

A Word Processor based Deed Design to facilitate Land Title Adjustment

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Key words: Off-register Transactions; Land Title Adjustment; Strategies to Strengthen de Facto Land Transaction Strategies; Fit for Purpose Technology; Social Tenure Domain Model.

SUMMARY

The paper presents a prototype deed designed for situations where paper documents are important, but transactions can be expected to occur through unofficial processes, and the title has to be cleaned up periodically. The deeds system may be maintained on word processors, which require lower levels of information technology infrastructure and lower levels of IT support than a system run on a database. It offers an alternative option to land tenure information systems that run on a database, such as SOLA or the STD. A word processor based system is a better strategic alternative where the critical success factors for a land tenure information system run on database may not currently exist. That said, the design offers a path to a system run on a database. It is also designed to cater for complex tenure situations, and situations where family law and law are do not have the levels of separation as they do in many jurisdictions where the common law has evolved from English law or Roman law.

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1. INTRODUCTION AND RATIONALE

The paper presents a design for a title deed that addresses the wider constellation of interests that may vest in a parcel of land than those that are normally reflected on a legal title deed. The design provides detailed information to assist the process of cleaning up the title if it becomes clouded by a series of off-register (informal) transactions. The design is informed firstly by an examination of the land title adjustment process in South Africa and secondly by field studies in South Africa, Ghana, Nigeria and Somaliland. The field studies included evaluating the strategies that poor communities use to secure their tenure in peri-urban Cape Town, South Africa, and Accra in Ghana, by the application of the Talking Titler system in land regularisation and adjudication in Nigeria, and post-conflict land administration strategy in Somaliland.

There is a need for land tenure information systems that are designed to work with what occurs on the ground in complex tenure situations. The field studies have revealed that in general legal paper documents (i.e. title deeds) are an important artifact for landholders as one of the instruments to secure their tenure and to secure transactions in land. However, title deeds may merely be one of a range of instruments and processes that people use for these purposes. While the author's field research has revealed that there are titling success stories where people do register secondary transactions, people often use title documents in a manner that does not match what policy makers intended. The consequence is off-register transactions create a mismatch between the official records (e.g. registered title deeds) and the *de facto* land tenure information system. It can be a very expensive process for future generations to clean up a cloudy title (Barry and Whittal 2016, Barry and Roux 2016). In situations where off-register transactions are inevitable, but there may also a need for clean titles at some later stage, then the paper documents should be designed to facilitate the regularization / title adjustment process.

In arguing the case for more detailed information about interests on a title deed, the article first covers land titles adjustment in South Africa. It then briefly discusses the findings on peri-urban studies, the use of the Talking Titler system, and post-conflict land administration. It then describes and motivates the different parts of the deed design.

South Africa has for long had a registration system that some international observers have regarded as world class. In South Africa only registered transactions are recognised in court (*Deeds Registries Act 47 of 1937, s.16, Harris v Buissine's Trustee (1840) 2 Menz. 108*).

However, off-register-transactions in some African freehold communities go back as far as the 19th century (Kingwill 2013, field notes). Nowadays, it appears that a significant proportion of the 1.43 million state-subsidised houses have passed hands off-register (Gordon 2008, Financial and Fiscal Commission 2012, Charlton 2013).

The land title adjustment process to clean up cloudy titles in South Africa, is instructive. Kingwill's (2013) work in the Eastern Cape Province and the author's work in KwaZulu-Natal reveal that initiatives to clean up titles tend to be initiated by land administration authorities for development purposes. Cloudy titles freeze development. The authorities cannot get the permission of neighbouring cloudy title owners for development applications. It is impossible to expropriate a land parcel for development if the de facto owner is not the registered legal owner. It is also impossible for a landowner to mortgage their property if the title is cloudy. Land titles adjustment is a legal process in terms of the Land Titles Adjustment Act 111 of 1993, where a commissioner gathers evidence about the chain of title and the chain of actual transactions, and then adjudicates who should be the rightful owner of a property. A new, clean title is then registered. A critical component of this process is that the relevant documentary evidence should be available to the commissioner. The commissioner has to examine documentary evidence as well as oral histories relating to particular properties to ensure that he or she does not inadvertently extinguish legitimate interests in the land.

