



Leveraging ArcGIS Online for Mining Cadastre Portals



*FlexiCadastre EMEA Regional User Conference, Cape Town
February 13th – February 14th, 2015*



spatial dimension

ArcGIS Online for Mining Cadastre Portals

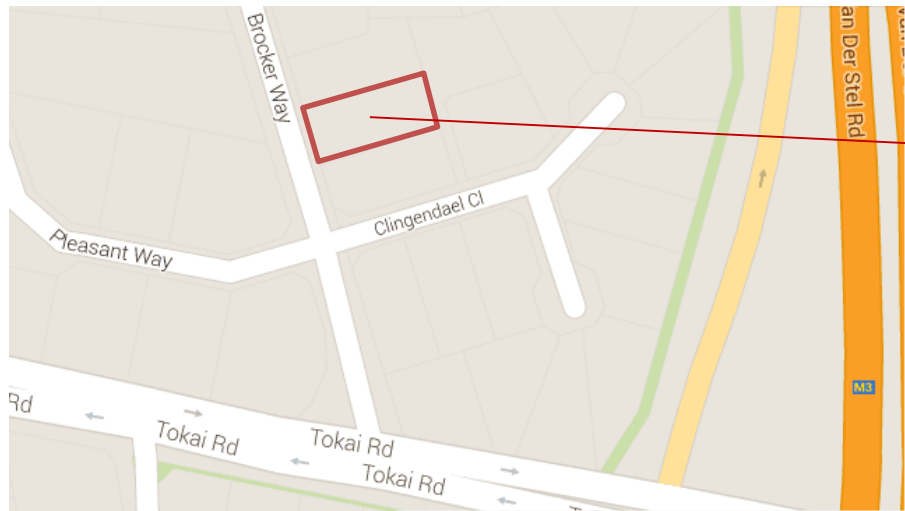
- What is a Mining Cadastre Portal?
- What is ArcGIS Online?
- Leveraging ArcGIS Online for a Mining Cadastre Portal

What is a Mining Cadastre Portal?

Cadastre:

“*a comprehensive register of the real estate*

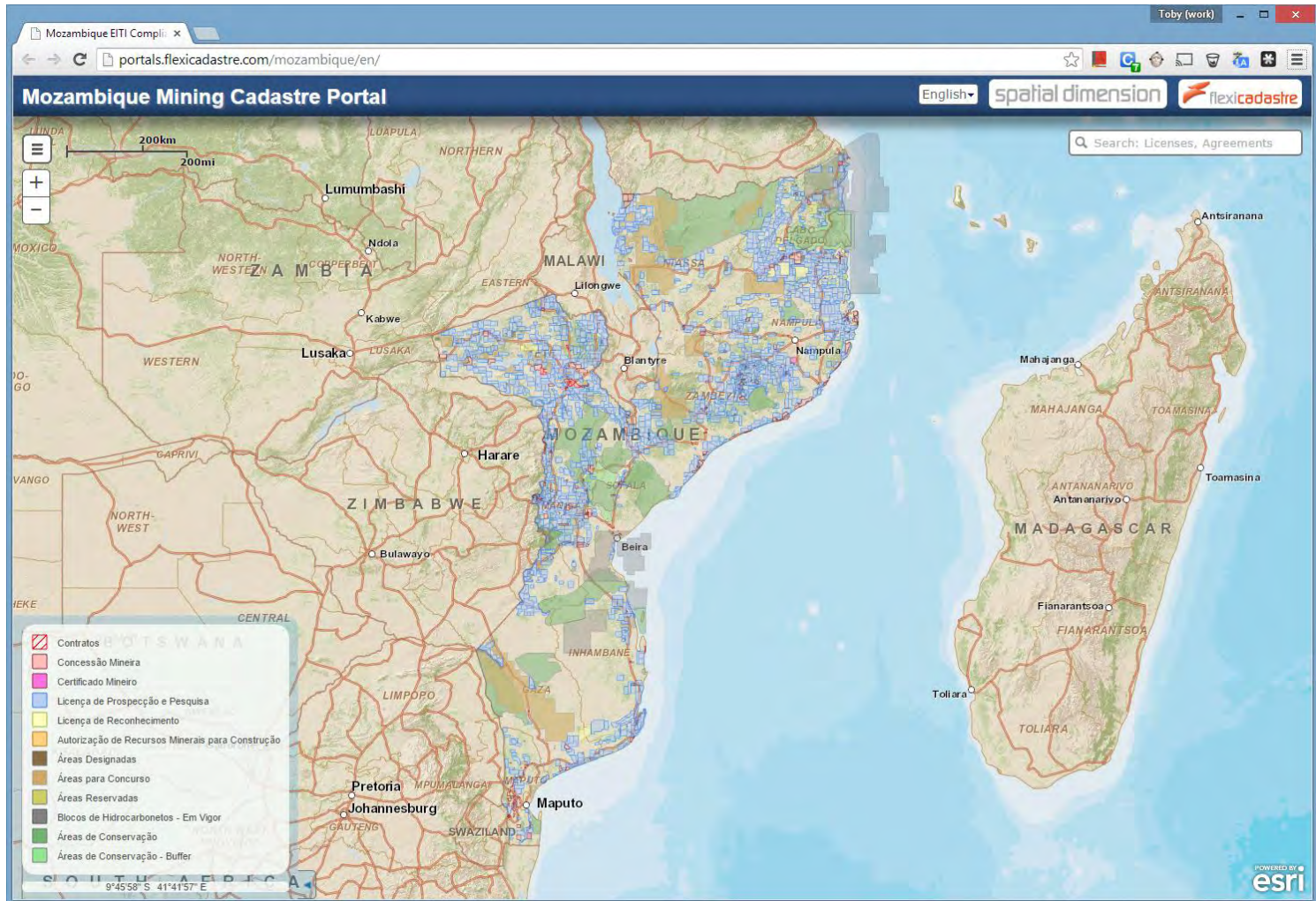
including details of the ownership, the tenure, the precise location”



Erf No: 8535
Address: 4 Broucker Way
Owner: A.T. Mills

What is a Mining Cadastre Portal?

