

IGIF IMPLEMENTATION IN MONGOLIA



МОНГОЛ УЛСЫН
ЗАСГИЙН ГАЗАР

**Agency for Land Administration and
Management, Geodesy and Cartography**

Director-General : Gankhuu Tsevelsodnom

COUNTRY PROFILE



- ❖ The 5th largest in Asia and 19th largest in the world.
- ❖ Located in the north central Asia borders with Russia and China.
- ❖ Total size: 1.5 million sq km
- ❖ Population: 3.5 million
- ❖ Landlocked country
- ❖ Political system: Parliamentary
- ❖ 21 provinces and Capital city (9 districts)



ORGANIZATIONAL STRUCTURE OF AGENCY



ALAMGC - GOVERNMENT IMPLEMENTING AGENCY

DIRECTOR GENERAL

DEPUTY DIRECTOR

Department of Public
Administration and
Cooperation

9 divisions

Geodesy and Cartography

Land Monitoring division

Land management
division

Urban Development
division

Urban Development
cadaster division

Cadaster division

Geodetic information and
Technology division

Finance and Economic
relation division

Archive and Information
center

Capital city

9 districts

21 provinces
/Local department/

360 soums
/Land officers/

1000 staffs



Historic and Culture



Topo map

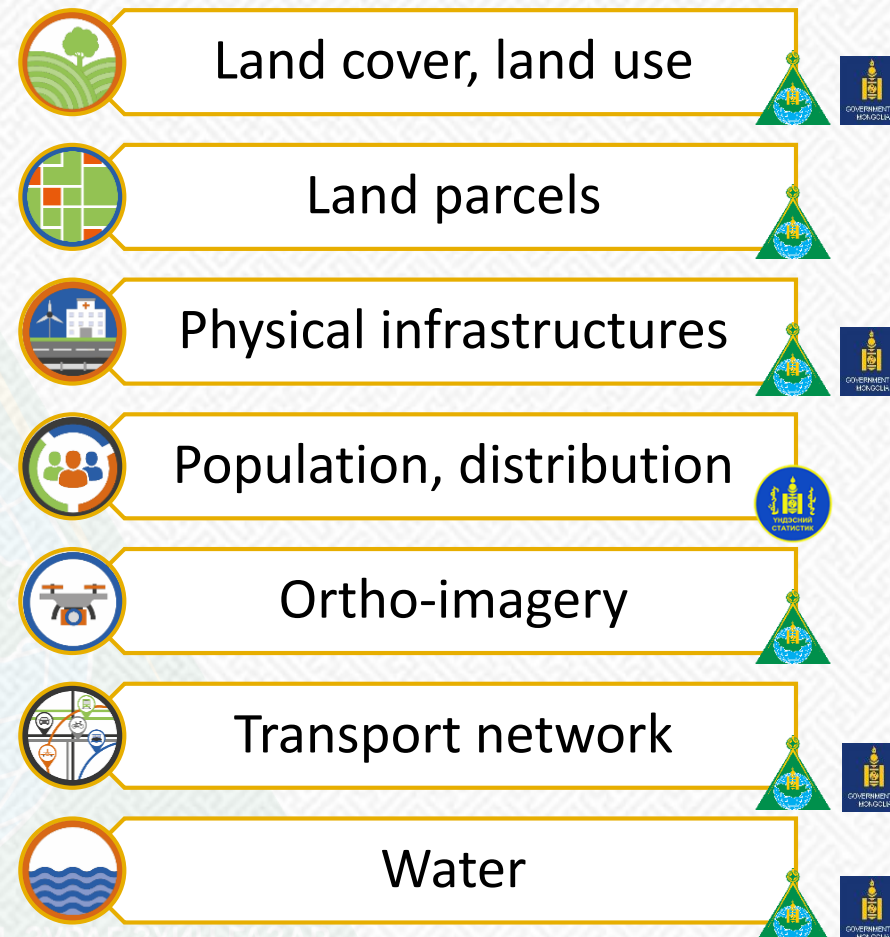


GLOBAL
BENCHMARK 16
BASE GEO SPATIAL