Currently, in South Africa and many other jurisdictions most deeds or titles are simple documents. The simpler the set of documents, the easier it is to administer the system. They are designed with the notion that each new transaction will be registered, not with re-adjudication or title adjustment in mind. In addition the original data relating to how title to land was determined, whose name should be on the title and whose should not, is seldom kept in the same office or database as the titles or deeds.

One way of addressing the challenge is to design a document which caters for off-register transactions and a probable later title cleaning, or re-adjudication process. A deed which captures the complex constellation of interests in a piece of land at the outset, captures the intentions of the interest holders as to how these interests should evolve over time, and a mechanisms for searching these documents in electronic form may make a title adjustment commissioner's work easier and possibly more robust.

The second motivation for the design is based on field work in Somaliland, Ghana and Nigeria, and software development and testing using the Talking Titler system. Most registration systems are not designed for complex tenure situations, where a constellation of interests may exist outside of what is modelled in the registry. Landholders use a range of structures and processes to secure their tenure and to secure their transactions. Efforts to regularise a situation or to recreate the title after the official records have been destroyed have to take into account oral testimony as well as documentary evidence. In simple terms, if more evidence that is relevant to these situations can be provided in the form of documentary evidence, perhaps augmented by multi-media evidence, then the regularisation process might be considerably improved (Barry et al 2002; Barodien and Barry 2004; Barry 2005, 2006, 2009, 2015; Barry and Asiedu 2016).

2. DESIGN FEATURES

Computerisation of registries is increasing in many jurisdictions. Initiatives such as the UN-FAO's Solutions for Open Land Administration Software (SOLA) project, the Social Tenure Domain Model (STDM), and various commercial software products are available to effect this titling at low

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cost (Pullar et al 2012, UN-Habitat 2012). The title deed design presented here is intended to fill a gap beneath these systems in situations where the IT skills do not exist to maintain a database system and the problems associated with frequent software updates that occur in database and GIS software. Further, in jurisdictions where civil servants earn low wages, training them to meet the required level of IT competence merely trains them to leave to find higher paying jobs in commerce. As possible consequence is the land tenure information system then has to be maintained by outside agencies (Barry 2006, 2009).

A land tenure information system, a registry, that runs on a set of word processor files, files which can incorporate simple graphics (e.g. jpeg scans), is one strategic option where the critical success factors for system run on database software and/or GIS are absent. The simple registry requires a lower level of computer skills and requires far simpler systems of hardware and software. Word processor and portable data format (PDF) files are easily backed up and are easy to print for landholders. If the registry office is destroyed, during political unrest for example, it is easy to recreate the registry from off-site backups.

As with any registration system, there are a number of critical success factors to using such as system. Firstly, whatever is included on a title deed has to comply with the law. Secondly, the operations management function is very important. Properly managed procedures to limit instances of fraud, procedures to establish priority of documents, the proper updating of documents, and proper document management are essential. Conveyancing manuals going back over two hundred years always emphasize that the lawyer / person overseeing the transaction has to establish that the vendor or testator is not transferring a greater interest in the property than they possess and the buyer or heir is not receiving a greater interest than they are entitled to (Preston 1818). “You cannot sell what you do not own”, is the popular phrase that covers this.

A pro forma document is included in the appendix to this paper. The next section motivates and explains the different sections of schedules in the document.

3. EXPLANATION OF DOCUMENT DESIGN

The prototype deed in the appendix incorporates many of the standard characteristics found on most titles or deeds, and it is influenced by titles / deeds in South Africa, Western Australia and Ghana. However, in addition a person creating the deed can describe or cross reference the many different interests in a piece of land when those interests are first documented. Cross references may be to other artifacts such as: paper and digital documents, videos, photographs, maps, and audio recordings. The deed also allows for key words pertaining to the different relationships to be incorporated in the documents. This should facilitate searching, data mining and social network analysis of the documents in digital form when re-adjudication occurs or to examine patterns of fraud or sharp practice over time.

Refer to the instrument in the appendix starting with the heading **PROPERTY DESCRIPTION**. Green text and green filled text boxes are for information purposes. They should be deleted from any “real” document.

3.1 File Naming Convention

The file name should indicate the deed number (e.g. TA_2017_123456_1) and possibly the property identifier (e.g. Lot 25). In this example, TA refers to the type of document (e.g. a title or transfer), 2017 the year of the transaction, 123456 represents the number of the transaction in the particular year, and the _1 represents the first amendment to it. So our file name might be TA_2017_123456_1 Lot 25. Choose a convention that suits the local circumstances. You don't want a range of different filing systems which cause incompatible records later on.