Public Map Portal



What is a Mining Cadastre Portal?

Transactional/e-Government Portal

The screenshot displays the Ministry of Mining Mining Cadastre Portal. At the top, there is a banner with the Kenyan coat of arms on the left, the text "Ministry of Mining Mining Cadastre Portal" in the center, and the "MADINI KENYA" logo on the right. Below the banner, the interface is divided into several sections:

- Licence Portfolio:** A sidebar menu with options: All Licences, Applications, Active Licences, Inactive Licences, Pending Verification, Licence Management (Apply for New Licence), Profile (Edit My Details, Edit Company Details, Sign Out), and External Links (Mining Cadastre Map, Madini Facebook, Madini Twitter, Share on Social Media).
- Licence Summary:** A table of details for licence EPL/1023:

Code	EPL/1023
Type	Exclusive Prospecting License
Status	Active
Owner	Test Company Ltd
Application Date	22/01/2015
Granting Date	07/04/2015
Expiry Date	06/04/2018
Commodities	COAL
Location	North-Eastern, Wajir
Official Area	17.1117 km ² ▾

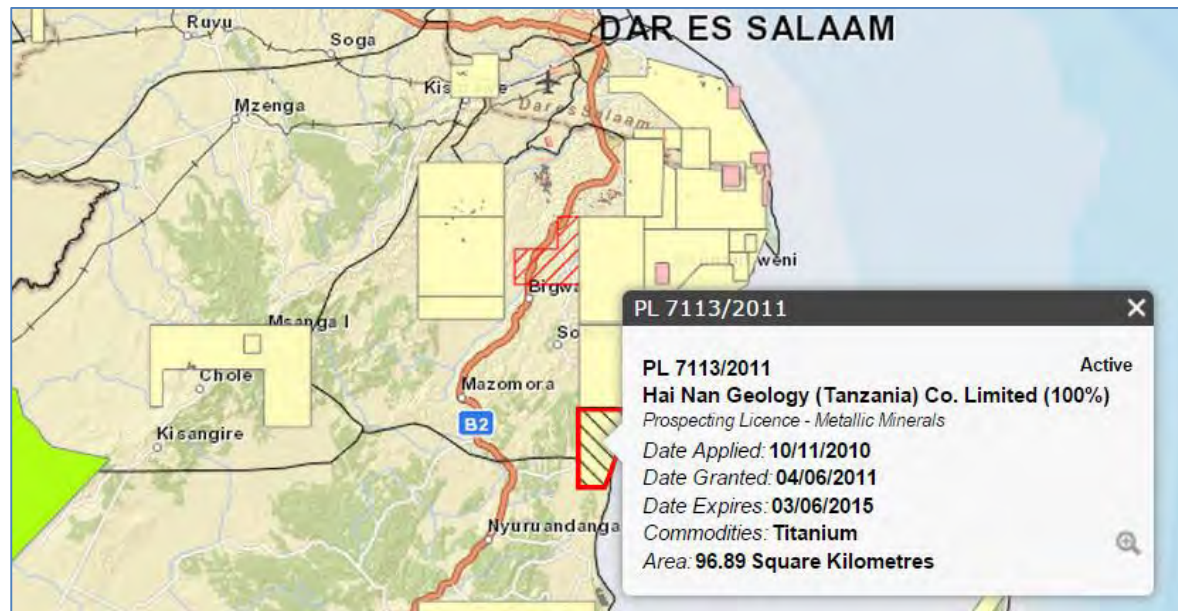
[Coordinates](#)
- Map:** A satellite map showing the location of licence EPL/1023 (highlighted in a red box) and EPL/1025 (highlighted in a grey box) in the North-Eastern region. The map includes zoom in (+) and zoom out (-) controls.
- Licence Data Verification:** A section titled "Licence Data Verification: Submit Verification Response" with a "Verify licence data" input field and a "Submit" button.
- Submit Proof of Payment:** A table with columns for Due Date, Description, and Link:

Due Date	Description	Link
06/07/2017	Report: Quarterly	Submit
06/10/2017	Report: Quarterly	Submit
06/01/2018	Report: Quarterly	Submit

What is a Mining Cadastre Portal?

Mining Cadastre:

“*register of all mining related tenements, including type, ownership, location, status, expiry date...*”



Why is a Mining Cadastre Map Portal Important?

Promotes transparency within Extractive Industries



Levels the playing field by making information easily accessible to everybody

What is ArcGIS Online?

esri Industries Products Support & Services About Community

Products

ArcGIS Online

Sign Up for a Free Trial →

Main Features Showcase What's New Credits Pricing Free Trial

The Mapping Platform for Your Organization

ArcGIS Online gives you everything you need to create interactive web maps and apps that you can share with anyone. With ready-to-use content, apps, and templates, you can be productive right away. And no matter what you use—desktops, browsers, smartphones, or tablets—you always have access to your content.

