



# ERHAN

MAPPING - ADRESSING  
SMART CITY  
SOLUTIONS

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With a quarter-century of experience  
in the fields of **G**eographic **I**nformation  
**S**ystems and **A**ddress **I**nformation **S**ystems

**We are**  
**shaping the world**





# COMPANY PROFILE

Our company, Erhan Ltd., established in 1987, has been engaged in the production of Address Information Plates and providing services in the field of Geographic Information Systems since the year 2000.

In Geographic Information Systems (GIS) projects, we work diligently with our experienced team to provide the best solutions to our clients. Over time, by closely following technological advancements, our professional team, knowledge, experience, corporate structure, and extensive staff enable us to meet our customers' needs comprehensively. While fulfilling incoming requests, we operate with the philosophy of "Absolute Customer

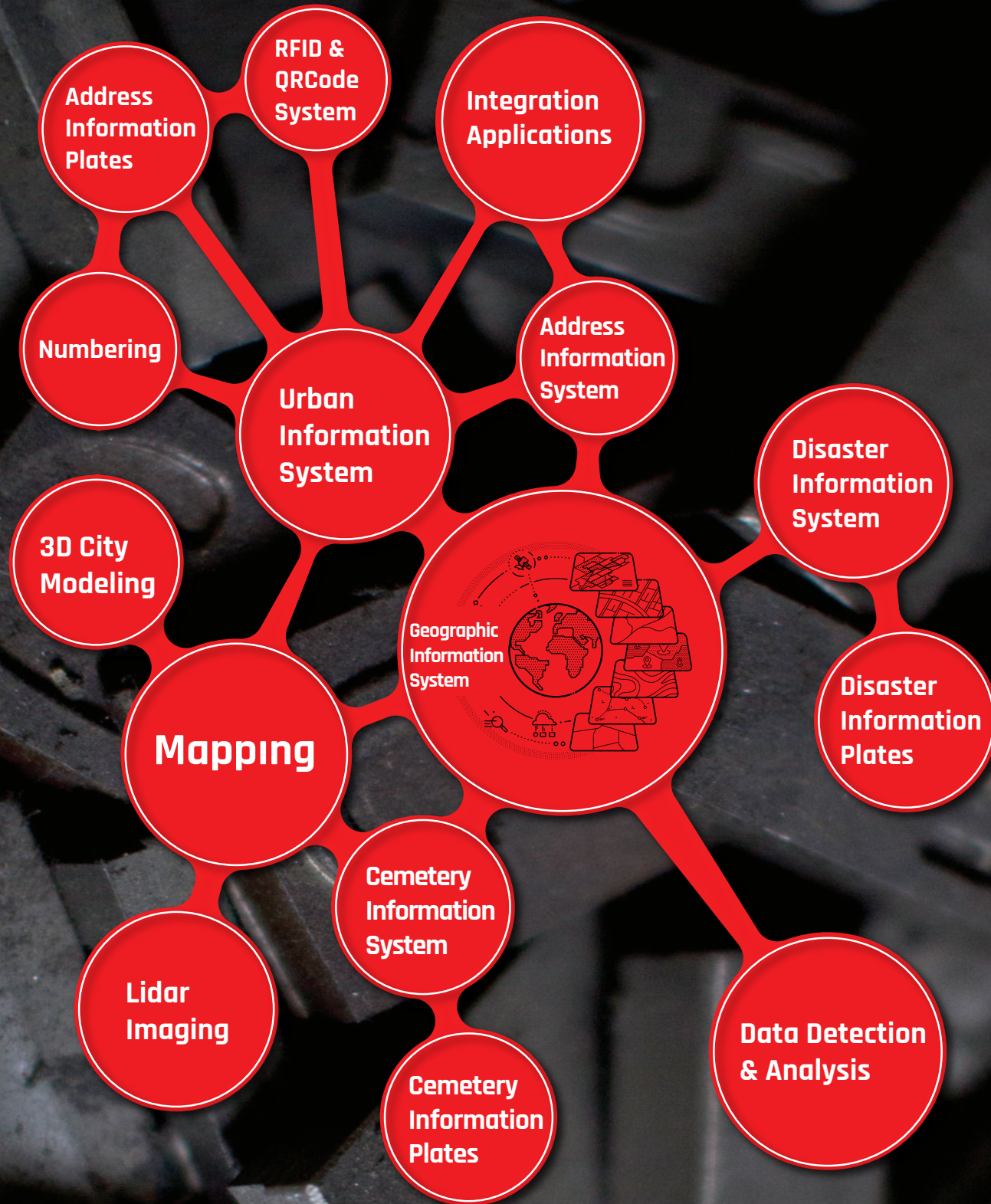
Satisfaction," prioritizing satisfaction over cost.

