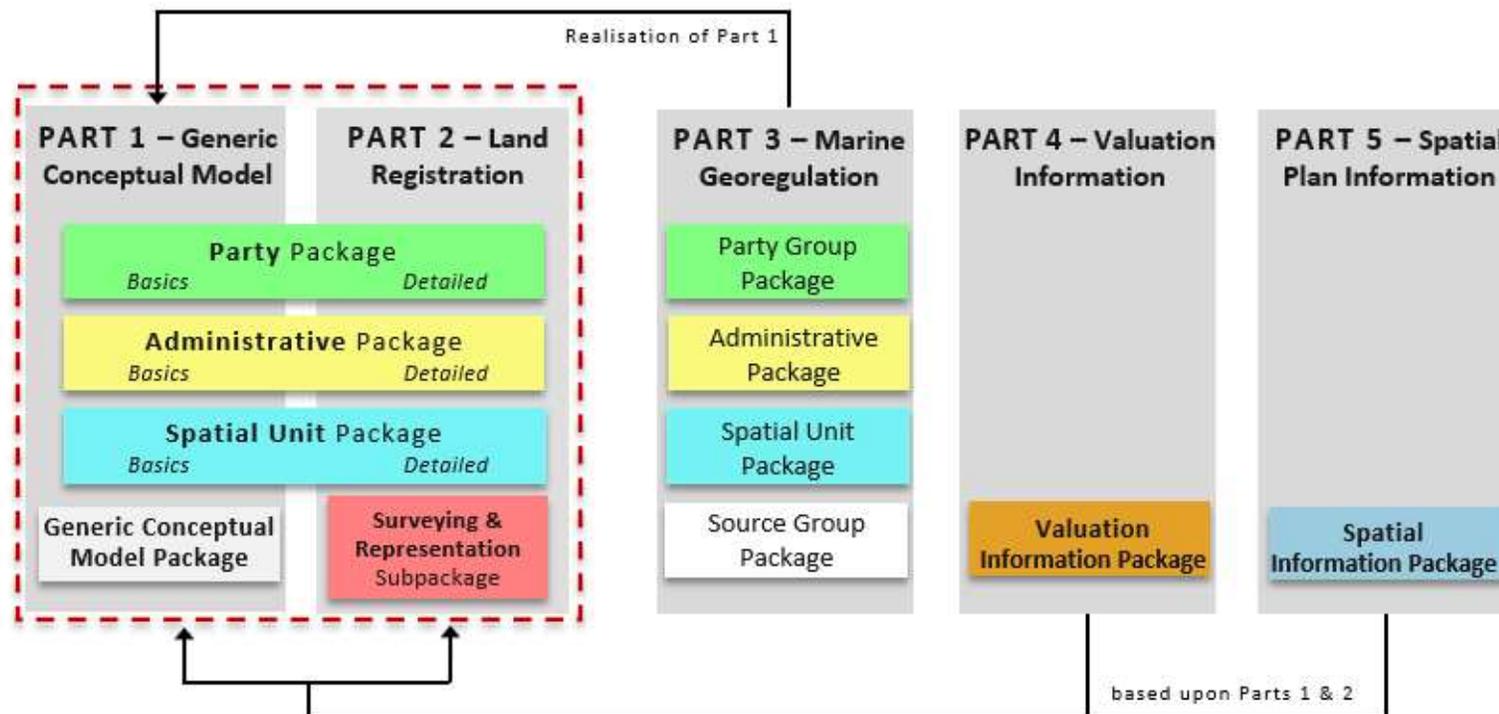
# ISO 19152 LADM – Part 1: Generic Conceptual Model

- defining a reference LADM covering of basic information-related components of land administration.
- An abstract, conceptual model with four packages:
  - **parties**: people and organizations
  - **basic administrative units**, rights, responsibilities, and restrictions: ownership rights
  - **spatial units**: parcels, spatial unit groups and levels.
  - **special classes** (generic conceptual model): source and versioned object



# ISO 19152 LADM – Part 1 and the other Parts

- All the concepts and definitions given in Part 1 – Generic Conceptual Model is used by the other Parts of LADM Edition II.
- **Editor team:** Chris Body (Standards Australia) Douglas O’Brien (Standards Canada), Jean-François Beaupré (Standards Canada), Knut Jetlund (HMMG) Christiaan Lemmen (FIG), Peter van Oosterom (FIG), Abdullah Kara (FIG).



