

# The scope of LADM revision is shaping-up

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# The 8th Land Administration Domain Model Workshop (LADM2019)

1-3 October 2019 Kuala Lumpur, Malaysia

The logo for the International Geomatics Association (FIG) is displayed in white text on a red rectangular background. The letters 'F', 'I', and 'G' are separated by two vertical white lines.







# Sustainable Development Goals



# Secure land rights for the world



# Purposes

- Peace Building and Security
- Social Justice
- Disaster Management
- Resource Management
- Tenure Security
- Access to Credit
- Taxation
- Smart and Resilient Societies
- Sustainable Land Use
- Protected Environment
- Slum Upgrading
- Access to Housing
- City Management
- Access to Basic Infrastructure



# Challenges in Land Administration

- 70% to be done
- Institutional setting
- Transparency
- Paper based systems
- Legacy
- Information management
- Decentralisation
- Poor and vulnerable
- Gender

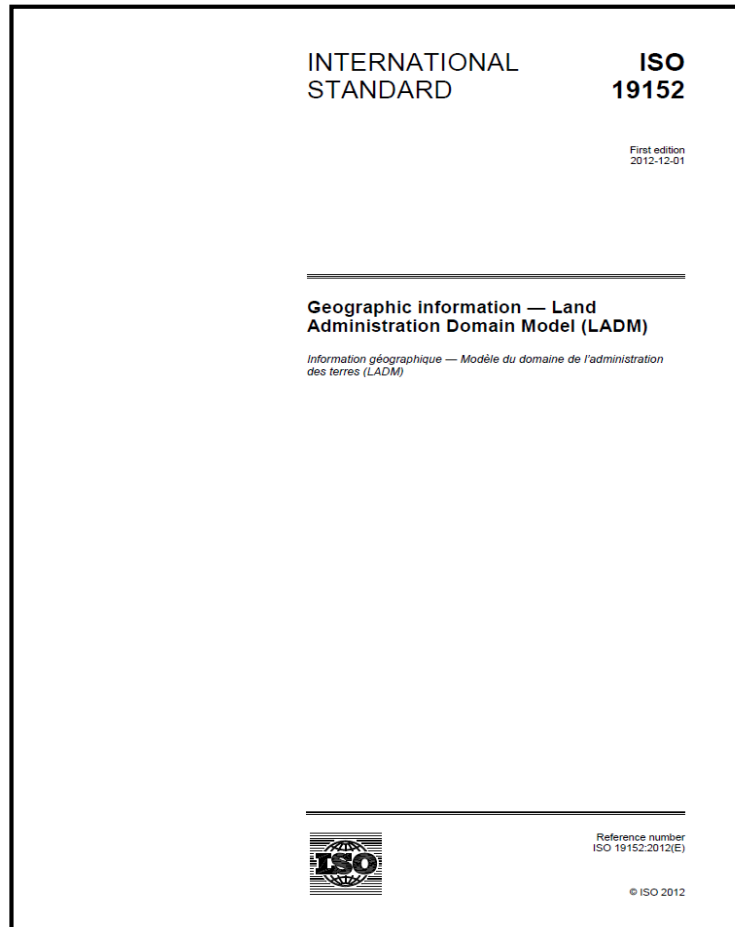


# Land Administration ISO 19152\*

Process of determining, recording and dissemination information about the relationship between people and land

This International Standard deals with **real rights** and **personal rights**. Real rights are rights over or in respect of **spatial units** (e.g. ownership, or usufruct). Personal rights are rights that parties have (e.g. fishing rights, grazing rights, or use rights).

# Cooperation



OGC White Paper on Land Administration

Open Geospatial Consortium

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**OGC White Paper on Land Administration**

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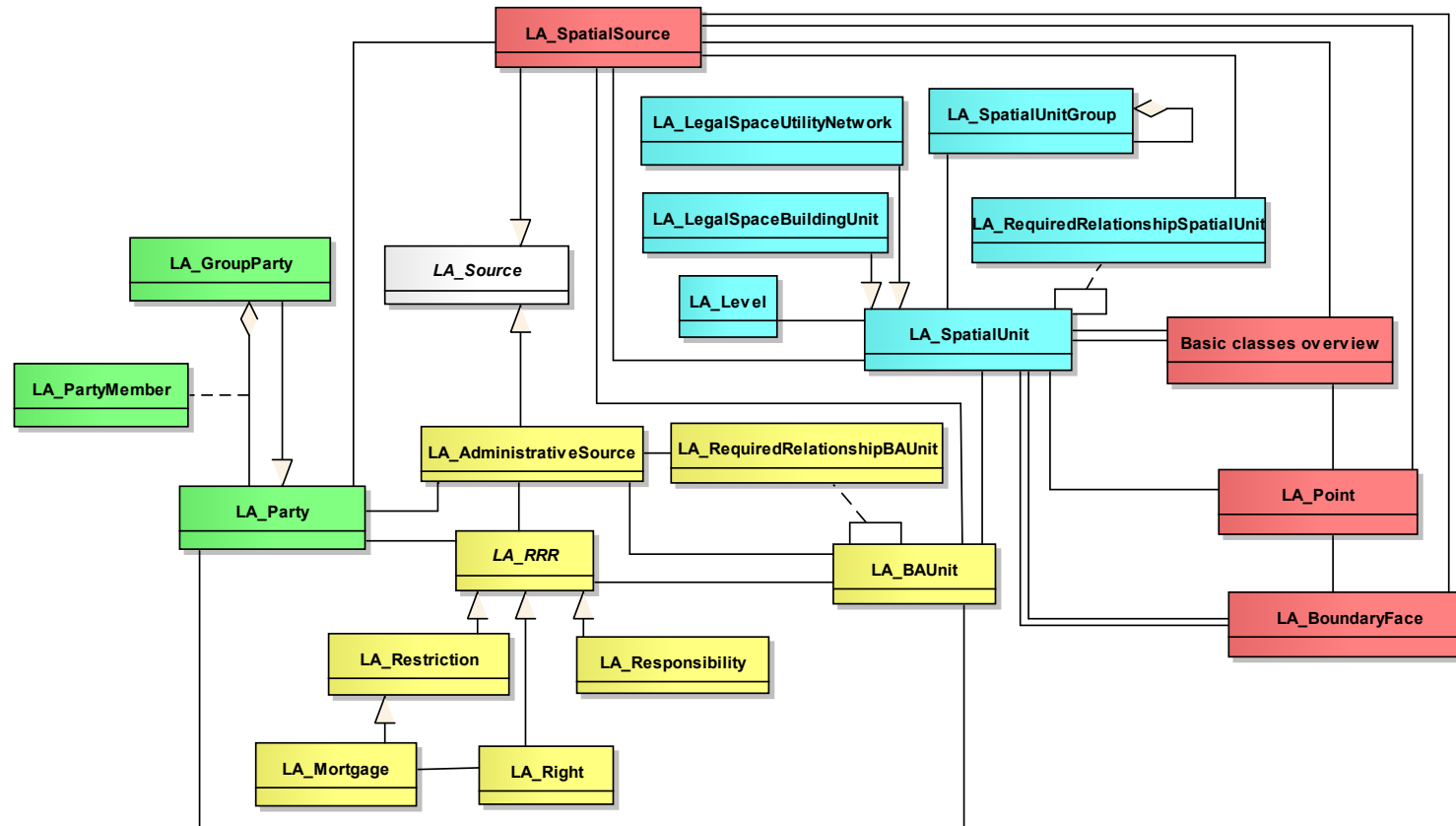
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Document stage: Approved  
Document language: English



