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PROJECT
STRENGTHENING EXTRACTIVE SECTOR MANAGEMENT IN MONGOLIA

Integrated Cadastral Database

Planning Workshop

Gus Ribeiro
Cadastral/GIS Specialist

Linda Mahoney
MERIT Technical Advisor
Jonathan Chambers
SESMIM

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Global Affairs Canada
Affaires mondiales Canada

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What is the goal?

To share geospatial database between MRPAM, MoET and Land ministries in UB and the local government (aimags and soums). This will provide a framework that can be scaled up to a national spatial data infrastructure (NSDI), but is limited to the existing stakeholders at this time.

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How will this be achieved?

By using an internet based server using a FOSS(4G) database:

PostgreSQL and PostGIS.





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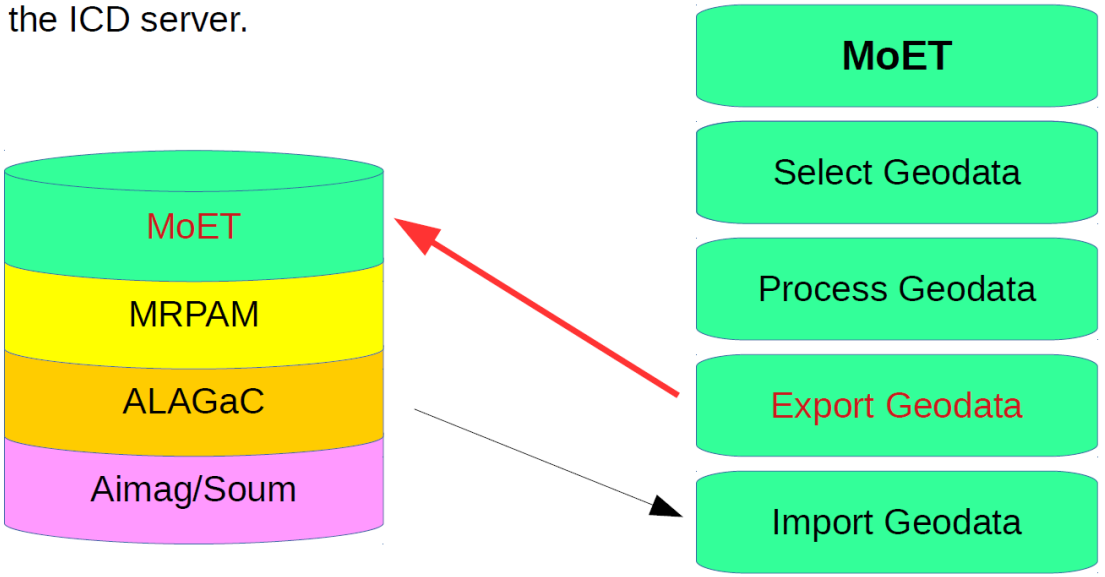
What is PostGIS?

PostGIS is an open source, freely available, and fairly OGC compliant spatial database extender for the PostgreSQL Database Management System. In a nutshell it adds spatial functions such as distance, area, union, intersection, and specialty geometry data types to the database. PostGIS is very similar in functionality to SQL Server Spatial support, ESRI ArcSDE, Oracle Spatial, and DB2 spatial extender except it has more functionality and generally better performance than all of those (and it won't bankrupt you). The latest release version now comes packaged with the PostgreSQL DBMS

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ICD Concept

Only MoET can export and update MoET geodata in Its layers in the ICD server.

