< Multi-purpose cadastres | Contents | Formilization and Adjudication >

The use of LADM primitives and structured indexing to support automated registration using submitted applications

Anthony Beck

Registration systems

> *Land registration systems provide the means for recognizing formalized property rights, and for regulating the character and transfer of these rights.*
>
> *(, p. 36)*

We have described:

- **fundamental primitives** - the nature and representation of **parties**, **rights**, and **land**.
- **outputs** - what **products (including search)**, if any, should be derived from the register.

We shall now discuss:

Digital Registration Systems and instantaneous transaction

This work has a focus on digital approaches.

The `application record` is the vehicle that conceptually presents a legal instrument (deed etc.) for consideration for registration.

We will use the summary application to both create the deed and render the change.

> *In an ideal world, all registration applications would be dealt with instantly on receipt.*
>
> *The Register would immediately be altered in accordance with the application, or, in the case of an invalid application, there would be an instant rejection.*
>
> *Items would no sooner arrive in the Keeper's in-tray than they would leave again.*
>
> *(, para 4.32)*

A transaction should be logical

A transaction represents a change to a party, right, land relationship.

Theoretically a successful transaction should be both logically **valid** and logically **sound**

A logical transaction should be valid

The slots representing the respective party, right and land change should be filled with valid entries.

A valid transaction should be sound

The valid entries should make sense.

For example:

> *a **granter** on the transaction **must have** the **power** to authorise the **transaction** on the register.*

State: a register of parties, rights and land

Each jurisdiction has its own legal framework that defines:

- **fundamental primitives**: the nature and representation of:
    - **parties** who hold
    - **rights** which are defined in
    - **land**

From registered legal facts we can determine legal impact:

- Who owns land
    - What the owner must (not) do on the land
- What benefits the owner has over other land
- What benefits third parties have over the owners land

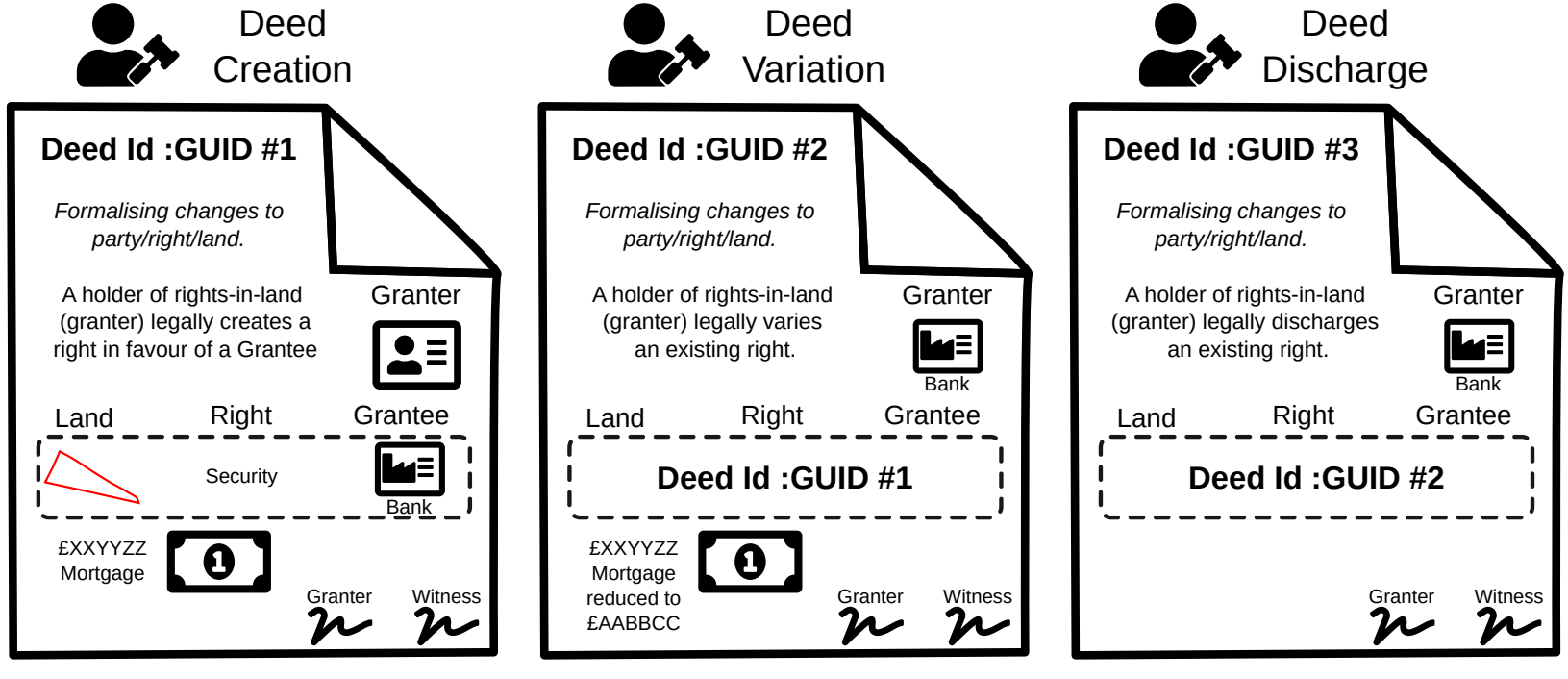
These are a reflection of the *first-order Hohfeldian rights incidents* and rights duality.

