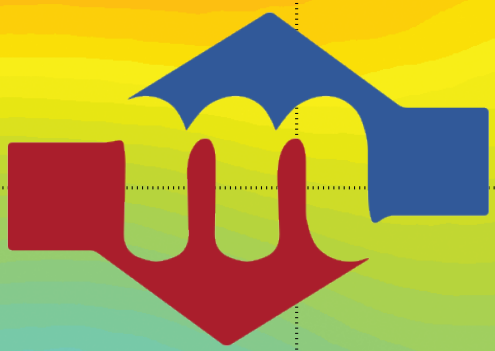

MESCİOĞLU

ENGINEERING AND CONSULTINNG INC.

Surveying, Cadastre and Information Technologies

Located in northern hemisphere between 26-45 E longtitudes and 36-42 N latitudes, Turkey is founded on Anatolian Peninsula. Topography varies between western and eastern sides of Turkey. Turkey is surrounded by sea on three sides and as an industrialized country, has non-industrialized neighbours with energy resources.

Turkey's geopolitical position as being a bridge between Europe and Asia, energy resources, population, production and workforce power, natural resources and potantial power affects the World.

Thanks to the recent development policies on medical, technological, engineering etc, Turkey continues its development rapidly and started being dominant at international projects.

MESCİOĞLU

ENGİNEERING AND CONSULTING INC.

Surveying, Cadastre and Information Technologies

International Federation of Consulting Engineers (FIDIC)

Europen Federation of Engineering Consultancy Association

OSTİM SAVUNMA VE HAVACILIK KÜMELENMESİ

ANATOLIAN RAIL TRANSPORTATION SYSTEM CLUSTER

COMMINICATION TECHNOLOGIES CLUSTER

Association of Turkish Consulting Engineers and Architects

UNION OF CHAMBERS OF TURKISH ENGINEERS AND ARCHITECTS

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Mescioğlu Engineering

Established in 1984, our company offers integrated solutions in engineering and consultancy of transportation, mapping, Water Resources, Landscaping coastal structures and other infrastructure projects.

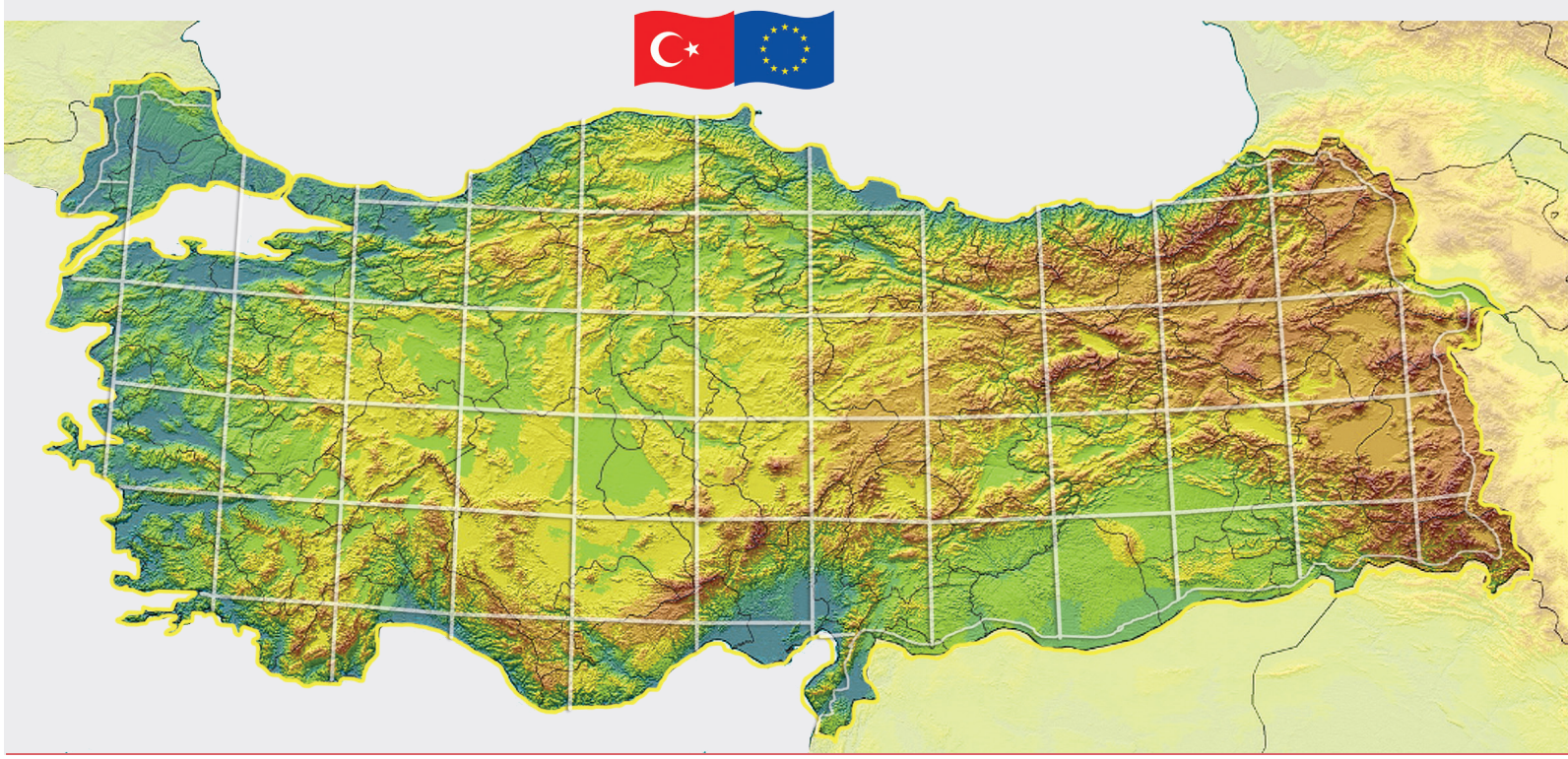
Being one of the first company that comes to mind with our trustworthy service culture based on technical capacities and quality assurance system, we go on rendering services with the utmost attention paid to customer satisfaction.

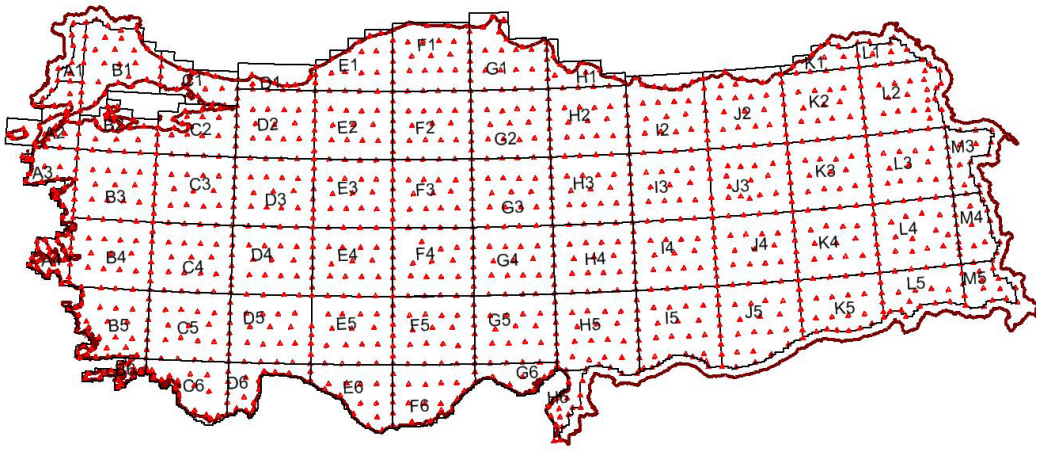
Ayhan Faruk MESCİ
Chairman of the Board

International Projects

A Land Parcel Identification System Project (LPIS)

Land Parcel Identification System Project is the biggest project in terms of area and budget and founded by the European Union and Republic of Turkey. Ministry of Food, Agriculture and Livestock, General Directorate of Agricultural Reform, and Department of Geographical Information Systems are beneficiaries of this protect. This project completed in 24 months and project area is 780.000 square kilometers. In this project was completed successfully and in planning time; provided Integrated Administration and Control System (IACS) which is compatible with EU's acquises and in the direction of EU experiences, for Field-based Agricultural Support System and then; provided orthophotos and digital elevation models (sustained, live and homogeneous based data including all country) for establishing and application of LPIS.

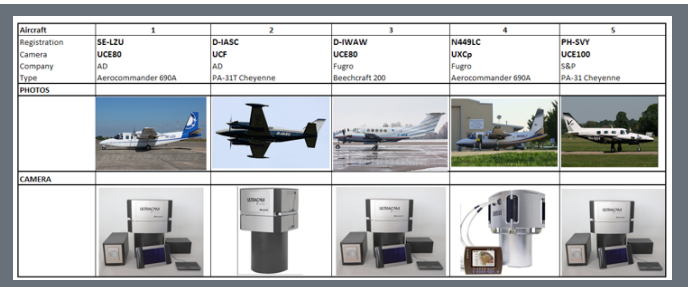


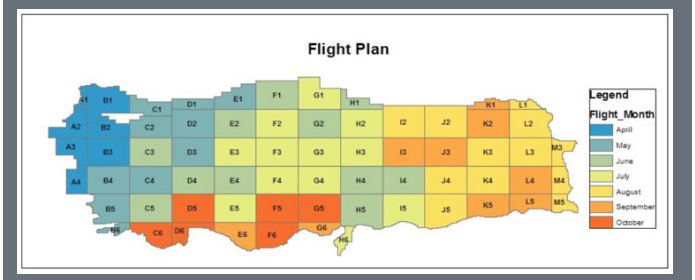


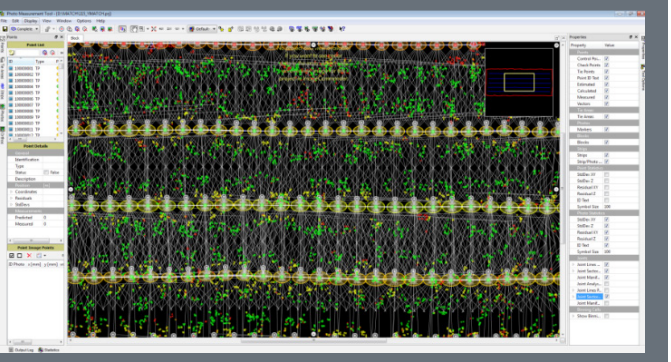
25 teams were organized for field works. These 25 teams realized of building and measuring for 2300 ground control points (GCP's) in 5 months.

The image acquisition has been completed in one season, April – October, by 7 aircrafts.

400.000 aerial images which have 30 cm. GSD (Ground Sample Distance) on 760.000 square kilometers and satellite images which have 30 cm GSD on 20.000 square kilometers that belong to neighbore country boundaries were worked in whole country.