DATA





Base geo spatial data



Current systems at ALAMGC



Current systems atALAMGC



Geodetic databases



topomaps



Geodetic reference



Imagery db



Geographic names db



Address map system



Land monitoring system



Land characteristic and
quality
and suitability db
Land monitoring db

Land management information system



Land use plan db



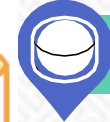
Land cadastral information db



E-land auction system



Land payment and tax system



Land valuation system



Urban development db



Urban cadastral system

Land Cadastral information system



Urban development information system





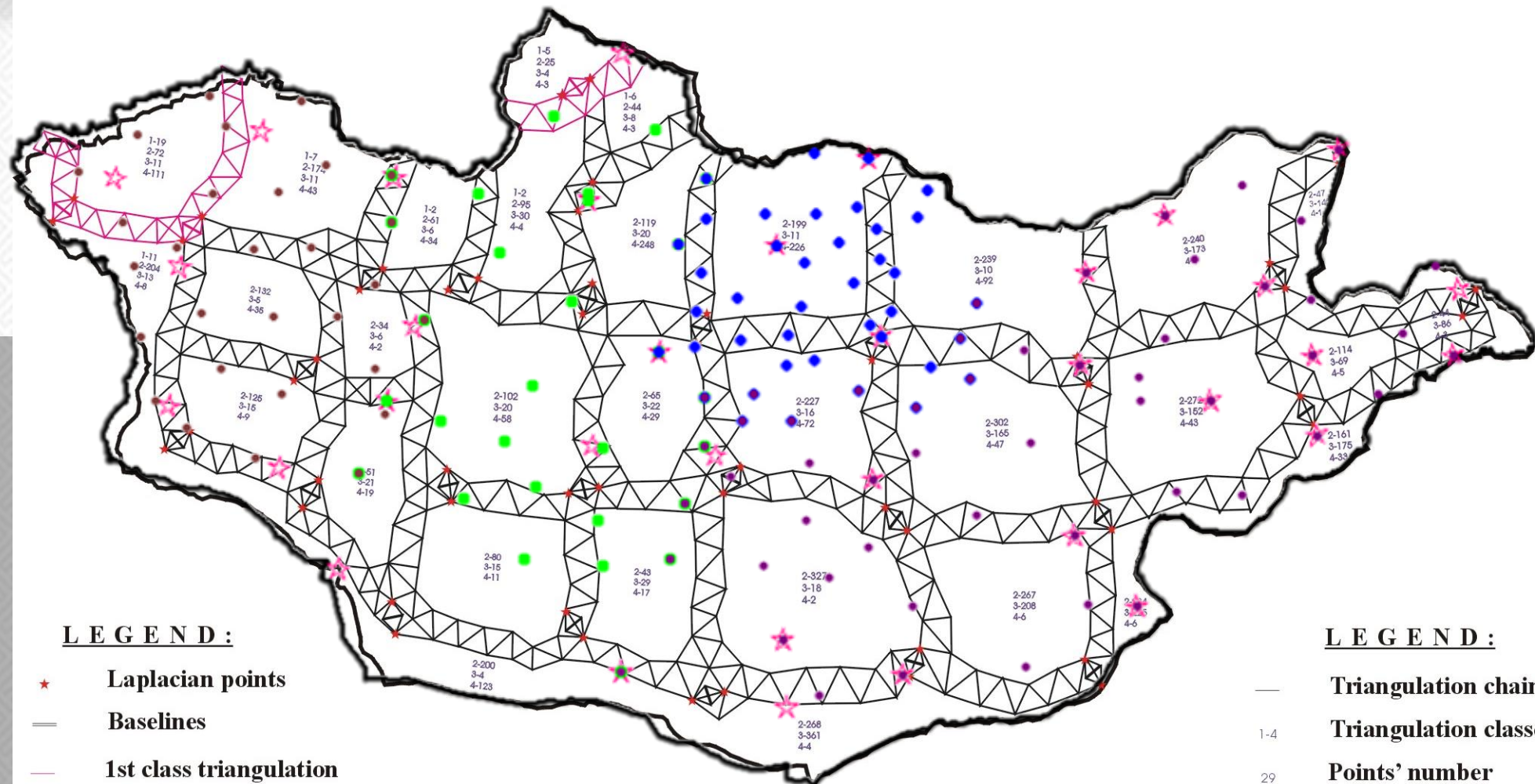
COORDINATE
SYSTEM



HEIGHT AND
DEPTH

APPLICATION:

- ITRF 2008 coordinate determination;
- All scale topographical and cadastral mapping
- Topographical mapping for Geological mining and exploration work
- Large scale topographical mapping after construction of facilities and buildings



- Triangulation network established by Russian red army in 1936-1961 consists of more than 20000 points
- Monref 97 network established in 1997-1998
- Densification of Monref 97 network in 2002-2013