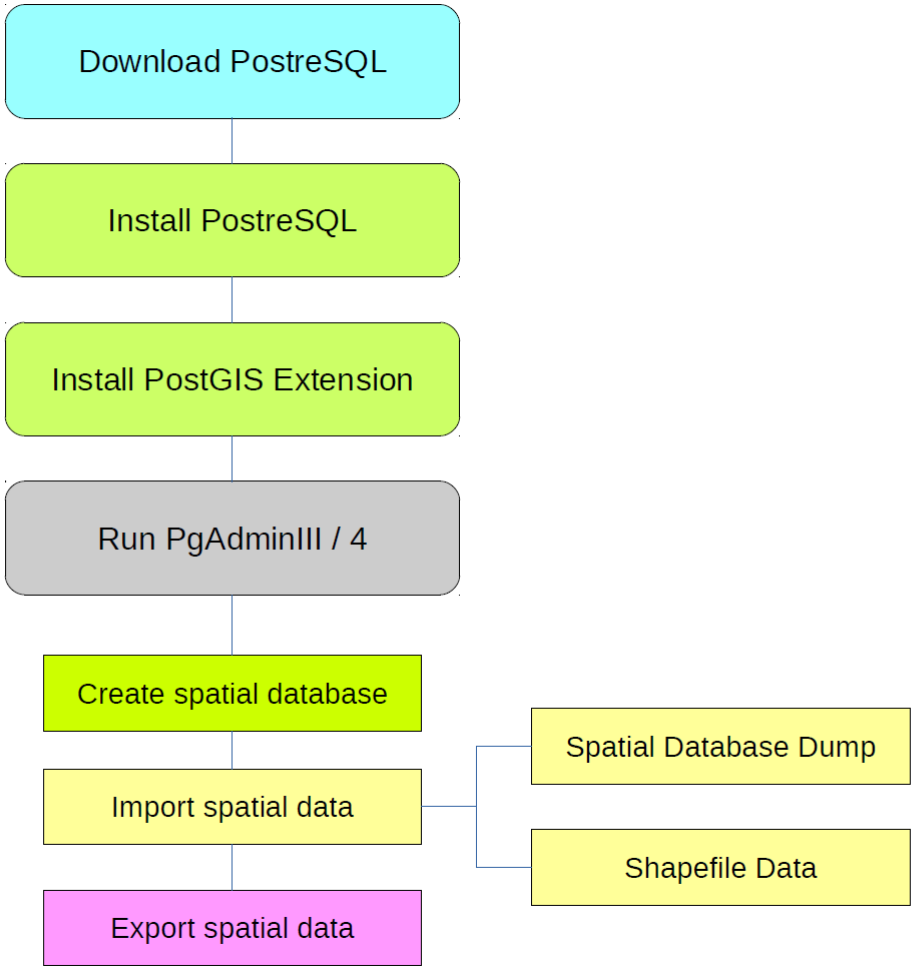


PostreSQL / PostGIS ICD Server

MoeT can import and use all the other geodata layers In the ICD server, subject to agreed protocols.
The same would apply to the other stakeholders such as MRPAM, ALAGaC and the Aimag/Soum stakeholders.

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PostreSQL – PostGIS Workflow



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How will this database be accessed?