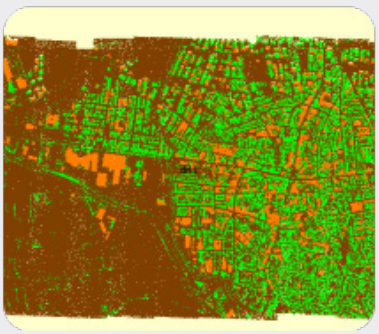






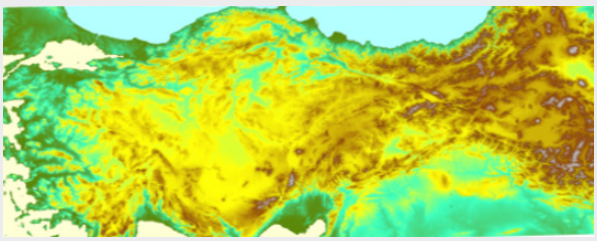
RGB Point Cloud

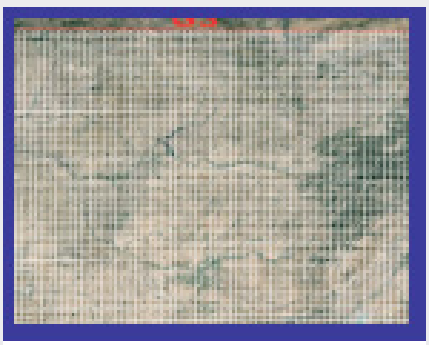
Clarification

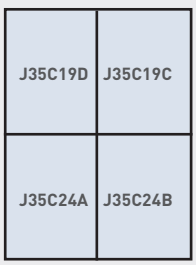


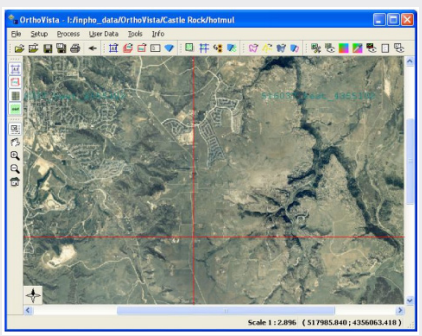
Filter

Point clouds that is Digital Surface Models (DSM) have generated by adjusted stereo models. Digital Terrain Models were generated by classifying of cloud points and after that Digital Elevation Models (DEM) in 5 m grid frame were generated by filtering algorithms by using produced digital surface models.







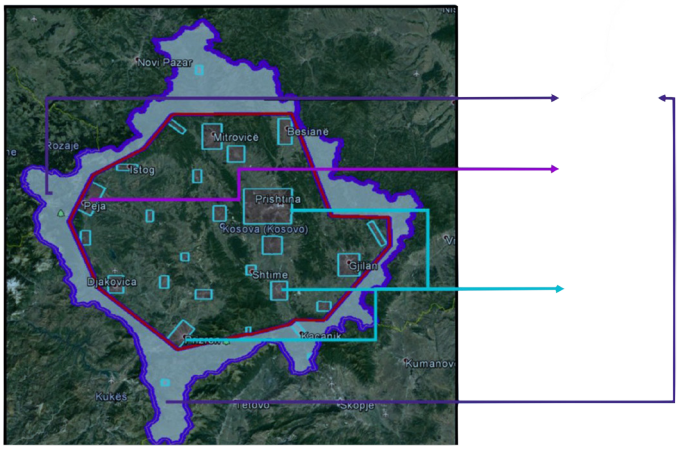


These 135.000 orthophoto maps (1/5000 scale) in 780.000 km^2 were delivered and approved by CFCU.

* Produced with Fugra Geospatial B.V (Holland) and Aerodata International Surveys Bvba (Belgium)

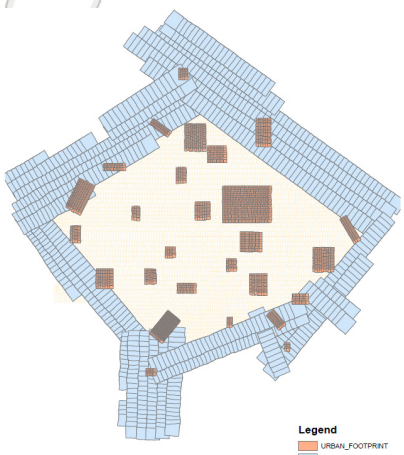
B Aerial Photography For The Territory of Republic of Kosovo

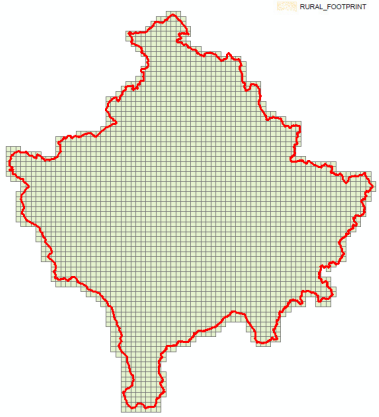
The "Aerial Photography for The Territory Of Republic Of Kosovo" project contract signed at 20.06.2018 with KCA. The project area 11.051 km2 and it will be produced for 150 days.



New Images and Orthophotos shall be produced for the whole country within the scope of this project. The resolution of the Orthophoto is 8 cm GSD for urban areas, 20 cm GSD for rural areas and 40 cm GSD for forest areas.

The image acquisition has been completed in 70 hours except transition period to area. 4120 tiles that covers each of 4 square kilometers will be made delivery.





* Produced with Küre Engineering Map and Development Construction Food Industry and Trade Limited Company.


Bursa City

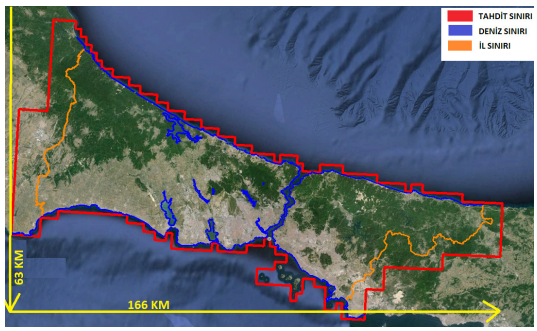
Production Of Orthophoto Maps And Digital Vector City Maps

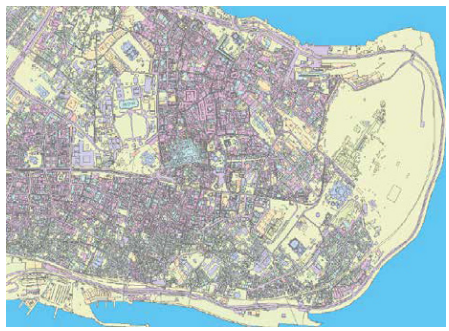
A Production of 1/1000 and 1/5000 scaled Revised Map and 1/1000 Scale Orthophoto Map Using Photogrammetric Methods in İstanbul City Borders

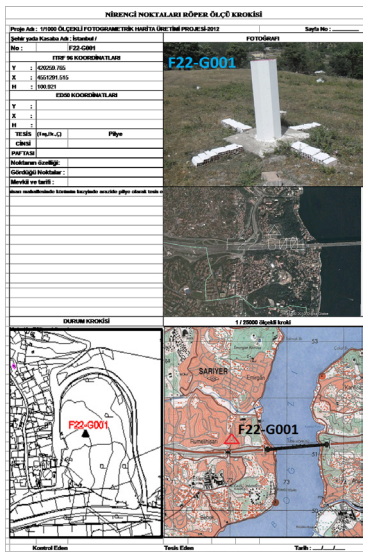
Project area is totally 7600 km^2 that it covers responsibility area of Istanbul Metropolitan Municipality (5343 km^2) and especially great divides area (2257 km^2).

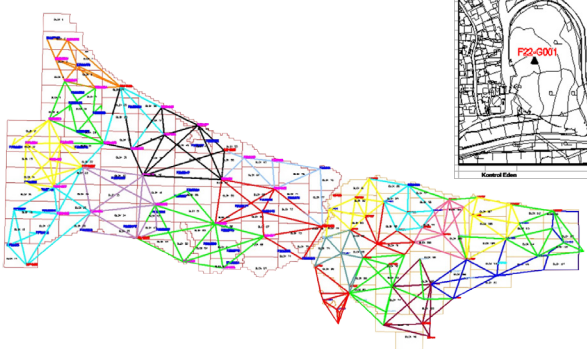
Images belong to European Side of Istanbul are taken by our Cessna 402B aircraft and DMC II230 aerial camera in 2012 and by Cessna T206H aircraft and Vexcel UCXp aerial camera in 2013.

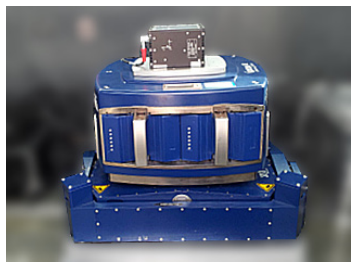
1450 ground control points established and calculated on creating geodetic network in provincial borders. Production of vector and orthophoto maps are realized for 2 years. Created Information System that include vector and orthophoto maps are opened to service on Municipality website for using of public.

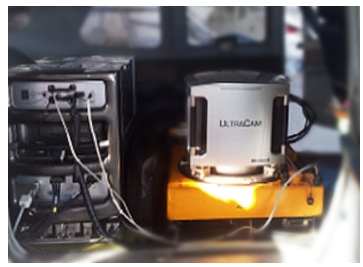


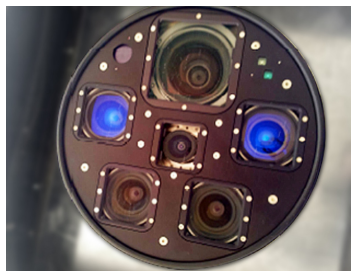












DMC II-230
Digital Aerial Camera

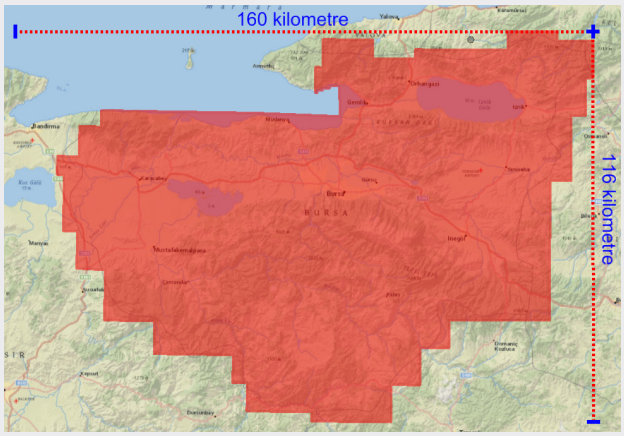
VEXCEL Xp
Digital Aerial Camera

Cessna 402B

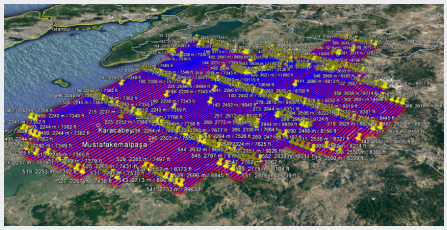

Beechcraft King Air C90

B Production of 1/1000 and 1/5000 scaled Photogrammetric Vector Maps and 1/1000 Scaled Orthophoto Maps in Bursa City Borders

The bidding is the biggest project on the basis of area in Turkey.