ЗАСГИЙН ГАЗРЫН ХЭРЭГЖҮҮЛЭГЧ АГЕНТЛАГ
ГАЗАР ЗОХИОН БАЙГУУЛАЛТ,
ГЕОДЕЗИ, ЗУРАГ ЗҮЙН ГАЗАР



GEODETIC NETWORK OF MONGOLIA

GNSS PERMANENT STATIONS



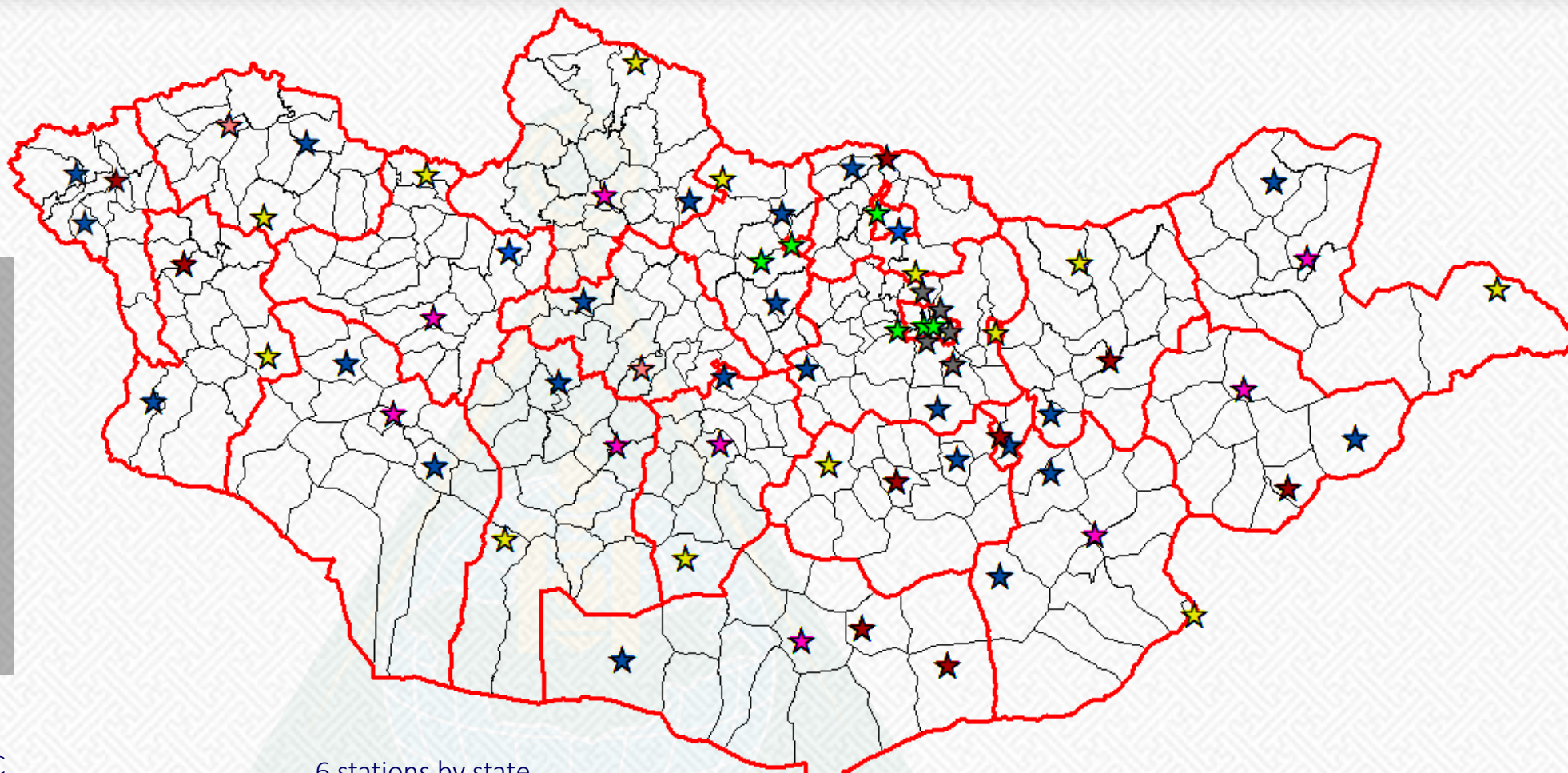
COORDINATE
SYSTEM



HEIGHT AND
DEPTH

APPLICATION

- For topographical mapping;
- For cadastral mapping;
- For land dispute measurement;
- Land tectonic movement study;