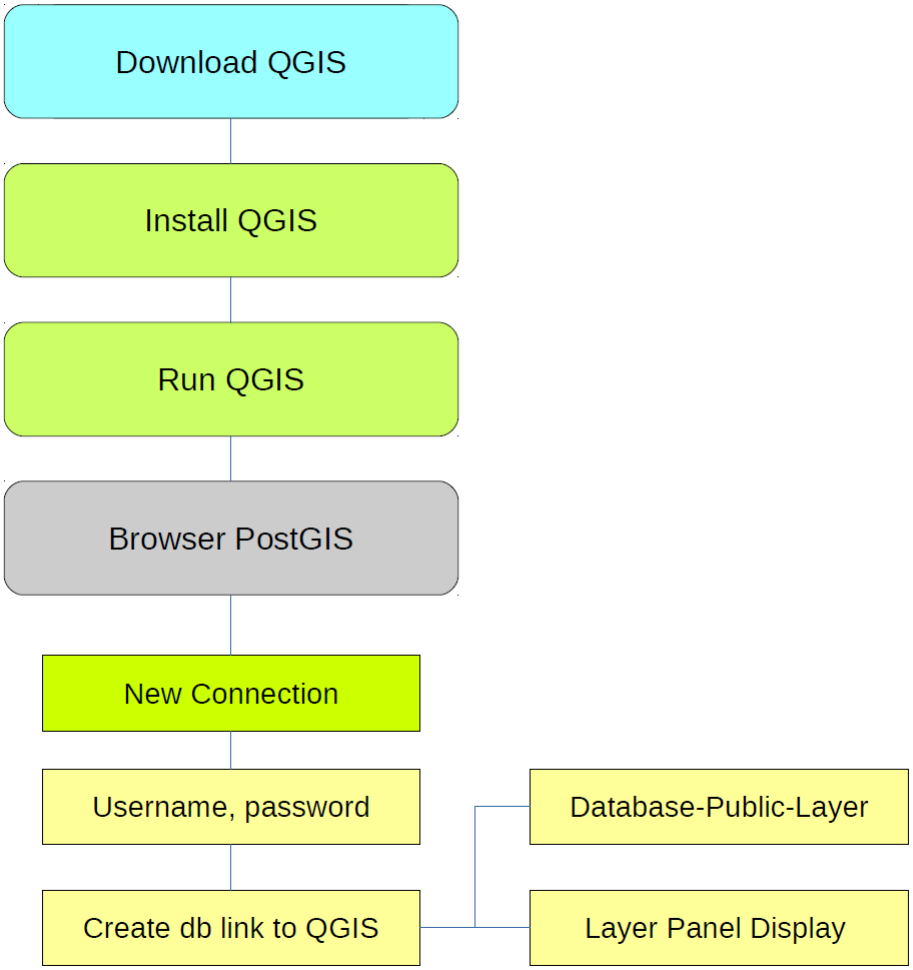
Using FOSS4G application like QGIS, and COTS application like ArcGIS.





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QGIS & PostGIS



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What will be included in the ICD database?

The first phase will be limited to data being shared between MRPAM and MoET for mining licensing purposes. This includes data that is being exchanged via DVDs and USB drives. ALAGaC will supply base mapping data such as infrastructure, local government boundaries, etc.

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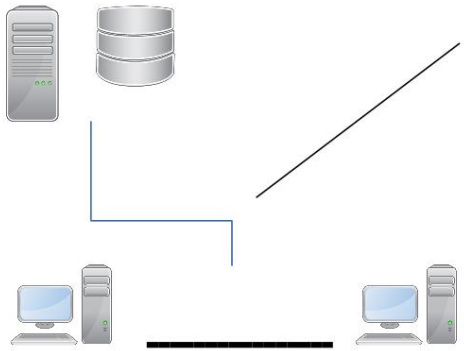