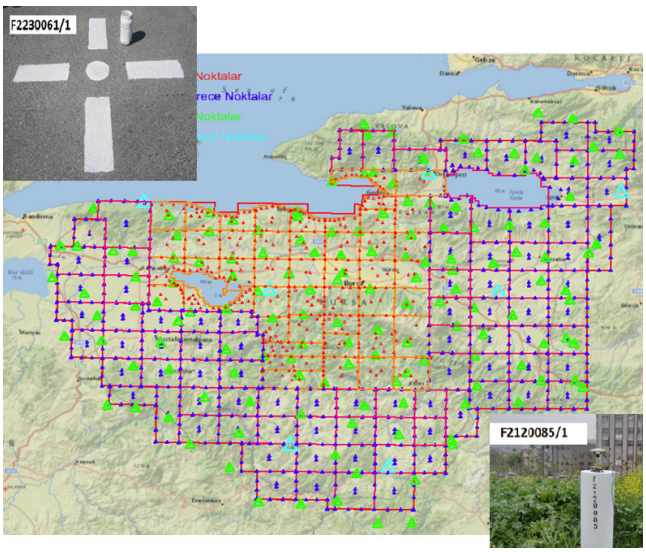


Project area is 12000 km2 and in Bursa Provincial Border.

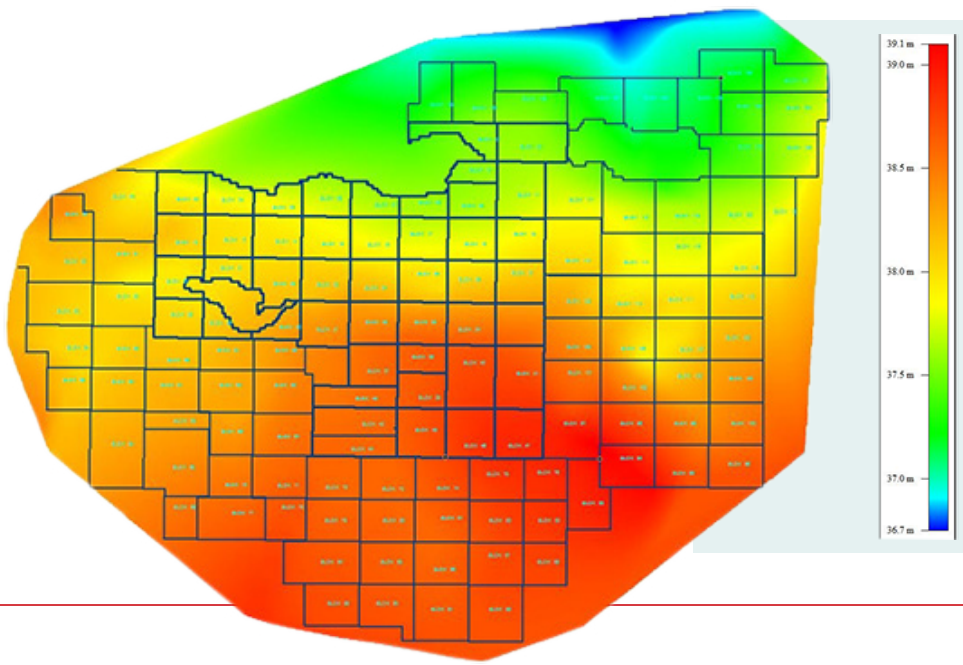


3 different aircrafts and aerial cameras are used for taking aerial images.

69 points on C1 Order GPS Network, 102 points on C2 Order GPS Network and 1461 points on C3 Order GPS Network were established for Bursa Geodetic Triangulation Network (BUGNA) at project area. Approximately 3000 observation datas are collected for this geodetic network.

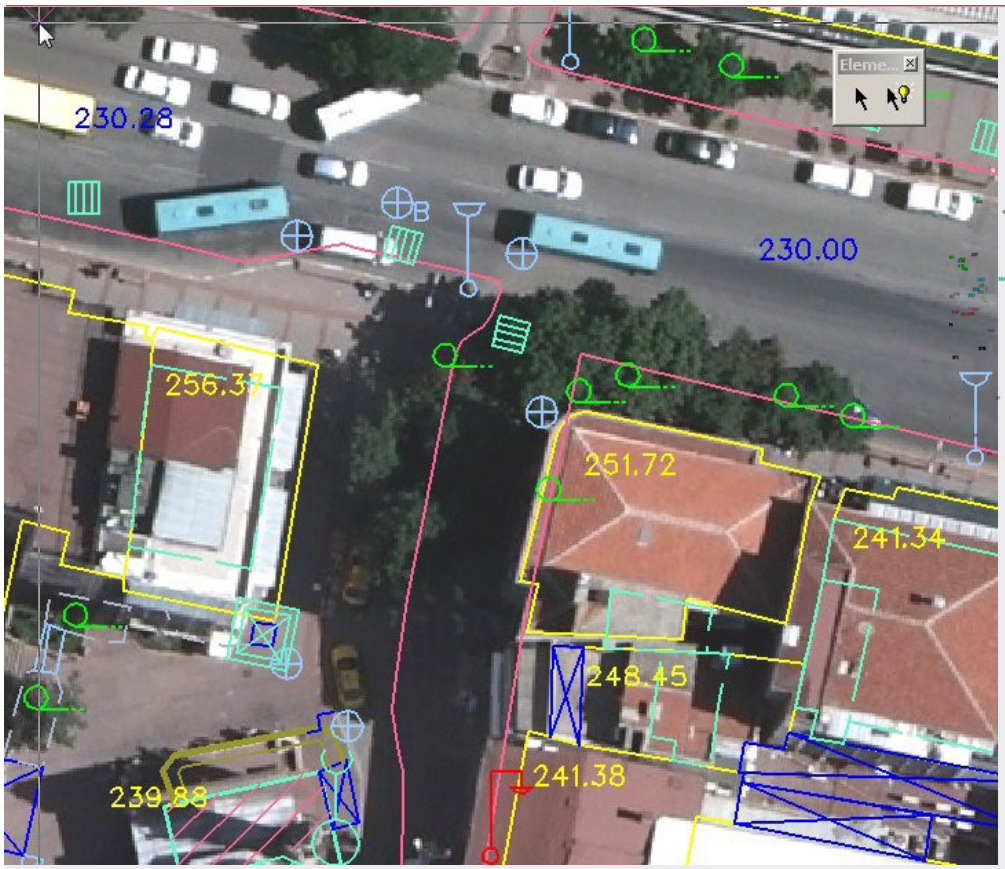


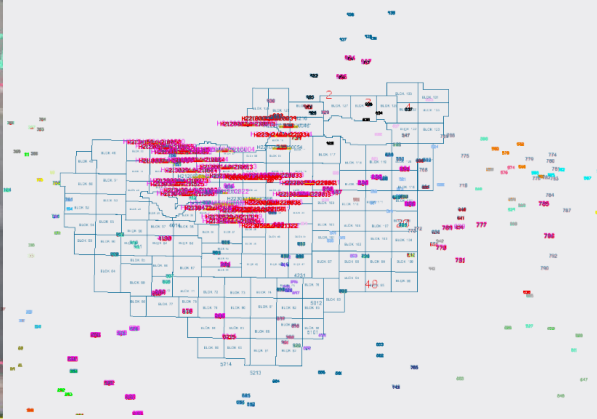
1600 km geometric levelling measurements and GPS levelling measurements on the all of C1 and C2 Order GPS points are made to determine of Helmert-Orthometric heights.



Geoid model are created in Bursa provincial boundary that it takes on active fault line.

Production Of Orthophoto Maps And Digital Vector City Maps





ED50-ITRF96 transformation parameters are calculated for archive maps and the other maps by produced some organizations that they are in ED50 datum for sharing between institutions. On these calculations are studied with 966 points in 119 working groups at the Archive of General Directorate of Land Registry and Cadastre and are calculated 2B transformation parameters.

Totally, 1/1000 scaled 22500 sheets are delivered per month 1200 sheets and they are compiled at field area. 32500 Orthophoto map sheets scaled 1/1000 and 1/5000 are produced and delivered to BUSKI.

C Antalya Project

Production of 1/1000 scaled Digital Photogrammetric Base (Vector) Maps and Orthophoto Project are tendered by General Directorate of Provincial Bank in Antalya.

The project area was 102.000 hectare and is has been completed between 2006 and 2008 successfully.

D Maras Project

Production of 1/1000 scaled Digital Photogrammetric Base (Vector) Maps and Orthophotos Project are tendered by General Directorate of Provincial Bank in Kahramanmaras.

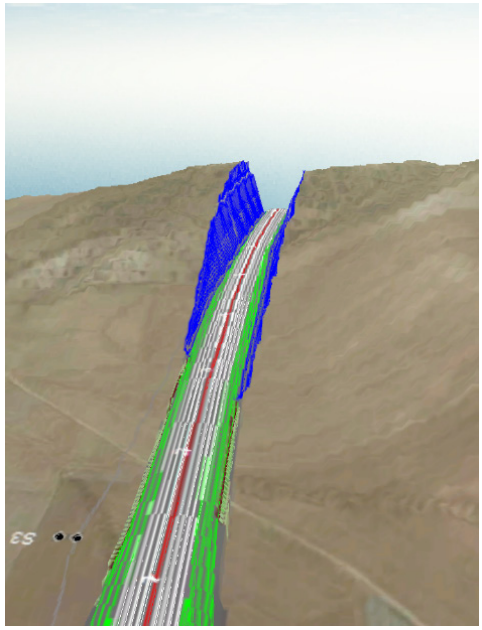
The project area was 27000 hectare and is has been completed between 2006 and 2007 successfully.

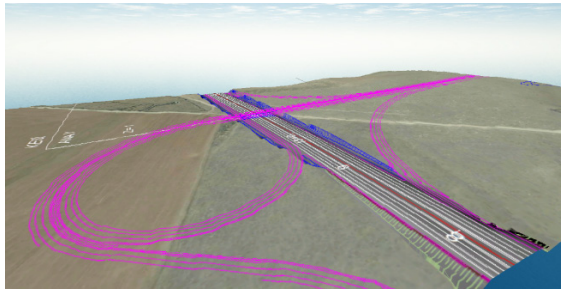
Antalya City

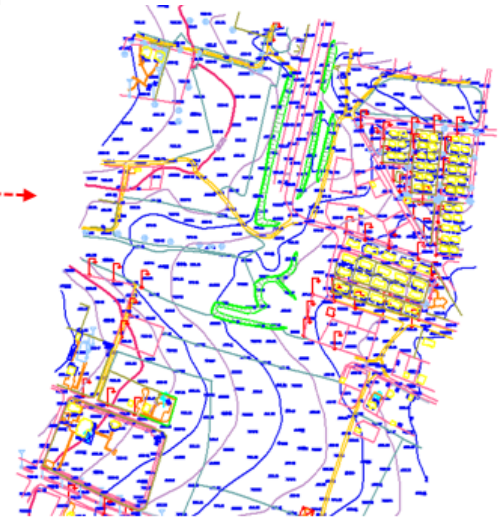
Digital Vector Route Maps Projects

A Production of 1/1000 scaled digital photogrammetric route vector maps and orthophoto maps for Ankara-Niğde Motorway Project Construction and Operation work

Route distance was 330 km and it has been completed for 90 days including to geodetic field works, image acquisition by digital aerial camera and production of digital vector and orthophoto maps.







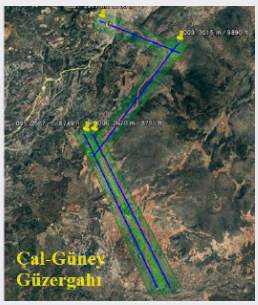
1+00 km.