However, **we have not discussed how we can change these legal facts**.

State change: Transactions on the Land Register

Changes to Party-Right-Land relationships are represented using **transactions** on the register.

The *second-order Hohfeldian rights incidents* of **immunity** and **power** are used to change rights relationships including:



State change: Transactions on the Land Register

- variation,
    - rights alienation (merge),
    - spatial sub-division (merge), or
    - change details
- transfer, or
- discharge

Conceptual transaction theory

Henssen (, p. 7) describes four general principles that underpin transactions within Land Registers:

- **The booking principle**
    - implies that real rights transaction has no legal effect until the change is registered.
- **The publicity principle**
    - implies that the legal registers are open for public inspection and that published facts
        - can be relied on in good faith and
        - are protected by law.

- **The consent principle**
    - implies that the registered party holding the real right gives their consent for the transaction.

This is critical.

The *party that is registered as holding the real right* is generally **the only party with powers to change the right**.

The *right holding party* has an **immunity** against third-parties waiving, annulling, or transferring their registered right.

This is particularly **important for owners** and supports the *nemo dat rule* (, p. 884):

> *You can not sell what you do not own*

If land is sold without the consent of the land owner then there has been **registration error** or **fraud**.

- **The specificity (originally *specialty*) principle**
    - implies that the transactional subjects (parties, rights, land) must be unambiguously identified.

The specificity principle

We described a Title as being framed by three key elements:

1. the party (*the who*) that benefits from
2. the ownership right (*the what*) over
3. a plot of land (*the where*).

and then extended by PRL relationships which benefit or encumber that land.

Party verification and designation during registration allows us to uniquely identify **the who**.

The legislative framework allows us to identify **the what**.

What is missing is a mechanism to uniquely identify **the where**.

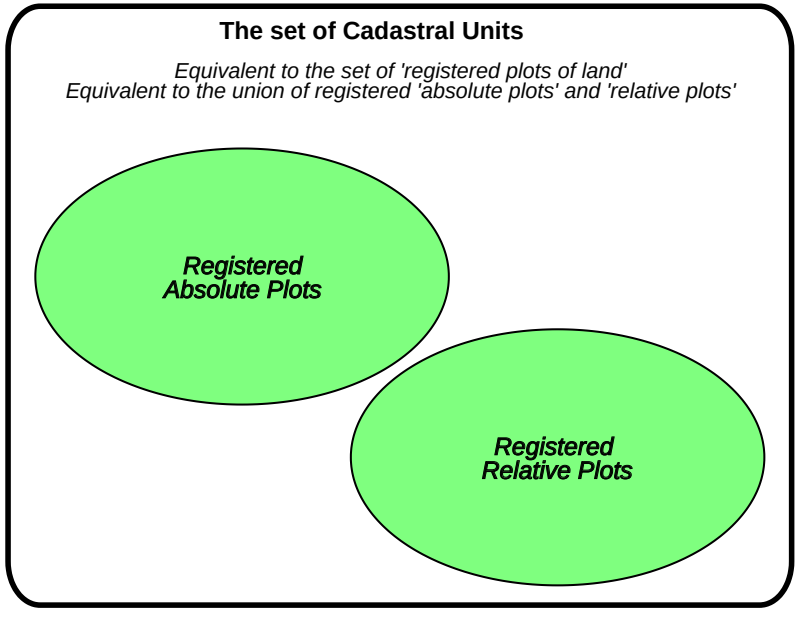
The where: a register of (owned or possessed) land