<http://docs.opengeospatial.org/wp/18-008r1/18-008r1.html>

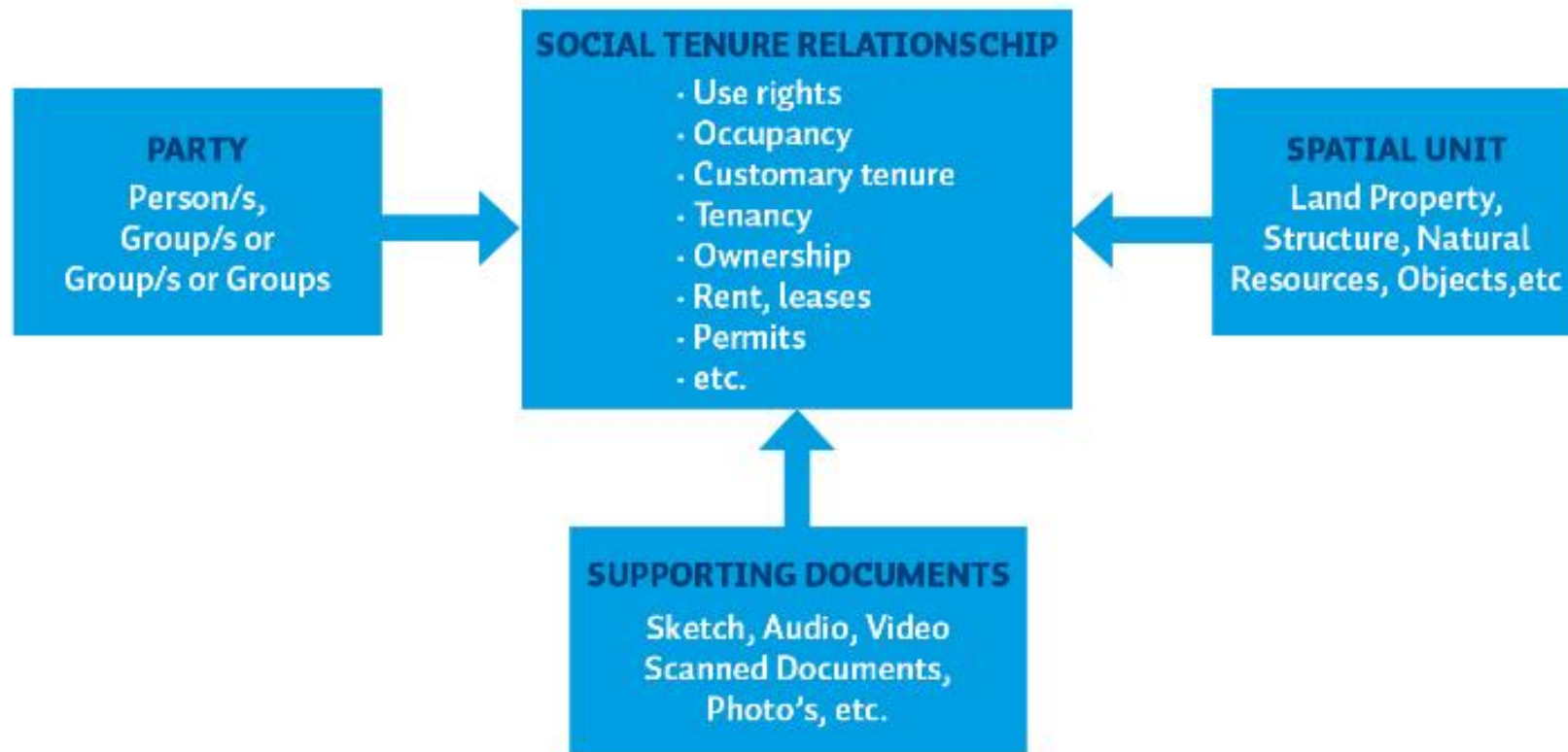
# Land Administration Domain Model



# LADM Edition II – WD1

- More complete support land management (also spatial planning, valuation, marine cadastre)
- More close to implementation (also tech. models and processes)

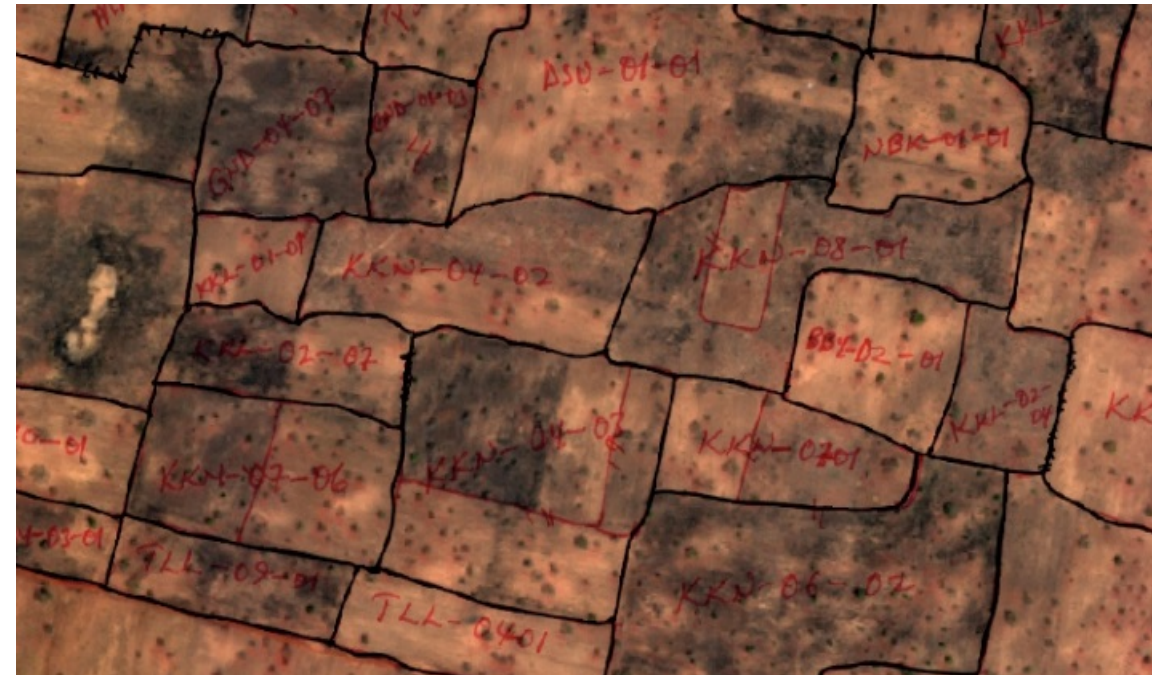
# Social Tenure Domain Model



# 2D/3D

- *Parcel:...the surface of the Earth, the materials beneath, the air above and all things fixed to the soil...*
- This is not a 3D partition of (legal) space