Watch the Video: What Is ArcGIS?

Make Maps Your Way

Combine your data with data from Esri and other contributors to create maps for the work you do. Ready-to-use basemaps, tools

What is ArcGIS Online?

- An online mapping platform
- Ready-to-use content, apps & templates
- Extensive library of online geographic datasets
- Upload your own data & combine with other basemaps & datasets



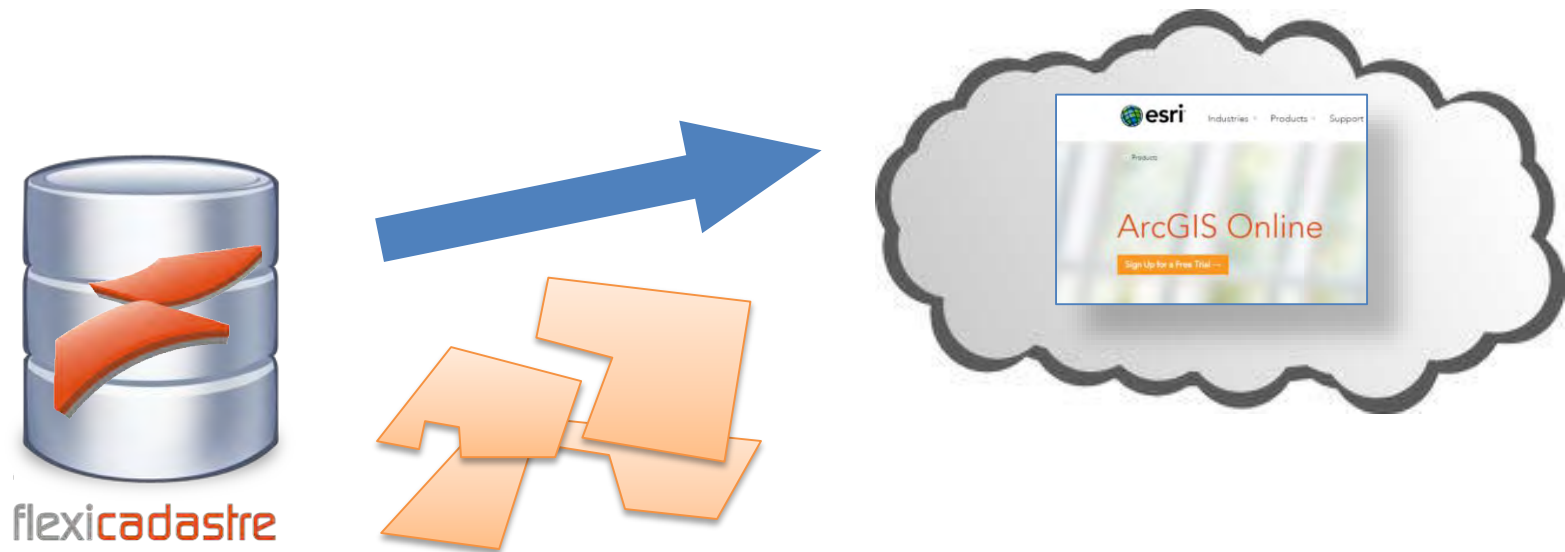
What is ArcGIS Online?

- Costs based on use of the platform
- Purchase credits
- Spend credits to:
 - Store data
 - Render map tiles
 - Deliver features
 - Perform geoprocessing tasks

