The description of the object of mapping

- Area – 603 700 sq. km
- Population – 49 200 000
- 24 Regions and AR Crimea
- 499 admin. districts
- 30212 settlements, including 1358 cities and towns
- 72 000 rivers (total length more than 240 000 km)

The infrastructure of mapping...

Cartographic supply of Ukraine

- Topographical maps in standard scales:
  - 1:1 000 000 – 9 sheets
  - 1:500 000 – 26 sheets
  - 1:250 000 – 156 sheets
  - 1:100 000 – 538 sheets
  - 1:50 000 – 2000 sheets
  - 1:25 000 – 8000 sheets
  - 1:10 000 – 30 000 sheets

- Plans in the scales 1: 5 000 and 1: 2 000 for all the cities and towns – more than 350 000 sheets

Problems of mapping in Ukraine...

- Updating of cartographical materials
  - Economic reforms
  - Administrative-territorial reform
  - Land reform
  - Renaming of large quantity of geographical names
  - Economic problems of transitions period of formation of independent state
  - All this has accelerated the “ageing” of cartographical materials

GEOINFORMATION MAPPING...

- Geoinformational Mapping based on the basis of geographical data, digital methods of topographic/geodetic and GPS measurements, remote sensing and digital photogrammetry
- GIM results and environment of functioning are spatial databases

6 universities train specialists in geodesy, cartography and cadastre
Infrastructure GIS Mapping...

- Fundamental network of GPS-stations
- Bank of geographical data
- Unified system of classification and encoding of topographical objects and their attributes in bases of digital maps
- Network of regional centers responsible for cartographic support
- State Cartographic Fund
- Technological basis of information mapping

Fundamental network of GPS-stations in Ukraine...

Bank of the geographical data...

- Geodetic network Database
- Digital maps in the scale 1:200 000 (for territory of Ukraine)
- Digital maps in the scale 1:10 000 (for large cities)
- Digital orthophotomaps in the scale 1:2 000 for single territories
- Database of digital elevation models (DEM) for all territory of Ukraine (1:200 000) and for large cities (1:10 000)

Bank of the geographical data (settlements and administrative boundaries)

30212 settlements, including 1300 cities and towns

Bank of geographical data (rivers)

72 000 rivers (total length more than 240 000 km)

Bank of the geographical data (DEM)

13 000 000 points in model
Process of development of DEM

The technological basis of GIS mapping in Ukraine...

- GIS-tools from Intergraph, ESRI, MapInfo, AutoDesk
- Oracle Database
- Digital photogrammetric systems produced in Ukraine (Production and Research Company “Geosystem”)

Digital photogrammetric system (GEOSYSTEM Com., Ukraine)

Used in Ukraine and exported to CIS-countries, USA, Great Britain, Sweden, Spain, Italy, South Korea, China, Mexico, Egypt etc.

Software “DIGITALS”

“GEOSYSTEM” Com. (Ukraine)

Analytical photogrammetric station “Stereoanograph”

Digital photogrammetric station “DELTA”

Special software for digital mapping “DIGITALS”

“GEOSYSTEM” Com. (Ukraine)

Digital color scanner “DELTA”

Digital photogrammetric station “DELTA”
Samples of applying of GIS mapping in Ukraine...

- GIS for ecological monitoring in Chernobyl zone
- GIS for tracing under mobile objects in Chernobyl zone
- GIS for emission monitoring
- Land inventory and land cadastre
- Application of DEMs for calculation of zones of radio visibility
- Simulation of zones of possible flooding
- GIS for hydrometeorological service of Ukraine
- Computerized National Atlas of Ukraine on CD
- Informational and reference GIS for large cities on CD
- Web-mapping
- etc.

GIS for ecological monitoring in Chernobyl zone

Land cadastre

Atlas of Ukraine
CD maps of cities

WEB Mapping

International co-operation

- Canadian-Ukrainian, Swedish-Ukrainian, Ukrainian-French projects on development of systems of land and other real property registration
- Canadian-Ukrainian project “GIS-Chernobyl”
- MapBSR
- Swedish-Ukrainian project “Capacity Building for the implementation of National Spatial Data Infrastructure”
- EuroGlobalMap
- etc.

Ukraine from outer space