6 stations by MCC
budget



2010

2011



2 stations by
state budget

6 stations by state
budget

2012



2013



12 stations by
state budget

13 stations by state
budget

2014



5 stations by UB
city budget

2017



2020-2021



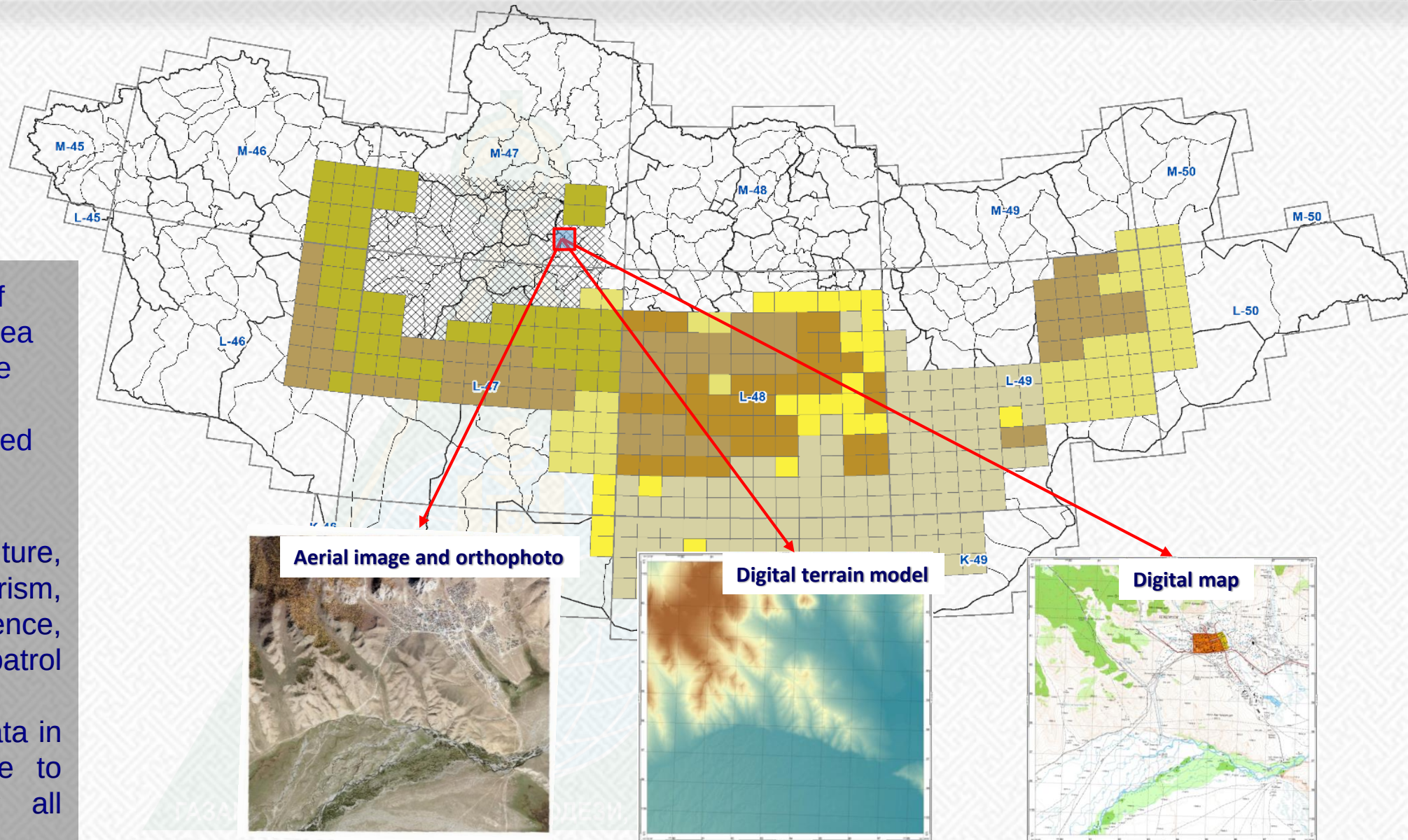
25 stations by
state budget



COORDINATE
SYSTEM



HEIGHT AND
DEPTH



- 2013-2019 45 percent of country 704000 sq.km area covered by 1:25000 scale digital map
 - 7328 sheets map produced
- APPLICATION**
- ✓ For geological mapping
 - ✓ For planning in agriculture, transportation, tourism, emergency, defence, infrastructure, border patrol and urban planning
 - ✓ Used as fundamental data in spatial data infrastructure to provide base map for all sectors