With the principle of offering quality at the best price, we continue to provide services under GIS, including Urban Information Systems, Disaster Information Systems, Cemetery Information Systems, and Data Detection Analysis.

We take pride in having the largest production network in Europe, the Middle East, and Africa in this field.







# OUR SERVICES

LiDAR Imaging, Mapping, 3D Urban Modeling, Geographic Information Systems, Urban Information Systems, Address Numbering, Address Information Systems, Address Information Plates (Door Number Plates, Wall-Mounted Plates, Pole-Mounted Plates, Street Direction Poles, Independent Unit Plates), RFID, Disaster Information Systems, Disaster Information Plates, Cemetery Information Systems, Cemetery Information Plates, Spatial Address Registration System (SARS Integration Applications), and Data Detection and Analysis.

We prioritize customer satisfaction by focusing on creative design and project planning, flawless production, fast installation, and maintenance of our work.





# Geographic Information System

Geographic Information Systems (GIS) is a computer-based system used for mapping and analyzing all types of data, both existing and newly created, on the Earth's surface.

Geographic Information Systems (GIS) technology combines common database operations such as querying, visualization, statistics, analysis, and geographic analysis shown on maps. All of these features distinguish GIS from other information systems and make it crucial in strategy planning, predicting outcomes, explaining events, and responding to both general and specific operations. This system, known globally as GIS (Geographic Information System), is effectively used in areas such as the planning of development-based local government strategies, implementation of plans, and geographically tracking urban areas and real estate.

## Role of Geographic Information Systems in Municipal Services

Identifying potential problems in a settlement area based on factors such as its geographical location, population, social living conditions, and the existence of industries, tourism, agriculture, trade, and other resources is one of the first tasks for any local government. Municipalities are institutions that closely monitor people's socio-economic living conditions, real estate, and urban development, making them the most suitable for utilizing Geographic Information Systems. An effective GIS solution consists of powerful software, seamless and quickly renewable hardware, human factors, local data collection, and methodological components.







# Mapping

With our advanced mobile mapping technologies, we collect field data quickly, reliably, and cost-effectively.

Through GNSS cameras, LiDAR, and radar sensors integrated into our vehicles, we obtain detailed spatial data. With this technology, we perform street-level imaging, aerial photography, and surface scanning operations with high accuracy. Thanks to our 45-degree oblique cameras, we can achieve results with a margin of error of  $\pm 2.5$  cm at an altitude of 200 meters during aerial surveys.

Depending on the field width, we can map larger areas in shorter timeframes using Cessna-type aircraft.

With the digital data obtained, we provide detailed and accurate data for urban infrastructure and planning work, based on 1/1000 scale base maps. These maps are critical for settlement planning, urban transformation projects, and infrastructure management.

Our mapping solutions have a wide range of applications, including road and railway network management, construction and asset tracking, energy and environmental monitoring. Our mobile mapping methods are 40 times faster in data collection compared to traditional techniques, and they provide a safe working opportunity even in hazardous or hard-to-reach areas.



# City Information System

The City Information System, an application of Geographic Information Systems at the city level, is a system where spatial and non-spatial information is stored, processed, and analyzed in a specific technical computer environment, and based on the results, various decisions of the management are implemented.

With the City Information System, we provide the opportunity to quickly and efficiently obtain the planning, infrastructure, engineering, basic services, and management information needed to make optimal decisions in urban activities.

We can produce sociological and demographic maps of the residents and offer the ability to track the development of the city. Additionally, we ensure the graphical monitoring of the city's infrastructure data with computer assistance and ensure that infrastructure services work in harmony.