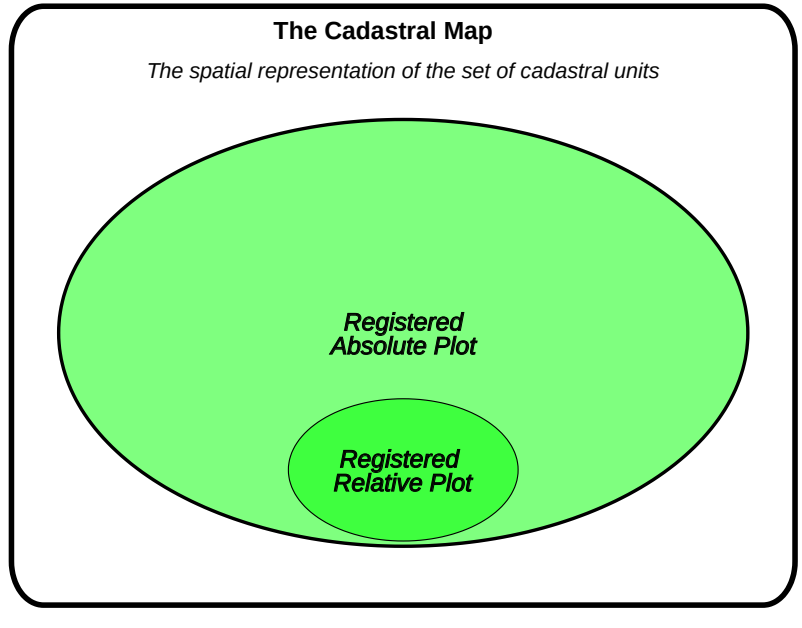
The where is the spatial extent of the owned plot of land.

Absolute and *Relative Plots* describe *Plots of Land* which when registered become *Cadastral Units*.

The set of 'Cadastral Units' represents all the 'registered plots of land'.

The spatial representation of the set of 'cadastral units' is the 'cadastral map'.





Specificity and indexing

A digital Land Register consists of relationships describing:

- Party,
- Right,
- Land

> *and then extended by PRL relationships which benefit or encumber that land.*

Two principal indexes are required to efficiently structure a modern digital Land Register:

1. Party index - to efficiently identify *pertinential benefits*.
2. Spatial index - to efficiently identify encumbering third party rights.

Describing change

Transactional instruments are *jurisdication dependent* and used to *legally instruct* registrars to make **changes** to the register .

These are normally **legal instruments** (a *Deed* or *Contract*) but can be less formal.

A transactional instrument for a Land Register:

- describes specific rights relationships between:
    - a *granting party* (a right holder - normally the owner) and
    - a *grantee party* (the benefiter) over
    - an *area of land*.
- can represent *multiple rights* granted to *multiple parties* over *multiple areas of land*.
    - as long as the granter has the **power** to make the rights change which is being granted.

What's in a name?

It does not matter whether a *transactional instrument* is formal, informal or even a *legal instrument*.

The key element for this approach is that the *transactional instrument* is a **vehicle for change**.

As we will see **change drives everything** and we will articulate this change in a manner which is:

- Machine readable,
- Human readable, and
- Legally competent evidence

Henceforth, we will use the term **deed** for *transactional instruments*.

Transactional Instrument of change as APIs

Accepted Transactional Instruments change a register. They are legal APIs defined for each jurisidiction. Which:

- *define change*
    - creates,
    - varies or
    - discharges
- a thing *(which is of interest to the parties AND is of interest to the registration body)*
    - registerable spatial right
- and is *(legal)* - OPTIONAL by jurisdiction
    - executed (signed by the grantor),
    - witnessed and
    - delivered (to the grantee).