ArcGIS Online for Mining Cadastre Map Portals

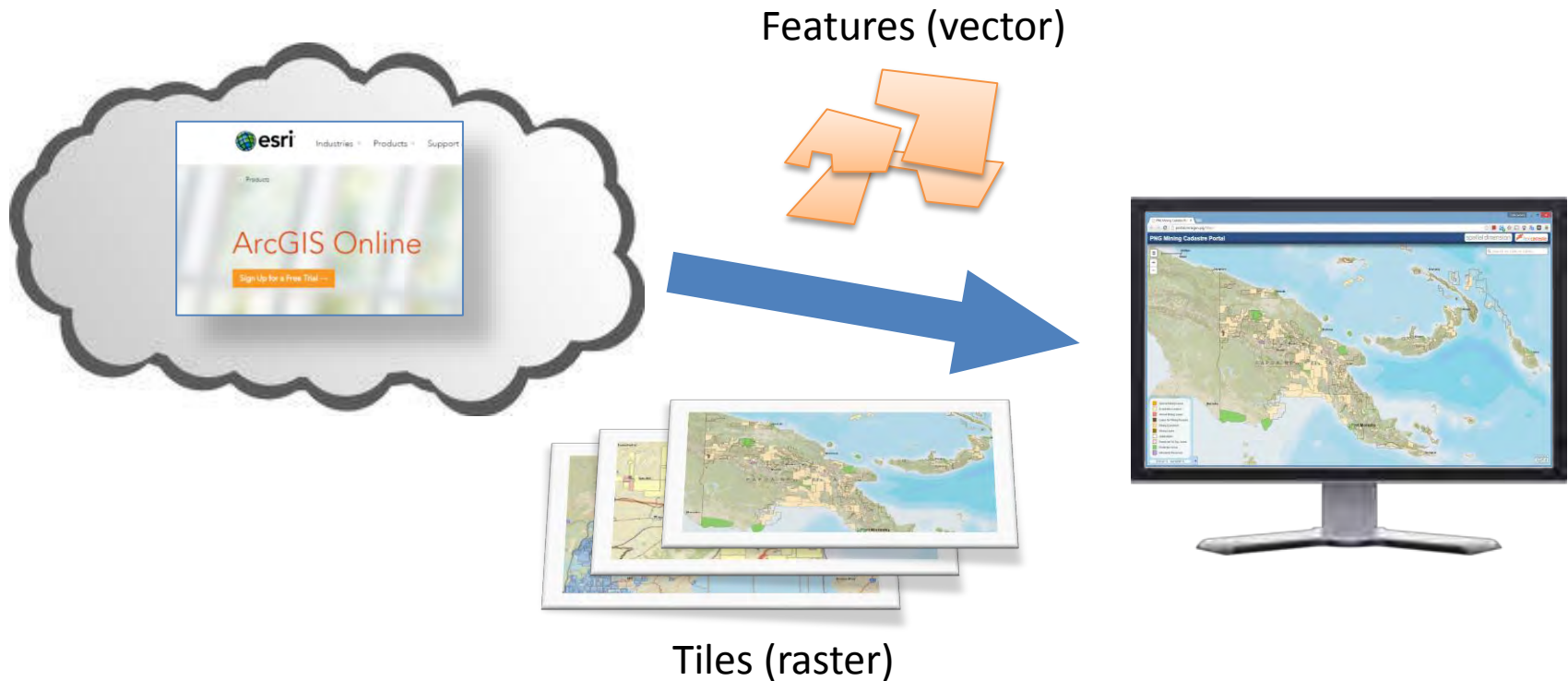


ArcGIS Online for Mining Cadastre Map Portals



Vector data uploaded to ArcGIS Online

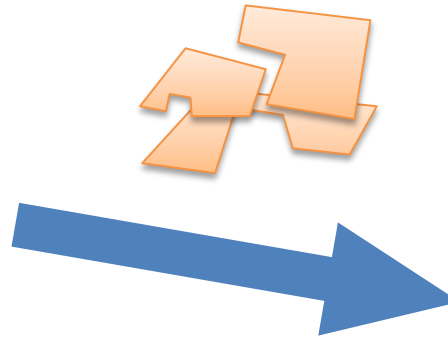
ArcGIS Online for Mining Cadastre Map Portals



Two options for delivering data to the browser

ArcGIS Online for Mining Cadastre Map Portals

Features (vector)