# Data Collection



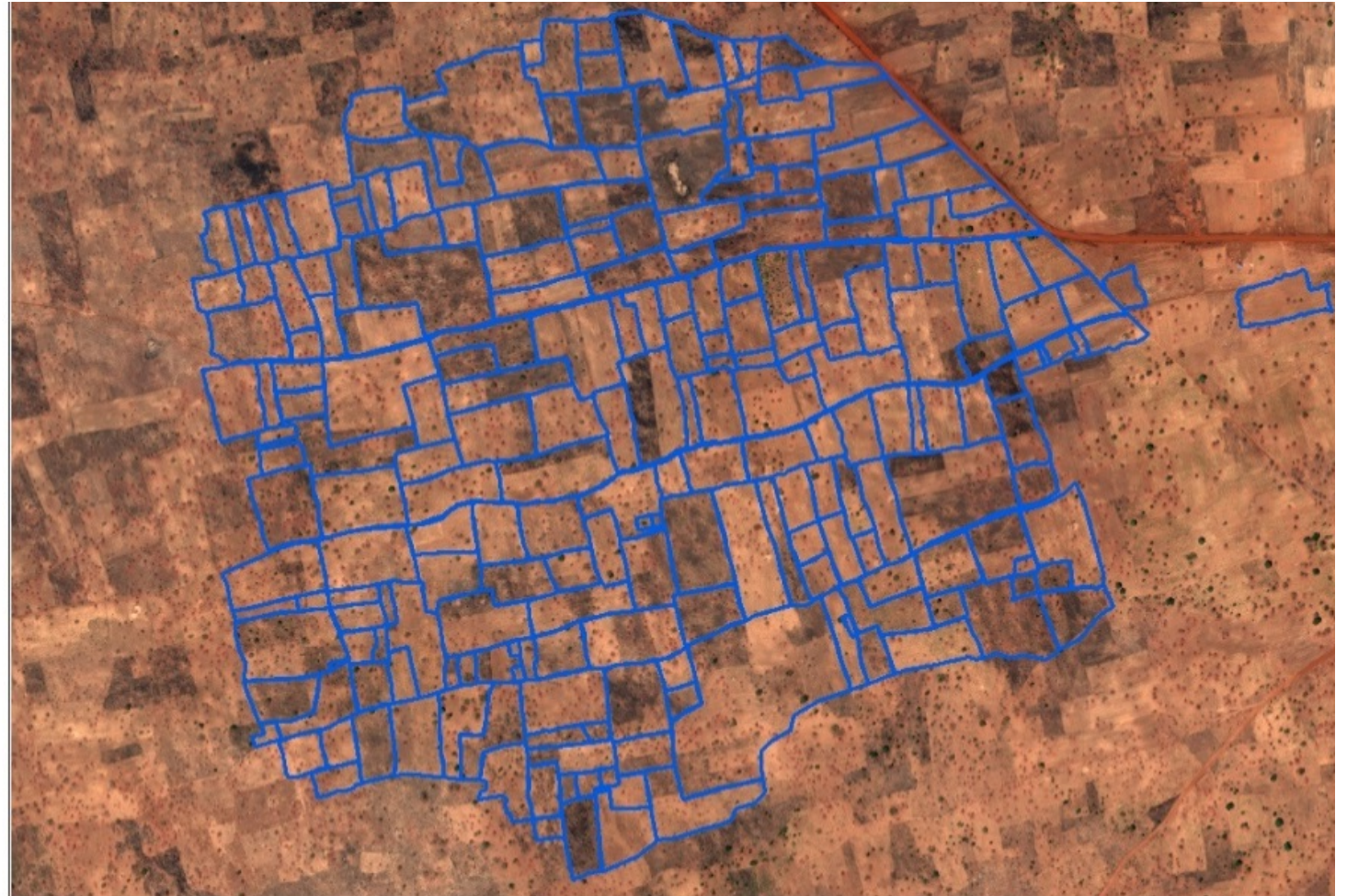
Courtesy Kwabena Asiama



# Data Collection



# Data Collection



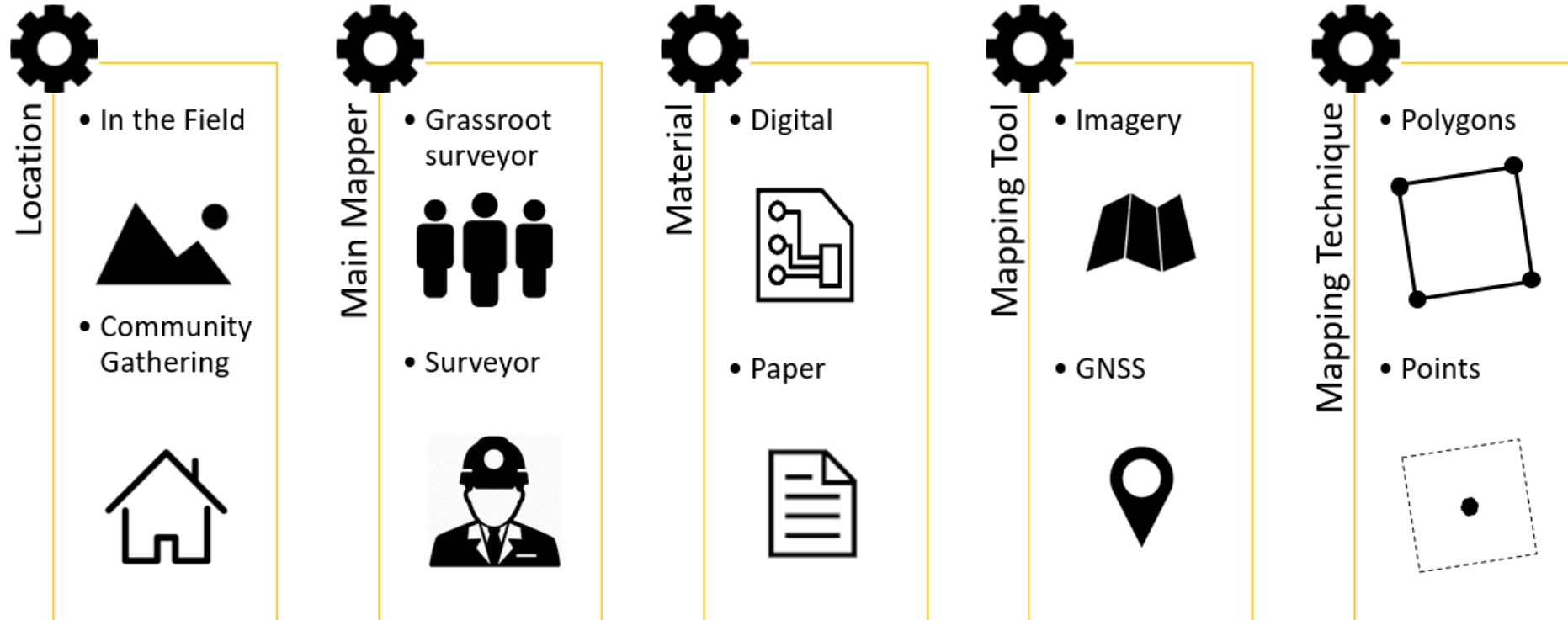
Courtesy Kwabena Asiamama

# Data Collection

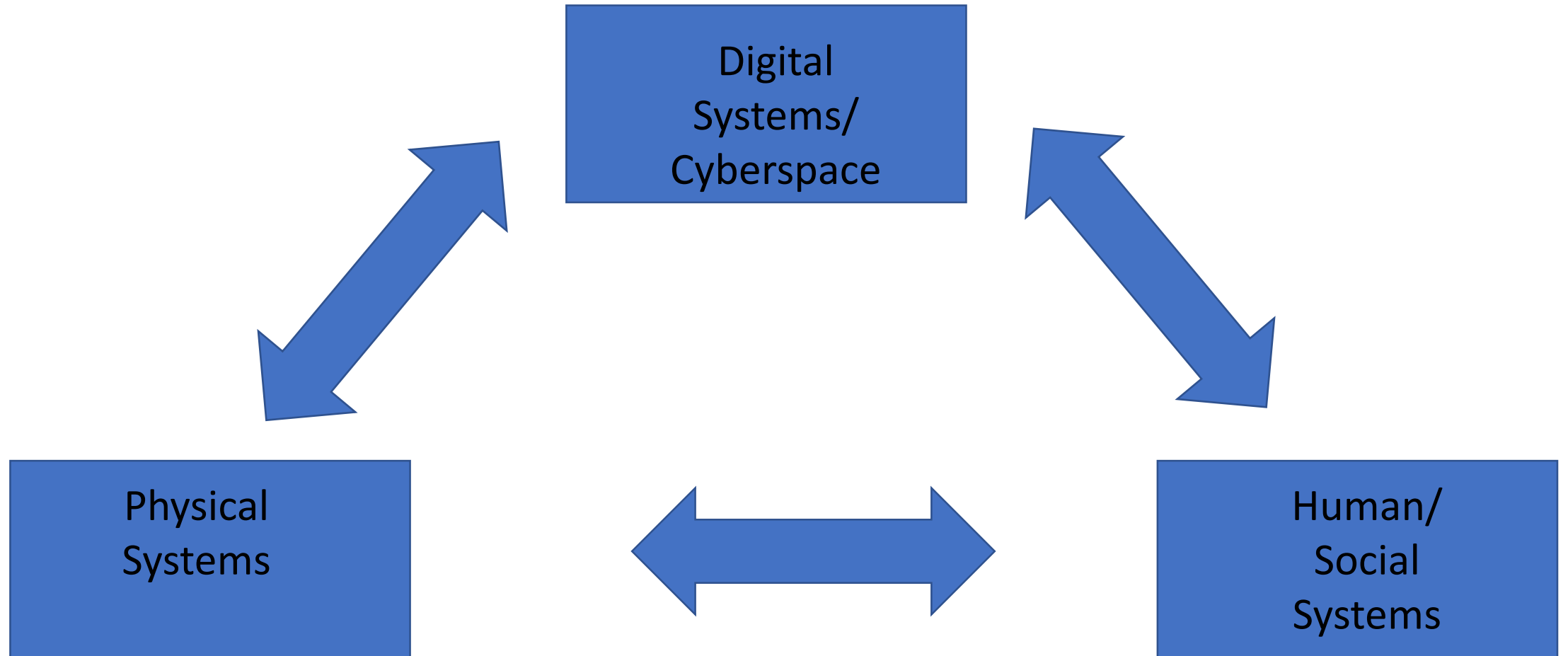


Photo's Liliana Merizalde

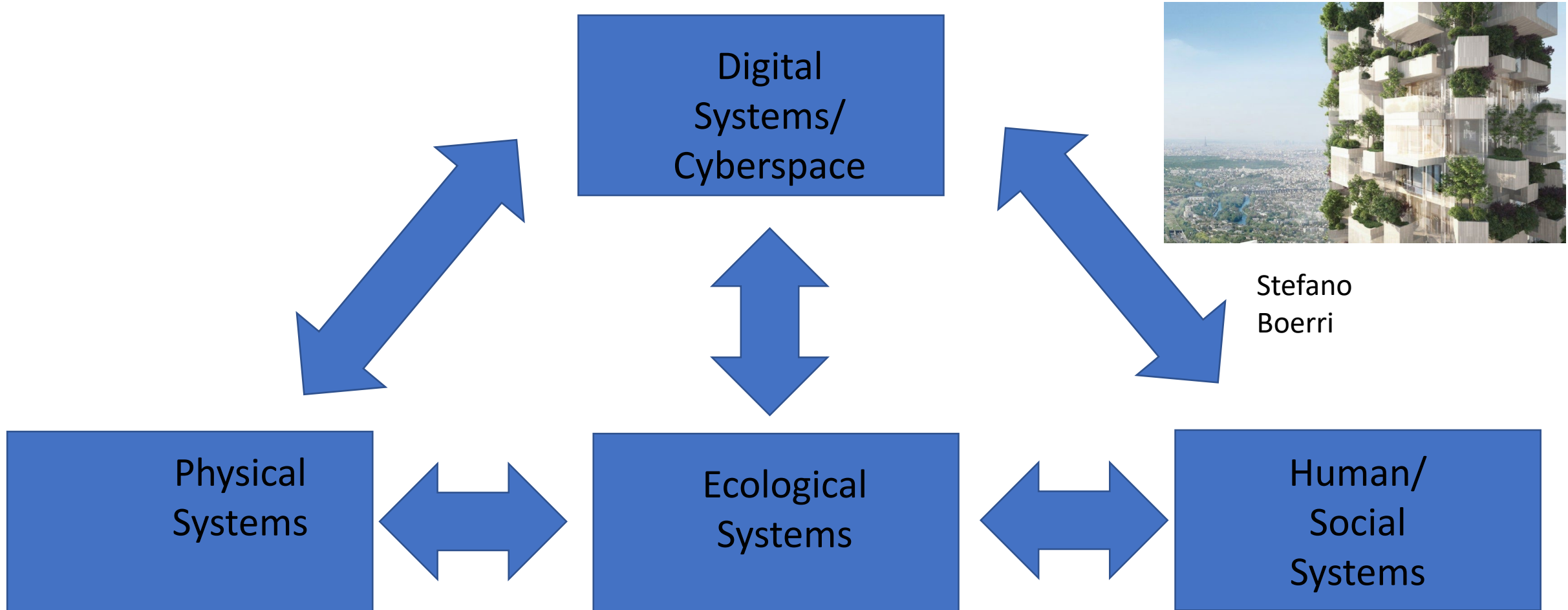
# Mapping and Recording Options



# Smart Cities Coors



# Smart Cities Coors/Lemmen Draft



# Sensor Registration



# Sensor registration

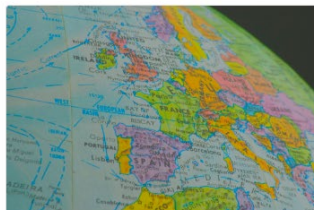
## Welkom bij de pilot van het Sensorenregister

Gemeente Eindhoven en Kadaster hebben een pilot voor het sensorenregister opgezet voor de vaste sensoren in de openbare ruimte op Stratumseind in Eindhoven. Iedereen is welkom om mee te doen. Doe jij ook mee?



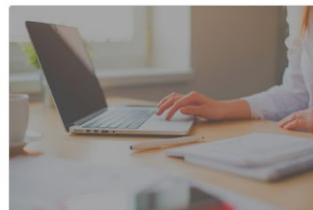
### Informatie over de pilot

Klik hier voor informatie over de pilot.



### Viewer

Klik hier om sensoren te bekijken.