Transactional operations

Transactional Instruments can produce:

- **create operation**:
    - a new party/right/land relationships by *alienating* rights.
    - multiple party/right/land relationships can be generated with a single instrument.
- **variation** of right(s) in *an instrument that has already been registered*
    - the variation does not need to affect all rights in an instrument.
    - rights can be *discharged* through this process.
    - variation allows nuanced change to an instrument.
        - at implementation one should consider whether
            - the right is physically varied within that instrument (this destroys audit) or
            - the right is discharged in the original instrument and articulated through the new instrument (maintaining audit)
- **discharge** *an instrument that has already been registered*
    - the instrument is discharged extinguishing all rights.

The life-cycle of a Transactions instrument

A deed does not appear fully formed. It is part of a process:

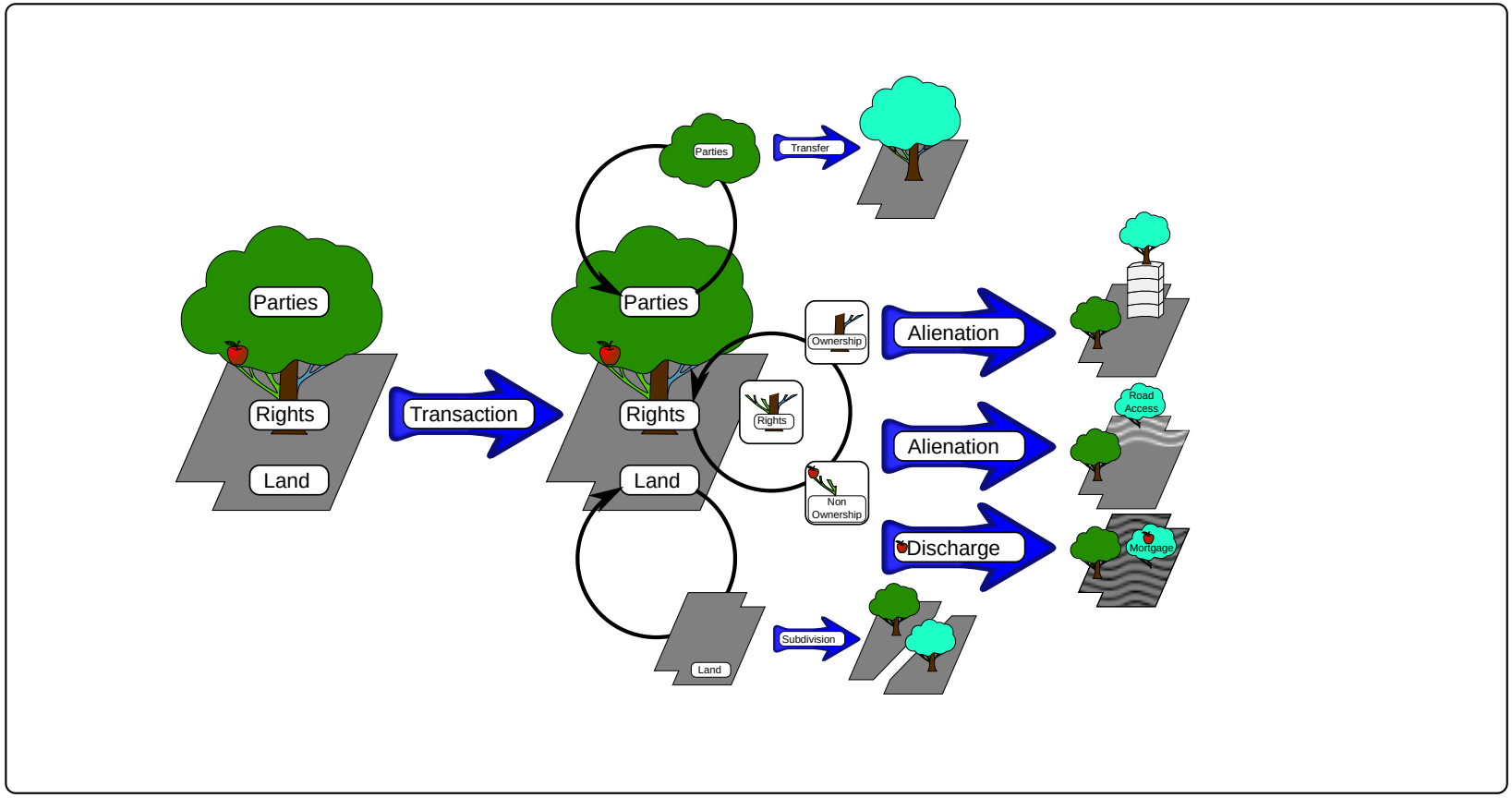
- Draft (applications) - applications that are yet to be submitted.
- Submitted (applications) - An application is submitted to the **registrar** for acceptance.
    - Rejected - An application *is **rejected** because it breaches a registration rule*.
    - Accepted - An application *is **accepted** because it does NOT breach a registration rule*. An accepted application becomes a *Transactional Instrument (deed)*.
- Registered (deed) - An application is accepted by the **registrar**. Once registered it can be:
    - Varied - PRL relationships are **changed** by the right holder with powers.
    - Discharged - PRL relationships are **extinguished** by the right holder with powers.
    - Voided - PRL relationships are **voided** by the jurisdiction to correct a registration error.