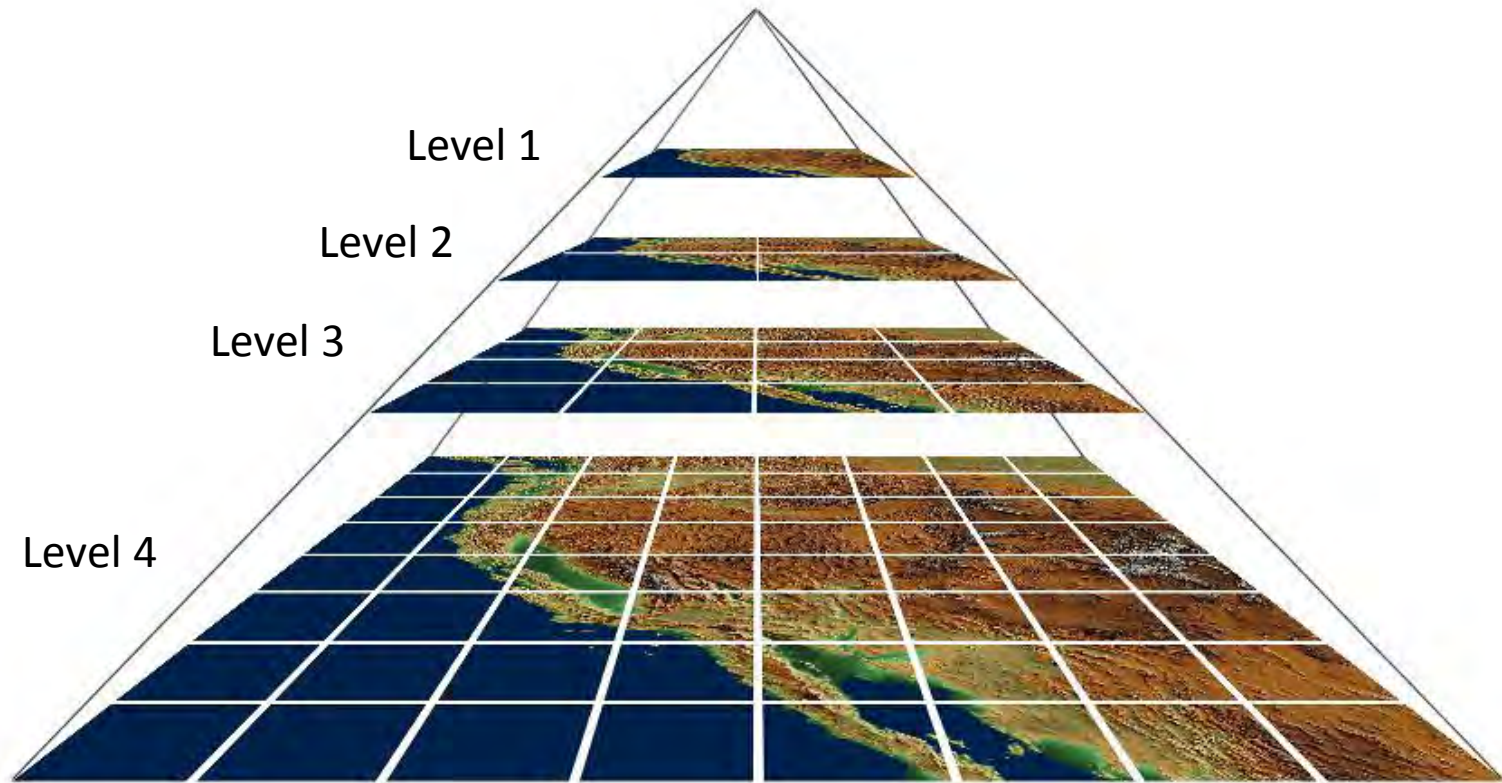


- ✓ Faster (few features)
- ✓ Includes attributes
- ✓ Symbology can be changed on the fly
- ✗ Very slow for many features (50 000+)

ArcGIS Online for Mining Cadastre Map Portals



ArcGIS Online for Mining Cadastre Map Portals



Tiles are pre-rendered at different scales and
Cached to improve performance

ArcGIS Online for Mining Cadastre Map Portals



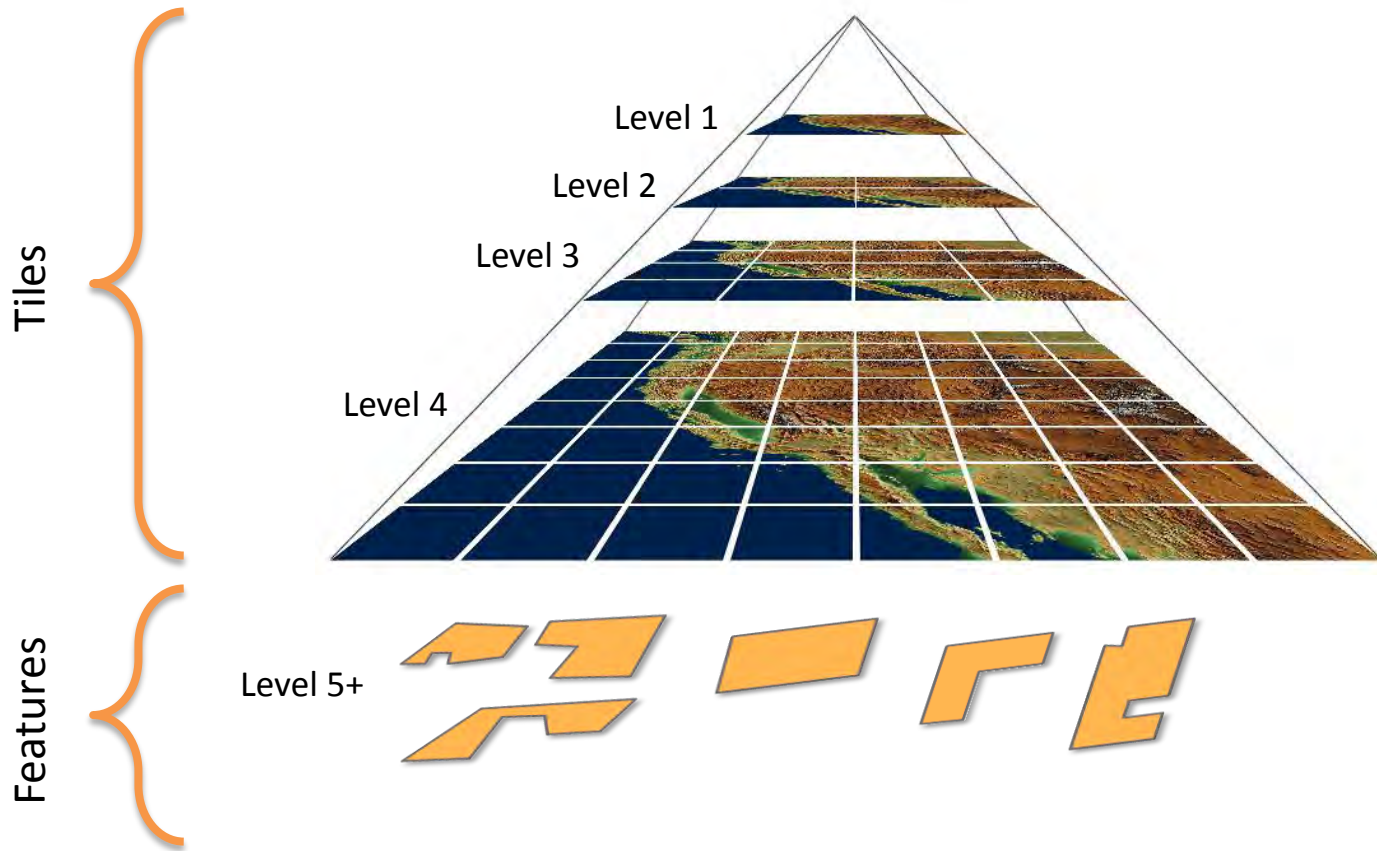
✓ Faster (many features)