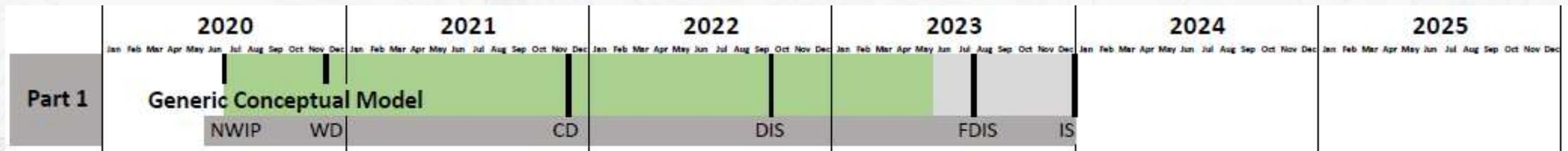
Packages of All LADM Parts

# ISO 19152 LADM – Part 1: Generic Conceptual Model

- The Project manager Chris Body
- Countries contributing: Australia, Canada, China, Finland, Republic of Korea, New Zealand, Norway, Sweden, UK, US and FIG
- Draft International Standard (DIS) Ballot / Result of voting received on 2023-03-13 (N5879)
- Approval: 24 / Disapproval 1 / Abstention 16

# ISO 19152 LADM – Part 1: Generic Conceptual Model

- 105 comments received.
- 16 General / 52 Editorial / 25 Technical / 3 Editorial-Technical / 9 not indicated
- Accepted: 90 / Accepted in principles: 5 / Not accepted: 10
- The comments will be discussed with the project team on the 25th, 26th May 2023 and with TMG on 6th of June 2023.





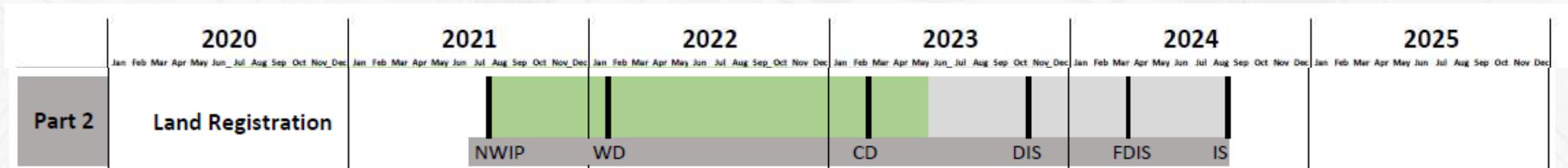


# ISO 19152 LADM – Part 2: Land Registration

- The Project manager Christiaan Lemmen
- Countries contributing: Canada, China, Finland, France, Germany, New Zealand, Sweden and US
- Committee Draft (CD) Ballot / Result of voting received on 2023-04-12 (N5868 / N5889)
- Result is positive.