3.2 Property Description

The property description is best explained by examining the example document. The example refers to a standard form of identifying property and cross referencing the property to others in order to maintain a chain of title. There are many other ways of naming / identifying a piece of land, such as a reference to a family lineage instead of a Lot.

Note the different methods of showing the location and the cross references to other documents such as survey plans and the original deed. A copy of the survey plan is a very good way of showing the location of the property in relation to the neighbouring properties. See the green text below the figure for a more detailed explanation.

A key spatial relationship may be the chain of subdivisions and consolidations e.g. Lot 25, portion of Lot 1. Lot 25 and Lot 1 are the nouns. In this case they are property objects. "*Portion of*" is the verb, which implies a relationship between these two property objects.

3.3 First Schedule: Primary Rights

A number of registries around the world divide their documents into different schedules, and I have drawn on these. The first schedule in this example is the primary rights holder(s) who may be an owner, a lessee etc. Note that the chain of transactions is retained within the document. Some, registries have the abstract of title / index for the chain of title in a file for the property, (e.g. Accra in Ghana), others run an abstract or index book. If possible, the abstract or index should be kept within the document. However, if there is a strong possibility of off-register transactions after first registration, then it may be a better option to provide a paper index in an office file. Bona fide off-register transactions tend to be simple private conveyances; the vendor hands over the title deed to the vendee. As an example, people running the records in a local level registry can make written notes about the off-register transactions that occur in the file for the property. Likewise the signature section should be adapted to cater for off-register transactions.

Historically some jurisdictions have kept a parcel based index or a person index. The example deed incorporates a parcel based index. It shows the chain of title in the current parcel, each instrument used to effect a transaction and the chain of subdivisions and / or consolidations that created the current parcel. A person index shows the properties in which a particular person holds interests. Newfoundland, for example, keeps both types of index. South Africa used to index by parcel in the paper record system. It also allows a person to consolidate their personal land holdings

incorporating shares in multiple parcels in a single deed using a certificate of registered title. Thus an indexing system needs to be devised to suit local circumstances, and this also dictates how it should be incorporated in a title deed – if at all.

Note the options (green ink) for trying to prevent the title holder from selling the property without the permission of other people who have an interest in the land. We can't have everyone's name on the title. Title adjustment commissioners tell me that this effectively freezes the property as it can be impossible to get every signature when matters affecting the property arise. However, we do need to protect off-title interests as best we can. Examples of the type of instrument that might be used to protect off-title interests are listed in Schedule 5 of the example deed.

3.4 Second Schedule: Partial / Secondary Rights Abstract

This is a list of all the partial or secondary rights registered against the title or that have been registered. This second schedule can be found in a number of Torrens type systems where the instruments shown in the abstract are kept in separate files and the details are not shown on the title / deed. You have to go and retrieve each document to examine the instrument. I do not recommend this for the type of complex situations that I envisage this instrument being used for, as document references may be omitted in error or the documents themselves may be lost. Thus we have details of these rights included in the document in schedule 3.

3.5 Third Schedule: Partial / Secondary Rights Instrument Details

There are a number of systems (e.g. South Africa) that copy the details of each partial / secondary right into the current deed. I have shown examples of this.

In a looser situation, we might just make notes of agreements and transactions that occur that affect the property or property object. For example, in a local level record system for informal settlements that I have come across, there was an initial register and then changes in family structures and transactions were written down in a book. If the skills and equipment exist to do this, then the third schedule (or the index in the first schedule) that I have shown here could be adapted for this purpose. The advantage is the changes can be shown in a record system outside of the settlement. It may not be rigorous. It may not fit what is required by law. However, it is a record of what has actually happened. In the informal settlement, a note was made that an uncle was to look after the shack for two children who were orphaned by a massive shack fire. The uncle then tried to sell the shack. The note was explicit that he did not have that right. Getting the record out of the settlement on file means external mediators or law enforcement agents can intervene.