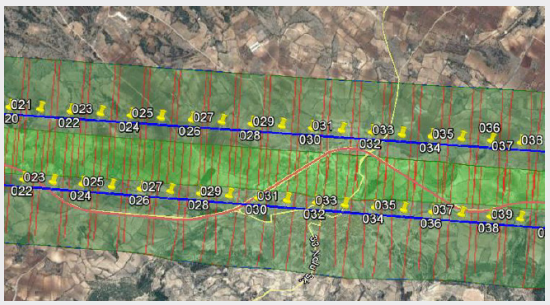
* Produced with ERG & SEZA Consortium

B Route Maps in Aegean Region

Digital aerial images for Routes of İzmir-Bergama, Denizli Kale-Beyağaç and Çal-Güney were taken by our Cessna 402B and DMCIIe 250 aerial camera.

1/1000 scaled base (vector) maps were produced and delivered for 8 weeks.





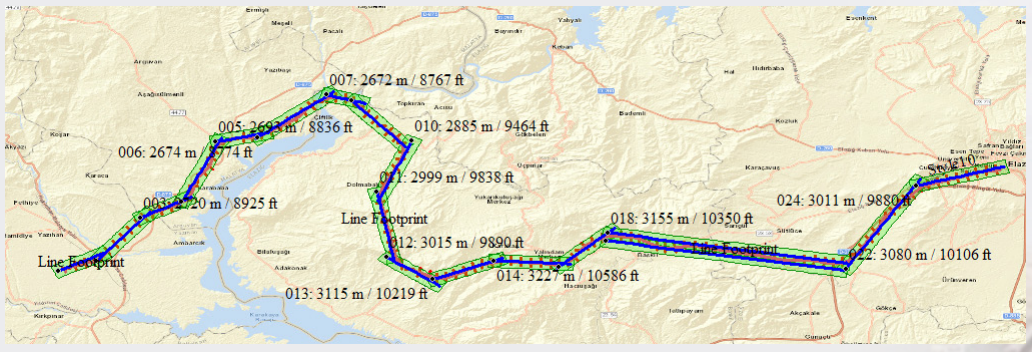
* Produced with Temelsu International Engineering Services Inc.

C Ankara-Adana Highway

It is the **first** photogrammetric project for General Directorate of Highways in 2000. Route distance 227 km.

D Project of High-Speed Train Route Mapping

Production of 1/5000 scaled photogrammetric base (vector) maps between Konya-Aksaray&Aksaray-Kayseri for High-Speed Train Routes Preliminary Project. Route distance is 300 km totally.



Siirt-Kurtalan Railway (Substructure-Superstructure) Survey, Project Design, Engineering and Consulting Services, 36 km.

Malatya-Elazig Railway (Substructure-Superstructure) Survey, Project Design, Engineering and Consulting Services, 126 km.

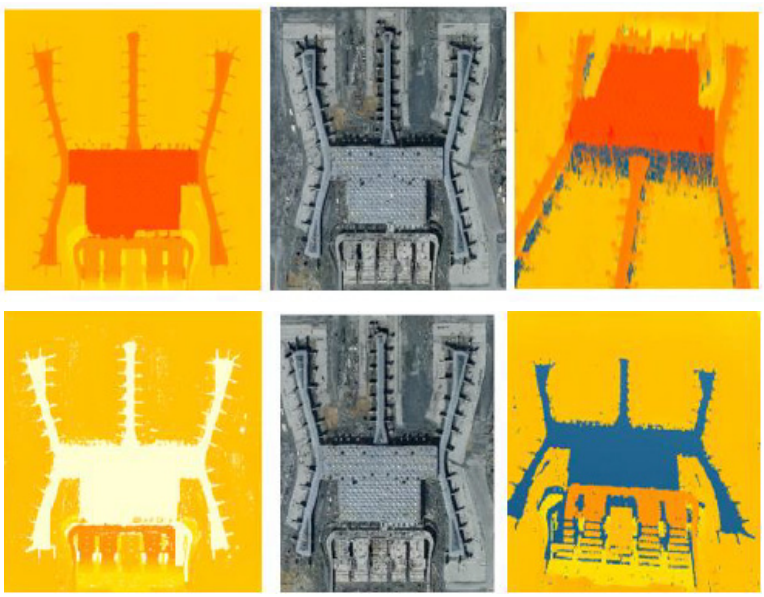
Erzurum-Kars Railway (Substructure-Superstructure) Survey, Project Design, Engineering and Consulting Services, 215 km

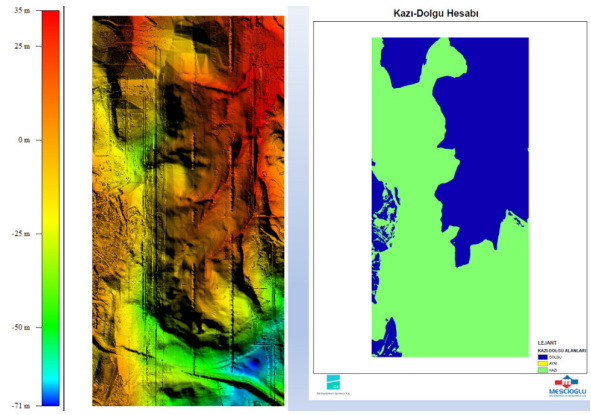
Sanliurfa-Mardin Railway (Substructure-Superstructure) Survey, Project Design, Engineering and Consulting Services, 181 km

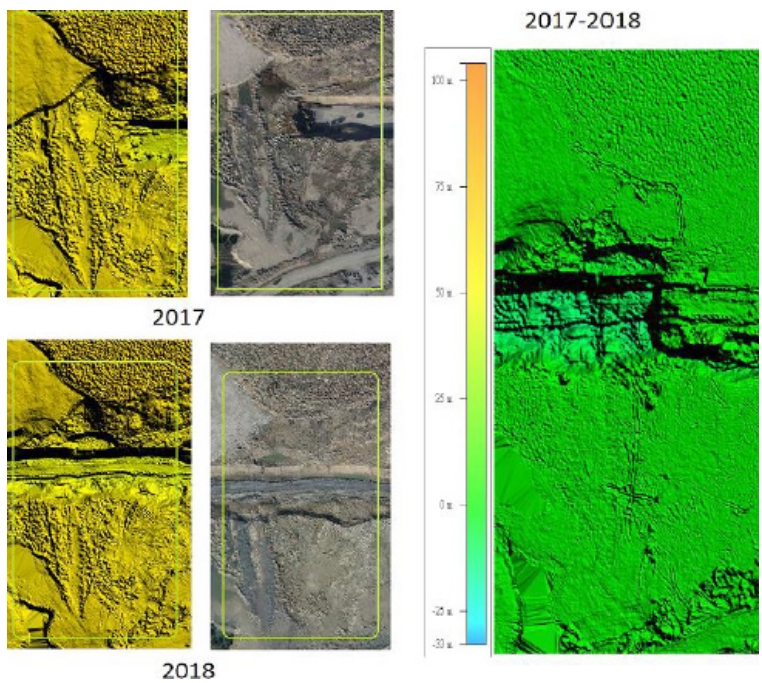

TCDD

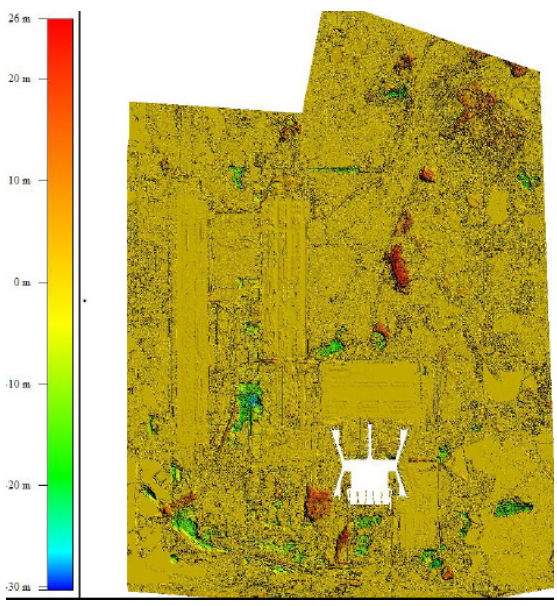
Determination of Cut and Filling Areas for Istanbul New Airport by Photogrammetric Methods

Cut and filling areas for Istanbul New Airport are calculated by taking aerial images periodically and using photogrammetric methods.




Kazı-Dolgu Hesabı
35 m
25 m
0 m
-25 m
-50 m
-71 m

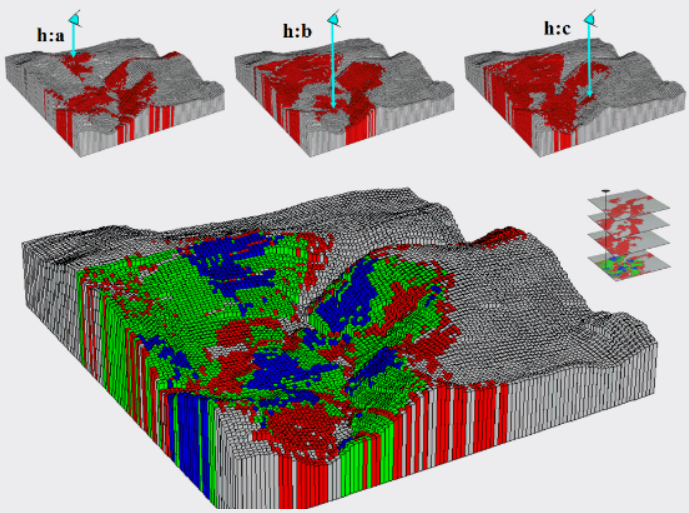

2017-2018
2017
2018


26 m
20 m
10 m
0 m
-10 m
-20 m
-30 m

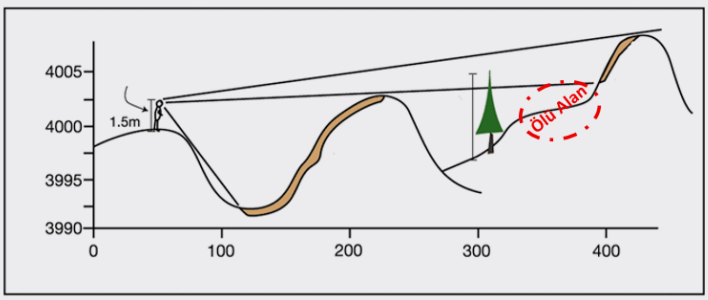
GIS Project

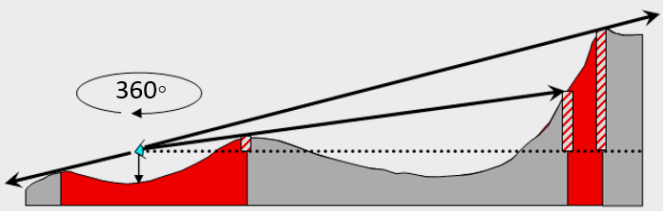
A Specified to Locations of Cell Site and Realized to Visibility Analysis

It is a private process for the determination of precise location of installed base or transmission station to realize uninterrupted telecommunication at large area by using digital topographic maps.



Electromagnetic signals radiated with 360° from base station on their signal route are created a dead area because of natural or artificial obstacles (trees, hills, buildings, towers etc.). This project includes some analyses like minimizing or covering another base station to this dead area and calculating of the best location and height of the base station depending on topographic elevation. for uninterrupted communication.