# ISO 19152 LADM – Part 2: Land Registration

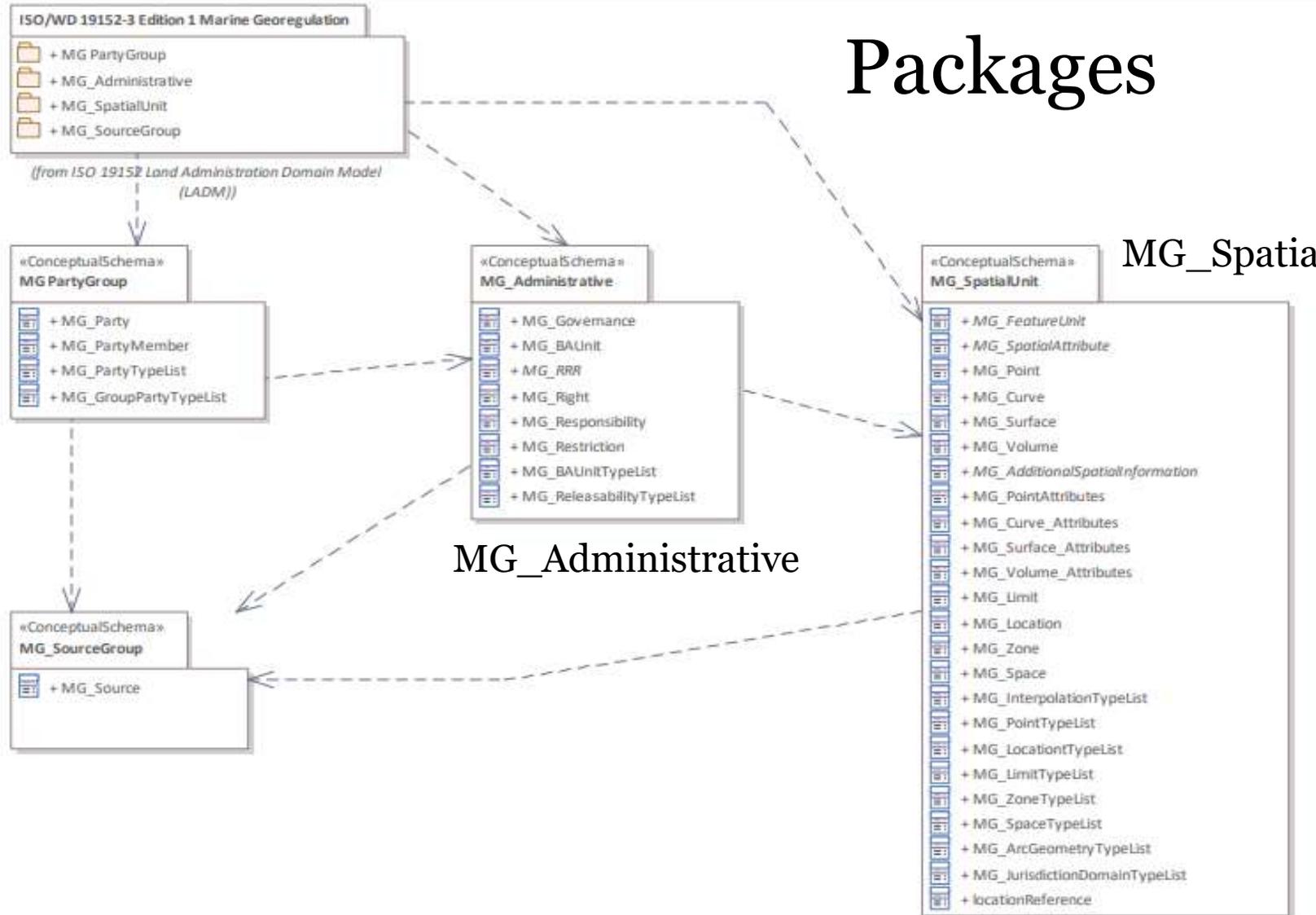
- 89 comments received.
- 8 General / 30 Editorial / 35 Technical / 16 not indicated
- Accepted: XX / Accepted in principles: X / Not accepted: X
- The comments will be discussed with the project team on the 20th and 21st June 2023.