3.6 Fourth Schedule: Multimedia Evidence Index

Multimedia records such as video files, audio recordings, photographs etc. can be very useful in societies where paper based records are not the norm, or where paper records cannot capture tenure relationships adequately on their own. They also allow people to describe situations in their own language and in the particular setting where the land interests apply. The problem in cases where there is change, especially when there is urbanisation, is the oral tradition (what was passed down through generations) and the oral history (what people have observed in their lifetime) may be

manipulated. My experimental work in South Africa and Nigeria has shown that a video record can be very useful in providing the story at a particular time. However, very few communities where this may be important have the means to store this data in a database or GIS. We also want to avoid relying on outsiders to manage the system. However, we can store multimedia data on durable mediums such as DVD disks and that is what I have done in my work. I have given out copies of the DVDs to the different parties. If there is a dispute later on, the DVD can be viewed by a mediator who has access to the technology to view it.

If there is a community based photographer (perhaps the guy who does videos of social events such as weddings and other social events) then a record of still photographs, audio files and videos can provide the detail of how the tenure system is supposed to work and the witnesses to a transaction. It's an option, and having the record available where people can look at it from time to time may reduce the risk of conflict or manipulation of the system by elites. A warning (again), however, is that the conditions for the system to work have to be in place. Risks include: is there a safe place to store the files and can they be accessed, are people likely to be intimidated when they give evidence on camera, can technology savvy people manipulate the process, and so forth? How the data are collected may also be important. For example, mediators in property disputes have also told me that a person may present one story in one forum and then a very different story in another forum.

3.7 Fifth Schedule: Interested Person Details and Relationships

The fifth schedule covers situations where it is not possible to record the names of all the parties who have an interest in a piece of land or some other property object on the deed or title or in the first schedule of the sample deed.

We might have a list of persons who give permission for a transaction to occur. There has to be a system to manage this list. Otherwise the list itself can become a source of conflict over generations.

If we can't list interested parties, we might give the file name and location of a lineage or family register.

Legal documents such as a pre-nuptial contract, trust for a community, membership list for a communal property association might be referenced in this list.

Note the allowance for searchable key words and key relationships. This is a look into the future. Whereas a word processor file based system is simple, it should also cater for future needs as the system evolves. A system of key words and key relationships may be used if the skills exist to run such a system among the operational staff. If the key relationships system is properly set up, data can be extracted into social network analysis packages and the subsequent analysis can identify harmonious, conflicting and changing patterns of behaviour in local politics and family politics as they pertain to land tenure and the parcel(s) in question.

4. CONCLUSION

The above and the pro forma deed cover much of the complexity that we can expect in many situations where a simple registration system is inadequate in capturing the many interests in pieces of land and there is a lack of IT skills to run a land record system. Clearly there are weaknesses with many parts of the document. For one, it might appear to be overly complex. It may also be difficult to prevent fraud if the systems are not in place to manage this. That said, even the most sophisticated systems can be gamed if the checks and balances are not in place. A document showing the details of what was intended at the outset, who had off-register interests, and such may mitigate fraud or at least provide more information for victims of land grabs to get their property back.

The strengths of the pro forma deed are it captures much of the relevant information in a single document, and it incorporates the use of multi-media tenure information. It does not need a highly skilled IT person to maintain a software system and offsite back-ups can be created easily. It is also structured so that the data may be transferred to a database system in future without too much fuss. Moreover, it has the look and feel of many deeds or titles that are used around the world and it should be possible to integrate this with existing registries if it is run as parallel system; providing it is set up with this in mind in any local context. It does need someone who can operate a word processor and manage files, however. It can be adapted, e.g. simplified to match the skills and technology available or extended to cover more complex environments, to fit many situations. That adaptation is one strategic option that might be considered in any given situation.