### Registreren

Klik hier om een sensor te registreren.

- Information about ‘what is being sensed where and by whom’
- Accessible for everybody (companies, citizens and government)
- Public and easy to find
- Uniform, nationwide and trustworthy
- Create awareness of what’s happening where
- [www.sensorpilot.nl](http://www.sensorpilot.nl)

Jene van der Heide  
Magdalena Grus





Jene van der Heide  
Magdalena Grus



# Land indicators

- Which indicators can be supported from LADM?

<https://unstats.un.org/sdgs/metadata?Text=&Goal=5&Target=5.a>

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United Nations » Department of Economic and Social Affairs » Statistics Division



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## SDG Indicators

Metadata repository

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# Marine Cadastre

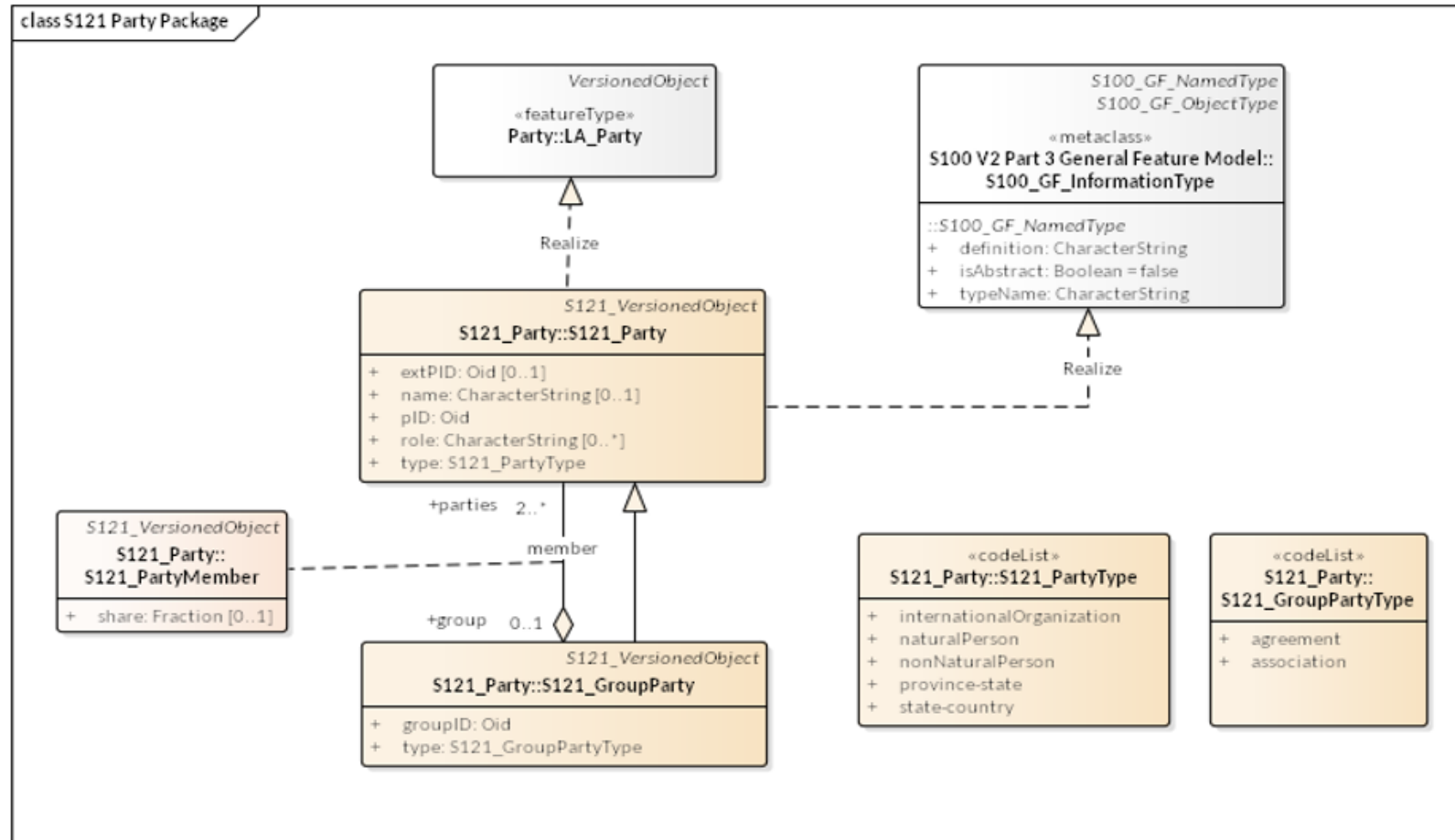
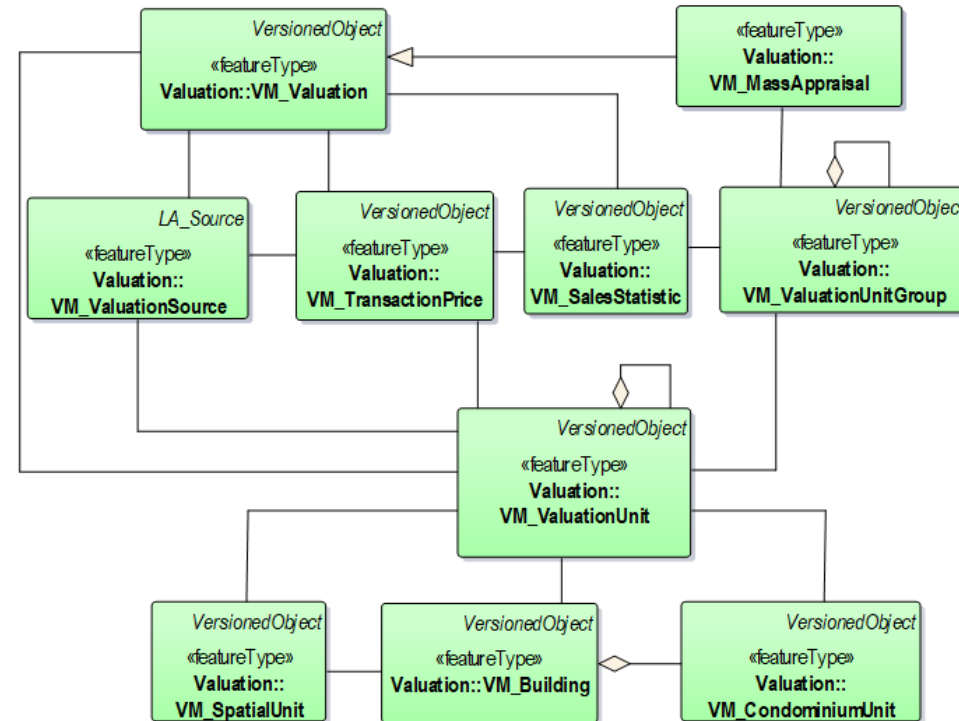