# ISO 19152 LADM – Part 3: Marine Georegulation

- Part 3 provides the concepts and structure for standardisation for georegulation in the marine space.
  - It addresses 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.
  - It references and uses 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.
  - It provides a model for representing rights, restrictions and responsibilities within the context of the marine space.
  - Based on realization of LADM core classes.

# ISO 19152 LADM – Part 3: Marine Georegulation



Packages

MG PartyGroup

MG\_SpatialUnit

MG\_Administrative

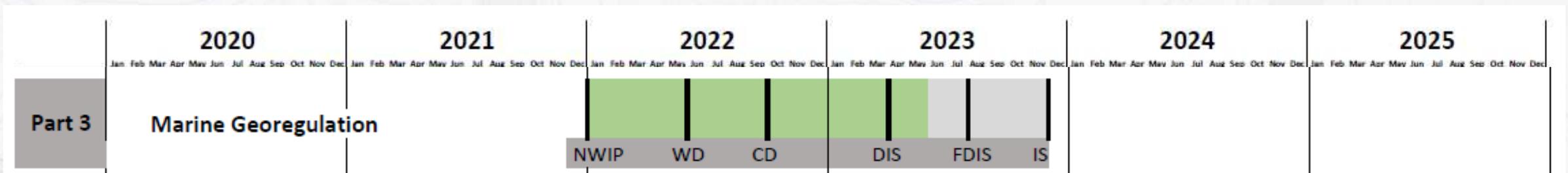
MG\_SourceGroup

# ISO 19152 LADM – Part 3: Marine Georegulation

- The Project manager Chris Body
- Countries contributing: Australia, Canada, China, France, Germany, Republic of Korea and US
- Draft International Standard (DIS) Ballot / Result of voting received on 2023-04-17 (N5891)
- Result is positive.

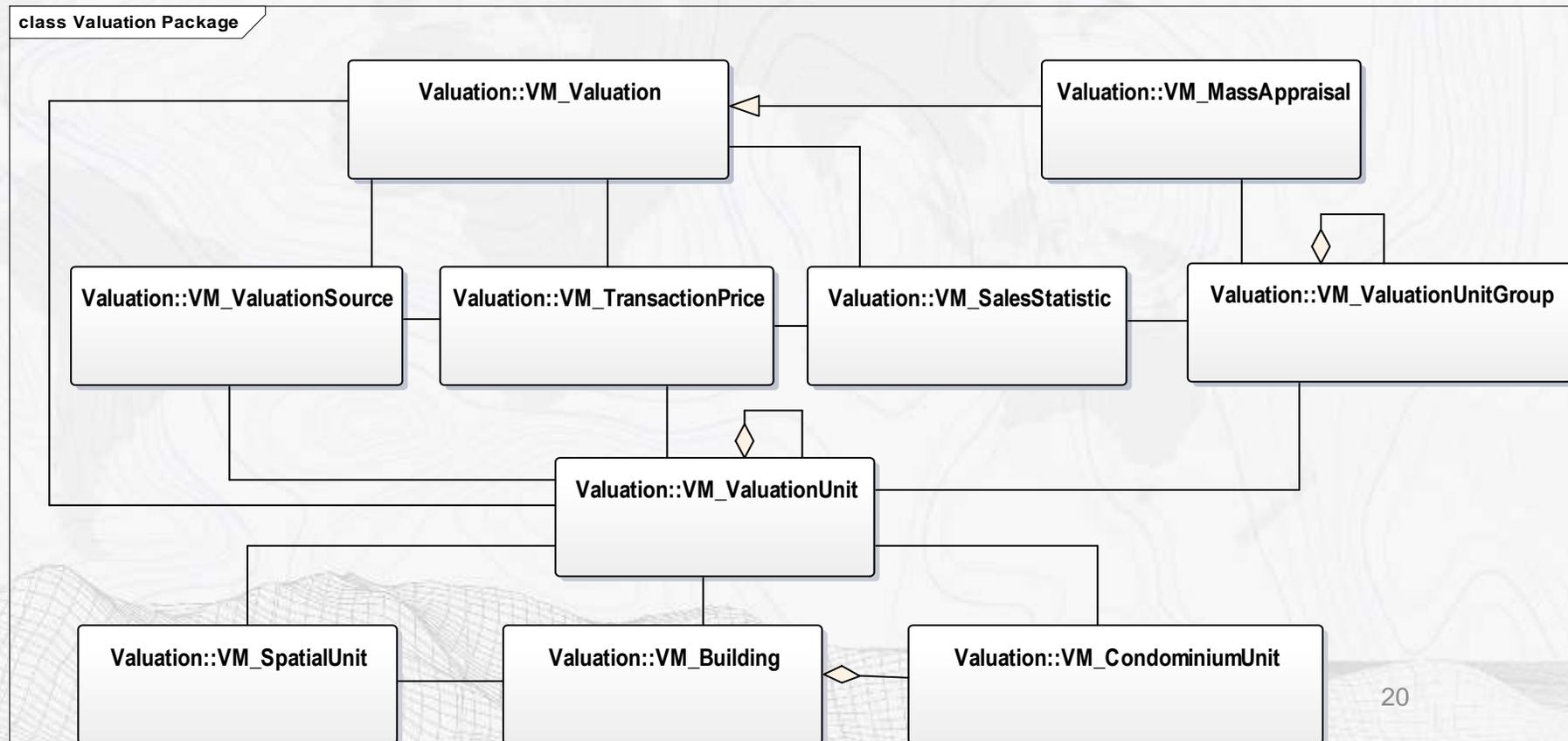
# ISO 19152 LADM – Part 3: Marine Georegulation