REFERENCES

- Barodien G and Barry M 2004. Palm Computers for Spatially Referenced Social Surveys in Upgrading Informal Settlements. *New Zealand Surveyor* 294(June 2004), 3-9.
- Barry M, Roux L, Barodien G and Bishop I 2002. Video-evidencing and Palmtop Computer Technology to support formalising Land Rights. *Development Southern Africa* 19(2), 261-272.
- Barry M and Khan K 2005. *Developing Talking Titler Methods in Creating Land Records*. Research Report to Natural Resources Canada, Surveyor General, Western Region.
- Barry M 2006. *A Strategic Framework for Post-Conflict Land Administration Development: Hargeisa Municipality, Somaliland*. UN-Habitat, Nairobi. 20 July 2006.
- Barry M 2009. *Innovative Response to Land Registration, Customary Title and Land Conflict: Applying Talking Titler Methodology: Report No 4 February 2009*. British Council, Security Justice and Growth Programme, Nigeria. 9 pages.
- Barry M. 2015. *Property Theory, Metaphors and the Continuum of Land Rights*, UN-Habitat / Global Land Tools Network, Nairobi.
- Barry M and Asiedu K 2016. Visualising Changing Tenure Relationships: The Talking Titler Methodology, Data Mining and Social Network Analysis. *Survey Review*, **49 (352)**, 66 – 76.
- Barry M and Roux L 2016. Study of Effective Land Registration Usage in State-Subsidised Housing. *South African Journal of Geomatics*, 5 (1), February 2016, 82 – 94.
- Barry M and Whittal J. 2016. Land Title Theory and Land Registration in a Mbekweni RDP Housing Project. *Land Use Policy*, 56 (2016), 197-208.
- Benda-Beckmann, F. V. von, K. V. von BendaBeckmann, & M. G. Wiber (2006). The Properties of Property. In Benda-Beckmann, F. V von, K. V. von Benda-Beckmann, & Wiber. M. G 2006 (eds.). *Changing properties of property*, New York, New York: Berghahn Books.
- Charlton, S. 2013. *State ambitions and peoples' practices: An exploration of RDP housing in Johannesburg*. Thesis (PhD). University of Sheffield.
- Financial and Fiscal Commission 2012. *Building an Inclusionary Housing market: Shifting the Paradigm for South Africa*. Report on the public Hearings on Housing Finance. 31 January 2012.
- Gordon, R 2008, *Review of data on how the poor access, hold and trade land: Additional Analysis*, Cape Town: Urban LandMark,
http://www.urbanlandmark.org.za/downloads/Additional_Quantitative_Analysis_Report.pdf
[2014.07.24]

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Preston R 1818. *Abstract of Title*, Vol I, Clarke & Sons, London.

Pullar, N., McDowell, A., Solovov, A., Manoku, E., & Rizzo, M. P. (2012). Solutions for Open Land Administration (SOLA) Software—Customising Open Source Software to Support Land Administration Services and Responsible Land Governance. In *Annual World Bank Conference on Land and Poverty, Washington DC. The World Bank*, April 2012.

UN-Habitat 2012. Handling Land. *Innovative tools for land governance and secure tenure*. United Nations Human Settlements Programme (UN-Habitat).

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APPENDIX PRO FORMA DEED EXAMPLE

Deed Number TA_2017_123456_1 ←

Michael Barry.

Reference System to reflect
unique number of title deed and
a new number for every change
/ endorsement

Copyright

PROPERTY DESCRIPTION

Lot 25, portion of Lot 1, Almondville, province of Kalahari in the registration area of Cape bounded as shown on the sketch plan below.

Survey Diagram / Plan: DA_291_1979 ←

Original Deed: TA_4562_1979 ←

Tenure: Lifetime Lease

Area: 2206 square metres more or less

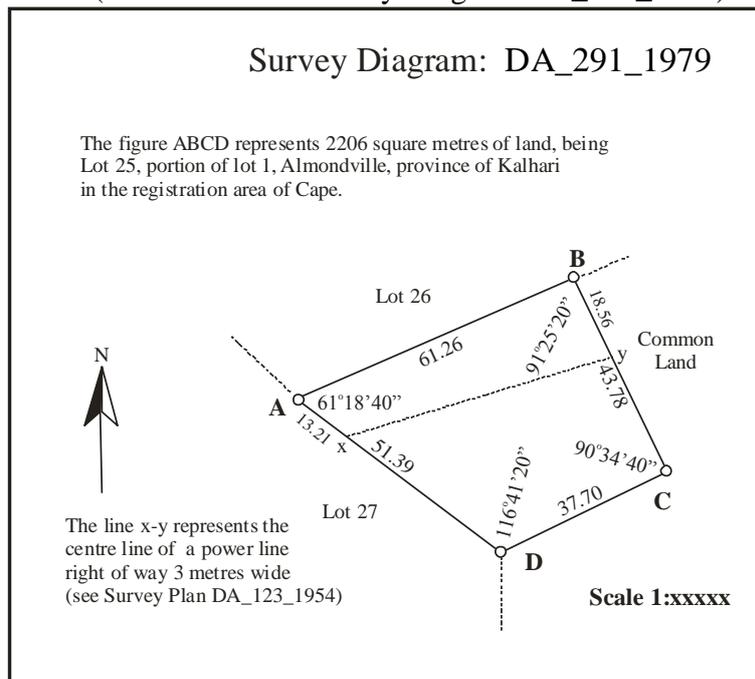
Note: References to
original / related
documents