With this service, the nearest hospitals, educational institutions, public institutions, historical buildings and areas, religious facilities, healthcare centers, important business centers, hotels, and police stations can easily be located, and the output of this process can be obtained.

As Erhan Ltd., with the City Information System, we also offer extensive querying and tracking capabilities using both graphical and verbal databases.



# Numbering

We begin by making the necessary assessments in the work areas, taking appropriate photographs, and updating the data after the field visit. With address numbering, we carry out the installation of number plates for all buildings, streets, and roads.

In the conducted work, we make use of technology, especially AI-supported software during the address numbering phase. With the help of field assessments, we perform street-by-street checks to verify the currency of the map and mark outdated locations on computers.

After the field assessments, our experienced teams visit all buildings and workplaces, recording entrance doors, double entrances if present, the directions facing the street, and old numbers. At the end of the day, the data recorded on tablet computers is transferred to the central server via the internet.

Once the streets and roads that have been worked on are approved by municipal authorities, we prepare the new number plates and carry out the installation process.

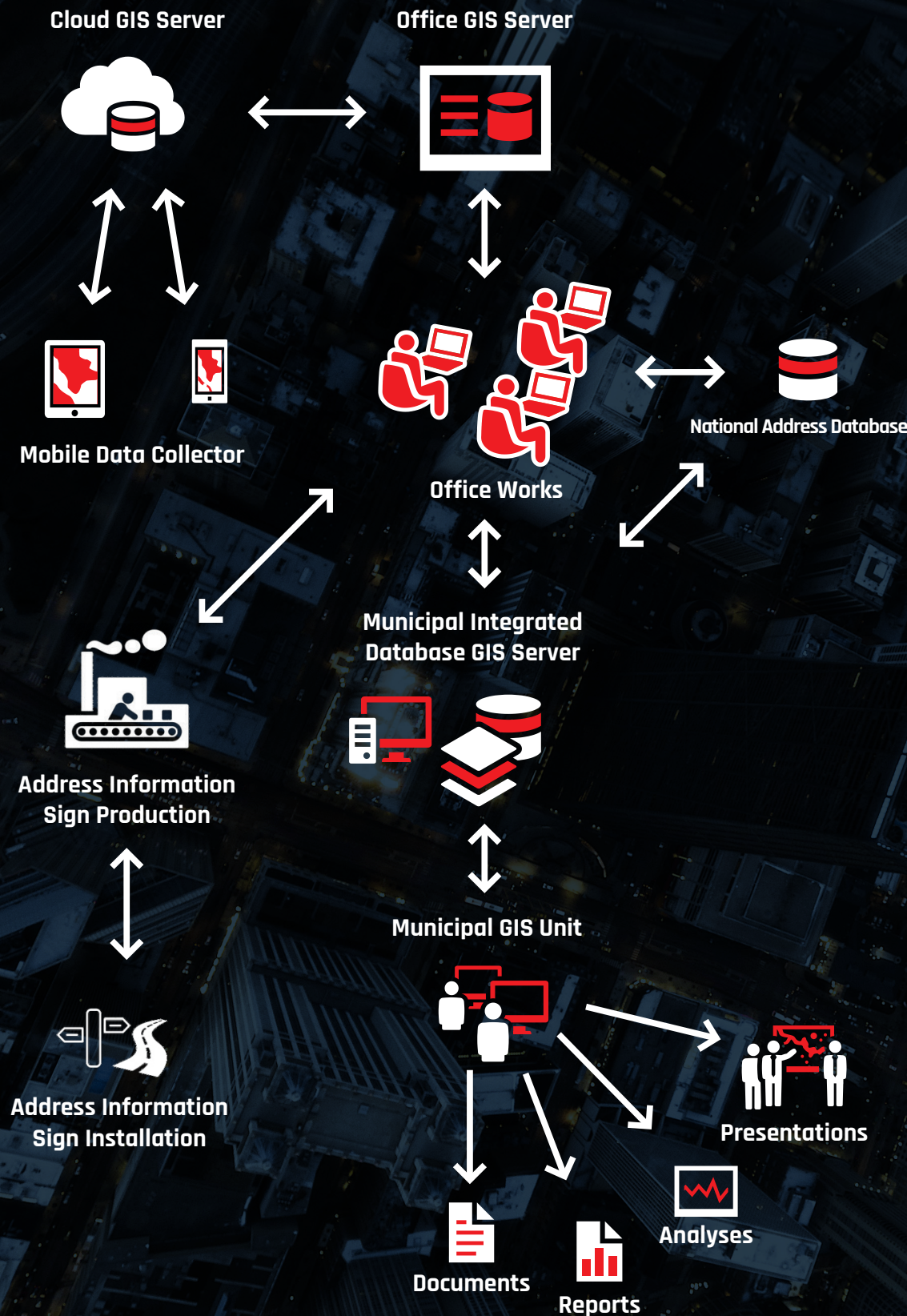




# Address Information System

For the Address Registration System to be successful, the address numbering and Address Information System work must be carried out thoroughly and completely. The address numbering and Address Information System process includes the entire process of numbering the addresses in the field, installing the plates, and entering the addresses into the National Address Database.

