



# AngloGold Ashanti & Spatial Dimension

## FlexiCadastre: The way forward

*FlexiCadastre User Conference  
Cape Town - February 2010*



# A Global Company

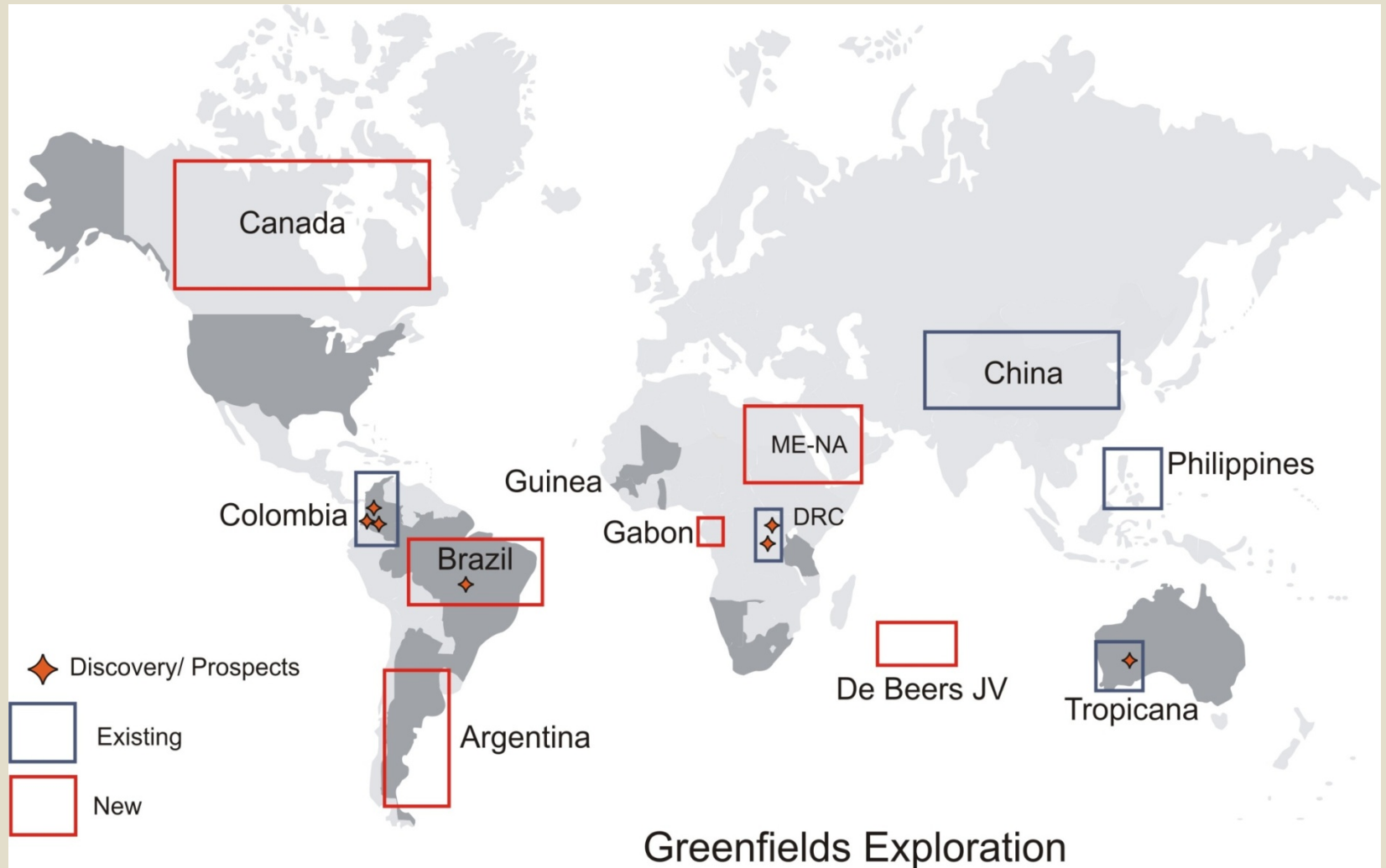
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- Company formed in 1998
- World's 3<sup>rd</sup> Largest Gold Mining & Exploration Company
- Employ 61500 people world wide
- Operating 20 mines in 10 Countries around the world
- Corporate Office Johannesburg, with regional hubs in Denver, Nova Lima, Accra, Perth
- Regional Exploration Offices in Bogota, Mongbwalu, Beijing, Perth, Nova Lima, Dubai, Libreville
- Primary Listing on JSE
- Also listed on the exchanges of New York, London, Australia, Ghana & Euronext Paris & Brussels

# Global Operations



# Global Greenfields Exploration



# Why the need for FlexiCadastre?

*Currently how does AngloGold Ashanti manage its Tenement, Lease, Mineral and Mining Title and associated Agreements related to exploration (Greenfields, Brownfields & our Operations Globally?)*