LOCATION AND SURROUNDING PROPERTIES

GPS coordinate of Midpoint: *Latitude, Longitude, Height, Geodetic Reference System.*

Note: Noting the reference system is of major importance. A GPS position may be displaced from the national mapping agency's system. Mixing positions of properties based on different reference systems on maps or in a GIS can create havoc.

Sketch Plan: Not to Scale (Extracted from Survey Diagram DA_291_1979)



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(Note: the sketch plan be no more than a sketch. It may be an extract from an official survey plan / diagram or just a sketch of the relative positions of the different properties and servitude interests. It is not an essential part of the document, but it is nice to have it. – see the types of titles used in Western Australia for a real example. If you do not have a sketch then a description of the boundaries and adjacent properties should be included. E.g. Lot 25 is bounded by Lot 25 to the North, Common Land to the East and South, and Lot 27 to the West.

First Schedule: Primary Rights

A: Primary Rights Holder

The wording below should be adapted to each situation.

This property lease was transferred for the sum of \$50,000 from James Blog ID635478003 to Jane Beatrice Doe ID 576832008, represented by Attorney John David Brown who appeared before me.

James Blog: ID 635478003 Signature:
John David Brown ID 772118009 Signature:

Note: Part A: The owner or lessee and his representative sign the deed in front of witnesses

James Louw ID 772118009 Signature:
Registrar of Deeds Date 5 May 2017

Witness 1: James Peter Doe ID 671231456 Signature:
Witness 2: John David Brown ID 780817378 Signature:

Possible special clauses to cater for people with interests in the land whose names are not on the title:

1. No transaction relating to this property may occur without the signed approval of the persons listed in the Fifth Schedule to this document, or
2. No transaction relating to this property may occur without the signed approval, or the photographed show of hands, thumbprints of 70% the members of the Almond lineage as per the Almond lineage register document Almond xyz, or
3. No transaction relating to this property may occur without the signed approval the trustees of the Almond Family Trust,etc.

Note: Abstract / index of instruments in the chain of title.

B: History / Index / Abstract of Primary Rights Holders and Subdivisions and Consolidations

Instrument	Holder	ID Number	Date	Comments
TA_452_1992_3	James Blog	635478003	13 Jan. 1992	Inherited by will W456/92
TA_876_1986_0	Joan Blog	228781008	13 Mar. 1986	
TA_4562_1979_2	Germaine Jones	345649008	29 Sep 1979	Created by subdivision from Lot 1

Note the Deed number needs to be updated every time a change (e.g. an endorsement on the deed) is made. E.g. When the first change is made it will become TA_123456_2016-1

SECOND SCHEDULE: PARTIAL / SECONDARY RIGHTS ABSTRACT

This section is merely an index of the different interests over the property.

INSTRUMENT	DESCRIPTION	DATE	Notes / Endorsements
CA_123_2008	Caveat: Family rights	5 May 2008	Family rights reservation
MA_278_2008	Mortgage in favour of Greenland Bank	5 May 2008	
SA_452_1992	Right of Occupation (usus) in favour of Arthur Blog	13 Jan 1992	Cancelled 5 May 2008
SA_235_1954	Power line right of way / servitude 3 metres wide in favour of electricity corporation	26 Feb 1954	Created over parent lot 1. Survey plan DA_123_1954

Note: The above is what often appears on some Torrens titles. The actual documents have to be retrieved from the filing system. They are not duplicated in the deed / title.

THIRD SCHEDULE: PARTIAL / SECONDARY RIGHTS INSTRUMENT DETAILS

The following are examples of what might be included in the deed as descriptions of partial rights. This section is not an essential part of the deed. However, it is sensible to compile all the different interests over the property in a single document. Providing this is done correctly and kept up to date, the landholder has all or at least most of the information about their property in a single document.

