



IMPLEMENTATION OF A MINING CADASTRE AND REGISTRY SYSTEM (MCRS) IN UGANDA



By:

Agnes Alaba

Ag. Assistant Commissioner-Geodata

GSMD



PRESENTATION OUTLINE

- BACKGROUND
- MCRS DESIGN
- MCRS IMPLEMENTATION
- CHALLENGES/ISSUES
- FUTURE AND PROSPECT OF MCRS IN UGANDA



Introduction and background

- ▶ In order to improve the pace and effectiveness of the implementation of its new mining development strategy, the Government requested for a technical assistance credit from the World Bank, Nordic Development Fund and African Development Bank. This credit became effective on 15th December 2003 as Sustainable Management of Mineral Resources Project (SMMRP)

MCRS is part of the sub components of the SMMRP. The objectives of MCRS are:

Objectives of MCRS

To improve the entire process of licensing and the administration of the mineral sector; a computerize system that capture all transactions that take place during the life cycle of mineral.

To established a system that is effective and that will increase efficiency in the granting of mineral rights and improve accuracy and accessibility of information. The system that

is transparent, public, of general application, non-discretionary and will respect the priority of the first application presented.



Establishment of MCRS Design Stage

The establishment of the MCRS has been executed in 2 two stages;

(i) The Design stage –Swedish Geological(Hifab) in association with sunshine projects Ltd.(u).

Analysis of existing situation:

- Licence management largely manual with spatial data captured in ArcGIS and non-spatial data in Excel spread sheet.
- Spatial overlaps
- Manual Workflow management



DESIGN observations with the Mining legislation

- FCFS determined by CAO's Office; time of placing of beacons is used as basis of priority that is liable to manipulation.
- Spatial overlap recorded coordinate related issues.
- MCRS to be established at HQ and later rolled out to regional offices, however an offline solution recommended due to problem of IT infrastructure.



Design of MCRS

Workflows Designed for application & renewals, transfer, surrender and revocations for following mineral rights;

- Exploration
- Retention Licence
- Mining lease and
- Location

All Business Processes were model in workflow for each licence type except for prospecting:

The workflow included all the processes followed during each licence life cycle: from applications(reception), processing up to granting, renewal and all obligation of the mineral right holders as prescribed in the Uganda's mining legislation.



Implementation of MCRS

- (ii) Implementation stage.
- Contract for implementation by MTL, Tanzania commenced in June 2011

Based on a flexi cadastre
architecture/system
and the existing mining code of
Uganda



Status of work

- Data import and migration
 - From ArcGIS and Excel spreadsheet
 - All prospecting licence capture
 - Data capture of all missing attribute and spatial content.
 - Workflow translated into flexi procedure
 - UAT(User Acceptance Test where key functionalities were demonstrated,)
 - Training (GIS, introductions and hands on flexi cadastre, Mining legislation..)



System capabilities

- System scalability – currently implemented at head office Entebbe , with possibility of connectivity to other regional offices;

System capabilities

User friendly– contains a graphical user interface;

flexicadastre

Uganda FlexiCadastré PRODUCTION

User: Agnes Alaba
Version: 4.3.2.05 (Beta)
Instance: Uganda FlexiCadastré PRODUCTION

Search

Home

Home
Regions
Active
Applications
Licenses
Actions
Approvals
Companies
People
Agreements
Documents
Maps
Reports
My Settings
Admin Tools
Help
Logout

License Summary

License Type Group	Application	Active	Inactive
Exploration	24	737	24
Mining	0	66	8
Other	0	0	0

Action Summary

Actions	All Actions	My Actions
Overdue:	3235	75
Due today:	6	0
Due this week:	30	0

My Reports

My Searches

Today's Notifications ([All Notifications](#))



Legal framework

- Workflows for all license types both spatial and non spatial licenses were designed in accordance with Uganda Mining code and implemented in Flexi cadastre

Usability

The system allows for advance searching that enables the DGSM to fulfill their obligations of reporting and monitoring compliance by mineral rights holders.