In the production and installation of Address Information Plates, we carry out all these processes flawlessly as one of the major producers in our sector, along with our domestic and international projects. We manufacture and install door number plates in many countries across Europe, the Middle East, and Africa, with Turkey being our primary market. Considering the population and building density, by 2024, we have produced address information plates for 85% of Turkey. With our manufacturing speed and quality, we are proud to be one of the largest brands in our sector in Europe and the Middle East.





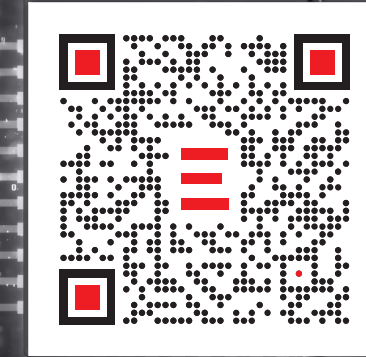
# QR Code & RFID

Thanks to QR Code and RFID technology, plates are no longer just tools that display the door number. We place QR Codes and/or RFID tags on the plates based on needs. Using mobile devices that can read QR Codes and RFID tags, our field workers can access and update the information related to the building.

When an RFID tag or QR Code is scanned, we retrieve the information from the system. The data related to the building is displayed on the screen based on the scanned barcode number. This way, the door number plate becomes more than just a sequence of numbers indicating the location of the door within the street.

## Why RFID?

Radio Frequency Identification (RFID) is a technology used to identify objects through radio waves. The reader in the system converts the radio waves received from the RFID tag into digital information and transmits it to the information system. Thanks to RFID-based systems, it is also possible to track the physical location of the object associated with the tag.