✗ No attributes

✗ Fixed symbology

✗ MANY tiles to generate at high zoom levels

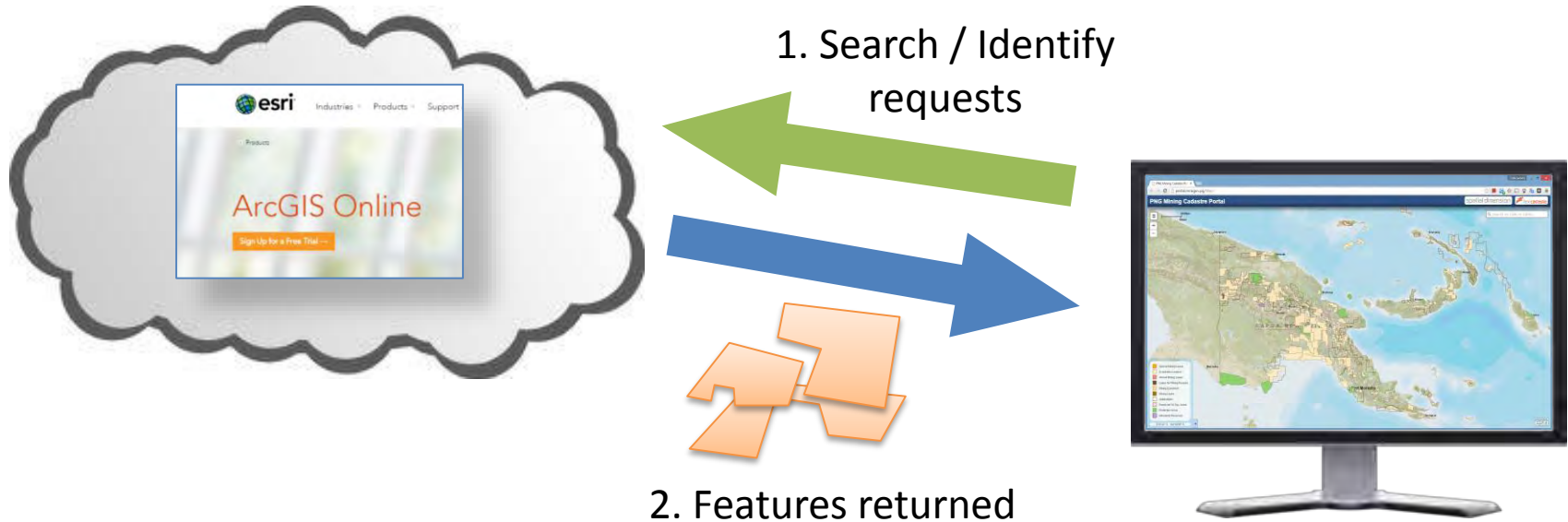
ArcGIS Online for Mining Cadastre Map Portals



Hybrid approach:

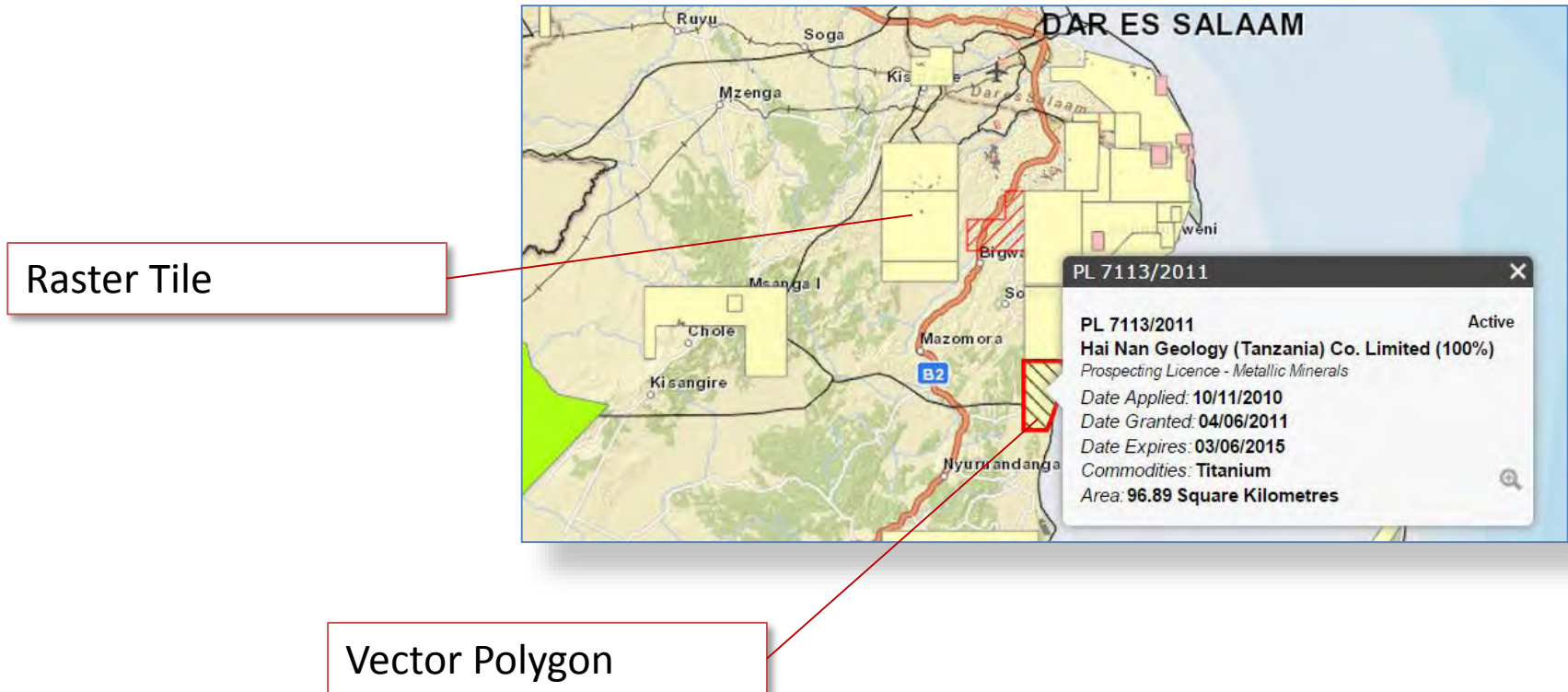
Deliver different data types at different scales