▶ **Automatic control of Duration of Mineral rights**

- System configured to take into account legal duration of each type of mineral right as defined by the Ugandan Mining Law and Regulations.

Notifications

- Atomically informs of required action as part of licensing process such as fees payments and reporting obligation;

FCFS

- The systems is capable of enforcing the principles of first come First serve by processing license in a correct sequence as well as checking for overlaps with

Security


- ▶ System security
- ▶ Provide security tools to preserve the confidentiality and stability of information and system auditing

Login - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites

Address <http://192.168.0.220/FlexiCadaastreUgandaLive/Login.aspx?BrokenOutOfFrame=True&Logout=true> Go Links



flexicadaastre

Uganda FlexiCadaastre PRODUCTION

Username:

Password:

Disable popup blocking before login

Version: 4.3.2.05 (Beta)
.NET Version: v2.0.50727

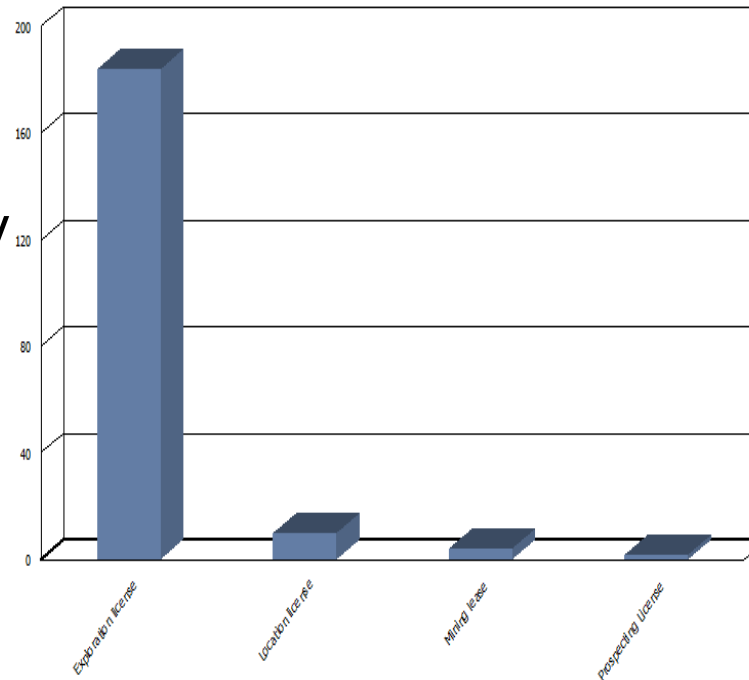
Copyright © 2005-2012
Spatial Dimension (Pty) Ltd
All Rights Reserved
[Conditions of use](#)