- 120 comments received.
- 6 General / 101 Editorial / 13 Technical /
- Accepted: 91 / Accepted in principles: 29 / Not accepted: X
- The comments will be discussed with the project team on the 20th and 21st June 2023.



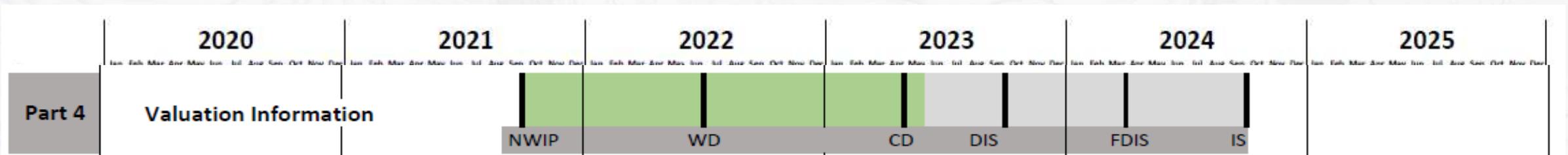
# ISO 19152 LADM – Part 4: Valuation Information

- Representing all stages of administrative property valuations (input and output data in valuation processes).
- Basic components of property valuation systems: transaction prices, sales statistics, valuation units,...



