





3D CADASTRE IN INDONESIA
Revisiting the Concept of Boundary


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INTRODUCTION



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Strata Title **ACT (1)**



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Strata Title **ACT (2)**

Principles

- New secondary tenure
- Attached to any of primary land tenure, accordingly to land surface
- A bundle of rights comprises of right to posses individual Spatial Unit, as well as rights to common properties
- Strata Title registration document: primary tenure certificate, Strata Title certificate, Land Book in the registrar comprises of separation deeds, occupancy worthiness permit, sketches, field notes, floor plan or blueprint and proportional value of Spatial unit when necessary → 2D registration with 3D tag

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Strata Title **ACT (3)**



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3D Object **BOUNDARY (1)**

Types

- Entirely bounded by walls: inner surface of wall + lower surface of ceiling + upper surface of floor
- Partially bounded by walls: outer surface of wall connected to outer space
- Entirely bounded by imaginary surfaces: vertical projection of agreed boundary in accordance with the use of the unit

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3D Object **BOUNDARY (2)**

Implications (1)

- Entirely bounded by walls: the wall is no more private domain, while it is not defined as common property too
- Partially bounded by walls:
 - dualism between the boundary defined by outer surface of wall connected to outer space and the boundary for wall that is not connected to outer surface, which is neither defined based on this and previous boundary principles
 - The thickness of the wall is mostly not defined in blueprint or floor plan → spatial representation can hardly be acquired




3D Object **BOUNDARY (3)**

Implications (2)

- Entirely bounded by imaginary surfaces: on one hand provides flexibility but on the other hand creates another inconsistency on boundary definition as the boundary is defined based on the agreed line not the boundary line defined in blueprint or floor plan







Spatial UNIT

Working Definition


A 3D unit that is wholly enclosed by either physical or imaginary surface(s), which is located partly or completely on, above and beneath the surface of the earth and sea



Spatial Unit ADMINISTRATION

Working Definition

An execution tool of policy regarding unique 3D Spatial Unit that comprises of space and resources on, in and below the land and sea, which encompasses public sector activities applied to the 3D Spatial Unit within the scope of Spatial Unit Tenure, Use and Value



Spatial Unit **ADMINISTRATION SYSTEM**

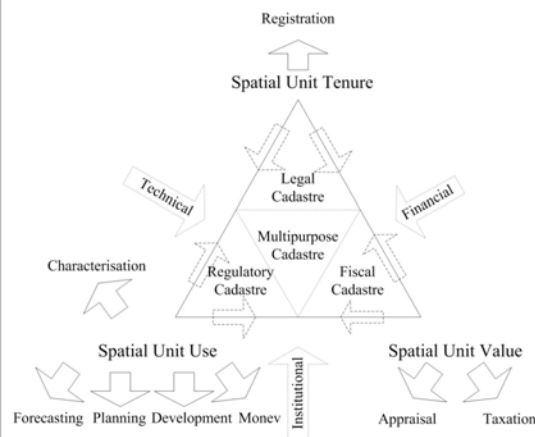
Working Definition


A fundamental infrastructure for facilitating Spatial Unit Administration, which is based mainly by its institutional, technical and financial arrangement



Spatial Unit **ADMINISTRATION**

Hierarchy of Spatial Unit Administration System







Spatial Unit **ADMINISTRATION BOUNDARY**

The Concept

- The boundary: outer physical and/or imaginary surface(s)
- Shared boundary: share the same proportion, esp. based on its thickness



Spatial Unit **ADMINISTRATION BOUNDARY**


Advantages & Disadvantages


Advantages:

- Avoid violation to hidden private domain
- Inconsistency on modelling 3D object could be prevented
- High flexibility for clear boundary definition

Disadvantages:

- Virtuality of the boundary
- Complexity of data





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Spatial Unit **ADMINISTRATION BOUNDARY (1)**



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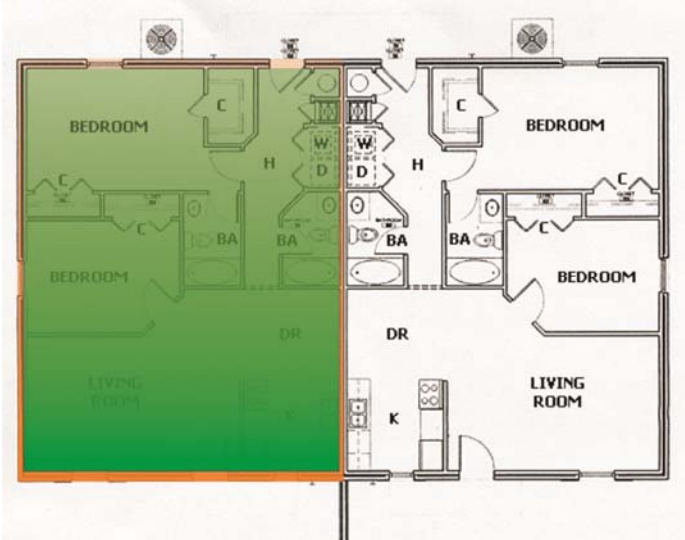

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Spatial Unit **ADMINISTRATION BOUNDARY (2)**



DISCUSSION

- Small ideas, big systematic impacts
- The matter of decision whether:
Having accurate representation of 3D object but more complicated processes and system
Or
Having not so accurate representation of 3D object but simpler process and system
- Legal framework should further deal with the loopholes



Thank you

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