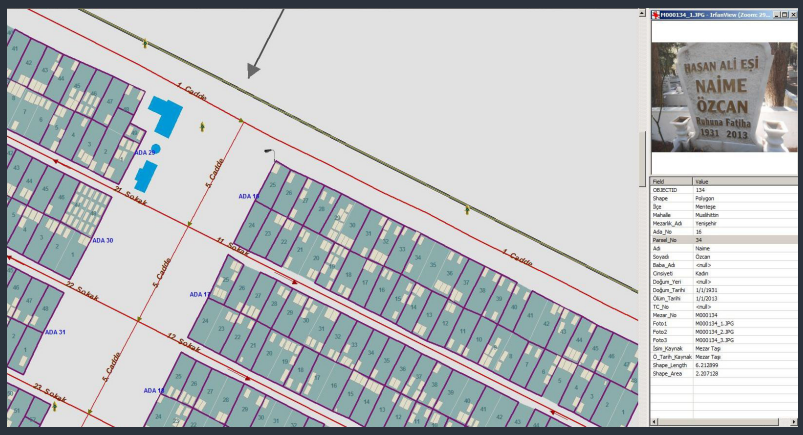


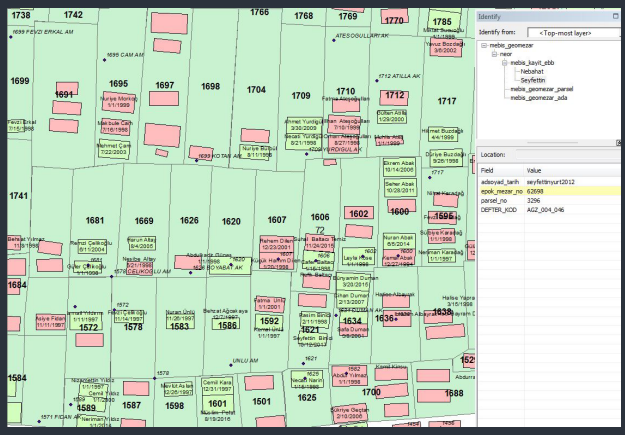


B Cemetary Information System (Erzurum)

Cemetary Information Sysytem was created for approximately 56.000 graves on the 550.000 m^2 area (Asri and Abdurrahman Gazi Districts of Palandöken in Erzurum Provincy).

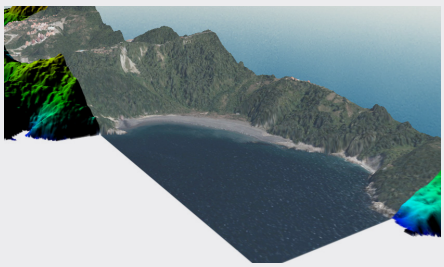
Within the scope of the project; geodetic field works, capturing image corner coordinates, collecting verbal data in archives and some attribute data from area were correlated on the database.

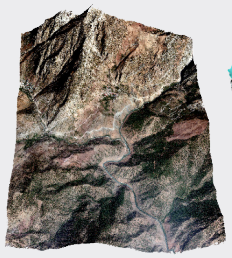


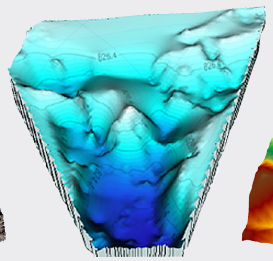


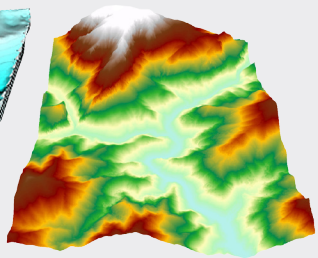
C Overflow Analysis

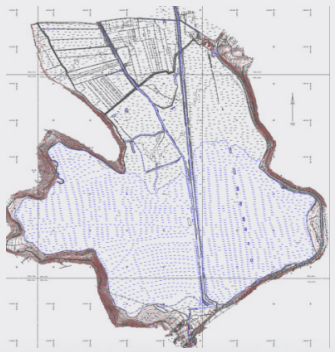
Some economical losses are result of flood and overflow in the World (40%). Specified of the risk areas about flood and overflow will provide an opportunity to prevent like these natural disasters. Preparing of the owerflow maps will enable for multi criteria decision analysis together with distance between urban areas and rivers, the maps of slope and viewpoint, morphologic information, geological analysis and land use classifications.

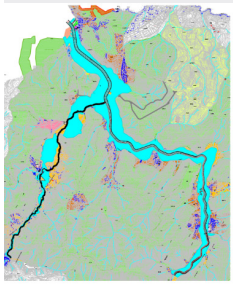




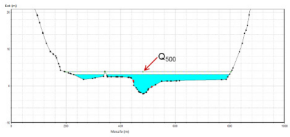


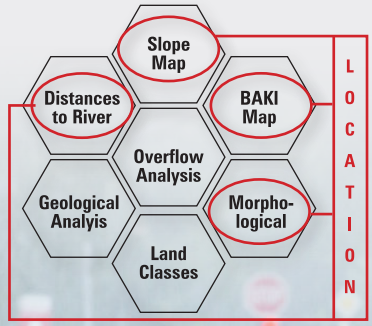






	TASKINDAN ETKİLENEN ALAN						
	Yerleşim (ha)	Tarım (ha)	Sağlık (ha)	Plaj (ha)	Spor (ha)	Toplam (ha)	Bina (adet)
Mescal Dere Q500=285/493m3/sn	18,4744	127,7605	61,0552	9,9053	3,7797	220,9753	249





D Monument Tree Project

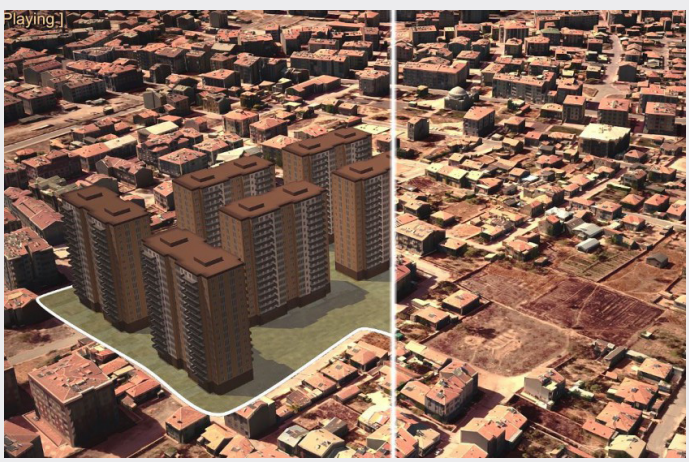
Identification Project of Worth Preserving and High Degree Registered City Trees and their Inventory Analysis Service in Bursa.

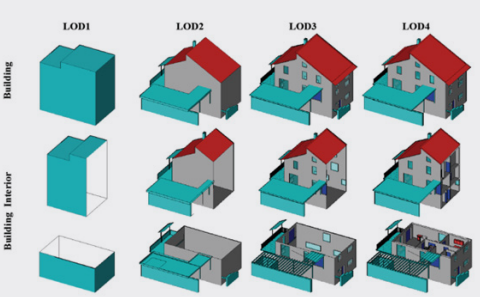
Project scope: 1201 Trees as Monument and Candidate.

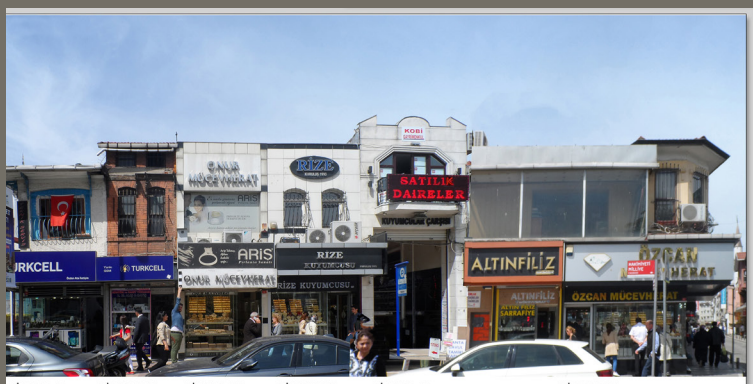
3D City Model

3D City Model is represented by 3D of whole geographical data about composing of city texture like building, street, bridge, several facilities for receational, cultural, religious, historical and vegetation cover etc. Geographical objects in 3D data set belonging to city are symbolized geometrically, topologically, semantically, visually and spatially at the logic of Geographic Information System.

Because of remain in the forefront of visuality, 3D City Models are using for administrators interesated in city planning and municipality services for making correct and efficient decision and as decision making sistems for sustainable city development.







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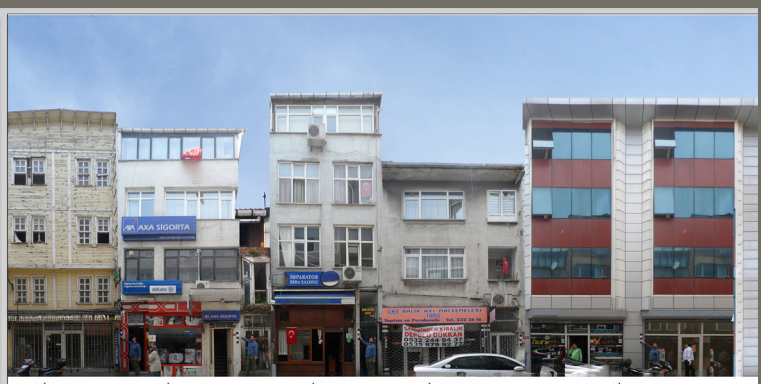
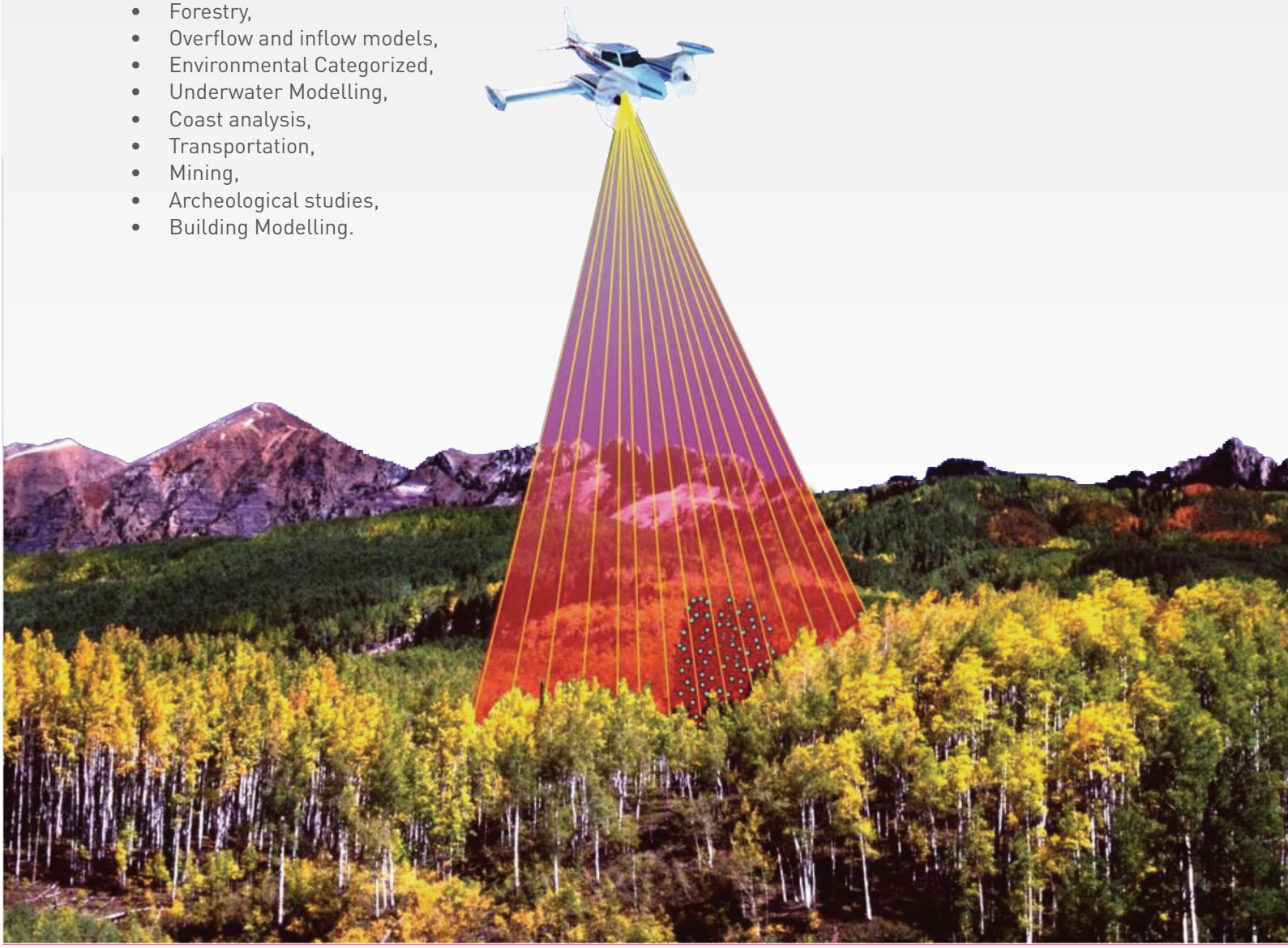