# ISO 19152 LADM – Part 4: Valuation Information

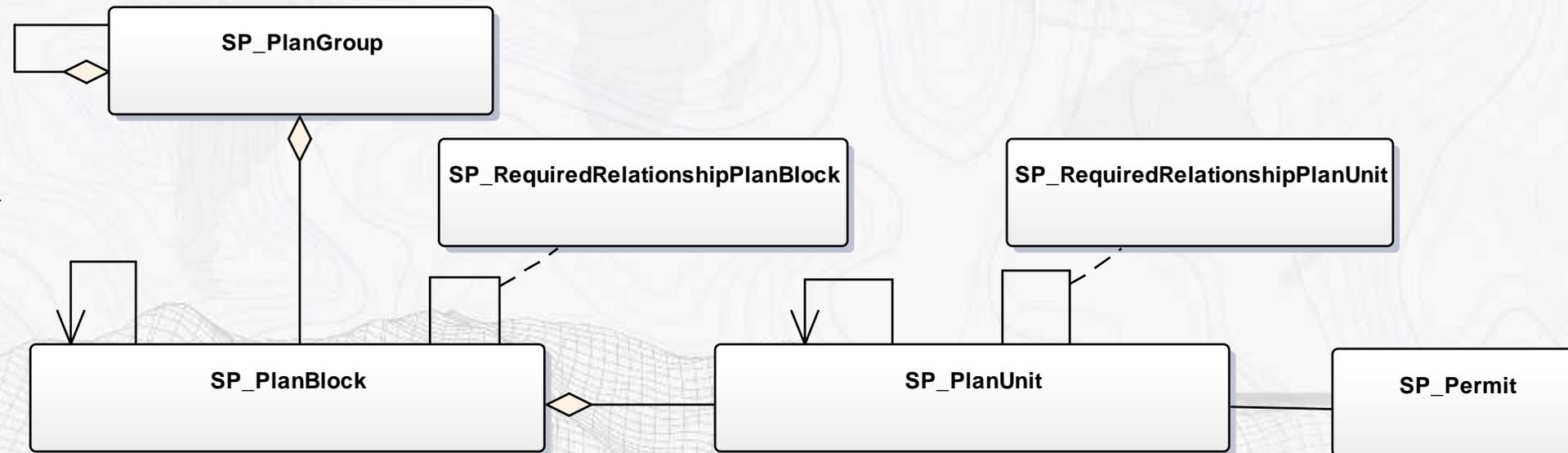
- The Project manager Christiaan Lemmen
- Countries contributing: Australia, Canada, China, Finland, France, Germany, Turkey, and US
- Committee Draft (CD) Ballot / Result of voting received on 2023-05-17 (N5880 / N5901)
- 52 comments received
- 4 General / 21 Editorial / 26 Technical / 1 Not indicated



# ISO 19152 LADM – Part 5: Spatial Plan Information

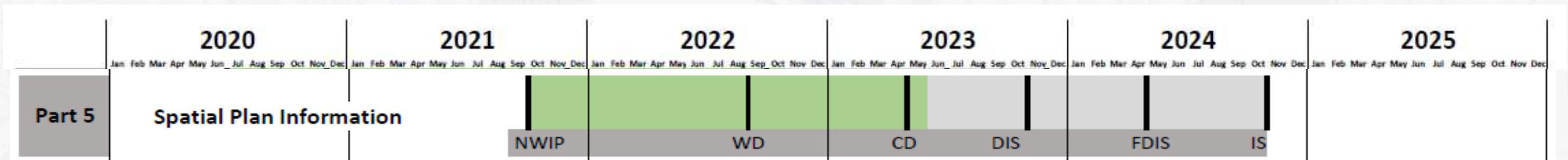
- Defines LADM integrated model covering basic information related components of spatial plan information on land/water, and elements below/on/above the surface of the earth with 2D/3D/4D (3D + time) geometric representation
- Four basic classes:

- plan unit
- plan group,
- plan block and
- permit



# ISO 19152 LADM – Part 5: Spatial Plan Information

- The Project manager Christiaan Lemmen
- Countries contributing: Australia, Canada, China, Finland, France, Germany, New Zealand, Poland, South Africa, and US
- The CD of LADM part 5 Spatial Plan Information has been distributed, with commenting / voting
- Start date 2023-04-18 and End date 2023-06-13.