Figure P.1 — IHO S-121 Party Package inheritance of ISO 19152 LADM [Fig. E14, IHO S121, 2016].

# Valuation and Taxation

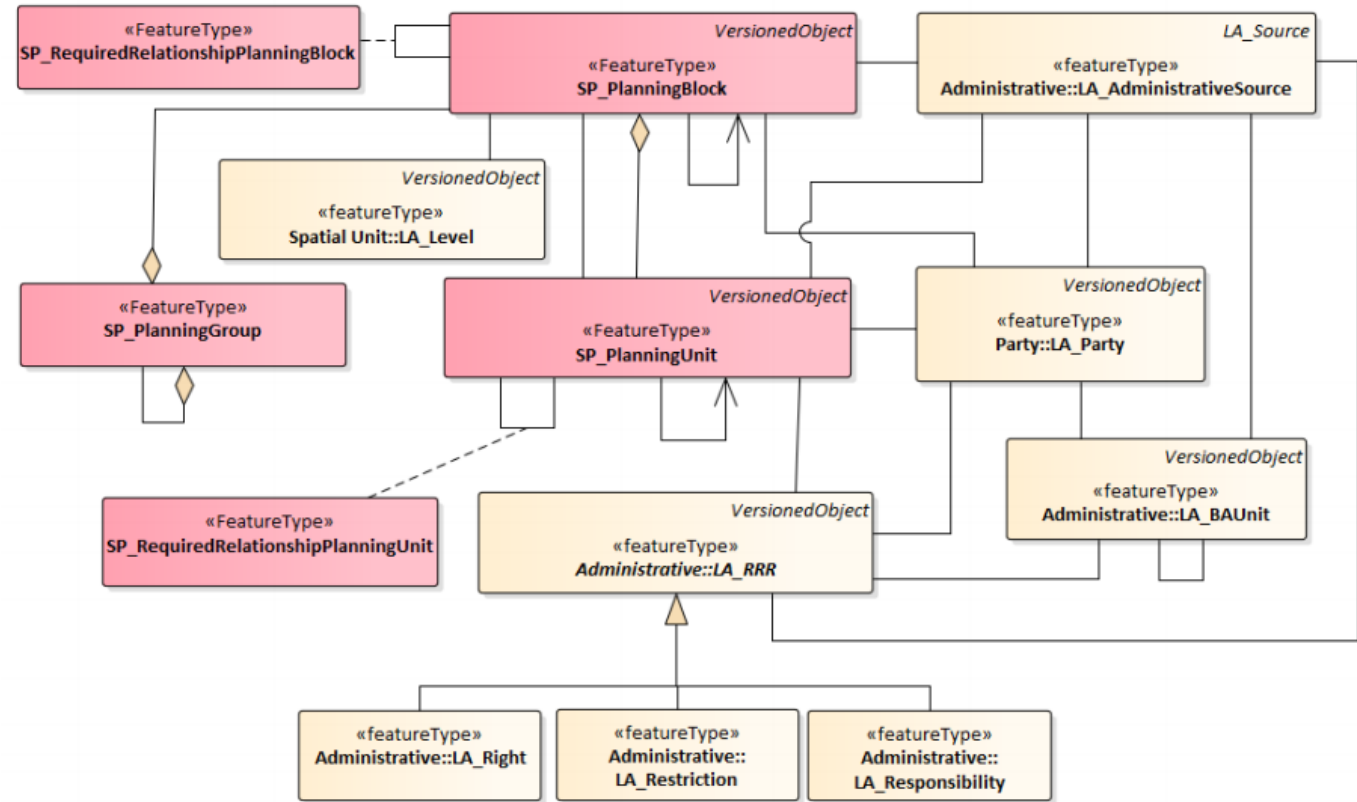
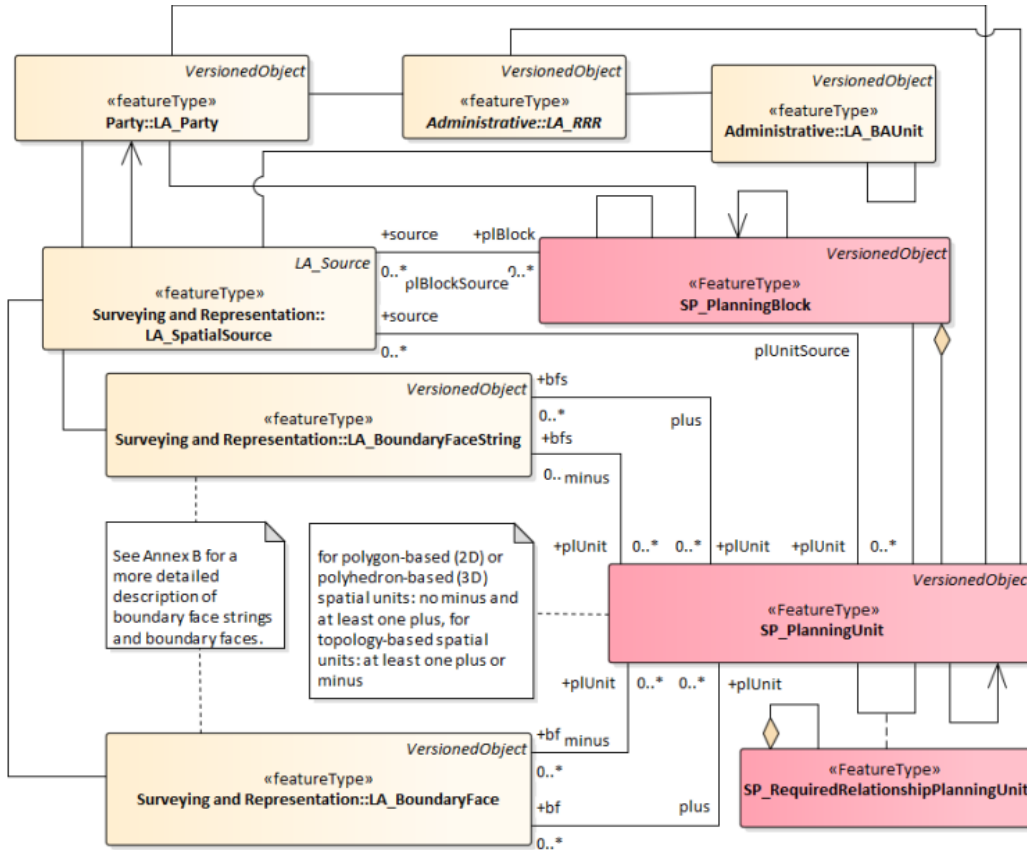