Using database terminology, if the relationship is 1:1 then the instrument may be created in this document. It can be copied to a separate document in the database if necessary. If it is a Many-to-1 (e.g. power line servitude over many

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properties) or Many-to-Many relationship, then the partial right document should be created separately. The text of that document should be copied into this document. I envisage that the legal document is the one which was first created to define the particular rights – copies of that are evidence of the rights. So, if you copy the text into this section here from the Mortgage deed MA_278_2008. If there is a difference between the text in this document and that one, the text in the older document, the first document to be registered and which creates the secondary right, should prevail.

CAVEAT / WARNING / NOTICE / CHARGE file CA_123_2008

No transaction in rights in this land shall take place without the express, written consent of the interested parties listed under schedule 1 part B of this title deed.

MORTGAGE file MA_278_2008

(Copy method: direct by cut and paste)

Over property known as lot 25, portion of lot 1 Largeville, province of Kalhand in the registration district of Cape in the amount of \$40,000 in favour of Greenland Bank to be repaid in monthly instalments over twenty years at a rate of interest to be determined from time to time *etcetera*.

Date:

Cancelled on 5 May 2008 as per cancellation notice on original document

Cancelled on 5 May 2008 in terms of death certificate DD1234/2008 by me

[Signed]

James Louw

Registrar of Deeds

Cancelled in terms of TA_452_1992, 13 January 1992.

POWERLINE SERVITUDE / RIGHT OF WAY in terms of Deed

SA_235_1954; Survey Plan DA_123_1954

(Copied from Deed SA_235_1954; in the event of a difference between the two texts, the wording of the original Deed has priority)

The line as represented on Survey Plan **DA_123_1954** represents the centre line of a power line servitude 3 metres wide over lot 1. Owner shall allow all reasonable access to the power line at all times.

FOURTH SCHEDULE: MULTIMEDIA EVIDENCE INDEX

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Multimedia data may form an important body of evidence in the event of a dispute, land grabbing by powerful elites, succession disputes between chiefs and such like. The more uncertainty exists when a deed or title is created the more evidence should be available in the event of court action. The following show the location of the media files. Photographs may be included in this document. Other types of data should merely be referenced here.

ITEM	TYPE	LAND AFFECTED	DESCRIPTION AND LOCATION
MMP1_2007 MMP1_2007.Doc	Photographs	Lot 25	Photographs of interested parties listed in First Schedule part B MMP1_2007 stored on directory ...
MMv2_1994 MMv2_1994.doc	Video	Region	Video of nature and extent of pastoral over-rights of grazing, access and passage in the region
MMV1_1966 MMV1_1966.Doc	Video	Lots 1, 25, 26	Video of elder Howling Wolf Jones relating to floatable rights: collect bark for medicinal purposes over lots 1, 25 and 26. Unextinguished yet insufficient corroboration to register caveat.
MMS1_1954 MMS1_1954.doc	Sound File	Lot 1	Recording of oral history of Grand Owl; power line crosses sacred site.
			Declared a fraud in terms of court decision 12345/r/t/456 dated 11-Nov-1995.
DNA635478003	DNA record		DNA record of James Blog stored in the National DNA registry
Fingerprints635478003	Fingerprint Record		Fingerprint record of James Blog stored in the National Fingerprint registry

FIFTH SCHEDULE: INTERESTED PERSON DETAILS AND RELATIONSHIPS

Titling programs can extinguish the interests of many if we're not careful. Thus it's a good idea to reflect the interests of all interested parties when a new title is created. This section might describe relationships and/or provide coded relationships for data mining and social network analysis at a later date or ongoing monitoring of the records.

Legal documents such as a pre-nuptial contract, trust for a community, membership list for a communal property association might be referenced here.

Interested Parties

Name	ID	Relationship
John Doe		Husband
Jack Doe		Son
Erin Doe		Daughter
Ally Doe		Cousin

Lineage / Family Register File

LFaa 1867_456_1009 as updated from time to time.

Description of Relationships

The following may be the actual descriptions or a reference to a general correspondence type file. See the second schedule above.

Describe the interests of each party.

DATA MINING AND SOCIAL NETWORK ANALYSIS DATA

Data mining and social network analysis are tools that may be useful in unravelling relationships and analysing changing relationships when the system is converted to a database type system or potential conflicts or evidence of fraud and land grabbing using the titling starts to emerge. If feasible, a series of relevant relationship types, key words and key relationships can be defined for extraction into network analysis software. This may reveal patterns of fraud or other unusual behaviour in local politics and the land tenure system.