Geology,
Soil



Land and
explosion



Water

- Geology
/1:500'000, 1:1'000'000 /
- Tectonics, New tectonic
/1:1'000'000/
- Geomorphology
/1:500'000, 1:1'500'000 /
- Minerals
/1:1000 000 /
- Hydrogeology
/1:500 000, 1:1500 000 /
- Hydrology
/1:1'000'000, 1:10'000'000 /
- Engineering-geology/
permafrost/ /1:500'000,
1:1'500'000 /
- History archeology
/1:5'000'000/





CONSTRUCTION,
SETTLEMENT



INFRASTRUCTURE



POPULATION
INFORMATION



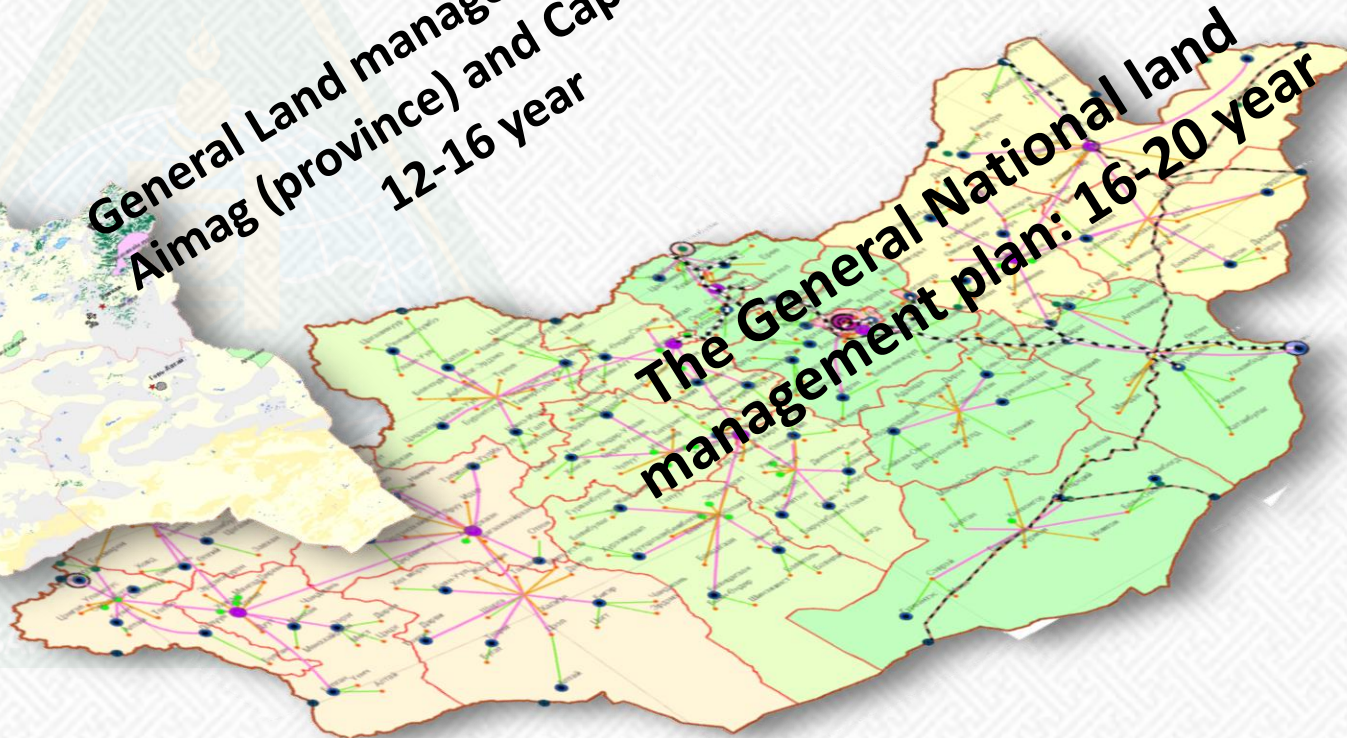
Annual land management plan of
capital city, Soums and districts