MoET

5 – PC Workstations
No network server
ArcGIS
ESRI shapefiles
Raster images

Data exchange
ESRI shapefiles
DVD disks or email

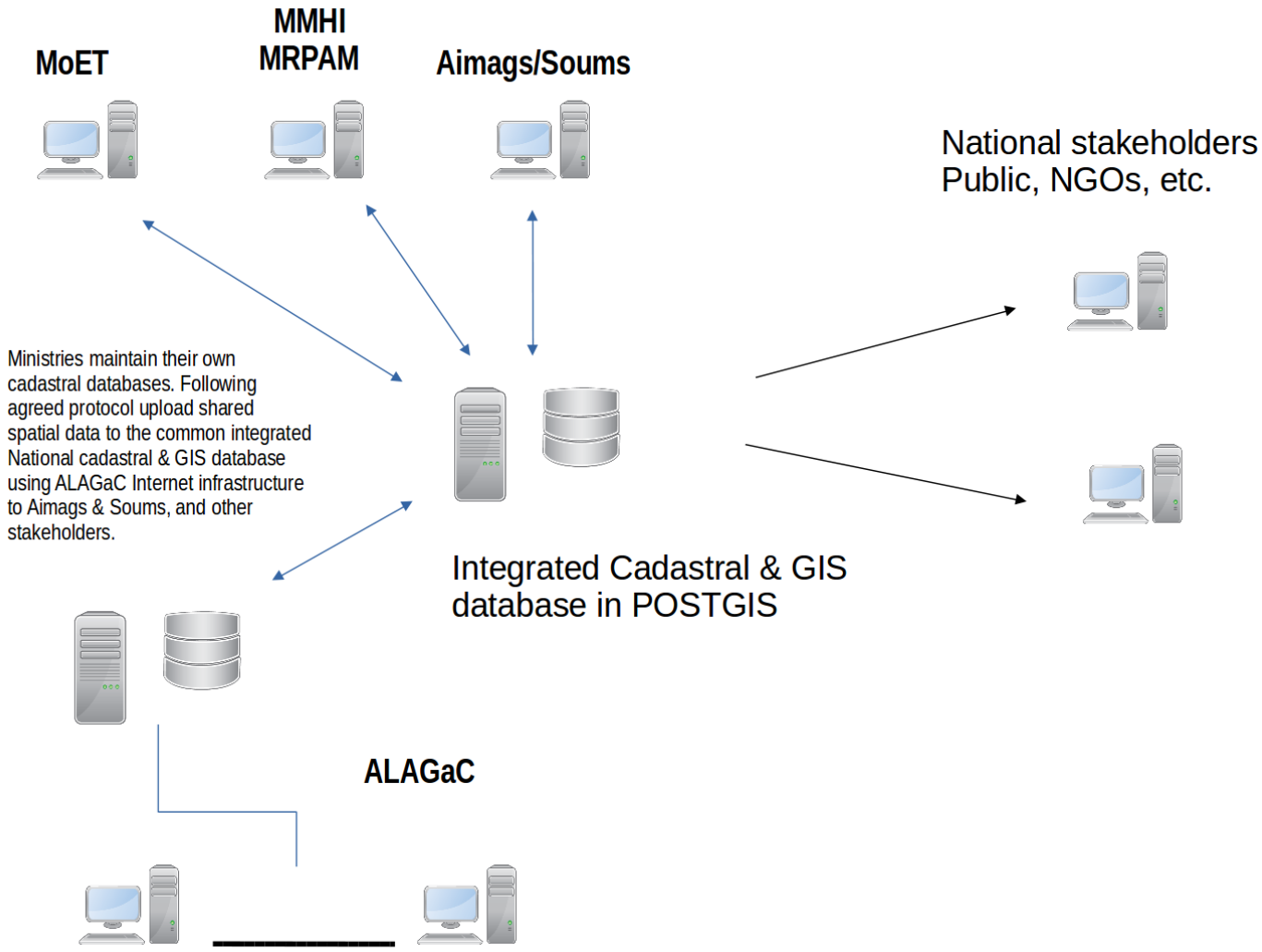
MRPAM



Multiple – PC Workstations
Networked server
Oracle database with licensing application
ArcGIS
Oracle spatial database
Raster images

Note: PAM does not have a system at this time

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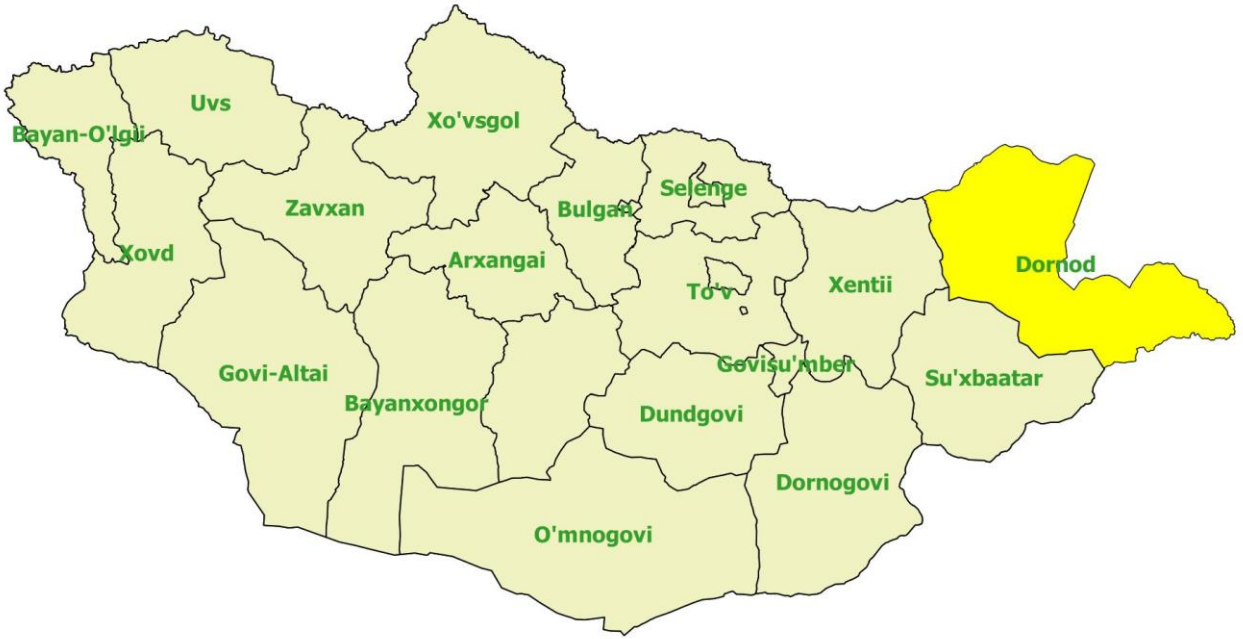
Who will have access to the ICD database?