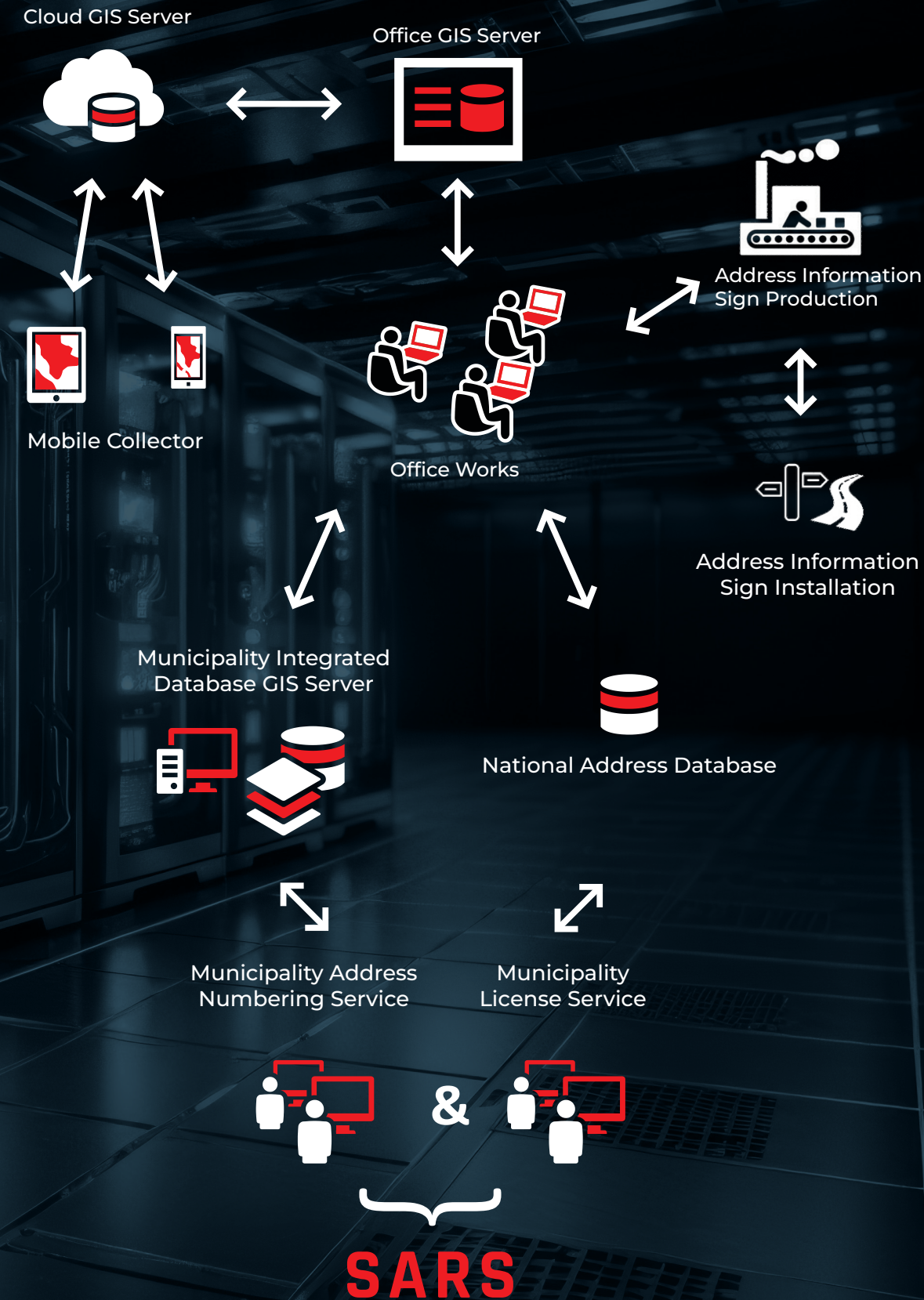
# SARS Integration Applications

The Spatial Address Registration System Project (SARS) was included in the 2011 Investment Program as the "Creation of the Spatial Address Registration System and the Online Real Estate and Construction Permits Project." Since that date, our company has been providing services to local governments in the process of integrating the data they obtain into the SARS database.

We produce statistics on the qualitative and quantitative aspects of the current population by settlement area, ensure that address and population information is monitored from a single central point, and prevent economic losses caused by address confusion.

With this application, we eliminate the cost burden of creating and updating census data and voter registers.

Thus, we ensure the effective and efficient delivery of public services, improve the functioning of public oversight mechanisms, and help public institutions and organizations achieve an e-Government structure based on the principle of interoperability.





# Disaster Information Signage



With the Disaster Information System, we integrate technology into the plates to show citizens where they should gather during a disaster. We create an identity card for each building, and by scanning the QR codes on the plates with phones, we access maps that guide to the gathering areas.

## Disaster Information Plates

We have implemented the Disaster Information Plates project in Beşiktaş Municipality and İzmir Metropolitan Municipality.



# Cemetery Information Signage



With the Cemetery Information System, we meet all the information needs of citizens visiting cemeteries. Through this system, visitors can easily and conveniently find the location of the grave they wish to visit by simply entering the name and surname on interactive devices at the cemetery entrance.

We also provide visitors with identity and death record information about the deceased, as well as cemetery maps and route information.

We carry out the production and installation of the plates to be placed within the cemetery flawlessly.



# Data Detection & Analysis

In Data Detection and Analysis studies, all data related to residential areas is collected, matched with both graphical and non-graphical information, queried, and analyzed.

With our data detection application, which includes Geographic Information Systems, City Information Systems, Address Information Systems, and National Address Data Updates, we update buildings, streets, and avenues to their most current status. Through this application, the geographic data of buildings, construction dates, functions, features, construction quality, fuel type, heating systems, whether they are residential or commercial, ownership or rental status, elevators, parking, and occupancy/vacancy status can easily be identified.