Territorial development plan of Soum
level: 5-7 year



General Land management plan of
Aimag (province) and Capital City:
12-16 year



The General National land
management plan: 16-20 year



ЗАСГИЙН ГАЗРЫН ХЭРЭГЖҮҮЛЭГЧ АГЕНТЛАГ
ГАЗАР ЗОХИОН БАЙГУУЛАЛТ,
ГЕОДЕЗИ, ЗУРАГ ЗҮЙН ГАЗАР



LAND CADASTRAL INTEGRATED DATABASE SYSTEM



PARCEL



ADDRESS



BOUNDRY



BUILDING



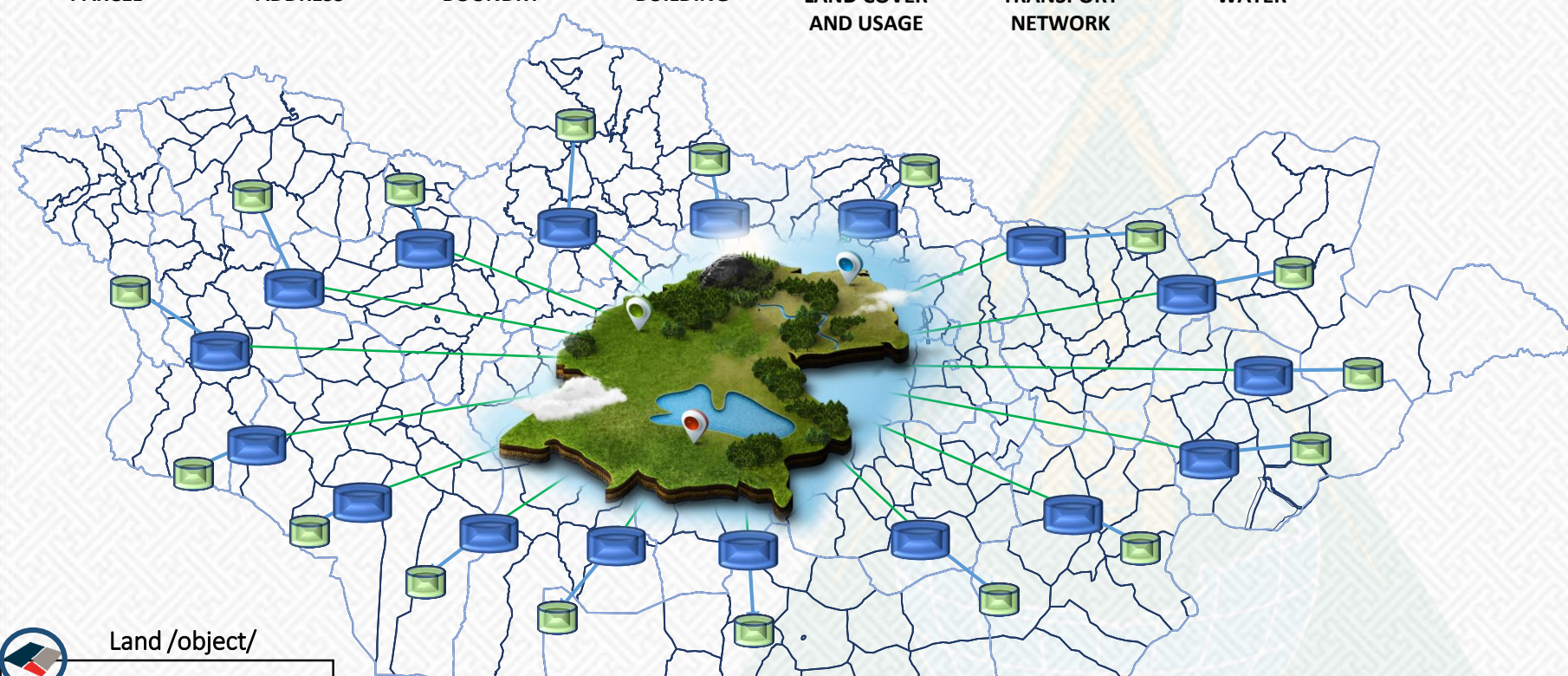
LAND COVER
AND USAGE



TRANSPORT
NETWORK



WATER



Land /object/

- Location of the site
- Object Address
- Parcel number
- Size of field
- Types of use
- Coordinate



State land registration

- Surname, name, and registry
- Parcel number
- Civil address
- Order and decision
- Land fees and taxes



Land assessment

- Land fees and taxes
- Base price of land
- Land valuation



Нэгж талбарын хувийн хэрэг

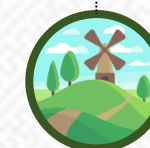
- Цаасан хувийн хэрэг
- Цахим хувийн хэрэг