- As a broad statement Greenfields manages this information & data with various systems and have processes in place for the management of these
- In some instances Brownfields have been able to combine their management of this information and data off Greenfields processes and systems
- Operations have typically been viewed independent entities and therefore a lot of investigation and auditing is required to understand processes & systems that may be in place

## Solution

**AngloGold Ashanti requires a global information management system to handle all processes related Mineral Asset and Agreement Management thereby lessening risk to business, applying Corporate Governance procedures, providing global compliance with business processes, business partners and divergent legislation faced by a global company**

# The Problem & The Drivers

- AGA is a global exploration and mining company formed by amalgamating existing assets with assets acquired by mergers and/or acquisition
- This entailed bringing on board a myriad of legacy systems and the inherent problem of divergent business processes
- Until now there has been no concerted effort to address this problem or identify and understand the size of problem
- Possible missed business opportunities or loss of existing title to assets due to non compliance to country regulatory legislation, environmental legislation or Stock Exchange regulations
- Litigation and/or loss of rights to mine or prospect if the company misses reporting, payments, renewals deadlines etc.
- No documented and mapped business processes to ensure land management does not pose risk to business
- No consistent reporting standards

# Existing Systems?

## Australasia

- Implemented LeaseControl (Maxwell Geosciences) in 2004
  - Business processes well documented
  - Robust and well proven in the region (used for all mining and exploration title, tenement and agreements)
  - Very Australian focused
- Not suitable for a global rollout

## South America

- Colombia has an in-house developed system built on top of Oracle Spatial
  - Mature system built specifically to cater for our Colombian operations and Colombian Legislation, to handle all mining and exploration title, tenement and agreements types
  - Has all the necessary alerts, automated payments, automated applications and advanced spatial capabilities.
  - Well documented business processes
- Expensive to maintain. AGA is not a software developer

# Existing Systems? (Cont)

## Greenfields Corporate Office

- All Greenfields and Brownfields agreements managed with Microsoft SharePoint Services.
- Portal has email alerts to responsible persons
- Spatial component is currently handled by ArcIMS but moving towards new Spatial IMS called Streamline Enterprise (To be described later)
- Legal and Company Secretarial have databases containing basic metadata pertaining to Mining Title and Agreements.
- All original Mining and Exploration title and agreements are housed by either Company Secretarial or Greenfields Exploration Information Management Systems (Exception being China)
- Due to Global reach of company, legislation and tax regimes demand that our international title & agreements be lodged offshore in our offices on the Isle of Man. Full Audit required for scoping exercise



# Existing Systems? (Cont)

## Global Operations & Brownfields

Complete audit required to ascertain systems in place (if any)

- Most challenging areas
  - SA, Ghana and Brazil (huge volumes of records over decades of mining and exploration)
- Other
  - Tanzania, Guinea, Mali, Namibia, USA, Argentina, Australia (last)

## Greenfields Countries to be added to FlexiCadastre

- Americas
  - Canada, Colombia, Brazil\*, Argentina\*
- Africa and Middle East
  - DRC, Gabon, Guinea\*, Tanzania\*, Dubai (new office for ME Countries)
- Australasia
  - Australia\*, Philippines, China?

## Processes Completed to date

- Evaluated FlexiCadastre (against like systems) to see if it would fit with AGA business model
- Engaged with Spatial Dimension to discuss all technical aspects of the product and understand recommended rollout process model (June 2009)
- Undertook detailed in-house technical analysis of product to understand how FlexiCadastre would fit with our Global IS Strategy, utilizing existing expertise and technology as much possible
- Recommended the product to executive management and received support (October 2009)
- Receive project approval in Nov 2009 and received limited budget for 2010.
- Undertaking a phased rollout globally (no big bang approach)
- Appointed AGA Global Project Manager
- Selecting sites for initial rollout and identifying site champions
- Identifying information types to be catered by system

# Prospecting and Mining Information identified for inclusion in FlexiCadastre

- *Countries Mining Legislation*
- *Environmental Legislation and integration with IBAT (Integrated Biodiversity Assessment Tool)*
- *Mines & Minerals Act Equivalentents*

*The following identified categories of information will need to be included but in a phased in approach based on AGA exposure risk*

- Prospecting and exploration licenses
- Agreements on water and power take offs
- Concessions
- Partnerships
- Joint ventures and Agreements
- Access rights
- Leases
- Historical and cultural sites
- Wilderness or national parks and environmental settings
- Royalties
- Consents
- Permissions

# Prospecting and Mining Information identified for inclusion in FlexiCadastre (Cont)

- Permits and authorizations
- Amodiation Agreements
- Confidentiality Agreements
- Consultancy Agreements
- Data Acquisition Agreements
- Database Purchase & Buy Back
- Drilling Agreements
- Developing and Mine Operating
- Heads of Agreement
- Letter of Intent
- License Agreements
- Liquidation Agreements
- Loan Agreements
- Memorandums of Understanding