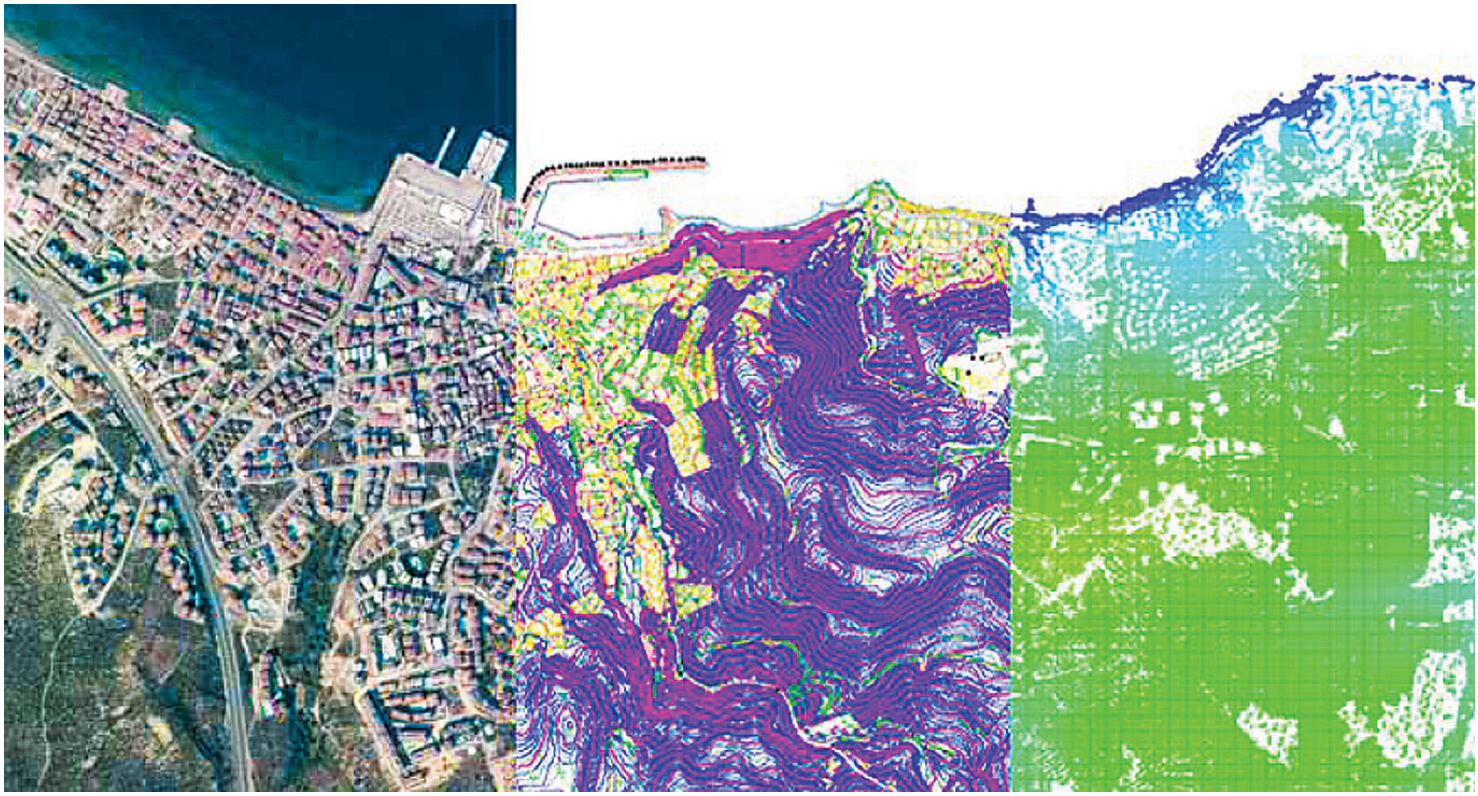
BİNA NO: 9 BİNA NO: 10 BİNA NO: 11 BİNA NO: 12 BİNA NO: 13

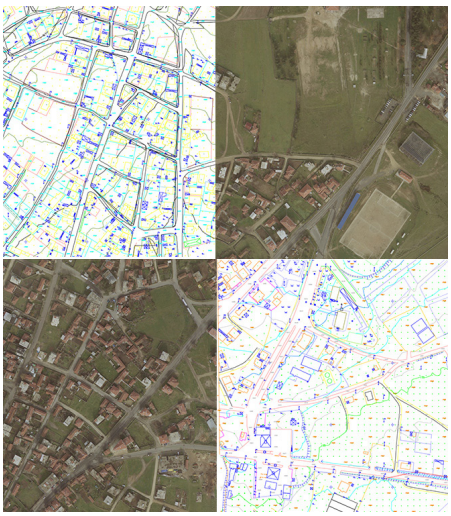
Lidar

Lidar technologies have laser measurement systems which can mountable differents platforms (helicopter, plane, vehicle, boat and UAV's). They are using for:

- Digital Elevation Models,
- Agricultural Applications,
- Forestry,
- Overflow and inflow models,
- Environmental Categorized,
- Underwater Modelling,
- Coast analysis,
- Transportation,
- Mining,
- Archeological studies,
- Building Modelling.

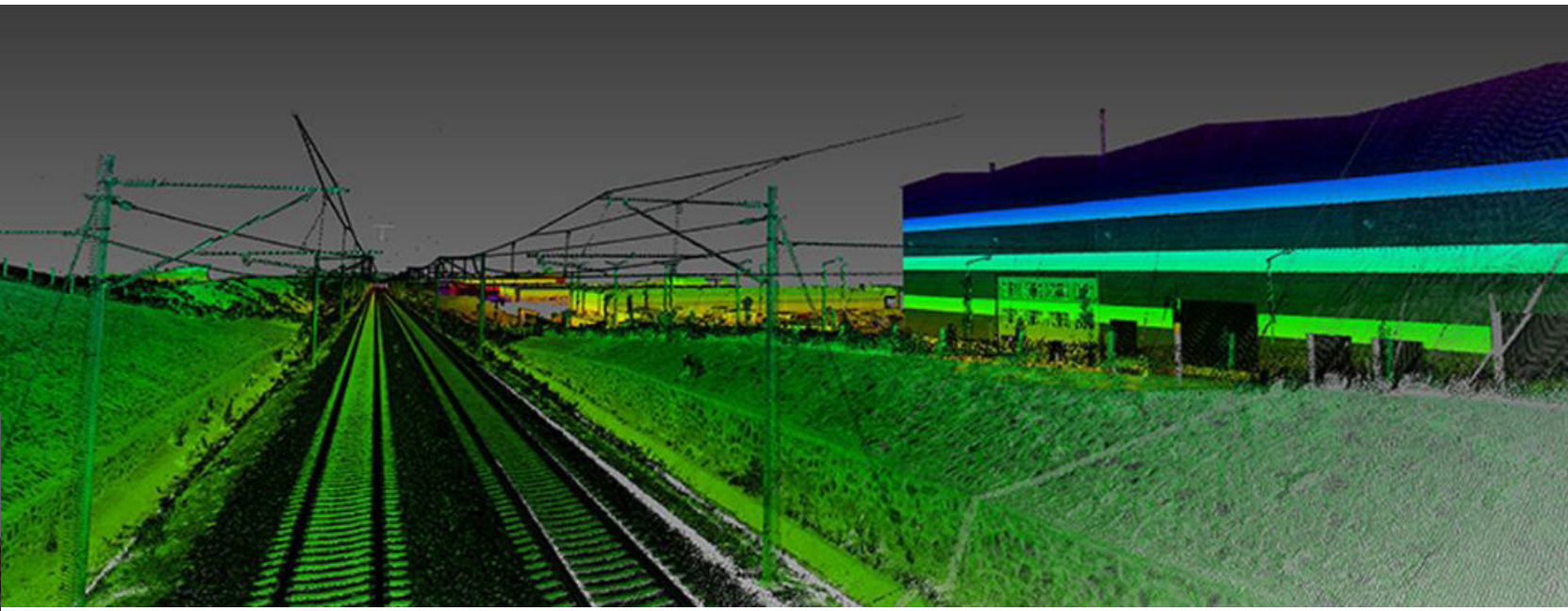






Mobile Lidar

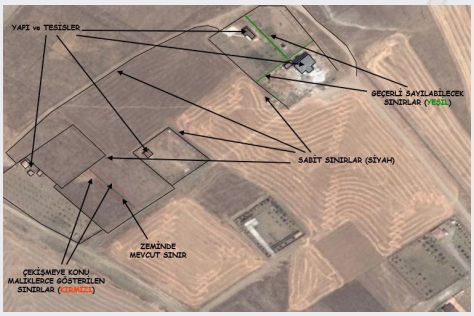
Mobile mapping systems utilize the in LiDAR technology. When combined with positional equipment, these georeferenced data points can be used to digital elevation models (DEMs), Digital Terrain Models, Digital Mapping etc.

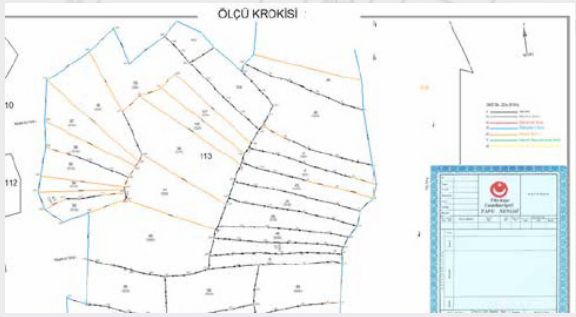


Cadastre

Turkey is one of the few countries that makes cadastre engineering works via private sector.