ArcGIS Online for Mining Cadastre Map Portals



Because tiles have no attributes, search & identify Services make use of the Feature Service

ArcGIS Online for Mining Cadastre Map Portals



Data Updates

Tanzania Mining Cadastre Portal

portal.mem.go.tz/map/

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License (130)

HQ-P20485	Application Recommended
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
HQ-P25200	Application Recommended
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
HQ-P25201	Application Recommended
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
HQ-P25199	Application Recommended
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
HQ-P25489	Application-Tender Modified
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
HQ-P28814	Application
ABG Exploration Limited	Prospecting Licence - Metallic Minerals
PL 9240/2013	Active
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
PL 9241/2013	Active
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
PL 9063/2013	Active
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
PL 6444/2010	Active
ABG Exploration Limited (100%)	Prospecting Licence - Metallic Minerals
PL 8539/2012	Active

PL 10356/2014

PL 10356/2014 Mezzo Holdings Limited (100%)
Prospecting Licence - Metallic Minerals
Date Applied: 14/08/2014
Date Granted: 31/10/2014
Date Expires: 30/10/2018
Commodities: Gold
Area: 27.3 Square Kilometres

Active

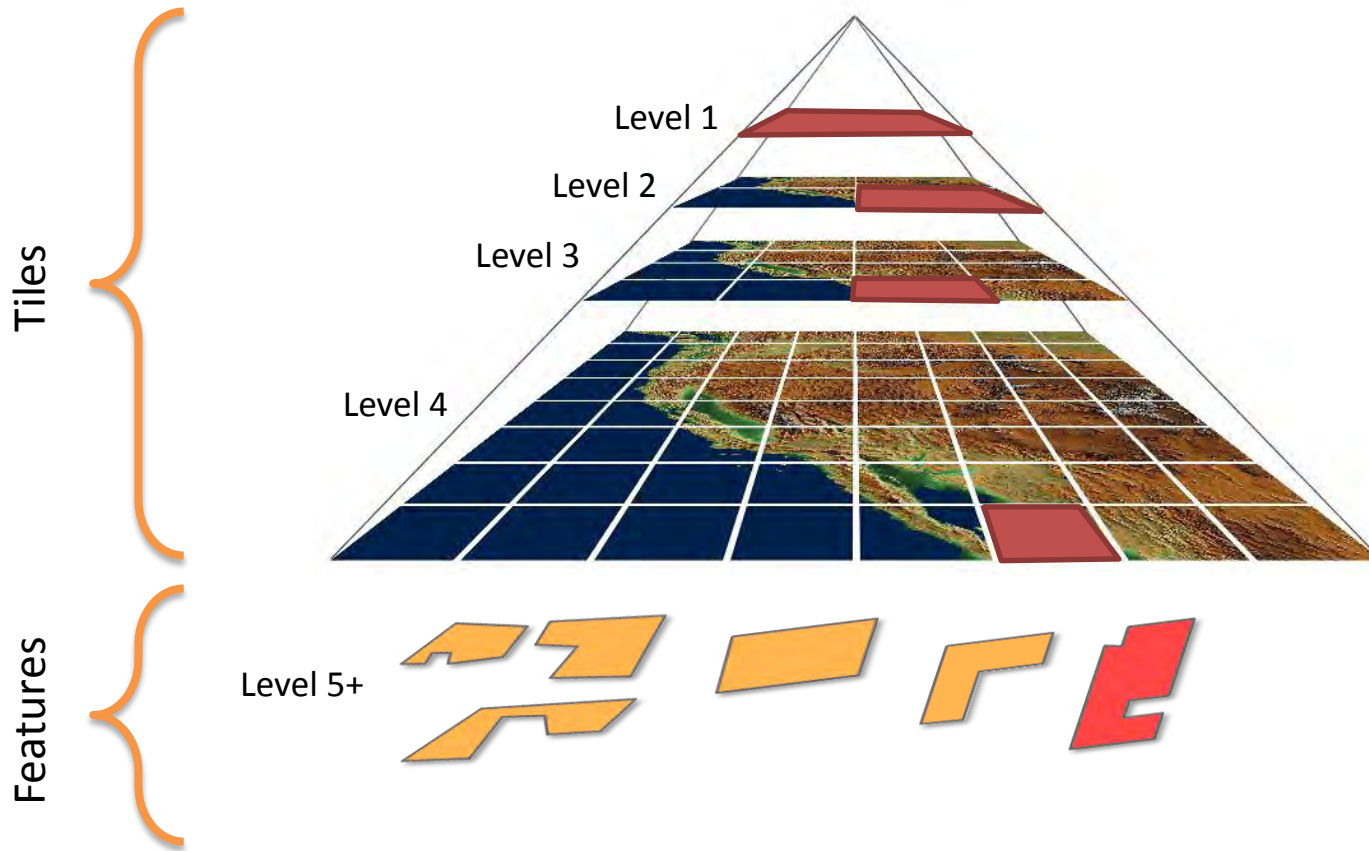
esri

Shanwa

Data Updates

- For any online portal to be effective, the data must be current
- Daily updates preferable
- Regenerating tiles has a time & cost implication