WATER



ROADS, NETWORK



AGRICULTURE



16.1

STATE SPECIAL NEEDS

9.2



FOREST



CITY AND
SETTLEMENT

Газрын нэгдмэл сан

73.4

0.3

0.4

0.5



CONSTRUCTION,
SETTLEMENT



INFRASTRUCTURE



POPULATION
INFORMATION

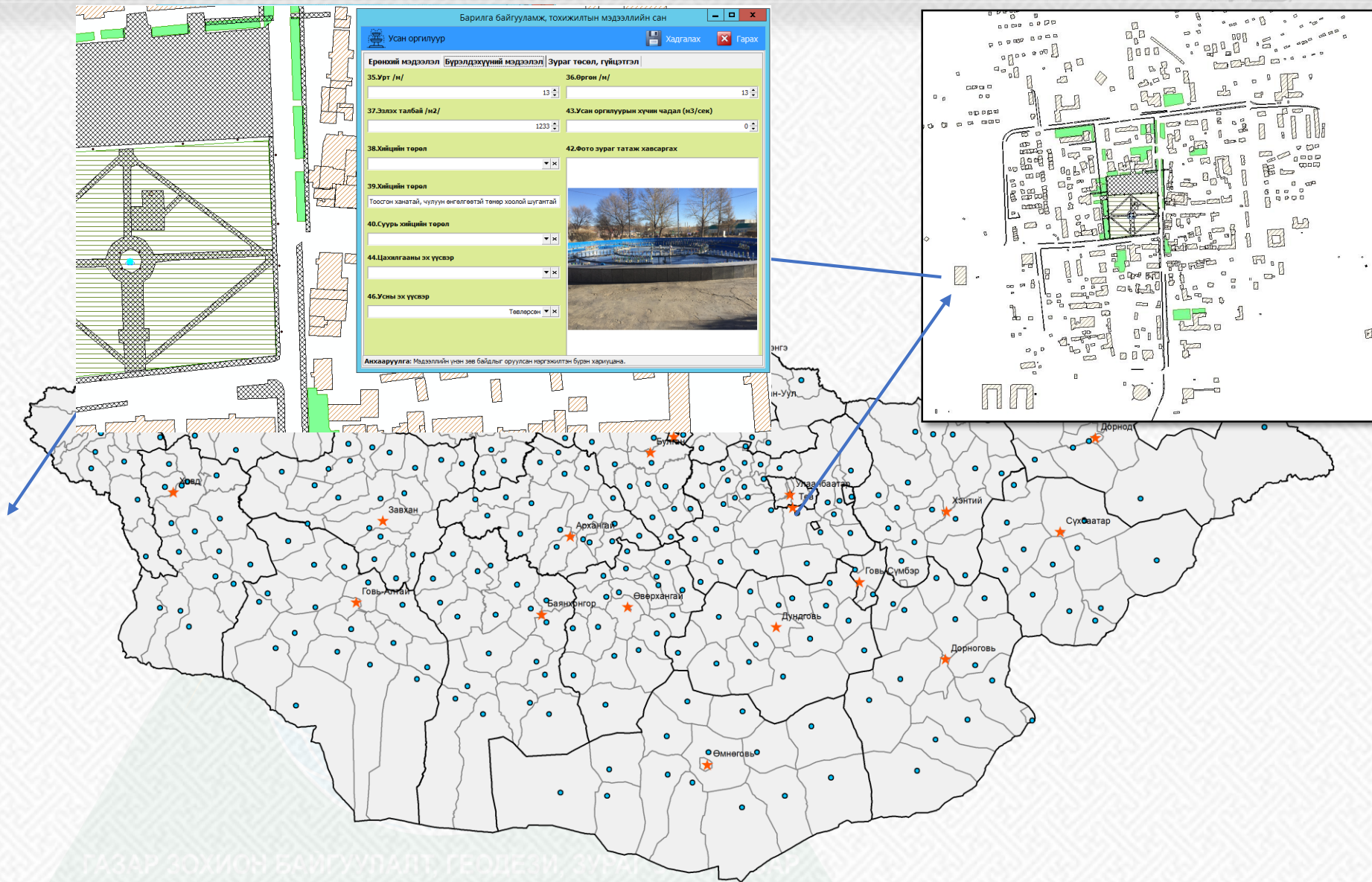
Urban Development Database is:

1. Street lighting
 2. Memorial statue
 3. Fountain
 4. Pedestrian path
 5. Bike path
 6. Parking
 7. Green area for public
 8. Green area for limited use
 9. Specialized green facility
- To register 201 types of 9-layer information in the form.