# ISO 19152 LADM – Part 6: Implementation Aspects

- No WD was submitted yet there have been some preparation.
- ISO/TC 211 will reach out to the Open Geospatial Consortium (OGC) and other interest parties for their assistance to implement LADM Edition II.
- Part 6 will be discussed with OGC on the 8th of June 2023.
- Proposal next to the OGC Land Administration DWG (Domain Working Group, discussing the domain) set-up an OGC SWG (Software Working Group, developing implementation standards)

# ISO 19152 LADM – Part 6: Implementation Aspects

- OGC SWG Land Administration standard components:
  1. Methodology for developing a country profile
  2. Technical model / encodings
  3. Management and maintenance of semantically rich code list values (SKOS)
  4. Procedures / workflows
- OGC SWG LA standard(s) will become ISO LADM part 6
- ISO TC211 standards become CEN TC287 standards by parallel voting (Vienna agreement)

# Status of LADM

Published  
**ISO 19152:2012**

A standard is reviewed every 5 years  
 Stage: **90.92** (To be revised) ✓



Under development  
**ISO/DIS 19152-1**

Under development  
**ISO/CD 19152-2**

Under development  
**ISO/DIS 19152-3**

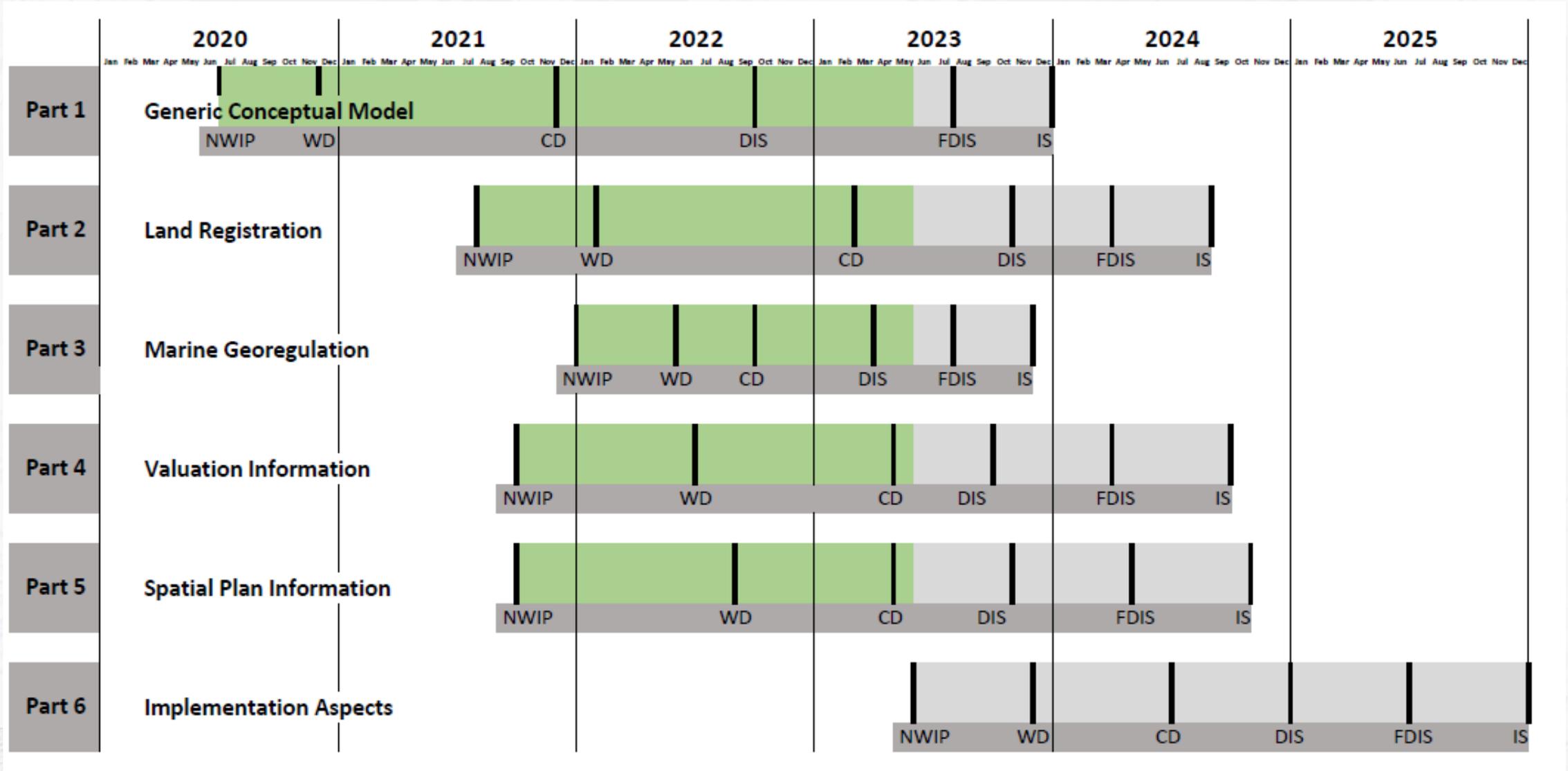
Under development  
**ISO/CD 19152-4**

Under development  
**ISO/CD 19152-5**

Source: ISO/TC 211

# LADM Edition II – Current Status of All Parts of LADM

(May 2023)



# 11<sup>th</sup> International Workshop

on

**Land Administration Domain Model**

and

**3D Land Administration**

The FIG logo consists of the letters 'FIG' in a white, bold, sans-serif font, centered within a red rectangular background.

**University of Gävle**  
in corporation with Lantmäteriet

**11-13 October 2023**  
Gävle, Sweden

**The Workshop addresses developments in the following areas:**

- 3D Land Administration System operational experiences (analysis, LADM based, learn from each other, discover gaps)
- 3D LAS cost effective workflow for new / updated 3D parcels = 4D (part of whole spatial development lifecycle: from planning / design / permit in 3D, to registration / use in 3D)