Transactional PRL primitive operations

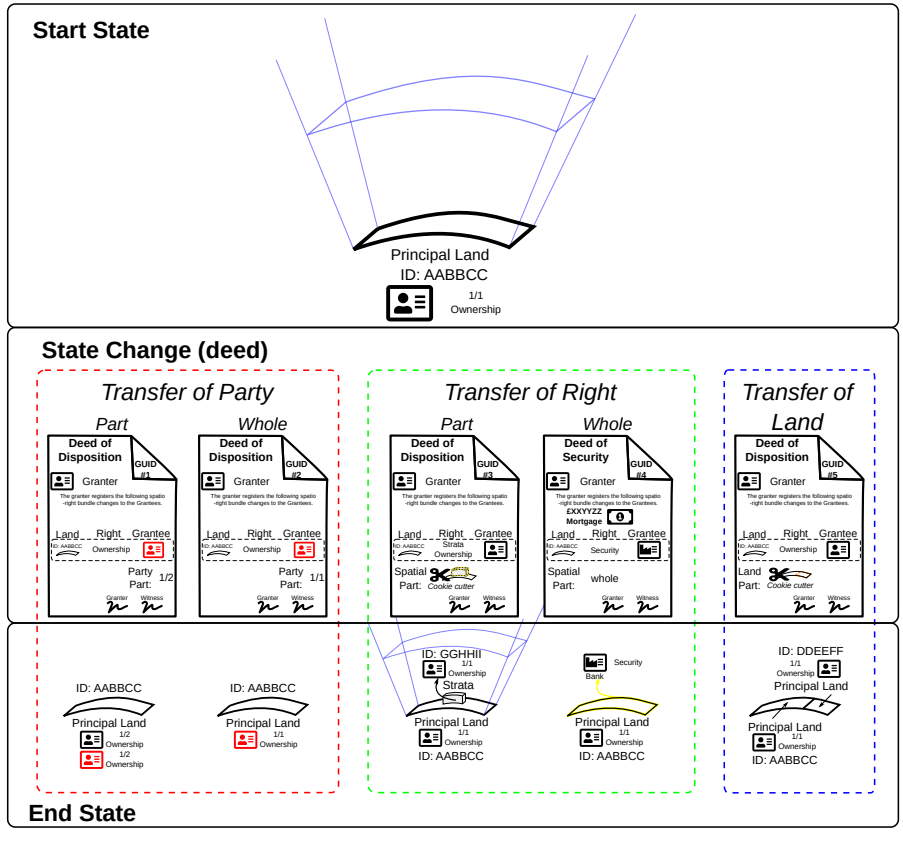
A right holder can undertake the following *PRL primitive operations* providing they have appropriate *powers*:

- Sale - Transfer of Party
- Rights alienation - Transfer of Right
    - ownership and
    - non-ownership
- Ownership subdivision - Transfer of Land

Transactional PRL primitive operations



Transactional PRL primitive operations



Bibliography

< State: a register of parties, rights and land | Contents | Modelling concepts >