# Prospecting and Mining Information identified for inclusion in FlexiCadastre (Cont)

- Mining Agreements
- Mining Leases
- Options to Purchase Agreements
- Rental Agreements
- Request for Execution
- Research Agreements
- Shareholders Agreements
- Strategic Alliances
- Subscription Agreements
- Transfer of Properties and Shares
- Local Community Agreements

# Where to from here?

- We are in the Project Kick-off & Scoping Stage
- Next week our first project workshop comprising AGA Project Team, Legal Council and importantly site champions and Spatial Dimension representatives
  - FlexiCadastre Product Orientation & Project Initiation
  - Form project team
  - Confirm current state
  - Document future state
  - Update project plan & budget
  - Discuss and initiate scoping of manual workflows & business processes
- Technical architecture finalization and implementation and initial configuration of H/W, S/W, Database and integration with Streamline Oracle Spatial Database by end March
- Complete first pass scoping study and document manual workflows & business processes for agreed information categories for Tanzania and Mali Brownfields / Operations by mid April (Gabon, MENA?)

# Where to from here?

We will then proceed with the standard implementation procedures that are well documented and proven by Spatial Dimension project team

These include the following:

- *Workflow Workshop*
  - Review document, Review & compile business data sources
  - Review & compile GIS data, Review reporting requirements
  - GAP Analysis, Initial user training
- *Solution Design*
  - Workflow design, Data model design,
  - Custom report design, Functionality design
- *Solution Configuration*
  - Configure workflows, Business data import/entry
  - Develop custom reports & extensions, Develop functionality
- *Deploy Pre-Production System*
- *Deploy Production System*
- *Go-Live*

# Technical Environment

- FlexiCadaastre will need to fully integrate with our Spatial Exploration & Mining IMS called Streamline Enterprise (being rolled out across the business)

## High Level Technical Architecture

- Oracle Spatial V11R2 DBMS
- Luciad Spatial (1<sup>st</sup> truly 3D GIS)
- Global system either viewed via GAN or Web
- Storage Infrastructure Built for expansion to 1PB.
- Loaded data currently 75TB, but in its infancy

## What is Streamline?

*Streamline Enterprise is a centralised, multilingual, web enabled, object relational database management system to capture, store, analyse, display and retrieve geographical information.*



# Streamline Enterprise – The Rationale & Concept

- Multilingual data and Interface standardisation allowing for real-time interchange in languages (English, Spanish, Portuguese, French and Chinese), fully scalable to other language character sets if the company expands to new frontiers
- Reduces time and training costs to integrate non English speaking technical personnel, faster entry to non English/Latin alphabet countries
- Remote office environment with ability to explore new terrains with minimal infrastructure cost to the company
- Minimize office closure cost data transfer and organisational costs
- Eliminate data loss through data hoarding
- Automated searching for data, replacing current time consuming manual searching, simplified data access “**Getting data into the hands of the specialists**”

# Streamline Enterprise – The Rationale & Concept (cont)

- Total replacement of poorly implemented and maintained file naming and directory structure conventions
- Reducing licensing costs of existing GIS software
- System enforced data standards and procedures, minimising data management personnel requirements ***“Protecting the companies interests”***
- Seamless data integration of all spatial data (raster, vector and geocoded documents) through open source data formats, eliminates proprietary data formats and applications and time wasted migrating between formats
- Corporate storage and capture of exploration models, retention of high level exploration intellectual property
- Ability to immediately review old exploration areas or countries with new exploration models without re-entering area or country
- Ability to build new exploration models as new data is added
- Greatly reduce time to analyse data and speed geological decision making
- Data mining of all attributed data to allow for finding hidden associations and define new exploration targeting models hidden in the data
- Better visualization of 3D data in an easy to use Google Earth like format

# Streamline Enterprise and FlexiCadastre will assist AGA in Corporate Governance & Compliance

Importantly the points below also provide critical success factors for the Rollout of FlexiCadastre

- Centralised data storage and management ensuring uniformity and standardisation across regions, country and local offices
- Automatically enforced standards for data collection; metadata storage; retention and archive across the enterprise
- Corporate wide data management standards based on ISO 19000 series of Geographical Information Systems International Standards and OGC (Open GeoSpatial Consortium Standards). Promoting international best practice for data management
- Inbuilt automated audit procedures
- Automatic change monitoring and status rollback (Who did what where and when, turning back to clock if required)
- Multi level security and access controls of data, more precise and secure than any current GIS data storage system



# THANK YOU

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- I would like to extend my appreciation to Spatial Dimension for the opportunity to present today on behalf of AngloGold Ashanti Limited.
- I look forward to working with you and successfully rolling out this exciting product globally
- Thank you to you the audience.