One of the main objectives of the cadastral is to determine the property boundaries and owners of the parcels. Cadastral works are the whole of public rights and restrictions, including the entire legal status of the land to show the Land Registry of real estate to establish and plan based on an official measure to make. Cadastre in agricultural activities are gained favor for preventing of border conflicts, reforming of soil and agriculture, land consolidation studies, land regulation, production planning, harvest estimation, healthy urbanization development plans for investment projects.

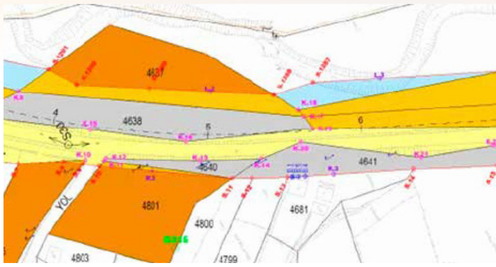


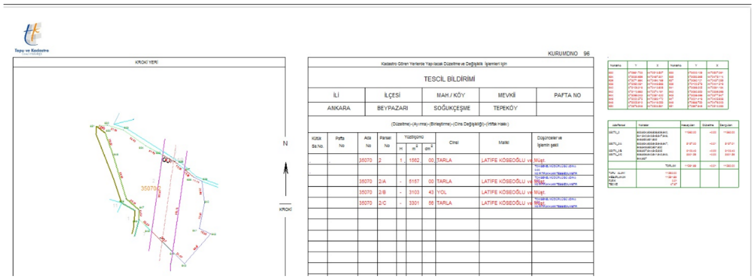


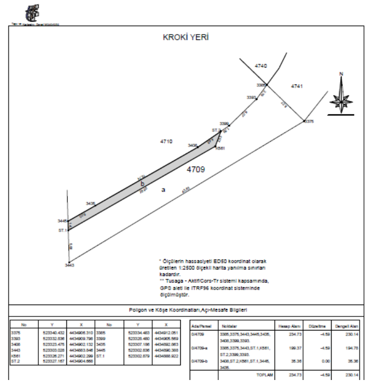
LOCATION	EMPLOYER	DATE	AMOUNT Parcel	Hectar
ANKARA	General Directorate of Land Regiştry and Cadastral	2010-2012	22032	
MANİSA		2014-2018		22193.22
GAZİANTEP		2015-2016		12003.95
BURSA		2010-2011	1247	3836.19
BOLU		2017-2019	36941	

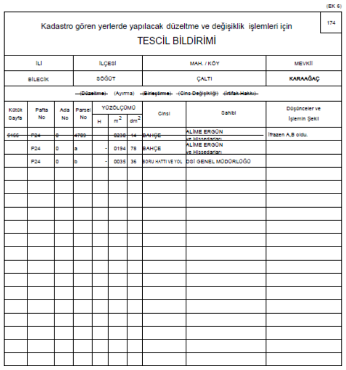
Expropriation

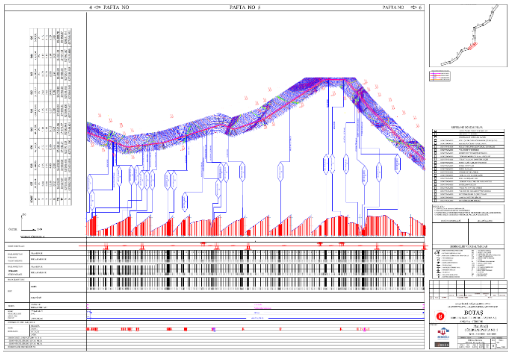
Owned public or private properties on the route of natural gas pipe line, energy transmission line, highway etc. are expropriated for dedicating by paying of the price of property.







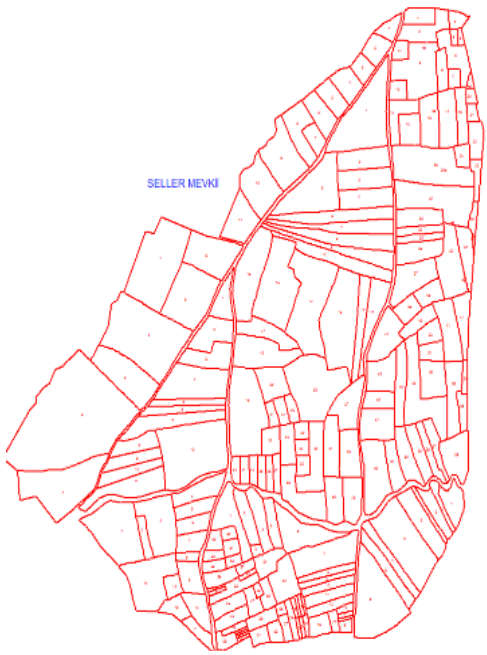




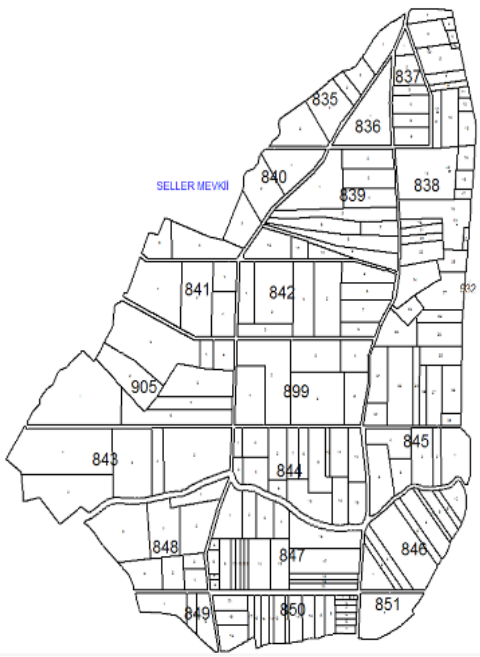
Land Consolidation

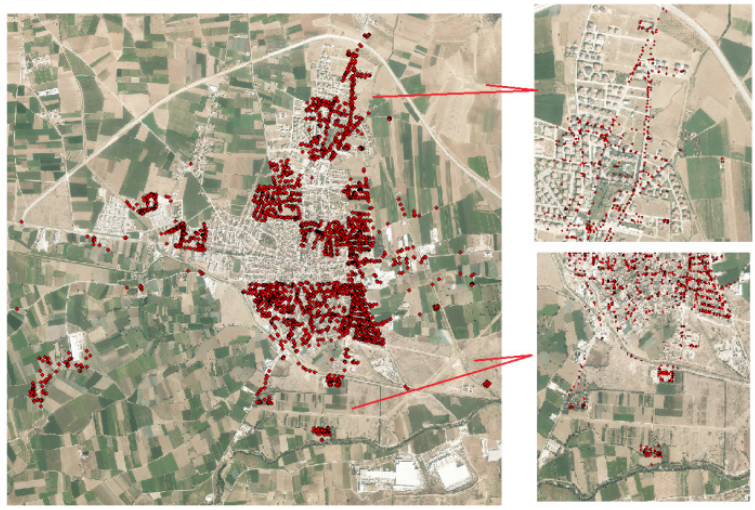
Little, dispersed and and amorph parcels for Land consolidation activities are categorized according to land productivity for the main aims of raising to crop and enhancing to operational efficiency by using little time, cost, workforce and capital and by availing the best of production factors.

Before Land Consolidation



After Land Consolidation





Housing Estate Projects

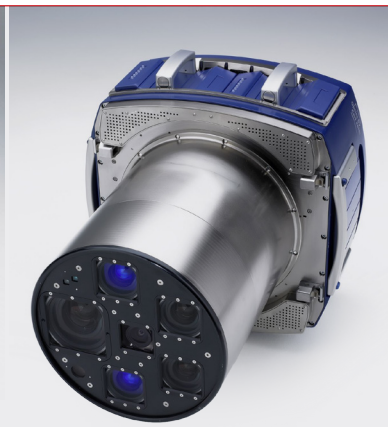
Basaksehir Kayabasi Neighborhood Housing Estate Project.

Avcilar, Ispartakule Housing Estate Mutual Road and Substructure Project.

Forest Management

The age, type vb. of the plants and trees in the forest area were determined from 1/25000 scale photogrametric maps.

Equipment



FEATURE	DMC II 250
Pixel Across Track	16768
Pixel Along Track	14016
FoV Across Track	45.5º
FoV Along Track	38.6º
PAN Focal Length	112mm
MS Focal Length	45mm
B/H	0.28
Number Of PAN Camera Heads	1
Number Of MS Camera Heads	4
Color Filter	True Color
Color Channels	R,G,B, and NIR
CCD Pixel Size	5.6µm
PAN : Color Ratio	01:03.2
Frame Rate	2.3 sec
Resolution Per Pixel	14 Bit
FMC	TDI
CCD Dynamic Range	>70 dB
Max. Operating Altitude	8000m
Max. Airspeed at 10 cm. GSD and 80% forward overlap	237 kts

Cessna 402B Businessliner

Registration: TC-CAY

S/N : 1073

Year: 1976

Engines: 2 × Continental TSIO-520-VB

Max Speed: 230 kts (226 mph, 428 km/h)

Service Ceiling: 26,900 ft (8,200 m)

Max Range: 1,273 nmi (1,467 mi, 2,360 km)

Camera Pod: 19"

Endurance: 5 Hours

Information Technology

Thanks to the continuous investments in IT, our company now has the most advanced IT infrastructure among the private sector companies. In the specially configured secure server room with automatic air conditioning and fire protection system, we are operating a file server with more than 500 TeraByte data storage, 200 cores of processing cluster workstations and 10gb/s fiber optical network infrastructure. Servers are connected to internet via 4 cores of fiber optical internet line by Superonline. As Mescioğlu, we always use state-of-the-art technology, software and hardware while chasing the technological advances and applying them to our workflows immediately.