Data Updates



If only one feature changes,
Not all tiles need to be regenerated

Data Updates

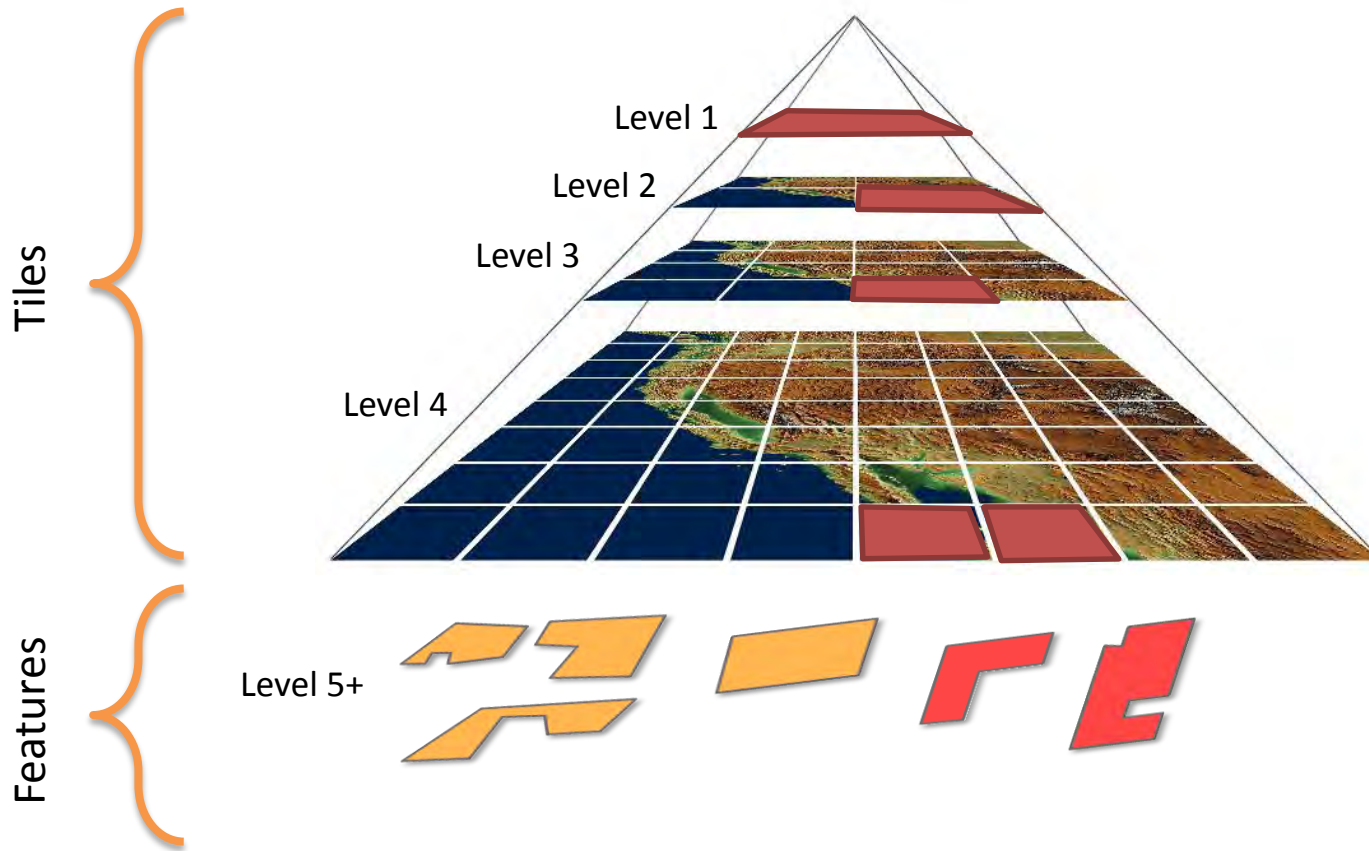
With every update:

- Analyse changes to the dataset since last update
- Rebuild only tiles covering the affected extents

Faster refresh

Reduced cost

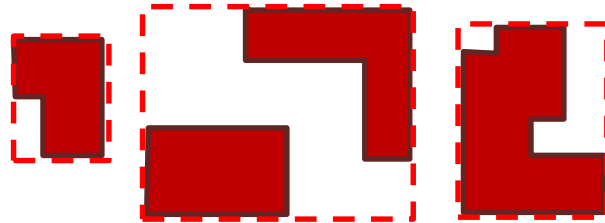
Data Updates



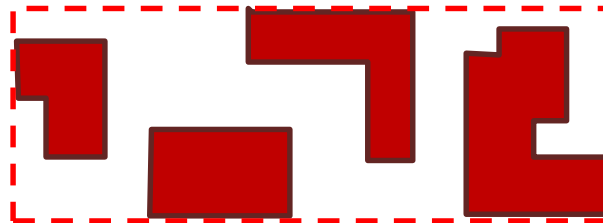
If many licenses change,
No need to regenerate the same tile many times

Data Updates

- At lower tile levels, request a refresh for each extent changed



- At higher tile levels, request a single refresh for the total extent of changes



What is a Mining Cadastre Map Portal?

<http://www.SpatialDimension.com/Map-Portals>





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Governance - Risk - Compliance

Thank You

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