# Classes of Valuation Package

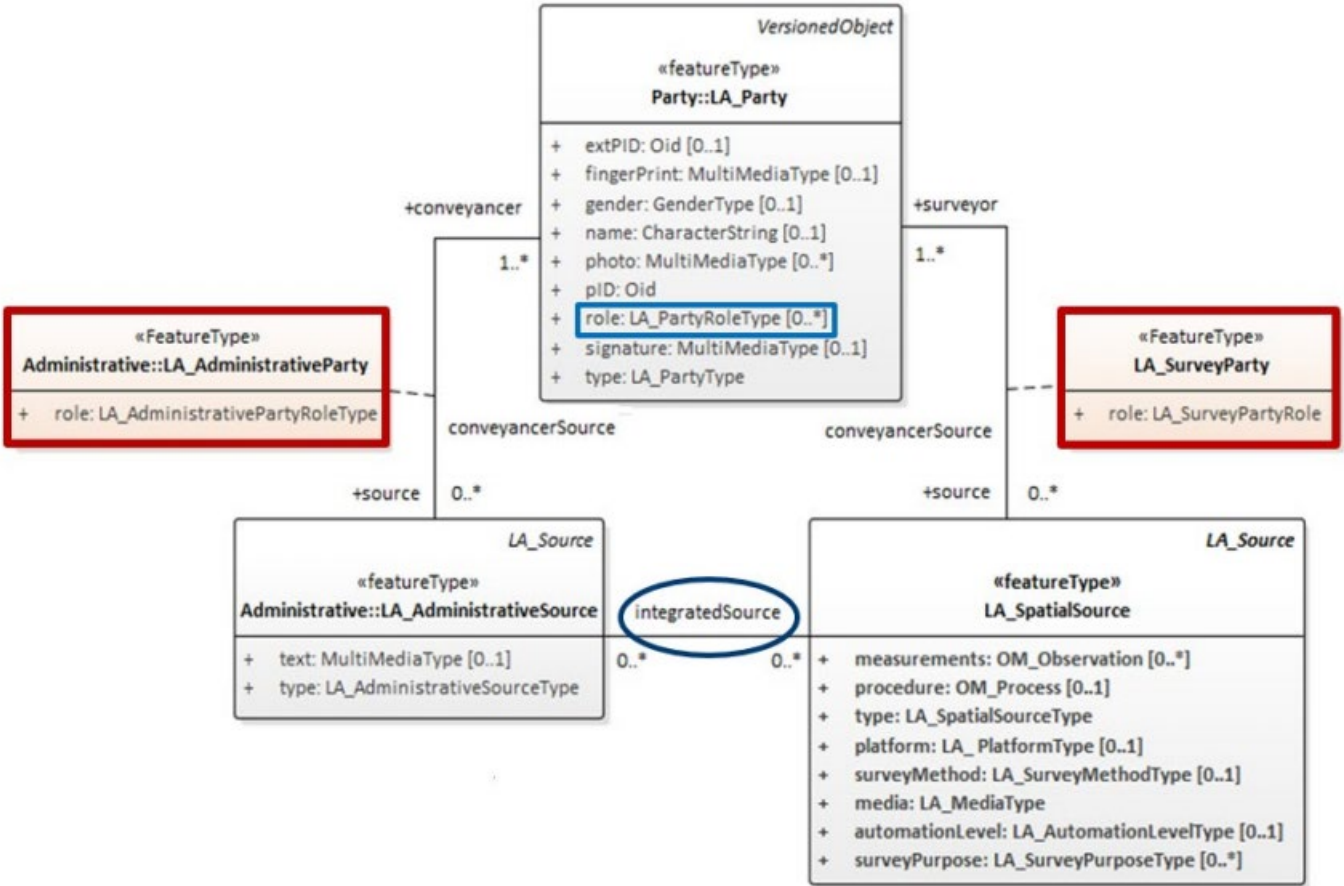


Abdullah Kara

# Classes of Spatial Planning Package



# Extended Source Class

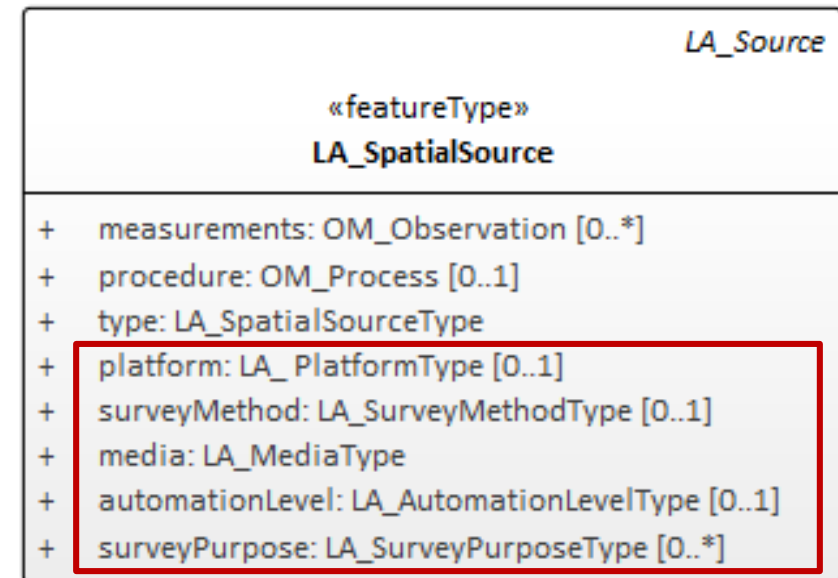


Anna Shnaidman

# Refined LA\_SpatialSource

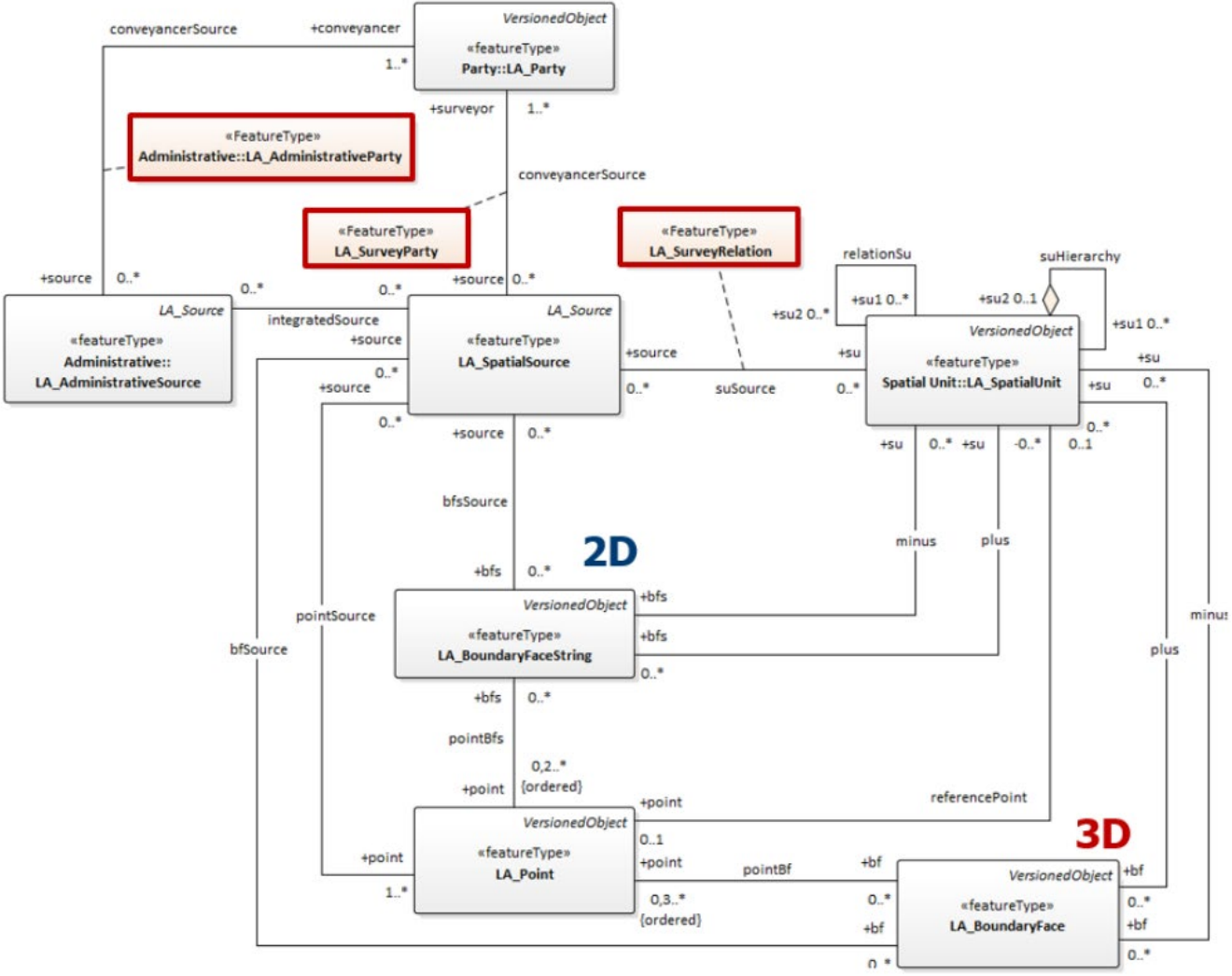
- New Attributes

- Platform *terrestrial, aerial, satellite....*
- surveyMethod *formal, participatory,....*
- media - source media *image, scannen map, ...*
- automationLevel *manual, semiautomatic, automatic, ....*
- surveyPurpose *landConsolidation, division, titleRegistration, controlMeasurements constructionPermit, ...*