Initially ICD prototype will only be used by the development team from the ministries and local government and others determined by the technical working group. It will not be available to the general public.

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How will we develop the system?

The system will be developed using the sample dataset from Dornod aimag.



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What do we need to resolve at the upcoming workshop?

1. Agree on the geospatial datasets that each stakeholder will upload to the ICD
2. Systematically examine each layer to clarify the metadata, and determine which attributes will be shared. Note: eliminate proprietary data that is to be retained by the stakeholder.

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Dornod Data Layers

Filename	Organization	Soum	Geometry	No. Fields	No. Records	Projection	Datum	Corrupt	Languages
BasinArea29	MOET		polygon	13	29	WGS84 UTM Zone 48	WGS84		Both
forest	MOET		polygon	8	1466	WGS84 UTM Zone 48	WGS84		
lake	MOET		polygon	9	1	WGS84 UTM Zone 48	WGS84		Both
river	MOET		polyline	15	1210	WGS84 UTM Zone 48	WGS84		Both
UBE	MOET		polygon	11	2	WGS84 UTM Zone 48	WGS84		
WaterZone200	MOET		polygon	26	1505	WGS84 UTM Zone 48	WGS84		Both
well	MOET		point	15	363	WGS84 UTM Zone 48	WGS84		Mon
Dornod_aimag_Boundary	MRPAM		polygon	14	1	None	WGS84	yes	Both
Dornod_in_reserve	MRPAM		polygon	28	2	None	WGS84	yes	Both (some)
dornod_license	MRPAM		polygon	29	190	None	WGS84		Both
Dornod_mineral_resource_accumulation	MRPAM		polygon	28	87	None	WGS84	yes	Both
Dornod_Special_protected_area	MRPAM		polygon	28	67	None	WGS84	yes	Both
dornod_tender	MRPAM		polygon	28	270	None	WGS84	yes	Both
dornod_tender_new	MRPAM		polygon	28	222	None	WGS84	yes	Both
aimag_bnd	Dornod		polygon	5	1	None	WGS84		Mon
bag_bnd	Dornod		polygon	5	66	None	WGS84	yes	Mon
sum_bnd	Dornod		polygon	5	14	None	WGS84		Mon
Aimag_hil	Dornod		polygon	16	1	WGS84 UTM Zone 48	WGS84		Mon
Border	Dornod		polygon	10	1	WGS84 UTM Zone 48	WGS84		
Chuluut_bus	Dornod		polygon	10	1	None	WGS84		
GNS_dornod_aimag	Dornod		polygon	13	49945	WGS84 UTM Zone 48	WGS84		
Otor	Dornod		polygon	10	1	None	WGS84		

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Technical Issues for Discussion

1. Coordinate reference system (CRS) or projections of the datasets
2. Maintenance of the datasets
3. Procedures for uploading and updating of data
4. Security of the database
5. Operations and maintenance of the database (server)

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Other Items

Time permitting any other items arising from the workshop discussions.