- 3D LAS web-based dissemination (usability, man-machine interfaces, including mobile/AR)
- Remote sensing/LiDAR and artificial intelligence (AI) for efficient 3D cadastral boundary extraction
- Legal aspects for 3D LAS, best legal practices in various legislation systems



- Focus on large cities, including developing countries
- 3D in the revision of ISO 19152, the Land Administration Domain Model
- Proposals for (and evaluations of) LA (remote) sensing information models (CD 19152-2) and data processing workflows (CD 19152-6), in the context of the revision of LADM

### Working sessions

- Urban development / plan information LADM part 5 (Chair: Karel Janecka, Czech Republic, Peter van Oosterom, The Netherlands)
- 3D legal building models/BIM (Chair: Vučić Nikola, Croatia, Abdullah Alattas, Saudi-Arabia)
- Legal aspects of 3D LA (Chair: Jenny Paulsson, Jesper M. Paasch, Sweden)
- Valuation Information / LADM part 4 (Chair: Jaap Zevenbergen, The Netherlands, Abdullah Kara, Turkey)



## More information

### Deadlines:

|                    |                                    |
|--------------------|------------------------------------|
| 11 June 2023       | Extended abstract (500-1000 words) |
| 15 July 2023       | Reviewing                          |
| 19 September 2023  | Final version of full paper        |
| 11-13 October 2023 | Workshop                           |

Website: <http://www.gdmc.nl/3dcadastres/workshop2023/>

Conference fee: 2300 SEK (approx. 195 Euro)

Co-chairs: Jesper Paasch (local) / Peter van Oosterom (programme)



LANTMÄTERIET



## OGC meeting, DWG Land Administration on 6 June 2023, 8:00am-9:30am (CDT), Huntsville AL, USA / online

1. Opening Christiaan Lemmen
2. Progress LADM Edition II, Peter van Oosterom
3. Developments in the Social Tenure Domain Model (STDM), Eva-Maria Unger & John Gitau
4. Standardisation of Cadastral Processes, Josip Križanović, University of Zagreb
5. **OGC LADM Standards Working Group**, Scott Simmons, OGC
6. Discussion

# Thank you!

## Any questions?