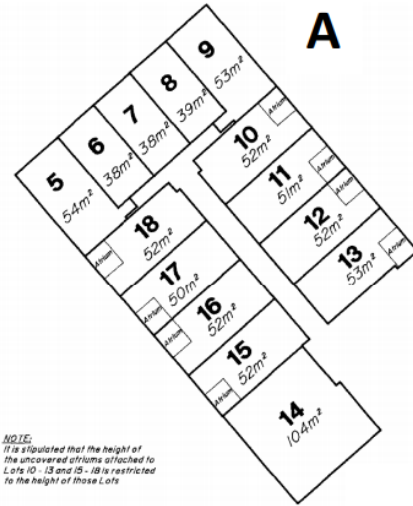


# Refined Survey Model

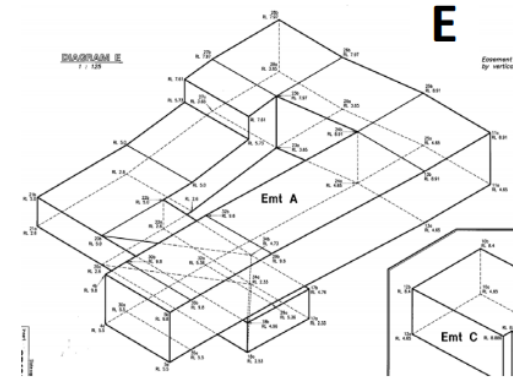
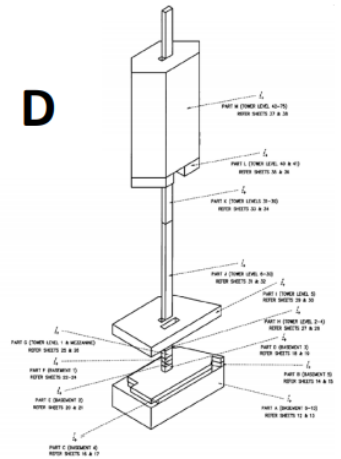
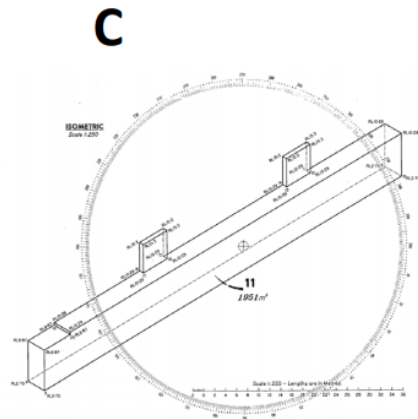
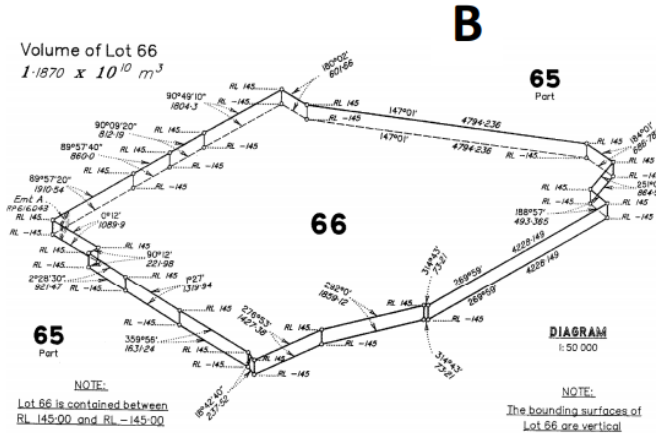


# Spatial Unit Geometries

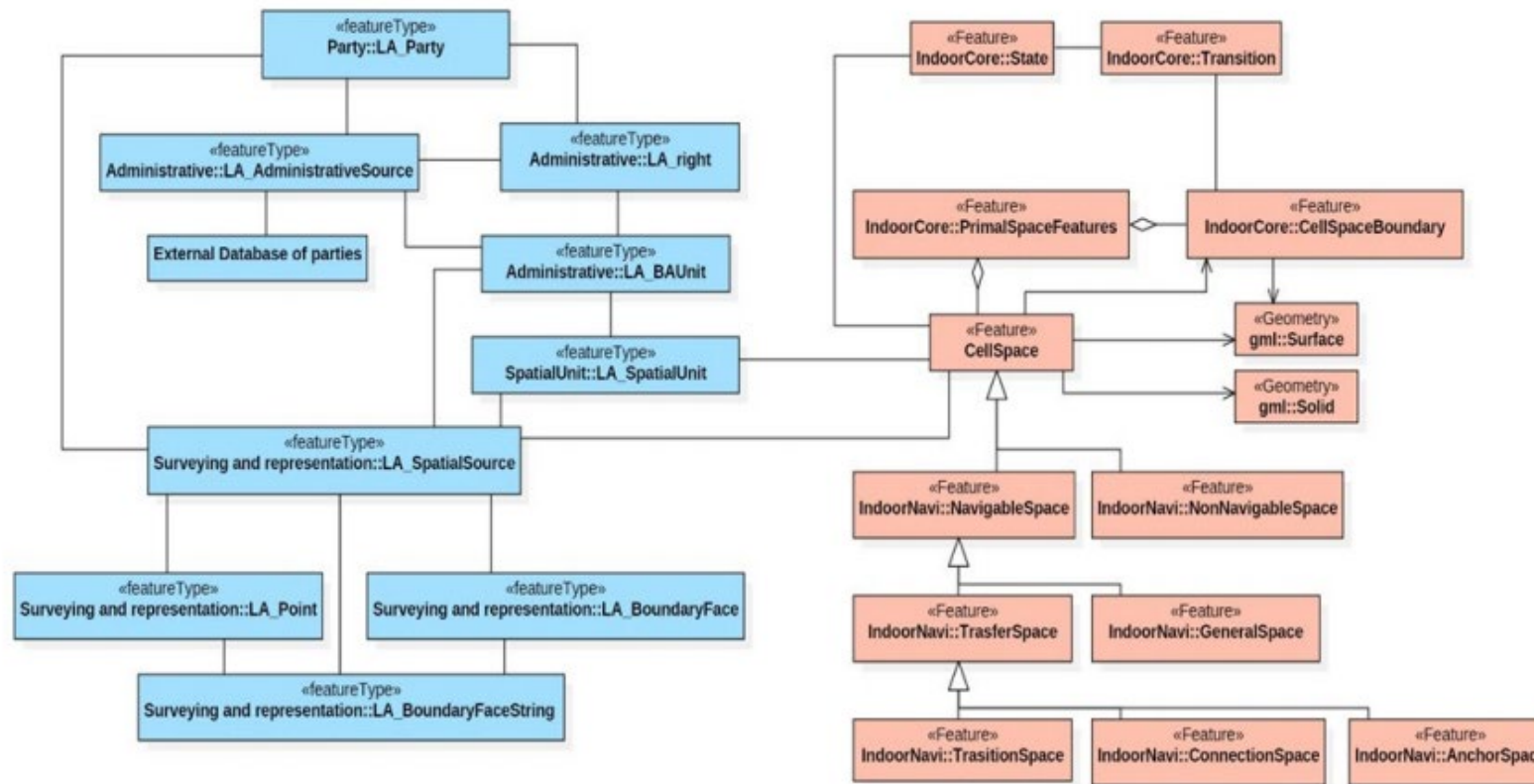
- A. Building Format spatial units
- B. Simple Slice
- C. Single-valued stepped spatial unit
- D. Multi-valued stepped slice
- E. General 3D spatial unit