Done Internet

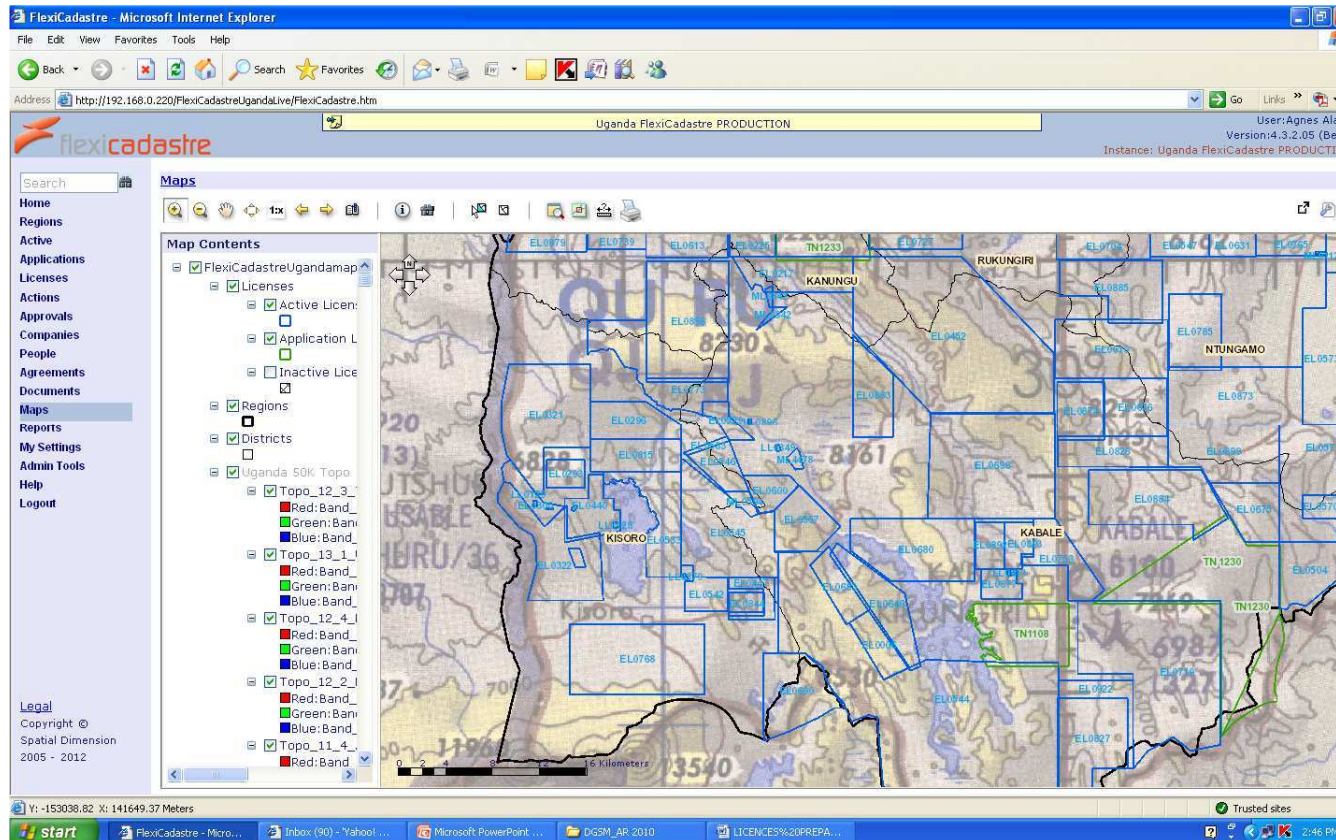
start Microsoft PowerPoint ... Login - Microsoft Inte... 2:43 PM

reporting

- ▶ Facilitate statistical treatment of mining title information ; statistical reports can be automatically generated on monthly, quarterly, or yearly basis (which ever is required);
- ▶ The system can also provide for automatic generation of historic file with information concerning cancelled or expired license



- The system treat simultaneously and interactively the spatial and Non-spatial data of Specific GIS (ArcGIS) and database application



Challenges/ issues: Coordinate system transformation

Reference Codes | Shape | Map References | Actions Open | Actions Closed | Documents | Resources | Related Licenses | Roles | Audit

22.2000 Square Kilomet **GET AREA**
 23.0800 Square Kilometre
 m: UTM36N_Arc1960 **Reproject**

Part 1
 to part

East (X)	North (Y)	ADD

Unit: Meter

East (X)	North (Y)	↑	↓	✖	✎
134000.00	-125000.00	↑	↓	✖	✎
134000.00	-126260.00	↑	↓	✖	✎
126000.00	-126260.00	↑	↓	✖	✎
126000.00	-123000.00	↑	↓	✖	✎
131000.00	-123000.00	↑	↓	✖	✎