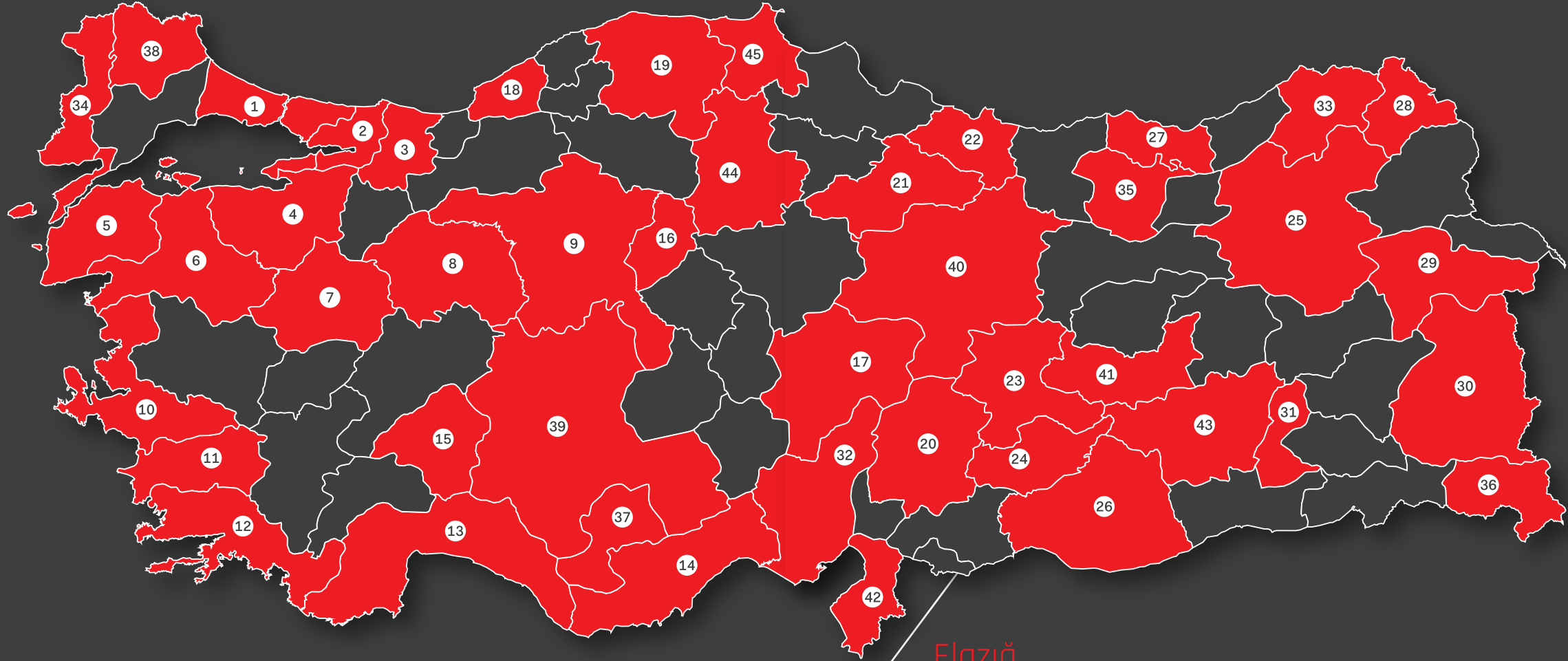
Additionally, details such as the population structure of the district, the population of neighborhoods, employment structure, daytime and nighttime population, labor force characteristics, and sectoral distribution can be detected.

All this updated information is archived in the computer environment, and by using satellite images, we ensure that the district's residents have the fastest and most accurate access to information. Thus, citizens no longer need to wait for address-based procedures or tax and zoning transactions at official institutions.