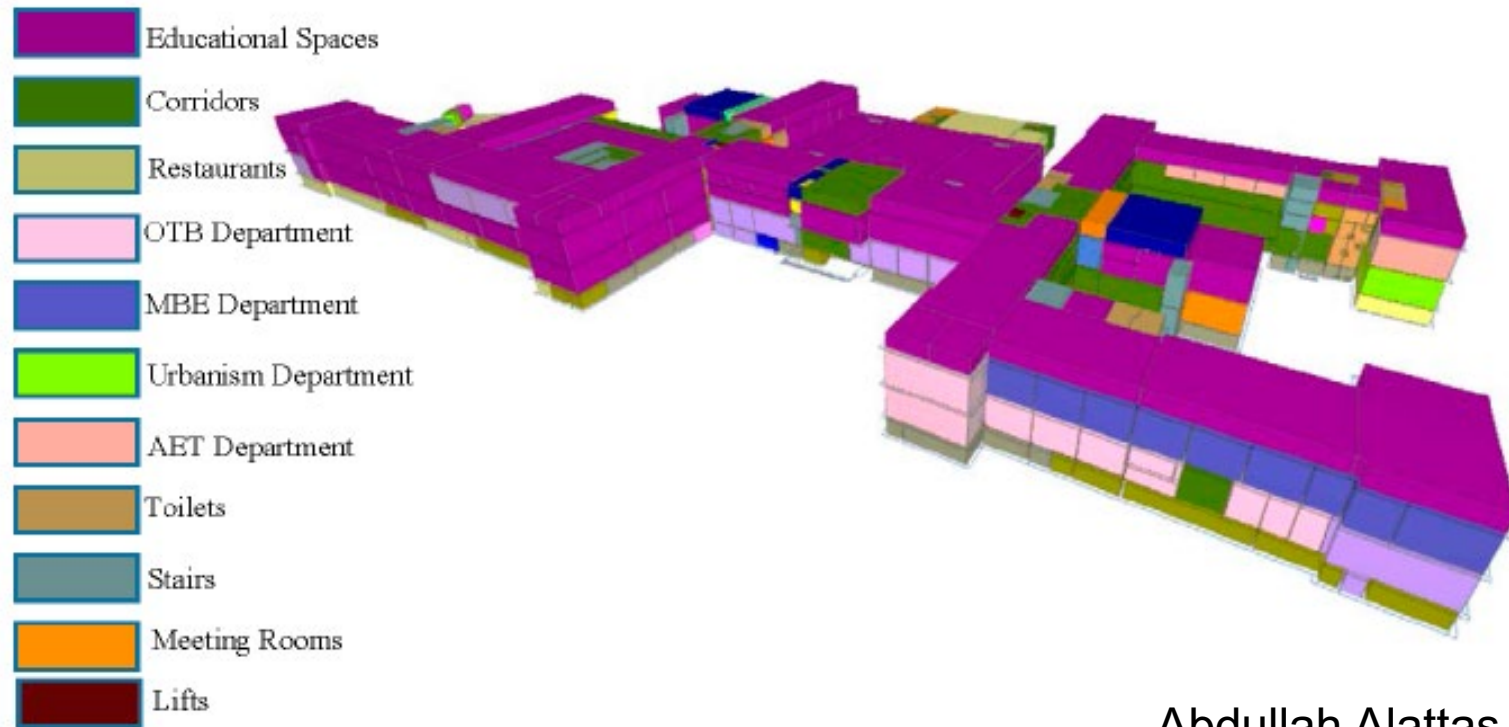
NOTE:  
It is stipulated that the height of the uncovered atriums attached to Lots 10 - 13 and 15 - 18 is restricted to the height of those Lots



# UML model of LADM-IndoorGML combined model



# The classification of different types of cells based on functional rights

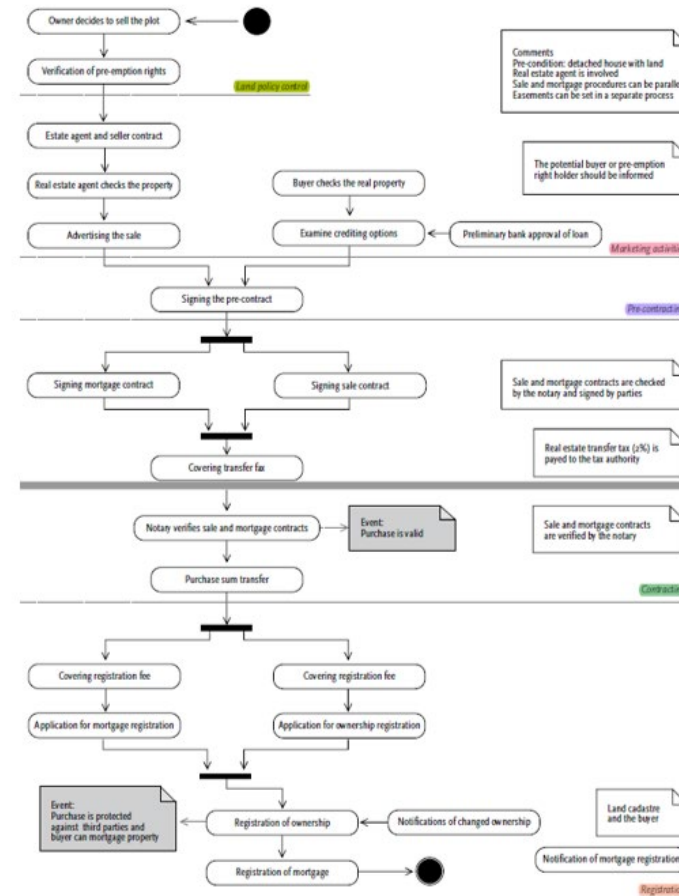


Abdullah Alattas

# Processes

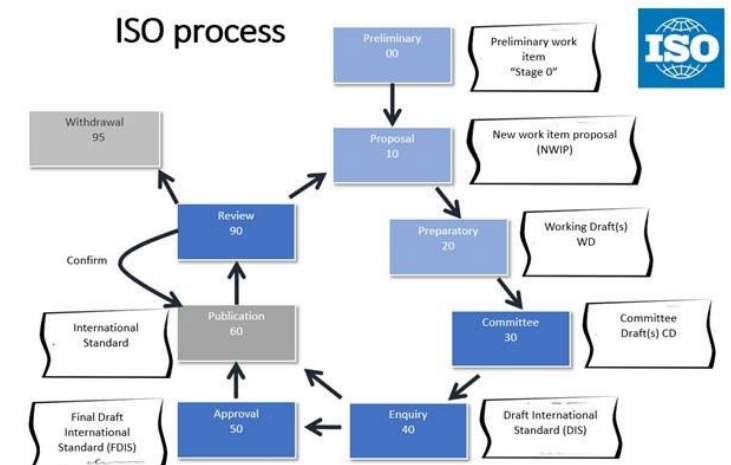
- Transactions
- Blockchain
- Access to Imagery

Example (Zevenbergen)



# LADM Edition II in ISO TC 211

- New project - to meet new requirements
- Modules for taxation and valuation, enhanced 3D and 4D support, land management processes, volunteered land administration and crowdsourcing information, support for harmonized land indicators, the link between legal space to physical objects, blockchain technology for land administration, spatial plans/zoning, Marine cadastres
- Encodings: xxxXML, RDF, INTERLIS, IFC, GeoJSON



# Open GeoSpatial Consortium OGC

- White Paper:
  - Valuation, SDG LA indicators, Performance Index, linking physical objects, indoor models, marine, spatial planning/zoning with legal implications, other legal spaces: mining, archaeology, utilities
  - BIM/IFC, GML, CityGML, LandXML, LandInfra, IndoorGML, RDF/linked data, GeoJSON, and:
  - Process models
- Pilots



# LADM Edition II Multipart

- Part 1 - Land Administration Fundamentals
- Part 2 - Land Tenure or Land Registration or Land Interests
- Part 3 - Marine Space or Marine Geo-Regulation
- Part 4 - Land Valuation
- Part 5 - Spatial Planning
- Part 6 - Implementation



# Organisations that have an interest

- UN – FAO
- UN – HABITAT
- Global Land Tool Network
- UN – Division for Ocean Affairs and the Law of the Sea
- UNGGIM – Land Administration and Manageme
- World Bank
- ISO/TC 211 members
- Open GeoSpatial Consortium
- International Federation of Surveyors
- Valuation Community
- International Hydrographic Organisation
- Royal Institution of Chartered Surveyors
- European Land Registry Association – ELRA
- CINDER Registrars



Thanks!