Map showing land parcels in KANUNGU, KABALE, and KISORO. Parcel boundaries are outlined in blue. Several parcels are labeled with EL codes: EL0898, EL0772, EL0529, EL0321, EL0296, EL0815, EL0293, EL0533, EL0440, EL0383, EL0385, EL0540, EL0537, EL0535, EL0534, EL0533, EL0532, EL0531, EL0530, EL0529, EL0528, EL0527, EL0526, EL0525, EL0524, EL0523, EL0522, EL0521, EL0520, EL0519, EL0518, EL0517, EL0516, EL0515, EL0514, EL0513, EL0512, EL0511, EL0510, EL0509, EL0508, EL0507, EL0506, EL0505, EL0504, EL0503, EL0502, EL0501, EL0500, EL0499, EL0498, EL0497, EL0496, EL0495, EL0494, EL0493, EL0492, EL0491, EL0490, EL0489, EL0488, EL0487, EL0486, EL0485, EL0484, EL0483, EL0482, EL0481, EL0480, EL0479, EL0478, EL0477, EL0476, EL0475, EL0474, EL0473, EL0472, EL0471, EL0470, EL0469, EL0468, EL0467, EL0466, EL0465, EL0464, EL0463, EL0462, EL0461, EL0460, EL0459, EL0458, EL0457, EL0456, EL0455, EL0454, EL0453, EL0452, EL0451, EL0450, EL0449, EL0448, EL0447, EL0446, EL0445, EL0444, EL0443, EL0442, EL0441, EL0440, EL0439, EL0438, EL0437, EL0436, EL0435, EL0434, EL0433, EL0432, EL0431, EL0430, EL0429, EL0428, EL0427, EL0426, EL0425, EL0424, EL0423, EL0422, EL0421, EL0420, EL0419, EL0418, EL0417, EL0416, EL0415, EL0414, EL0413, EL0412, EL0411, EL0410, EL0409, EL0408, EL0407, EL0406, EL0405, EL0404, EL0403, EL0402, EL0401, EL0400, EL0399, EL0398, EL0397, EL0396, EL0395, EL0394, EL0393, EL0392, EL0391, EL0390, EL0389, EL0388, EL0387, EL0386, EL0385, EL0384, EL0383, EL0382, EL0381, EL0380, EL0379, EL0378, EL0377, EL0376, EL0375, EL0374, EL0373, EL0372, EL0371, EL0370, EL0369, EL0368, EL0367, EL0366, EL0365, EL0364, EL0363, EL0362, EL0361, EL0360, EL0359, EL0358, EL0357, EL0356, EL0355, EL0354, EL0353, EL0352, EL0351, EL0350, EL0349, EL0348, EL0347, EL0346, EL0345, EL0344, EL0343, EL0342, EL0341, EL0340, EL0339, EL0338, EL0337, EL0336, EL0335, EL0334, EL0333, EL0332, EL0331, EL0330, EL0329, EL0328, EL0327, EL0326, EL0325, EL0324, EL0323, EL0322, EL0321, EL0320, EL0319, EL0318, EL0317, EL0316, EL0315, EL0314, EL0313, EL0312, EL0311, EL0310, EL0309, EL0308, EL0307, EL0306, EL0305, EL0304, EL0303, EL0302, EL0301, EL0300, EL0299, EL0298, EL0297, EL0296, EL0295, EL0294, EL0293, EL0292, EL0291, EL0290, EL0289, EL0288, EL0287, EL0286, EL0285, EL0284, EL0283, EL0282, EL0281, EL0280, EL0279, EL0278, EL0277, EL0276, EL0275, EL0274, EL0273, EL0272, EL0271, EL0270, EL0269, EL0268, EL0267, EL0266, EL0265, EL0264, EL0263, EL0262, EL0261, EL0260, EL0259, EL0258, EL0257, EL0256, EL0255, EL0254, EL0253, EL0252, EL0251, EL0250, EL0249, EL0248, EL0247, EL0246, EL0245, EL0244, EL0243, EL0242, EL0241, EL0240, EL0239, EL0238, EL0237, EL0236, EL0235, EL0234, EL0233, EL0232, EL0231, EL0230, EL0229, EL0228, EL0227, EL0226, EL0225, EL0224, EL0223, EL0222, EL0221, EL0220, EL0219, EL0218, EL0217, EL0216, EL0215, EL0214, EL0213, EL0212, EL0211, EL0210, EL0209, EL0208, EL0207, EL0206, EL0205, EL0204, EL0203, EL0202, EL0201, EL0200, EL0199, EL0198, EL0197, EL0196, EL0195, EL0194, EL0193, EL0192, EL0191, EL0190, EL0189, EL0188, EL0187, EL0186, EL0185, EL0184, EL0183, EL0182, EL0181, EL0180, EL0179, EL0178, EL0177, EL0176, EL0175, EL0174, EL0173, EL0172, EL0171, EL0170, EL0169, EL0168, EL0167, EL0166, EL0165, EL0164, EL0163, EL0162, EL0161, EL0160, EL0159, EL0158, EL0157, EL0156, EL0155, EL0154, EL0153, EL0152, EL0151, EL0150, EL0149, EL0148, EL0147, EL0146, EL0145, EL0144, EL0143, EL0142, EL0141, EL0140, EL0139, EL0138, EL0137, EL0136, EL0135, EL0134, EL0133, EL0132, EL0131, EL0130, EL0129, EL0128, EL0127, EL0126, EL0125, EL0124, EL0123, EL0122, EL0121, EL0120, EL0119, EL0118, EL0117, EL0116, EL0115, EL0114, EL0113, EL0112, EL0111, EL0110, EL0109, EL0108, EL0107, EL0106, EL0105, EL0104, EL0103, EL0102, EL0101, EL0100, EL0099, EL0098, EL0097, EL0096, EL0095, EL0094, EL0093, EL0092, EL0091, EL0090, EL0089, EL0088, EL0087, EL0086, EL0085, EL0084, EL0083, EL0082, EL0081, EL0080, EL0079, EL0078, EL0077, EL0076, EL0075, EL0074, EL0073, EL0072, EL0071, EL0070, EL0069, EL0068, EL0067, EL0066, EL0065, EL0064, EL0063, EL0062, EL0061, EL0060, EL0059, EL0058, EL0057, EL0056, EL0055, EL0054, EL0053, EL0052, EL0051, EL0050, EL0049, EL0048, EL0047, EL0046, EL0045, EL0044, EL0043, EL0042, EL0041, EL0040, EL0039, EL0038, EL0037, EL0036, EL0035, EL0034, EL0033, EL0032, EL0031, EL0030, EL0029, EL0028, EL0027, EL0026, EL0025, EL0024, EL0023, EL0022, EL0021, EL0020, EL0019, EL0018, EL0017, EL0016, EL0015, EL0014, EL0013, EL0012, EL0011, EL0010, EL0009, EL0008, EL0007, EL0006, EL0005, EL0004, EL0003, EL0002, EL0001, EL0000.