Outboard, dam

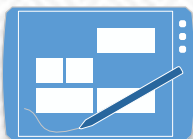
1. Pedestrian crossing
2. Pedestrian bridge
3. Dam,
4. Open trench
5. Hidden trench

to register 157 data from 5 layers..



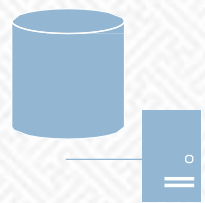


NSDI: Geoplatform



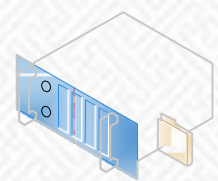
ETL PROGRAMMING
Provide a software services

Dynamic web site
To deliver and share all information through
single web page



Geoportal
Organize the operation of web
GIS
API

Data center management
Manage and organize the operation of
servers



GIS servers/services
Manage the mapping services

DBMS
Manage, protect, keep, give the permission
of spatial database.



GO-OPERATION IN IGIF



MINISTRIES

MINISTRY OF JUSTICE AND INTERNAL AFFAIRS

MINISTRY OF FOOD, AGRICULTURE AND LIGHT
INDUSTRY

MINISTRY OF NATURE, ENVIRONMENT AND
TOURISM

MINISTRY OF FOREIGN AFFAIRS

MINISTRY OF DEFENSE

THE MINISTRY OF CONSTRUCTION AND URBAN
DEVELOPMENT

MINISTRY OF EDUCATION, CULTURE, SCIENCE AND
SPORTS

MINISTRY OF ROAD AND TRANSPORTATION

MINISTRY OF MINING AND HEAVY INDUSTRY

MINISTRY OF LABOR AND SOCIAL SECURITY

MINISTRY OF ENERGY

MINISTRY OF HEALTH

AGENCY FOR LAND ADMINISTRATION
AND MANAGEMENT, GEODESY AND
CARTHOGRAPHY



International and
internal projects

ACTION PLAN



GOVERNMENT CABINET

AGENCIES

THE GENERAL INTELLIGENCE DEPARTMENT

COMMUNICATIONS AND INFORMATION
TECHNOLOGY DEPARTMENT

NATIONAL DEVELOPMENT AGENCY

STATE PROPERTY POLICY AND COORDINATION
DEPARTMENT

EMERGENCY MANAGEMENT OFFICE

FAIR COMPETITION AND CONSUMER AFFAIRS

PROFESSIONAL INSPECTION AGENCY

DEPARTMENT OF STANDARDIZATION AND
METROLOGY

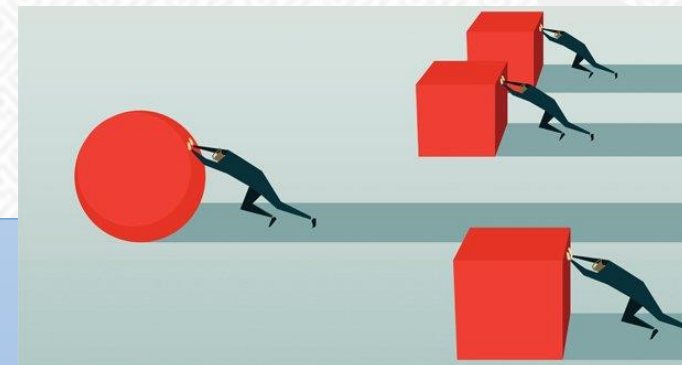
Strategic goals

- Geo-Strategic goals:

- Geospatial information collection
- Establish an integrated Geoplatform
- Create legal and policy framework
- Strengthening human and technological capacity development

Further challenges

- Data model
- Process model
- Business model
- Mobile app
- Integrate with dynamic web site
- Develop ETL, web based application for various users/metadata,
- search, access, online request/payment, online subscription/
 - Integrate geospatial information with statistical information to monitor SDGs
 - Support E-Governance
 - Promote research and development



The work is included in the Government of Mongolia's action plan
2018-2021



ЗАСГИЙН ГАЗРЫН ХЭРЭГЖҮҮЛЭГЧ АГЕНТЛАГ
ГАЗАР ЗОХИОН БАЙГУУЛАЛТ,
ГЕОДЕЗИ, ЗУРАГ ЗҮЙН ГАЗАР



THANK YOU FOR YOUR
ATTENTION