# Cities of the Project



1 İSTANBUL	12 MUĞLA	23 MALATYA	34 EDİRNE
2 KOCAELİ	13 ANTALYA	24 ADIYAMAN	35 GÜMÜŞHANE
3 SAKARYA	14 MERSİN	25 ERZURUM	36 HAKKARİ
4 BURSA	15 ISPARTA	26 ŞANLIURFA	37 KARAMAN
5 ÇANAKKALE	16 KIRIKKALE	27 TRABZON	38 KIRKLARELİ
6 BALIKESİR	17 KAYSERİ	28 ARDAHAN	39 KONYA
7 KÜTAHYA	18 ZONGULDAK	29 AĞRI	40 SİVAS
8 ESKİŞEHİR	19 KASTAMONU	30 VAN	41 ELAZIĞ
9 ANKARA	20 K. MARAŞ	31 BATMAN	42 HATAY
10 İZMİR	21 TOKAT	32 ADANA	43 DİYARBAKIR
11 AYDIN	22 ORDU	33 ARTVİN	44 ÇORUM
			45 SİNOP

## Elazığ

- The address data has been collected, designed, and entered into the Spatial Address Database within the scope of the numbering works.
- The Zoning and AYKOME modules have been made ready for use.
- A total of 52,000 door numbers and 6,000 street/signage plates have been installed within the address signage scope.
- For the cemetery information system, orthophotos have been generated with drones, cemetery data has been digitized, and a cemetery information system has been created.
- Within the urban information inventory, data related to buildings such as parking spaces, elevators, building usage purposes, construction materials, insulation and heating types, green spaces, emergency assembly areas, zero waste points, fountains, road width, and paving types have been collected and an urban guide has been created.
- A web-based management portal and mobile application have been developed for the Geographic Information System and mobile application.
- With the data obtained from the project, the urban guide and related systems have been integrated to facilitate management.
- The Elazığ Municipality mobile application has been made available on the App Store and Google Play.