Map navigation icons: Home, Zoom, Pan, Full Screen, Show preview map (checked)

Challenges/issues

Shape Validation Details

Validation Result | Validation Shape | Comparison Shape | Result Shape | Validation Shape Configuration | Result Shape Configuration

Validation has been run

RUN VALIDATION

The validation shape is: Invalid

Message

- Shape is not larger than maximum area (500.0000 Square Kilometre)
- Shape overlaps 2 licenses
- Shape overlaps 0 restricted areas

The validation shape overlaps 2 licenses:

Code	Name	Type	Type Group	Status	Overlap	
EL0438	EL0438	EL	Exploration	Active	0.0360 km ²	highlight
EL0008	EL0008	EL	Exploration	Active	1.9197 km ²	highlight

The result shape is: Valid

Message

- Shape is not larger than maximum area (500.0000 Square Kilometre)

Legal
Copyright ©
Spatial Dimension
2005 - 2012

Desktop 3:18 PM 6/02/2012

Challenges: implementation of discretionary powers

-License renewal



On the road

- Completion of data clean up
- Go Live Phase
- Scan and upload of documents related to mineral rights
- Integration-Allows for seamless integration with external systems like GMIS
- External stakeholders workshop

FUTURE AND PROSPECTS OF MCRS



- A fully functioning IT department
- A fully connected network
- Flexi-cadastre is a server based enterprise solution, thus requirement for its maximum performance
- System maintenance (software, Hardware and Human Resource)
- Training and more training esp. in areas of system support



THANK YOU FOR YOUR ATTENTION