IT INFRASTRUCTURE

PCs: 5 IP, 2 AT, 5 DEM, 4 OP, 4 IQC, 9 MNGs, : TOP 29
PHOT WSs : 8 DEM,2 IQC :TOP 10 - 1 Gb/s Network Bandwidth

CLIENT SIDE
SERVER SIDE

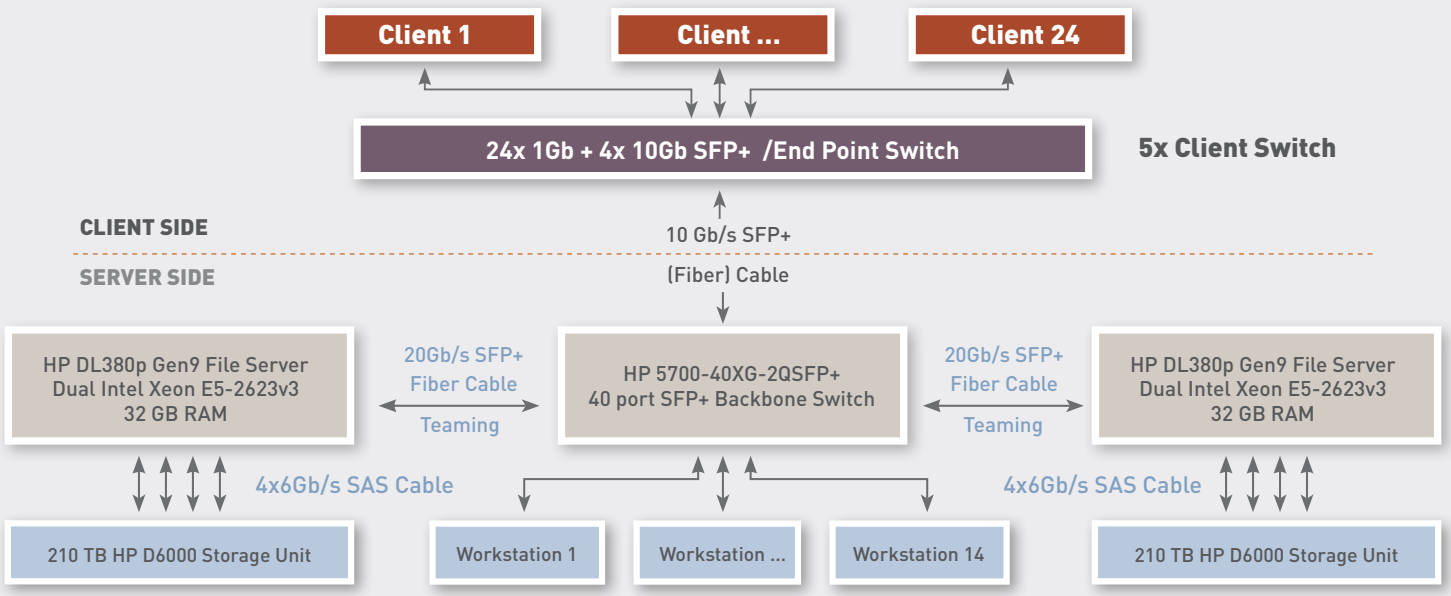
Network Infrastructure
1x HP 40 Port 10Gb/s Fiber Backbone Switch
5x (HP 24 Port 1 Gigabit + 4 Port 10Gbit : End Point Switch)

Processing Hardware (WSs)
14 HP (4 IMG Proc,4 AT , 2 DSM, 4 OP) Workstations
- 2 CPUs, 12 Cores
- 32 GB of RAM
- 10 Gb/s Network Bandwidth

Storage Hardware
2x HP DL380p File Server
- 2x D6000 210 TB Storage Unit
- 20Gb/s Network Bandwidth (NIC network Interface Card Teaming)

120x5TB External HDDs offline storage

It Infrastructure Architecture



Workstations

Clustered data processing pool
Each Workstation has

- Dual Xeon Processor
- 12 Cores
- 32GB RAM

Total 14 Workstations

Servers and Storage

- More than 500TB storage capacity with two storage servers

Temperature and humidity controller server room with 7/24 online surveillance system

Infrastructure

ENERGY BACK UP :
ENEL 60KVA UPS
TEKSAN 100 KVA Diesel Generator

AIR CONDITIONING:
Beko 9365 D 48000 BTU Air Conditioning Unit

HP 5700-40XG-2QSFP+ (40 port SFP+ 10Gbit) Fiber Backbone Switch

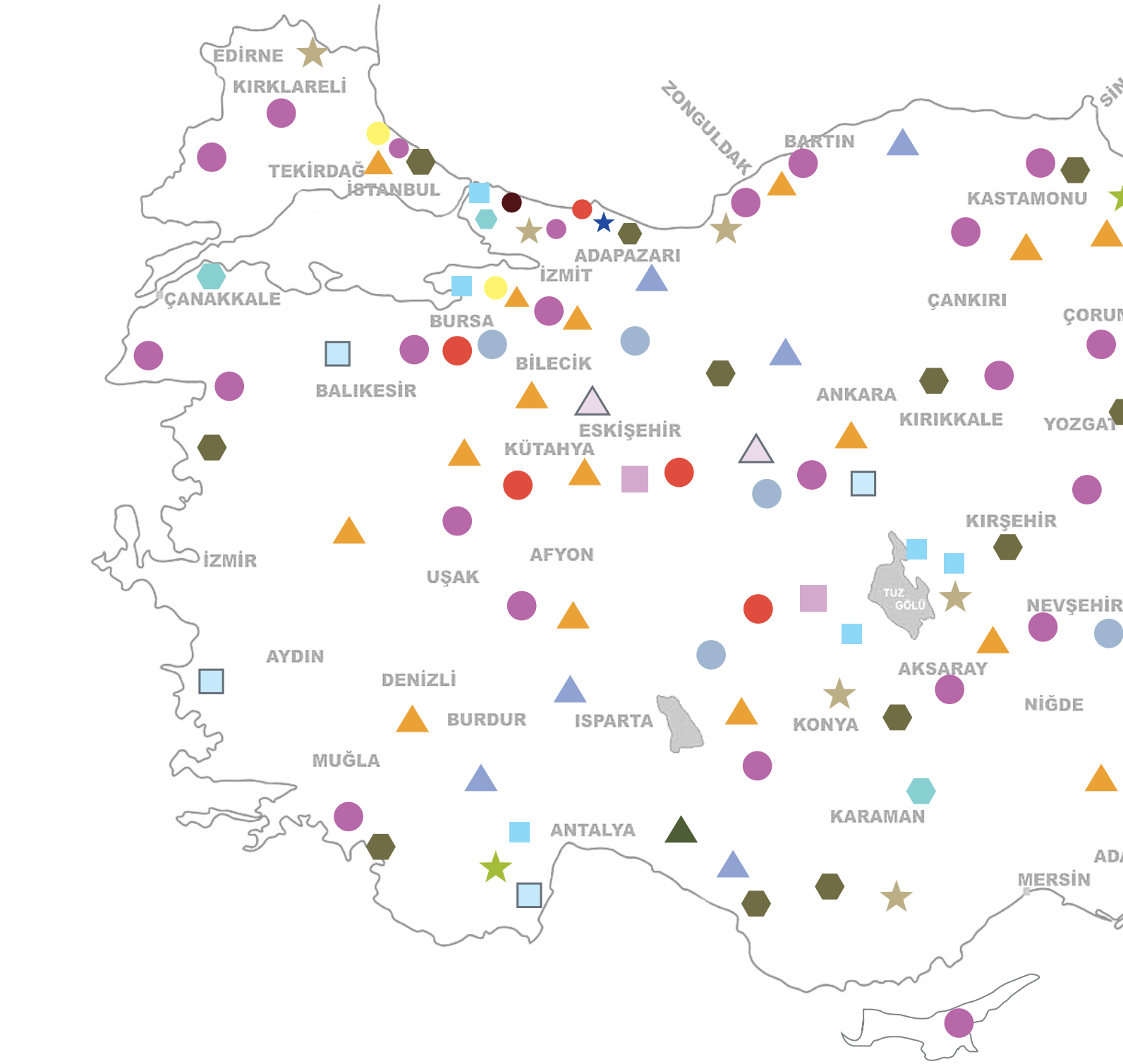
HP 5130-24G-4SFP+ EL (24Port 1Gbit+4Port 10G SFP+) Endpoint Switch

2X HP DL380p Gen9 2U File Server

2X HP D6000 5U Disk Enclosure

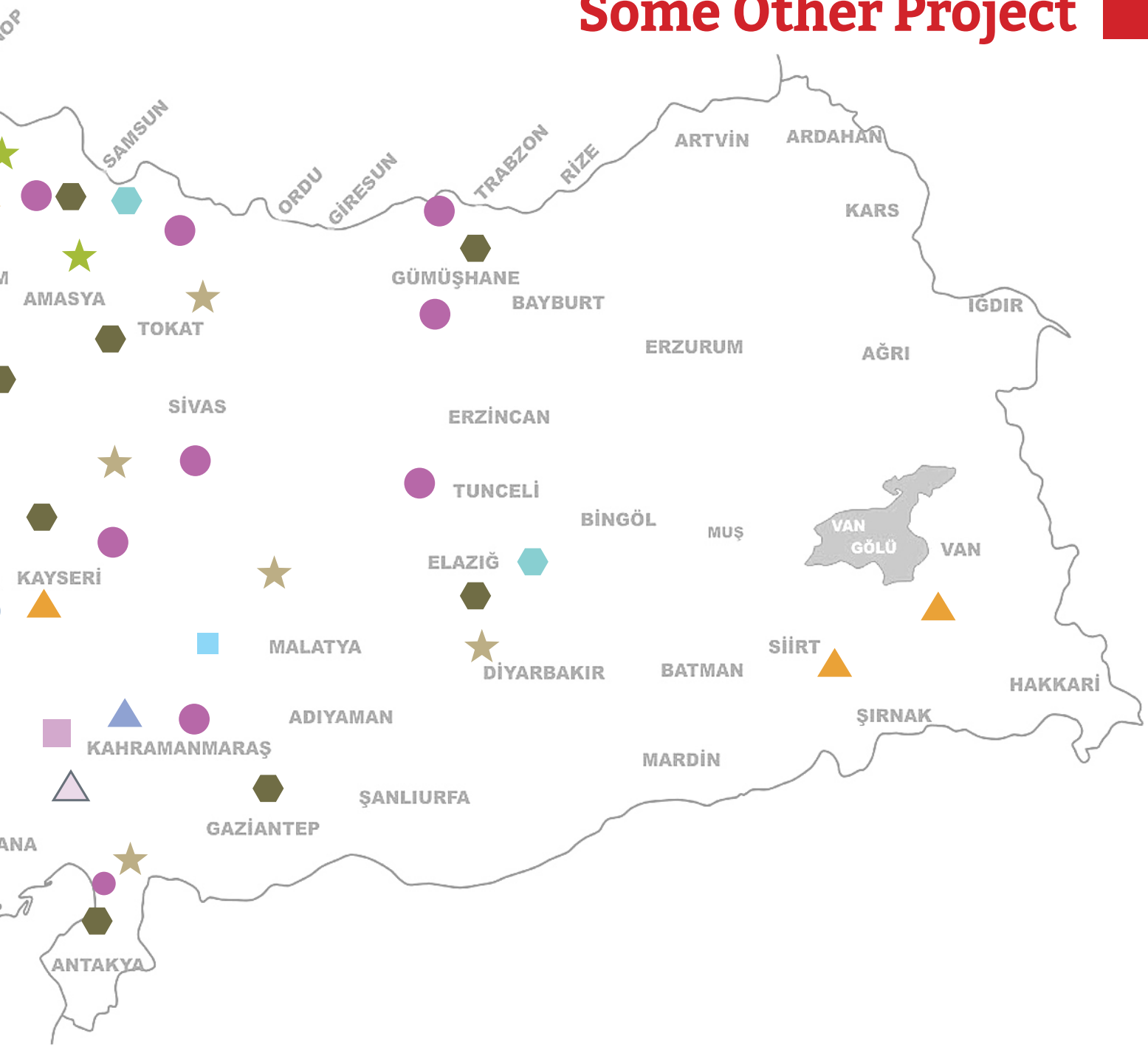
Two Storage Servers dedication ;

S01 : * HP DL380p Gen9 2U Server
* HP D6000 5U Storage (260TB)
S02 : * HP DL380p Gen9 2U Server
* HP D6000 5U Storage (260TB)



- Expropriation Engineering Projects
- Aerial Triangulation Fieldwork
- Digital Photogrammetric Map
- Forest Management
- Sewerage Surveys
- Consultancy Services
- Expropriation
- Urban Land Development Projects
- Large Scale Topographical Mapping Projects

Some Other Project



- Cadastral Projects
- Project Design, Engineering and Consulting Services
- Water Supply Survey Projects
- Highway Surveys
- Transportation and Traffic Planning
- Landscape and Urban Design Project
- Water Resources Engineering Services
- Information System Projects

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