	Area	Door Number Plate	Wall-type Plate	Pole-type Plate	Number Of Poles	Independent Unit Label		Area	Door Number Plate	Wall-type Plate	Pole-type Plate	Number Of Poles	Independent Unit Label
1	FATİH	83.250	8.100	2.600	2.300	0	49	VAN	88.000	4.000	0	0	0
2	EYÜP	52.000	3.500	3.500	3.000	0	50	AĞRI	35.000	0	0	0	0
3	BEYKOZ	49.500	7.500	1.900	1.650	0	51	ARDAHAN	43.000	0	0	0	0
4	GÜNGÖREN	38.350	3.250	550	500	0	52	KASTAMONU İLİ (KÖYLER DAHİL)	36.000	3.650	0	0	0
5	ŞİLE	17.000	1.600	900	750	0	53	TOKAT ZİLE	10.000	0	0	0	0
6	GÖKTÜRK	5.250	0	550	550	0	54	SİVAS	1.514	180	50	50	0
7	TAŞDELEN	9.750	0	650	600	0	55	MUĞLA - DATÇA	0	0	40	40	0
8	BEŞİKTAŞ	38.250	0	0	0	0	56	ÜSKÜP	3.000	0	250	250	0
9	BOĞAZKÖY	2.800	20	135	135	0	57	YENİŞEHİR	27.000	4.500	280	250	0
10	BAHÇEŞEHİR	750	45	25	25	0	58	KARASU	0	815	171	160	0
11	SİLİVRİ - ÇATALCA	110.000	13.000	4.200	3.900	0	59	SAKARYA	0	3.255	750	600	0
12	CELALİYE KAMİLOBA	6.500	0	0	0	0	60	HATAY	122.171	19.417	950	950	75.000
13	KUMBURGAZ	5.250	0	0	0	0	61	KOCAELİ	0	284	1.404	1.115	0
14	TUZLA - ŞİLE	15.000	1.200	0	0	0	62	ZONGULDAK	9.000	0	0	0	0
15	BAYRAMPAŞA	53.000	3.400	1.100	1.000	0	63	BOZBURUN	1.130	118	58	55	0
16	SARIYER	56.000	8.000	2.600	2.450	0	64	ANKARA	100.000	0	25.000	0	0
17	ESENLER	53.000	4.000	1.300	1.200	0	65	ÇANAKKALE	15.433	1.454	0	0	0
18	ŞİŞLİ	52.000	4.000	650	600	0	66	İZMİR	779.809	144.270	4.280	2.660	0
19	TEPECİK	0	250	220	200	0	67	KÜTAHYA	3.257	20.055	123	110	43.000
20	ÇAVUŞBAŞI	10.000	1.260	850	750	0	68	LÜLEBURGAZ	23.000	2.200	700	600	46.000
21	BEŞİKTAŞ	5.000	3.760	1.150	1.000	0	69	BURSA	8.061	885	1.160	1.068	0
22	ZEYTİNBURNU	30.000	2.950	360	300	0	70	YALOVA	1.500	0	350	300	0
23	AVRUPA YAKASI REVİZYON	175.650	12.500	2.950	2.800	0	71	KAHRAMANMARAŞ	25.000	3.000	6.000	0	5.000
24	ESENLER	0	0	0	0	200.000	72	MALATYA	80.000	7.500	700	500	0
25	BAĞCILAR	100.750	3.800	645	560	0	73	ADAPAZARI	5.000	3.500	1.150	900	0
26	BAKIRKÖY	18.000	0	0	0	0	74	ADANA	0	0	13.265	13.265	0
27	KÜÇÜKÇEKMECE	130.000	9.500	1.850	1.600	0	75	HAKKARİ	9.633	307	193	0	0
28	BEYLİKDÜZÜ	15.000	2.500	1.200	1.050	0	76	ÇANAKKALE	0	2.700	300	300	0
29	ARNAVUTKÖY	65.000	5.500	2.000	1.750	0	77	KONYA	31.983	16.883	3.512	0	0
30	GÜMÜŞHANE	101.276	0	0	0	0	78	ERZURUM	0	520	2.050	1.200	0
31	KAĞITHANE	5.000	0	0	0	0	79	ÇORUM	88.000	0	0	0	0
32	GAZİOSMANPAŞA SULTANGAZİ	155.000	8.650	2.850	2.600	0	80	KAYSERİ	216.500	22.700	500	500	0
33	ÇEKMEKÖY	35.000	12.000	7.200	6.500	0	81	ANTALYA	36.000	3.138	5.072	4.772	0
34	SİNOP	0	1.215	0	0	0	82	KARAMAN	41.000	0	0	0	0
35	ELAZIĞ	52.000	5.000	620	285	0	83	ORDU	95.000	6.250	7.000	3.800	0
36	ANADOLU YAKASI	110.000	24.200	3.500	3.000	0	84	ŞANLIURFA	170.000	500	150	100	0
37	AVRUPA YAKASI	126.500	30.600	2.950	2.800	0	85	ARTVİN	0	500	1.700	168	0
38	ESKİŞEHİR	0	0	455	450	0	86	MUĞLA - BODRUM	20.891	533	1.599	930	0
39	ISPARTA	0	6.000	1.000	950	0	87	AYDIN	504.633	24.562	4.490	2.989	0
40	KOCAELİ MERKEZ	80.600	14.600	5.900	5.600	0			5.866.701	531.456	146.288	94.718	419.000
41	KOCAELİ GEBZE	70.000	8.000	0	0	0		Area	Death Hazard Sign	Electric Pole Numbering	Manhole Number Numbering		
42	DİYARBAKIR	309.093	0	2.531	2.531	0	1	TREDAŞ ELEKTRİK DAĞITIM	400.000		310.000	450.000	
43	BALIKESİR İLİ (KÖYLER DAHİL)	573.000	15.000	3.250	2.500	50.000	2	OEDAŞ ELEKTRİK DAĞITIM	100.000		336.000	0	
44	KASTAMONU İLİ (KÖYLER DAHİL)	211.067	0	0	0	0	3	BEDAŞ ELEKTRİK DAĞITIM	400.000		317.000	528.500	
45	KIRIKKALE	0	3.500	500	500	0			900.000		963.000	978.500	
46	TRABZON İLİ (KÖYLER DAHİL)	100.600	180	50	50	0							
47	BATMAN	45.000	2.000	350	350	0							
48	ADIYAMAN	65.000	3.200	0	0	0							





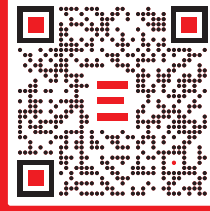






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